



City of Kalamazoo, Michigan Lead Solubility Testing

PRESENTED TO

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TABLE OF CONTENTS

List of Tables	iii
List of Figures	iii
1.0 INTRODUCTION	4
1.1 Background	4
1.2 Purpose	4
2.0 CORROSION INHIBITOR BENCH-SCALE EVALUATION	5
2.1 Bench-Scale Test Overview	5
2.2 Test Procedure	5
2.3 Results	7
2.3.1 Raw Water	7
2.3.2 Total Phosphorus	7
2.3.3 Orthophosphate	8
2.3.4 Chlorine Residual	9
2.3.5 pH and Alkalinity	10
2.3.6 Color	12
2.3.7 Turbidity	13
2.3.8 Lead Solubility	15
2.3.9 Lead Corrosion Rate	16
2.4 Discussion and Recommendations	19
2.4.1 Recommendations	21

LIST OF TABLES

Table 2-1. Lead Solubility Product Testing Matrix	5
Table 2-2. Solubility Test Sampling and Analysis	6
Table 2-3. Raw Water Quality	7
Table 2-4. Initial Carbonate System Chemistry	11
Table 2-5. Final Carbonate System Chemistry	11
Table 2-6. Turbidity Concentration with Time	15
Table 2-7. Lead Coupon Corrosion Rates	17

LIST OF FIGURES

Figure 2-1. Total Phosphorus Concentration.....	8
Figure 2-2. Measured Initial Orthophosphate Concentration	9
Figure 2-3. Chlorine Residual of Spent Solutions.....	10
Figure 2-4. Color Levels in Spent Solutions	12
Figure 2-5. Final Turbidity Levels	14
Figure 2-6. Lead Concentration vs. Time	16
Figure 2-7. Lead Coupons at the End of the Test Period	18
Figure 2-8. Lead Solubility Diagram with Varying pH and Inorganic Carbonate Concentrations at 25°C and I = 0.005 mol/L.....	20
Figure 2-9. Lead Solubility Diagram with Varying pH and Inorganic Carbonate Concentrations with 0.5 mg/L Orthophosphate at 25°C and I = 0.005 mol/L	20
Figure 2-10. Lead Solubility Diagram with Varying pH and Orthophosphate Concentration with DIC = 6 mg C/L at 25°C and I=0.005 mol/L ¹	21

APPENDICES

Appendix A – Bench-Scale Testing Results

Appendix B – Laboratory Water Quality Results Report

Appendix C – Coupon Weight Loss Report

1.0 INTRODUCTION

1.1 BACKGROUND

The City of Kalamazoo (City) requested Tetra Tech to evaluate the liquid phosphate corrosion inhibitor that the City has begun using at a few stations and is intending to use at all of its pumping stations once design and construction of the liquid storage and feed systems and controls has been completed. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) required bench-scale lead solubility tests with different corrosion inhibitors to determine the effectiveness of various blends and different concentrations of orthophosphate before completing a field corrosion inhibitor coupon study. To this end, Tetra Tech completed a bench-scale test to evaluate the effect of various corrosion inhibitor products with varying orthophosphate-polyphosphate ratios in the untreated water from Pump Station 14, as a screening level study to guide decision making for final selection of a product to be used system wide.

Historically, the City has used hexametaphosphate for sequestering iron and as a corrosion inhibitor. In March 2017, Tetra Tech recommended the City could switch to a liquid inhibitor product that contained a blend of ortho- and polyphosphate to provide an orthophosphate dose similar to what was measured in the existing system and supplying sufficient polyphosphate to sequester iron and calcium. The City switched to the use of the Carus 8400, which consists of a blend of 60% polyphosphate and 40% orthophosphate at several of their stations. The lead solubility test was intended to study the current product versus other competing products to assess their corrosion control effectiveness.

1.2 PURPOSE

The purpose of this report is to present the bench-scale corrosion inhibitor test results and the assessment of their corrosion control effectiveness. The bench-scale test was completed following the protocol developed by Cornwell as described in "Coupon Procedures for Evaluating Lead and Copper Solubility," Cornwell, David A. and Wagner, Jacob R., October 2019, Volume 111, Issue 10, pp. 12-24. Based on the results from the bench-scale test, this report discusses which corrosion control product and dose is more effective in treating the City's water and provides observational conclusions and recommendations to help the City decide how to proceed.

2.0 CORROSION INHIBITOR BENCH-SCALE EVALUATION

2.1 BENCH-SCALE TEST OVERVIEW

The project team conducted bench-scale testing of Kalamazoo's untreated water from Pump Station 14 to evaluate the corrosion control effectiveness of different inhibitor products at different doses. The solubility study tested lead release rates using products currently in use and additional products in which the percentage of orthophosphate varied. A total of ten water qualities were tested using different phosphate-blended products, the historic product, and the currently used product in this evaluation.

The test included one raw water sample to understand how the water would behave without the use of corrosion inhibitors, one sample with sodium hexametaphosphate (Sodium Hex.) to simulate historical trends in the system as a baseline of performance, two samples using the current Carus 8400 product at different doses, and two samples of each new inhibitor tested at different doses to assess their performance on corrosion control. **Table 2-1** summarizes the inhibitor products and their doses that were used in this study. A second dose of the inhibitor products was used to double the orthophosphate concentration and study the performance of a higher dose.

Table 2-1. Lead Solubility Product Testing Matrix

Description	Jar No.	Product	Poly:Ortho Ratio	Product Dose, mg/L	Orthophosphate Dose, mg/L PO ₄ /L	Polyphosphate Dose, mg/L PO ₄ /L
Blank	0	-	-	-	-	-
Historic	1	Sodium Hex.	100:0	0.88	0.00	1.50
Low Ortho	2	Carus 8400-L	60:40	1.50	1.50	2.25
High Ortho	3	Carus 8400-H	60:40	3.00	3.00	4.50
Low Ortho	4	Carus 8600-L	30:70	0.86	1.50	0.64
High Ortho	5	Carus 8600-H	30:70	1.72	3.00	1.29
Low Ortho	6	Carus 8700-L	15:85	0.70	1.50	0.26
High Ortho	7	Carus 8700-H	15:85	1.40	3.00	0.50
Low Ortho	8	Carus 3900-L	100:0	0.60	0.00	1.50
High Ortho	9	Carus 3900-H	100:0	1.20	0.00	3.00

2.2 TEST PROCEDURE

On October 27, 2020, a total of 30 gallons were collected during a site visit to Pump Station 14 (PS14) to complete various bench-scale tests over a period of 7 weeks. Ten (10) samples were tested twice per week where raw water from PS14 was dosed with different inhibitor products at different doses as described in **Table 2-1**. The more detailed laboratory procedure followed is contained in Appendix A and an overall summary of the procedure is provided here.

Each sample contained 800-mL of untreated water from PS14 and was dosed with the specified corrosion inhibitor solution at the defined doses, and with sodium hypochlorite to simulate current disinfection practices. The pH was adjusted using hydrochloric acid to simulate gas chlorination as currently used at the pump stations. After a 20-

minute mixing time, fresh solutions were transferred into 12 ounce (355 mL) wide mouth mason jars and the lead coupons, which were suspended from plexiglass covers, were placed over the top of the jars and excess solution was expelled out thus creating an airtight seal. The remaining fresh solution, or treated sample water, volume was analyzed for the parameters listed in **Table 2-2**. A sample of the treated water sample was withdrawn and sent to an accredited laboratory for analysis of total phosphorus concentration.

The mason jars containing the test solution and the lead coupons were allowed to sit for a 3- to 4-day period when a new set of fresh solution samples were prepared. The lead coupons were then transferred from the spent solution (3 to 4 days old) into the fresh treated water samples. The contents of the spent solution mason jars were analyzed at the end of each exposure period for the parameters listed in **Table 2-2** by withdrawing 100 mL of sample. The remaining spent solution water was acidified with nitric acid to a pH 2 and allowed to stand for 20 hours to dissolve any particulate lead. A sample of this acidified spent solution was sent to an accredited laboratory for analysis of lead concentration.

A total of 13 tests were performed where Pump Station 14's source water was dosed with corrosion inhibitor products, chlorine, and hydrochloric acid over a 7 week period. The study was planned to last long enough so that the lead concentration curve would flatten out, but not too long to avoid increasing the cost of this preliminary bench-scale study.

Table 2-2. Solubility Test Sampling and Analysis

Parameter	Sampling Frequency			
	PS 14 Source Water	Treated Sample Water	End of Each Exposure Period	End of Test Period
Bench Laboratory Measurements				
Alkalinity	Each Change Out	Each Jar	Each Jar	--
Ammonia	Each Change Out	--	--	--
Calcium	Each Change Out	--	--	--
Chloride	Each Change Out	--	--	--
Conductivity	Each Change Out	Each Jar	Each Jar	--
Iron	Each Change Out	--	--	--
Orthophosphate	Each Change Out	Each Jar	Each Jar	--
pH	Each Change Out	Each Jar	Each Jar	--
Sulfate	Each Change Out	--	--	--
Total Chlorine	Each Change Out	Each Jar	Each Jar	--
Temperature	Each Change Out	Each Jar	Each Jar	--
Outside Laboratory Tests				
Lead	Each Change Out	--	Each Jar	--
Total Phosphorus	Each Change Out	Each Jar	--	--
Coupon Weight Loss	N/A	--	--	All Jars

2.3 RESULTS

2.3.1 Raw Water

Raw water from Pump Station 14 was tested for various water quality parameters prior to the creation of each new batch of test solutions to understand the quality of water prior to chemical addition. Raw water quality is summarized in **Table 2-3**.

Table 2-3. Raw Water Quality

Parameter	Average	Minimum	Maximum
pH	7.85	7.61	8.05
Temperature, °C	22.2	16.5	24.7
Total Chlorine, mg/L	0.01	0.01	0.02
Conductivity, µS/cm	1097	910	1216
Turbidity, NTU	9.22	2.13	25.5
Alkalinity, mg/L as CaCO ₃	290	284	300
Calcium, mg/L as CaCO ₃	155	118	174
Free Ammonia, mg/L	0.076	0.027	0.128
Iron, mg/L	0.97	0.17	2.66
Chloride, mg/L	38.0	3.78	82.0
Sulfate, mg/L	25.3	16.0	53.0
Color, Pt-Co	36.2	7.0	106
Orthophosphate, mg/L as PO ₄ ³⁻	0.35	0.03	1.72

Similar to the raw water, the test water after chemical addition was analyzed for the water quality parameters described in **Table 2-2**. Water quality results of fresh test water and spent solution measured in-house are presented in **Appendix B**. Lead and phosphate concentrations as tested by an accredited laboratory are summarized in **Appendix C**.

2.3.2 Total Phosphorus

Total phosphorus samples were collected for analysis after chemicals were added to the raw water to prepare fresh solution to go in each jar. The raw water had minimal total phosphorus levels (< 0.07 mg PO₄/L) which were considered the Total-P baseline that would increase with the addition of phosphate corrosion inhibitors. The sum of raw water Total-P and orthophosphate and polyphosphate levels of each inhibitor product yields Total-P concentrations in the fresh test samples. **Figure 2-1** presents the final concentration of Total P in the test samples. The results generally reflect the expected concentrations of total phosphorus after chemical addition with some outlying results from dosing errors or sample labeling errors removed. The results also indicate that the sodium hexametaphosphate stock solution did not have a high enough concentration to provide any significant increase in total phosphorus concentration. This may have been a result of not properly understanding the concentration of the solution provided from the existing facilities. Therefore, the water quality in this jar was essentially the same as the raw water after chlorine addition.

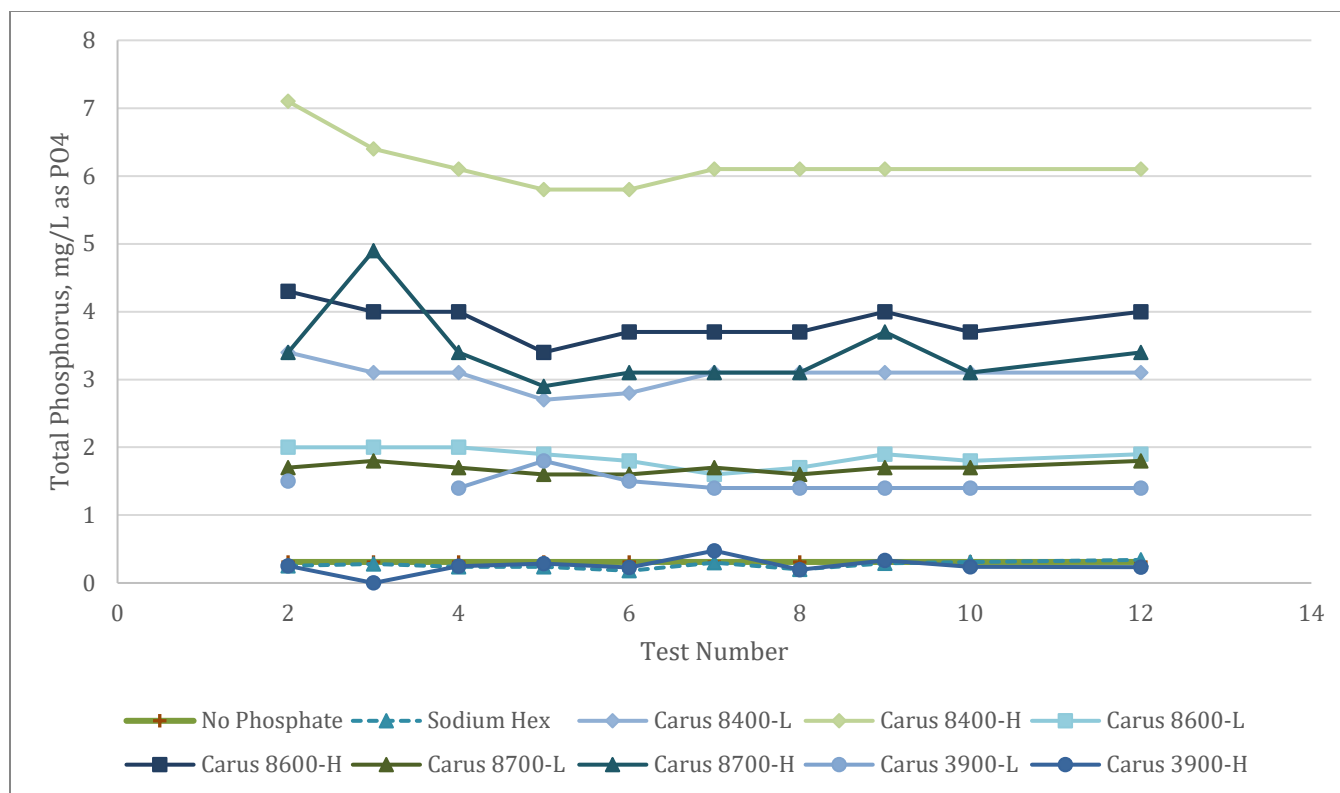


Figure 2-1. Total Phosphorus Concentration

2.3.3 Orthophosphate

The purpose of this study was to test different corrosion inhibitors at varying orthophosphate-to-polyphosphate ratios to determine which product provided better results for corrosion control in the distribution system. Orthophosphate is commonly used for lead and copper control and polyphosphate is mainly used for sequestering iron, manganese and calcium. Orthophosphate control on lead and copper release rates depends on the pH and dissolved inorganic carbon (DIC) of the water, on the characteristics of existing corrosion scale, and on the concentration of orthophosphate added. The solutions used in each jar were measured for orthophosphate concentration before introduction of the lead coupons and after the lead coupons were removed. Initial orthophosphate levels, excluding outliers, are presented in **Figure 2-2**. Resulting orthophosphate concentrations are approximate to the target dosing levels described in **Table 2-1**. As shown in figure 2-2 the low dose of the Carus 6400, 8600 and 8700 provided an orthophosphate concentration of approximately 1.3 to 1.4 mg PO₄/L and the higher dose provided an orthophosphate concentration of 2.5 to 3.0 mg PO₄/L. The other jars without orthophosphate addition reflected much lower orthophosphate concentrations.

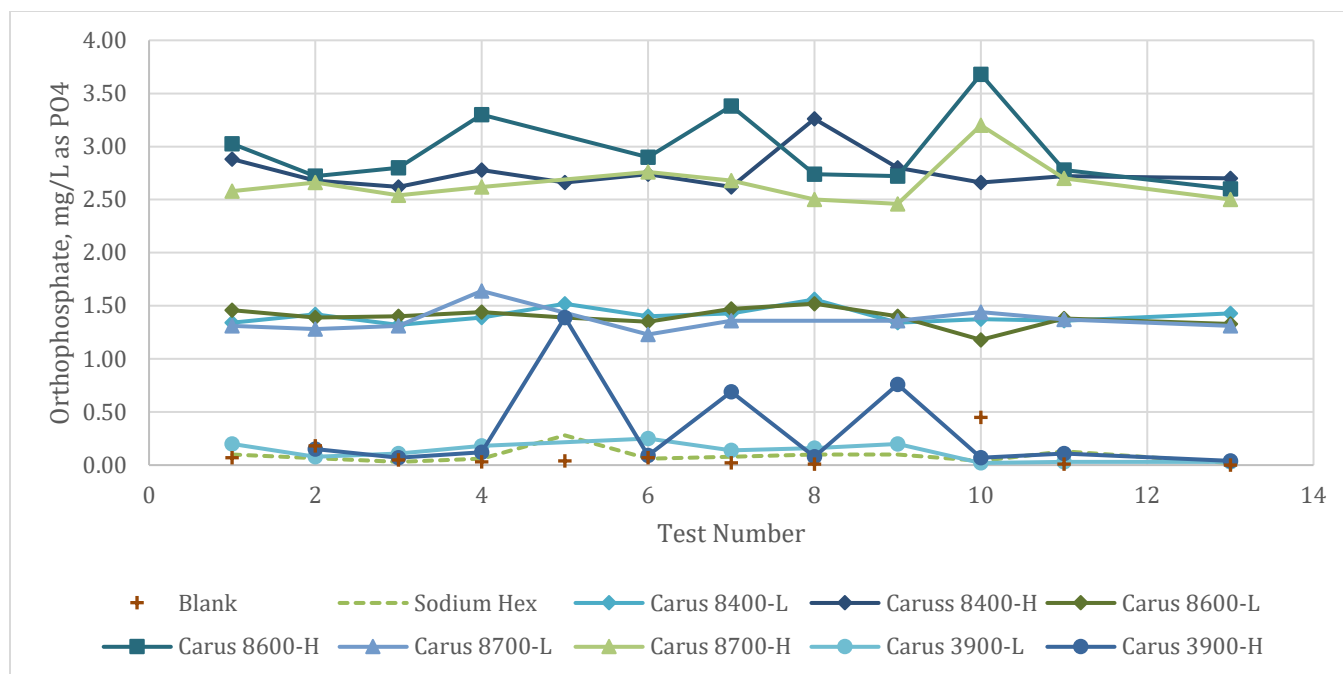


Figure 2-2. Measured Initial Orthophosphate Concentration

2.3.4 Chlorine Residual

While necessary for disinfection, chlorine is an oxidant considered to be a corrosive agent in water. Chlorine is known to affect iron the most, but it also appears to have an effect on lead and copper metals. Chlorine's corrosion potential is typically diminished by increasing the pH of the water or adding orthophosphate. In order to simulate system conditions, chlorine was added to the test samples with a target minimum residual of 1 mg/L after 3 to 4 days of contact time. Chlorine was added in the form of sodium hypochlorite solution after the corrosion inhibitor was added in order to limit the oxidation of dissolved iron. A small amount of hydrochloric acid was added to compensate for the pH effect of adding hypochlorite solution instead of gaseous chlorine solution as currently practiced by the City. The same chlorine dose was added to all the jars and the dose was not adjusted for each jar to achieve the same residual. The chlorine residual was the below target levels in the first experiments and, therefore, the chlorine dose was adjusted to meet the 1 to 1.5 mg/L chlorine residual target for all subsequent tests.

Figure 2-3 shows chlorine residual of the spent solution after being in contact with lead coupons for a 3 to 4-day period. Chlorine residual exhibited a larger decay in the blank water sample and the Sodium Hex sample, especially in tests number 8 and 9. The remaining inhibitor products have an average chlorine residual that ranges between 1.18 and 1.47 mg/L, which is approximate to the target chlorine levels. In general the water with a corrosion inhibitor added maintained a higher chlorine residual.

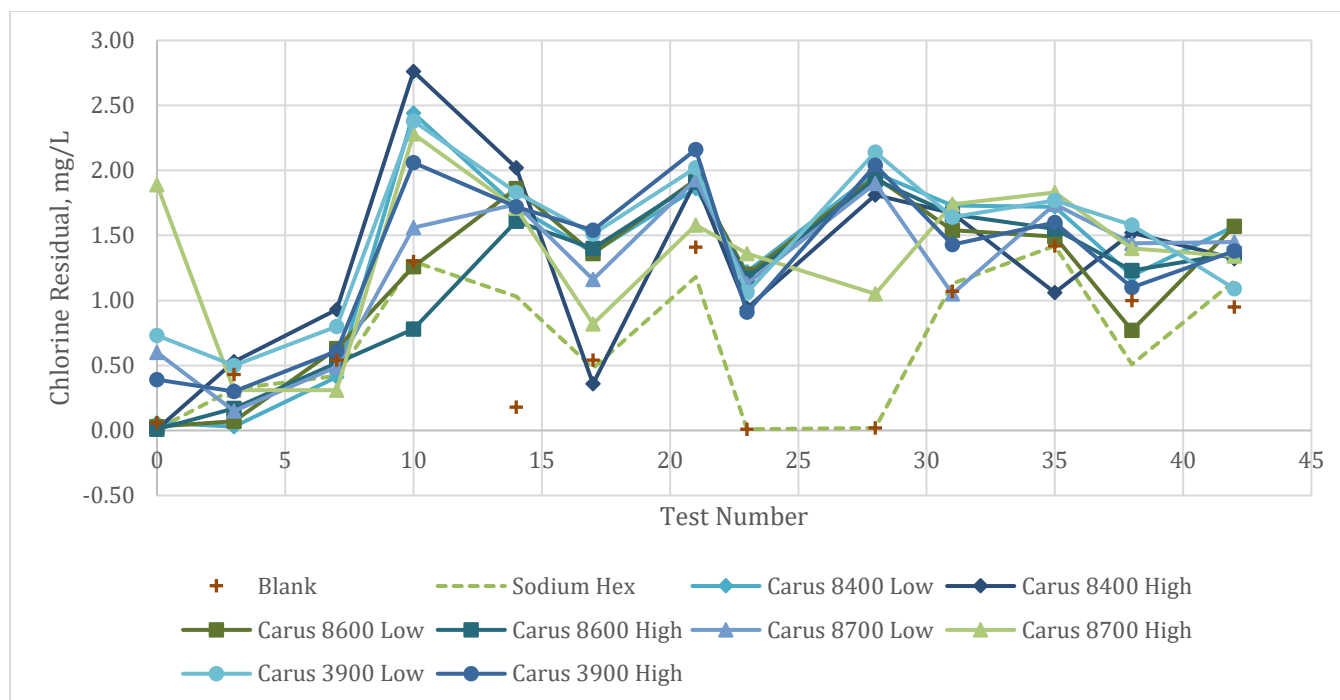


Figure 2-3. Chlorine Residual of Spent Solutions

2.3.5 pH and Alkalinity

Alkalinity is the capacity of water to buffer pH changes that helps maintain a stable pH level. Alkalinity is the sum of carbonate, bicarbonate, and hydrogen and hydroxide ions. Dissolved inorganic carbon (DIC) is a water parameter related to alkalinity, but more relevant to corrosion as it directly measures the carbonate species found in water that can react with lead and copper to form passivating scales. DIC is the total amount of inorganic carbon in the water which equals to the sum of carbon dioxide, carbonic acid, carbonate, and bicarbonate.

The pH, alkalinity, and DIC of water can vary within the distribution system due to interactions between the water and the pipes, biological activity, and decreased disinfectant levels. However, systems try to maintain a buffer intensity, or buffer capacity, that limits pH fluctuations. Literature indicates that waters with a pH range of 8.8 to 10 and low DIC (less than 10 mg/L as C) have high buffer intensity and therefore exhibit less variability in pH levels in the distribution system. And, conversely, high DIC levels may aggravate the solubility of metals found in pipe scales as literature indicates that DIC concentrations above approximately 20 mg/L as C can cause an increase in lead solubility.

Table 2-4 and **Table 2-5** summarize experimental results of pH and alkalinity and calculated results of DIC for the fresh test samples (initial) and the spent solutions (final), respectively. The average pH, alkalinity, and DIC remained stable when comparing the initial and final water qualities which indicates that there was not a significant change in dissolved carbon dioxide while the solutions were in the jars. However, pH values of 7.8 - 8.0 and high DIC values, >60, are not within recommended ranges for metals solubility control. To lower DIC concentrations and increase pH of the water, carbonic acid needs to be stripped out of the water as carbon dioxide. Another alternative is to increase the water pH with the use of chemicals, including potassium hydroxide, sodium hydroxide, and calcium hydroxide to form a protective scale on the pipe walls to reduce the rate of lead release into the water. However, adjusting the pH or DIC of the test solutions to achieve higher pH or lower DIC to reduce corrosion rates was not part of this study.

Table 2-4. Initial Carbonate System Chemistry

Description	pH			Alkalinity, mg/L as CaCO ₃			DIC, mg/L as C		
	Max	Min	Average	Max	Min	Average	Max	Min	Average
Raw	8.05	7.61	7.85	300	284	290	74	69	71
Blank	8.11	7.48	7.88	300	270	282	74	65	69
Sodium Hex	8.22	7.66	7.89	400	270	291	99	65	71
8400L	8.25	7.55	7.89	300	268	280	74	65	68
8400H	8.16	7.46	7.82	300	270	281	76	65	69
8600L	8.24	7.57	7.86	300	274	285	74	67	70
8600H	8.21	7.60	7.87	300	268	283	75	66	69
8700L	8.25	7.57	7.84	300	274	284	74	67	70
8700H	8.24	7.74	7.93	300	268	285	74	66	70
3900L	8.33	7.70	7.96	400	270	295	99	66	72
3900H	8.31	7.78	8.03	300	282	290	73	68	70

Table 2-5. Final Carbonate System Chemistry

Description	pH			Alkalinity, mg/L as CaCO ₃			DIC, mg/L as C		
	Max	Min	Average	Max	Min	Average	Max	Min	Average
Blank	8.16	7.65	7.88	300	270	282	74	66	69
Sodium Hex	8.47	7.65	7.94	300	264	282	73	66	69
8400L	8.10	7.43	7.87	288	250	278	73	61	68
8400H	8.11	7.58	7.87	300	260	282	74	64	69
8600L	8.13	7.62	7.91	300	266	283	74	66	69
8600H	8.10	7.60	7.92	290	200	277	70	49	68
8700L	8.15	7.62	7.92	288	250	280	70	61	68
8700H	8.19	7.61	7.93	300	270	284	73	66	69
3900L	8.30	7.73	8.01	298	274	288	72	67	70
3900H	8.30	7.73	8.05	300	274	290	72	68	70

2.3.6 Color

Color is a secondary standard that has been found to be objectionable when exceeding 15 color units. High levels of color in drinking water can be a result of dissolved inorganic material, inadequate treatment, iron and manganese precipitates. Metals, including lead, copper, and iron, are also common causes of colored waters as they are released from corroded pipe walls into the bulk water. Corrosion of metal surfaces, dissolution of corrosion scale, and scouring of corrosion sediments can cause metals to release into the bulk water and, therefore, increase color in the water.

Figure 2-4 presents apparent color concentrations of the spent solutions. Apparent color measures insoluble and soluble substances as opposed to true color which only measures soluble substances following sample filtration. Average color concentrations range between 12.2 and 21.5 Pt-Co units in the spent solutions, with Carus 8700-L being at the low end and Carus 3900-H being at the high end of the range. The currently used product, Carus 8400-L, averaged a color concentration of 20.5 Pt-Co units. The average color of the raw water before any chemical addition (sodium hypochlorite or phosphate inhibitor) was 35 Pt-Co units. Therefore, even though the colors of the spent solutions were sometimes above the 15 Pt-Co units secondary standard, they were less than the average measured color of the raw water without chemical addition.

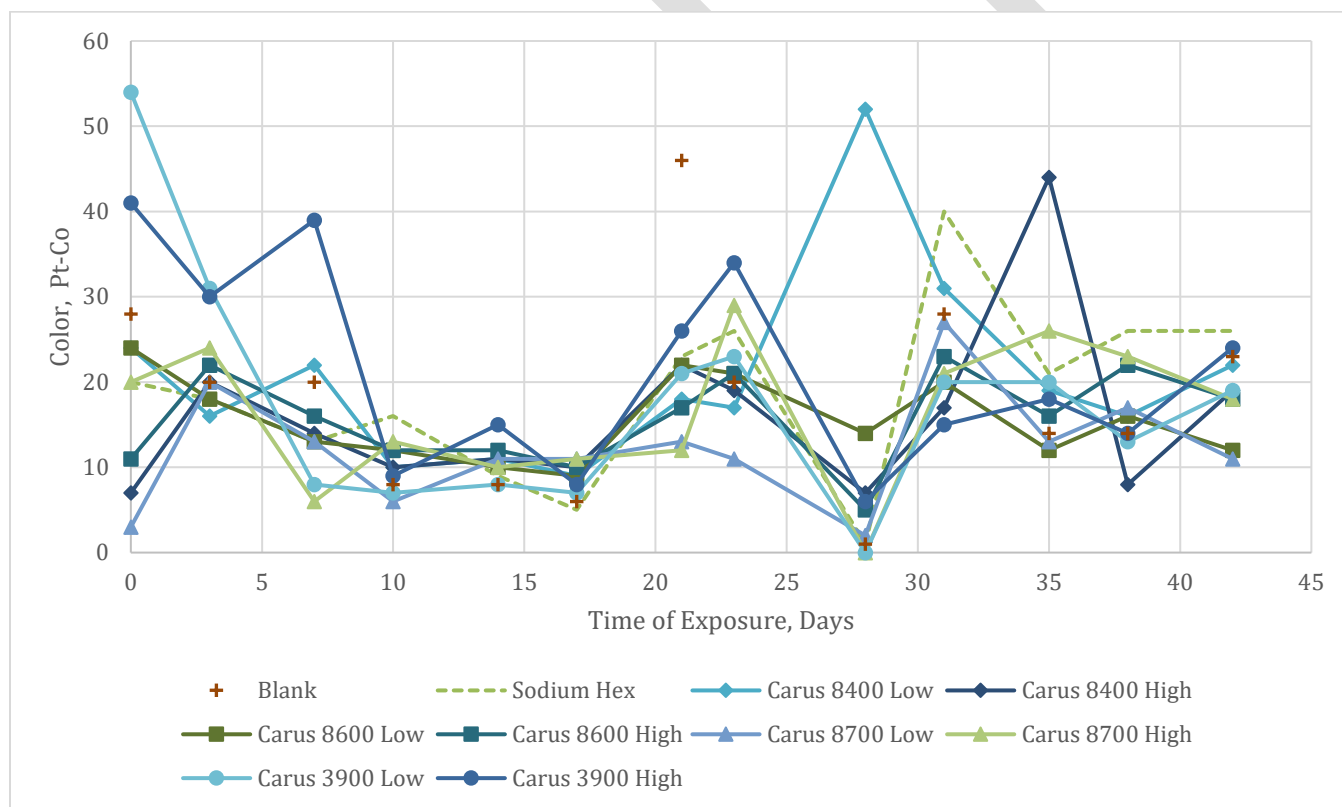


Figure 2-4. Color Levels in Spent Solutions

Test	Time days	Raw Water	Blank	Sodium Hex	Carus 8400 Low	Carus 8400 High	Carus 8600 Low	Carus 8600 High	Carus 8700 Low	Carus 8700 High	Carus 3900 Low	Carus 3900 High
		Jar #	0	1	2	3	4	5	6	7	8	9
1	Initial ¹	25	-1	-1	-3	-12	3	4	-1	1	-3	6
1	Final	--	24	0	-2	-11	4	5	0	2	-2	7
1	3 to 4 Days	--	28	-23	-23	-23	-23	-23	-24	-23	-24	-23
5	Initial ¹	13	13	10	6	11	15	16	8	20	6	15
5	Final	--	8	-17	-15	-15	-16	-14	-15	-16	-18	-11
5	3 to 4 Days	--	0.2	-26	-26	-25	-26	-26	-26	-26	-26	-26
11	Initial ¹	64	7	4	4	151	12	58	29	6	7	8
11	Final	--	14	-50	-52	-27	-59	-55	-58	-45	-51	-53
11	3 to 4 Days	--	5	-68	-62	-47	-69	-70	-68	-67	-69	-66

¹ Change in color after initial chemical addition compared to the untreated sample color.

² Change in color compared to the blank sample without inhibitor added (Jar 0) after the reaction period shown.

The data in the table above compares the color of the raw water without any chemicals added to the initial color values that were measured after the raw water was dosed with sodium hypochlorite and the corrosion inhibitor products. The table also presents a comparison of the color measured at the end of the exposure periods listed in the table to the color of the raw water that was dosed with sodium hypochlorite and to which no phosphate inhibitor was added. The variations in the raw water color are considered to be primarily related to the oxidation of iron in the raw water during storage after the sample containers were opened. The data for test 1 show that most of the samples exhibited an increase in color after the initial addition of the corrosion inhibitor chemical. The magnitude of the increase did not follow a distinct pattern from test to test in terms of which product provided more or less of an increase. Most of the samples that were treated with a corrosion inhibitor had significantly lower color compared to the blank after the coupons were removed from the solutions at the end of the holding period. All the solutions exhibited a much larger decrease in color after the solutions were held for an additional 3 to 4 days. The color appeared to be largely associated with iron in the water and whether the decreases in color were due to sequestering of iron, settling of large iron particles, another cause or a combination of these was not determined. However, the data indicate that phosphate inhibitor addition did not result in an increase in color with increasing exposure time.

2.3.7 Turbidity

Turbidity, a measurement of the light scattering ability of insoluble substances in the water, serves as an indicator of the cloudiness of the water. High turbidity can lead to customer complaints and can reduce the effectiveness of the disinfection process. Turbidity of the initial blank sample and the spent solutions is shown in **Figure 2-5**. Turbidity levels decreased as the water was allowed to sit for a 3 to 4-day period, thus, allowing larger, insoluble substances to settle. Starting with test 9 the water was gently stirred to allow lighter particles to be mixed with the water, but allowing larger particles to remain settled before turbidity samples were collected. This was considered to better replicate system conditions and so that settling of finer particles did not affect the turbidity results. Outliers in turbidity levels may be a result of the stirring procedure which might have caused large particles to mix with the water.

Figure 2-5 exhibits how turbidity levels significantly decrease with the use of inhibitor products and with precipitation of solid particles. Turbidity levels after the addition of the inhibitor products are comparable as they range between 0.98 and 2.14 NTU, with the Carus 3900-L being at the low end and Carus 8400-H being at the high end of the

range. The currently used product, Carus 8400-L, averages a turbidity level of 2.01 NTU. Turbidities of the untreated water and the treated water without a phosphate inhibitor added were in most cases the same as or in several cases higher than the water after addition of the phosphate inhibitor.

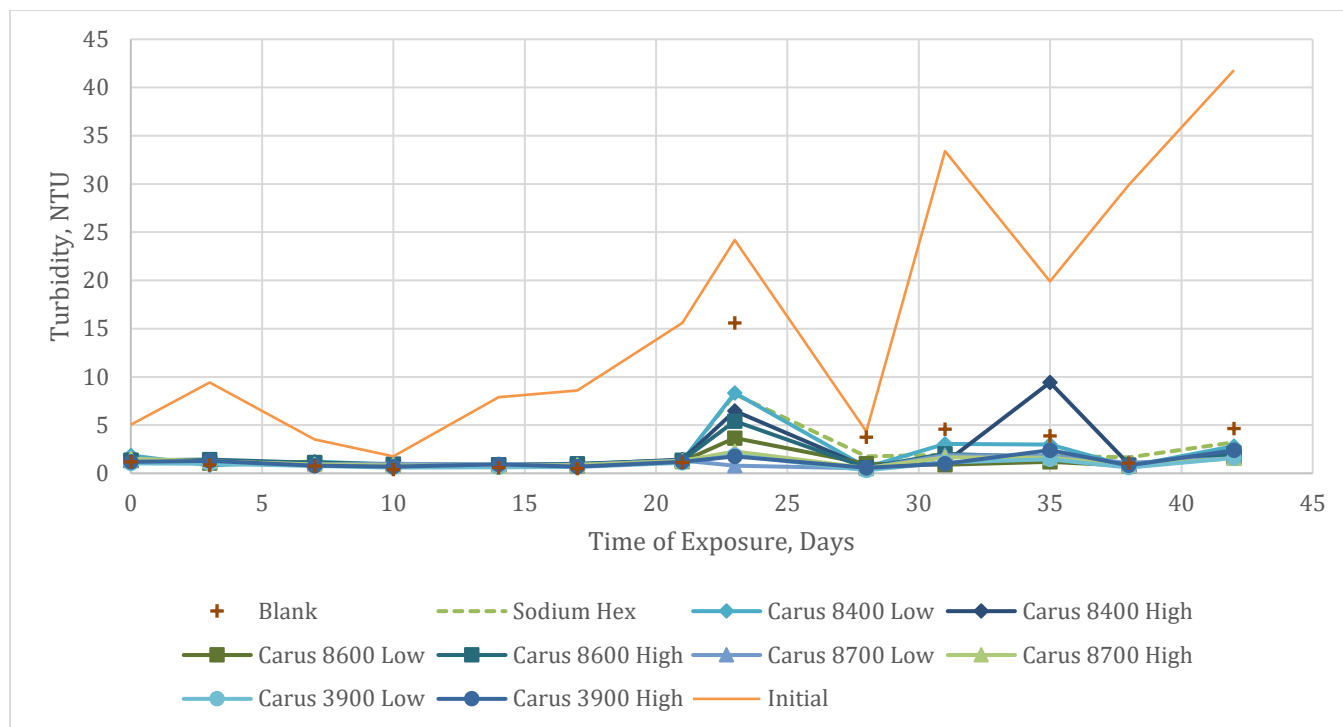


Figure 2-5. Final Turbidity Levels

Table 2-6 presents deviations in turbidity with time for Tests 1, 5, and 11. The final turbidity was measured in spent solutions that were in contact with the lead coupons for a 3 to 4-day period. The remaining sample volume was allowed to stand for an extra 3 to 4 days and turbidity was once again measured. Turbidity further decreased in concentration when the water was allowed to sit for a longer period of time which is representative of distribution conditions where large particles settle in the pipelines as pipe velocities decrease.

The final turbidities in test 1 were lower with phosphate addition compared to the blank, except the Carus 3900 product which were significantly higher. In test 5 the final turbidities were all slightly higher than the blank except for the low dose of the Carus 3900 which was the same. The final turbidities were lower for the low doses of Carus 8600 and 8700 compared to the blank in Test 11 and all other samples had higher turbidities. All of the turbidities for tests 1 and 5 were lower after 3 to 4 days probably as a result of settling of finer particles. The turbidities in test 11 were measured after gentle stirring. All of the turbidities were less than the corresponding turbidities measured prior to the additional 3 to 4 day holding period. The Carus 8600 product had the lowest turbidities after 3 to 4 days in test 11 and turbidities for the Carus 8400 product were higher than the blank.

Table 2-6. Turbidity Concentration with Time

Inhibitor Product	Final Turbidity, NTU			Final + 3-4 Days Turbidity, NTU		
	1	5	11	1	5	11
Blank	28	8	14	0.70	0.18	5.39
Sodium Hex	20	9	21	1.21	0.21	3.35
8400L	24	11	19	0.57	0.21	8.89
8400H	7	11	44	0.91	0.94	23.9
8600L	24	10	12	0.72	0.38	1.76
8600H	11	12	16	1.40	0.39	1.17
8700L	3	11	13	0.26	0.17	3.21
8700H	20	10	26	0.56	0.38	3.70
3900L	54	8	20	0.35	0.24	2.30
3900H	41	15	18	0.93	0.12	5.14

2.3.8 Lead Solubility

The lead concentration versus exposure time is graphed in **Figure 2-6**. Virgin lead coupons experienced high initial corrosion rates for the first 10 days, resulting in an increased lead concentration in the water. Corrosion rates were then stabilized after an exposure period of approximately 30 days and reached a roughly steady-state condition thereafter.

The Carus 3900 product which was a zinc polyphosphate formulation produced lead concentrations that were significantly higher than the other products tested throughout the exposure period. The Carus 8700 product using the higher dose to provide 3.0 mg/L of orthophosphate provided the most consistently low concentrations over the duration of the test and the lowest lead concentrations once the release rate had stabilized at the end of the exposure period. The Carus 8600 product dosed to provide 3.0 mg/L as orthophosphate provided a similarly low lead concentration at the end of the exposure period, but exhibited more variation in lead concentration over the entire exposure period as compared to the Carus 8700 product. None of the products tested provided a significant reduction in lead concentration as compared to blank which was dosed with chlorine and to which no phosphate inhibitor was added.

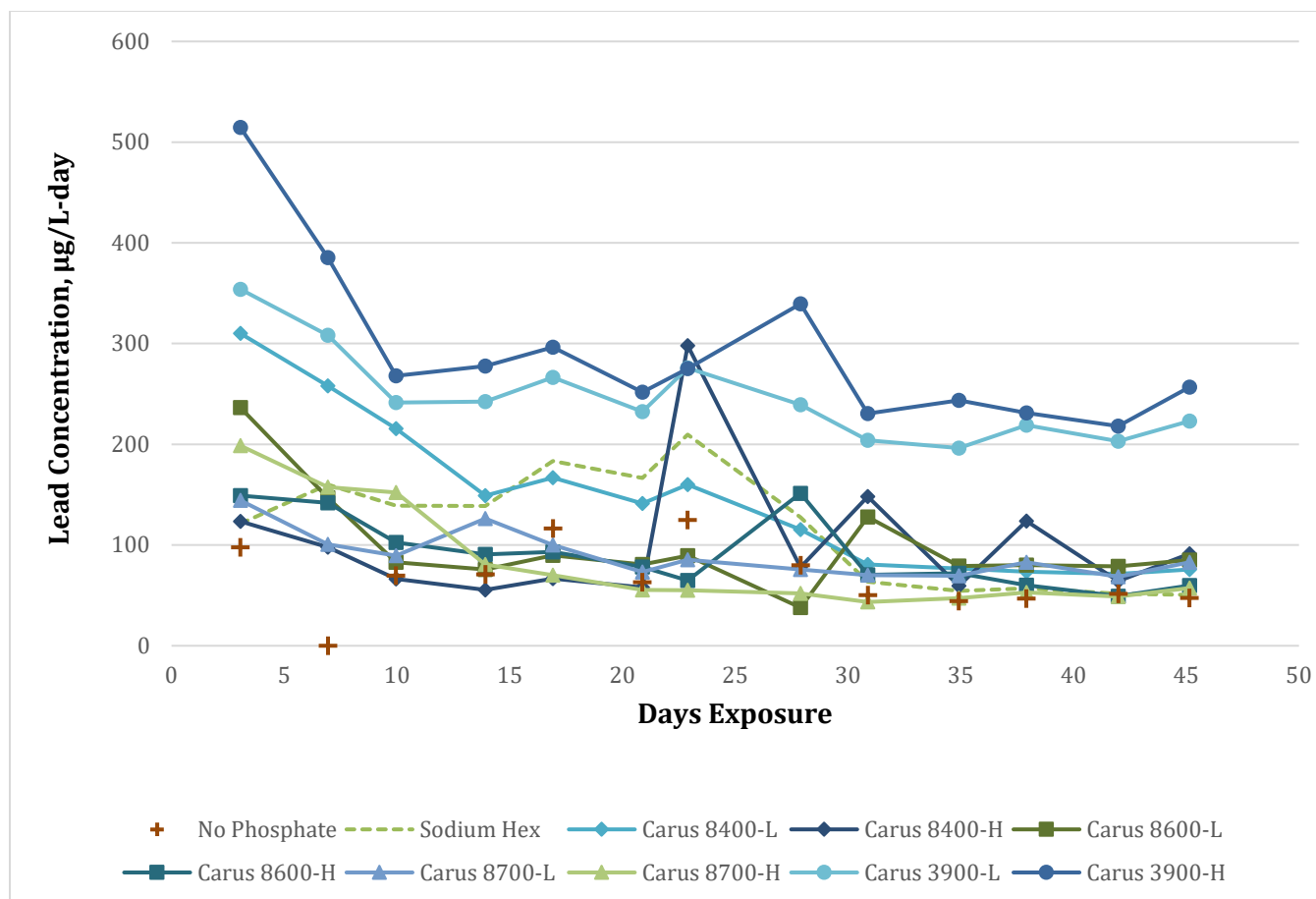


Figure 2-6. Lead Concentration vs. Time

2.3.9 Lead Corrosion Rate

The rate of corrosion of lead coupons was measured based on a change in mass or weight loss over the test period. Weighed lead coupons were supplied for the test by Water Solutions Unlimited. The coupons were 3-inch long by 1/2 -inch wide and 1/16-inch thick providing an exposed surface area of approximately 3 square inches. As part of this study, ten (10) of these lead coupons were inserted into separate mason jars attached to a PVC hanger attached to a plexiglass cover. The coupons were suspended in the test water, which was changed twice per week. The coupons were exposed to the solution in each jar for an average period of 45 days, 3 hours and 22 minutes. Lead coupons were weighed prior to and following the bench-scale study to evaluate their rate of corrosion using **Equation 2-1**.

$$\text{Corrosion Rate, } \left(\frac{\text{mils}}{\text{year}} \right) = \frac{(W)(K)}{(D)(A)(T)}$$

Equation 2-1

Where W is the weight loss in g, D is the density of the metal in g/cm³, A is the area of the test specimen in in², T is the exposure time in hours, and K is a constant that equals to 5.34 x 10⁵.

The information for each coupon used in the test is summarized in **Table 2-7**, and each coupon was photographed at the end of the exposure period before they were placed into their original envelopes and shipped off for cleaning and weighing. **Figure 2-7** shows the coupons at the end of the exposure period. The coupons appear to be in relatively good condition without a significant amount of corrosion or corrosion byproduct build up. They appear to have a relatively thin layer up of scale covering varying percentages of the surface area. Some of the scale build up is more brown in color indicating that some coprecipitation of iron may have occurred. Additional photos and information for the coupons is contained in the Water Solutions Unlimited report contained in **Appendix C**. Note that the coupon serial numbers corresponding to each jar number are correct in **Table 2-7 and Figure 2-7**. A couple of the coupons were not associated with the correct jars in the report in **Appendix C**.

Table 2-7. Lead Coupon Corrosion Rates

Jar #	Product	Lead Coupon Serial #	Initial Weight, g	Final Weight, g	Weight Loss, mg	Corrosion Rate, mpy
0	Blank	B5234	17.8668	17.845	21.8	0.41
1	Sodium Hex	A0274	16.51	16.476	34.0	0.63
2	Carus 8400L	B5236	17.9298	17.912	17.8	0.33
3	Carus 8400H	A0276	16.24	16.207	33.0	0.61
4	Carus 8600L	B5235	18.0691	18.046	23.1	0.43
5	Carus 8600H	B2841	19.0219	19.004	17.9	0.33
6	Carus 8700L	B5237	17.8592	17.837	22.2	0.41
7	Carus 8700H	B5252	-- ¹	17.88	--	
8	Carus 3900L	A0275	16.582	16.556	26.0	0.48
9	Carus 3900H	B2840	19.2359	19.209	26.9	0.50

¹Initial weight not measured and recorded.

The corrosion rates for the products that had a lower concentration of polyphosphate present, 8400L, 8600L, 8600H and 8700L had the lowest corrosion rates compared to the blank. Unfortunately, the coupon for the 8700H with a high orthophosphate and low polyphosphate concentration was not weighed initially by the supplier and therefore a corrosion rate could not be determined.

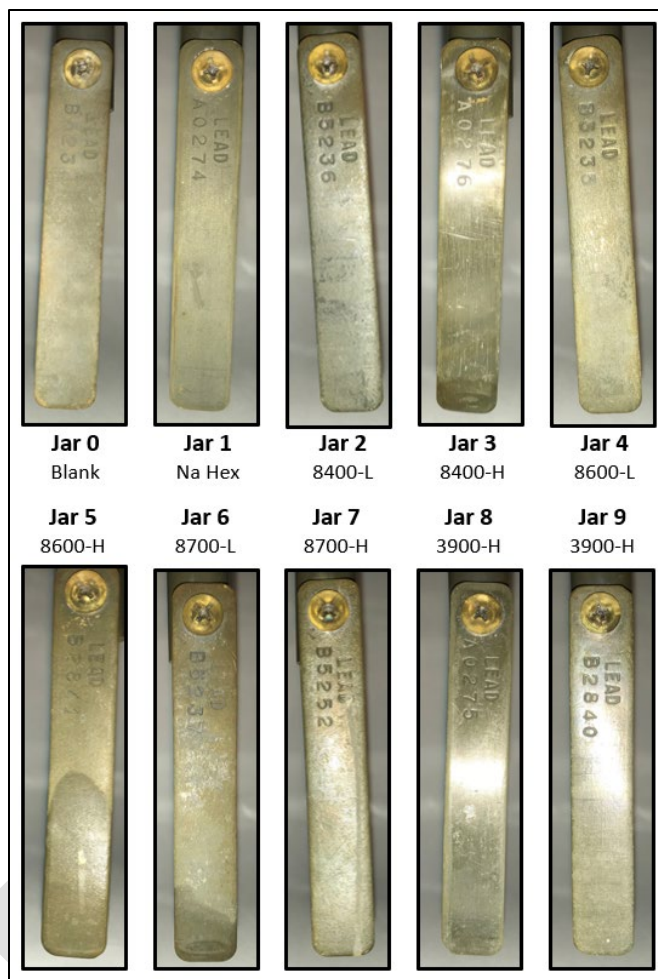


Figure 2-7. Lead Coupons at the End of the Test Period

2.4 DISCUSSION AND RECOMMENDATIONS

The bench-scale test allowed to conduct a preliminary study of various corrosion inhibitor products to determine which product was more effective at controlling corrosion in the distribution system. Based on the results from this bench-scale study on the LS14 Pump Station water, observational conclusions are provided as follows:

- Orthophosphate levels measured experimentally were approximate to target dosing levels.
- Chlorine residual was also approximate to target levels, which indicates an accurate experimental procedure.
- The pH, alkalinity, and DIC values are not within recommended range to protect the distribution system from metal release rate. Therefore, the use of a phosphate-based corrosion inhibitor product is necessary to minimize the concentration of metals in the bulk water by precipitating metallic solid compounds and forming a scale on the pipe walls.
- Color levels were below regulatory requirements, with product Carus 8700-L yielding the lowest average color values.
- Turbidity was considerably reduced with the use of inhibitor products and with precipitation of solid particles. This is consistent with the scale formation caused by the precipitation of metallic solid compounds. The product Carus 3900-L resulted in the lowest turbidity concentration.
- Lead coupons presented a high initial release rate, which is customary with virgin coupons. Once the release rate had stabilized, the concentration of lead in the water maintained a constant concentration in all test waters. The currently used product, Carus 8400-L and the product Carus 8700-H resulted in the lowest lead concentrations once stabilized. Because of familiarity with the product, Carus 8400-L takes precedence over Carus 8700-H.
- The addition of the phosphate corrosion inhibitors did not significantly reduce the lead solubility concentrations below the solubility of lead in the water without a corrosion inhibitor added. The DIC of the raw water is very high, over 60 mg C/L, which may partially explain the seeming lack of solubility control. The solubility of lead is likely controlled by cerussite, PbCO_3 , at a pH slightly below 8 and a DIC > 60 mg/L as shown in **Figure 2-8**. The addition of orthophosphate is intended to form a lower solubility lead compound such as hydroxypyromorphite, $\text{Pb}_5(\text{PO}_4)_3\text{OH}$, to coat the surface and lower the release of lead into solution. **Figure 2-9** shows how the addition of a small amount of orthophosphate, 0.5 mg/L, can change the solubility diagram so that hydroxypyromorphite becomes the compound controlling solubility in a pH range of 7.8 to 8.0 for DIC concentrations up to 40 mg/L. However, this figure shows that at higher DIC concentrations (>60 for the water tested in this study) the solubility is still controlled by cerussite, PbCO_3 . Higher concentrations of orthophosphate are required to make hydroxypyromorphite the compound controlling the solubility of lead as shown in **Figure 2-10**. This figure indicates that the theoretical lead solubility can be reduced from a log value of -0.667 at pH 7.6 to 8.0 when the solubility is controlled by PbCO_3 to a log value of -1.2 to -2.0 at this same pH range when the orthophosphate concentration is increased from 1 to 5 mg/L. This figure represents a DIC of only 6 mg/L so the solubility reduction at much higher DIC concentrations is expected to be less pronounced and higher dosages of orthophosphate may be required.

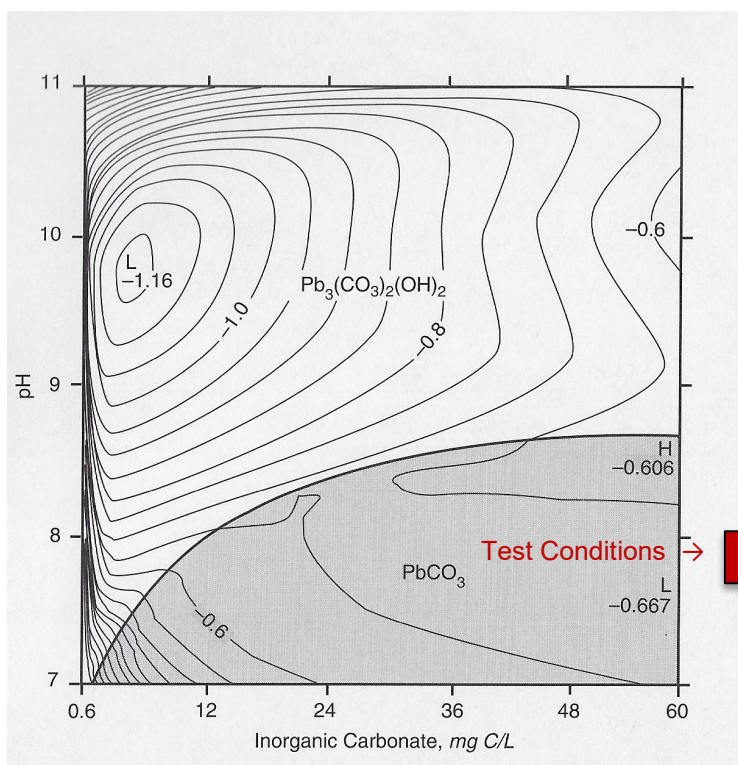


Figure 2-8. Lead Solubility Diagram with Varying pH and Inorganic Carbonate Concentrations at 25°C and $I = 0.005 \text{ mol/L}$

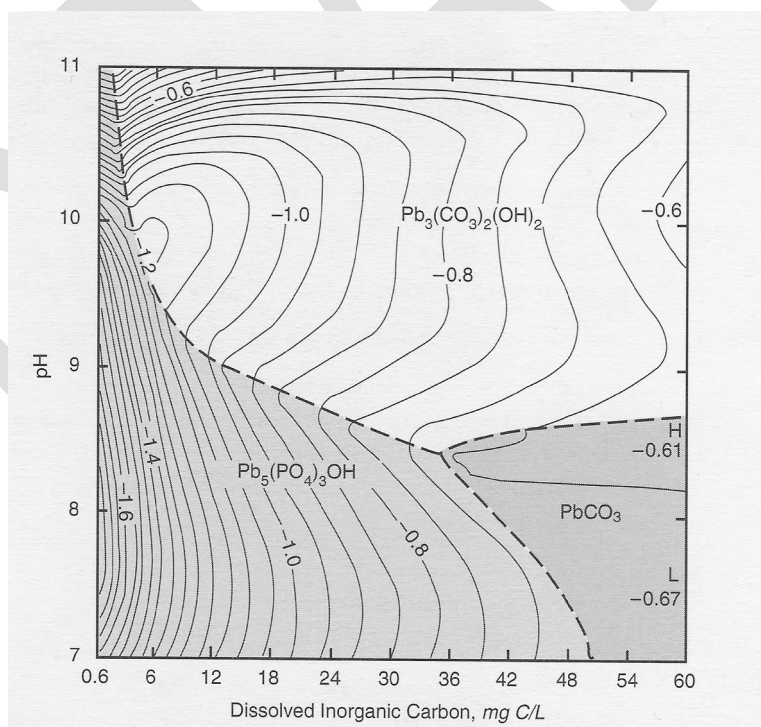


Figure 2-9. Lead Solubility Diagram with Varying pH and Inorganic Carbonate Concentrations with 0.5 mg/L Orthophosphate at 25°C and $I = 0.005 \text{ mol/L}$

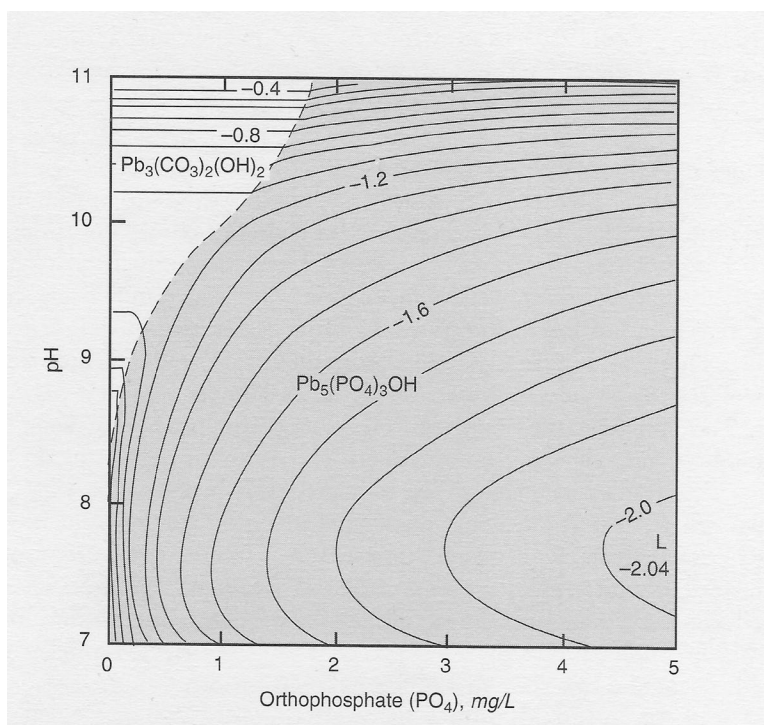


Figure 2-10. Lead Solubility Diagram with Varying pH and Orthophosphate Concentration with DIC = 6 mg C/L at 25°C and I=0.005 mol/L¹

¹AWWA Research Foundation and DVG Technologiezentrum Wasser, 1996, *Internal Corrosion of Water Distribution Systems*, 2nd Ed. Denver, Colorado: American Water Works Association Research Foundation (pp. 178, 186)

2.4.1 Recommendations

The results from this set of solubility tests indicate that an orthophosphate dose of up to 3 mg/L did not significantly affect the release of lead into solution during the testing as compared to a volume of the raw water to which no phosphate inhibitor was added. Information in the literature discussed above suggests that at higher levels of alkalinity and DIC in the water a larger orthophosphate dose is required to provide a level of control over lead solubility. Therefore, it is recommended that a second round of solubility tests be performed using a higher dose of orthophosphate to determine if the higher orthophosphate concentration will exert a significant influence over the lead solubility. To determine if there is a dose response for lead solubility an orthophosphate dose twice the highest dose used in this study and possibly one higher dose could be used. The raw water obtained from Station 14 contains both iron and calcium. Some polyphosphate should be dosed along with the orthophosphate to sequester these constituents. The polyphosphate dose for sequestration can vary with the chain length of polyphosphate component of the inhibitor, therefore the chemical supplier should be consulted relative to the minimum desirable polyphosphate dose for iron and calcium sequestration.

APPENDIX A – BENCH-SCALE TESTING RESULTS

Table A- 1. Fresh Treated Samples Water Quality

Test	Beaker No.	Product	pH	Temp., °C	Total Cl2, mg/L	Conductivity, µS/ cm	Turbidity, NTU	Alkalinity, mg/L as CaCO3	Free Ammonia, NH3 – N	Calcium, mg/L as CaCO3	Iron, mg/L	Chloride, mg/L	Sulfate, mg/L	Color, Pt-Co	Ortho P, mg/L
1	-	Raw Water	7.75	24.7	0.02	1216	2.13	292	0.037	174	0.17	5.45	22	25	0.23
	0	Blank	8.01	22.5	1.16	909	5.04	276	-	-	-	-	-	24	0.07
	1	Sodium Hex	7.93	22.3	0.28	900	2.77	280	-	-	-	-	-	24	0.10
	2	Carus 8400	7.83	22.4	1.41	912	2.61	278	-	-	-	-	-	22	1.34
	3	Carus 8400	7.78	22.3	0.33	878	2.73	274	-	-	-	-	-	13	2.88
	4	Carus 8600	7.71	23.4	0.74	924	2.85	286	-	-	-	-	-	28	1.46
	5	Carus 8600	7.76	23.6	0.94	905	2.95	280	-	-	-	-	-	29	3.03
	6	Carus 8700	7.71	23.7	2.54	939	2.77	288	-	-	-	-	-	24	1.31
	7	Carus 8700	7.80	23.6	4.13	944	2.68	300	-	-	-	-	-	26	2.58
	8	Carus 3900	7.86	24.1	1.04	939	3.33	-	-	-	-	-	-	22	0.20
2	-	Raw Water	7.73	23.9	0.02	923	8.16	300	0.059	128	1.26	0.00	18	48	0.09
	0	Blank	7.78	23.1	1.84	904	9.42	300	-	-	-	-	-	62	0.18
	1	Sodium Hex	7.73	22.9	1.48	905	9.60	400	-	-	-	-	-	61	1.22
	2	Carus 8400	7.55	22.5	2.17	901	9.61	300	-	-	-	-	-	49	1.42
	3	Carus 8400	7.46	22.7	1.94	937	7.84	300	-	-	-	-	-	49	2.68
	4	Carus 8600	7.72	22.2	1.97	912	8.83	300	-	-	-	-	-	58	1.39
	5	Carus 8600	7.68	22.4	2.02	922	9.82	300	-	-	-	-	-	47	2.72
	6	Carus 8700	7.84	22.3	2.17	916	14.70	300	-	-	-	-	-	60	1.28
	7	Carus 8700	7.79	22.3	2.25	911	17.90	300	-	-	-	-	-	47	2.66
	8	Carus 3900	7.74	24.0	1.45	945	9.14	400	-	-	-	-	-	42	0.08
3	-	Raw Water	7.61	23.2	0.01	916	3.50	294	0.035	118	0.30	4.58	21	20	0.05
	0	Blank	7.48	22.9	1.56	917	4.85	288	-	-	-	-	-	27	0.03
	1	Sodium Hex	7.76	22.8	1.73	925	4.64	280	-	-	-	-	-	26	0.03
	2	Carus 8400	7.82	22.9	1.90	922	4.19	276	-	-	-	-	-	33	1.32
	3	Carus 8400	7.74	22.8	2.03	911	3.57	286	-	-	-	-	-	32	2.62
	4	Carus 8600	7.83	22.8	2.06	912	3.96	288	-	-	-	-	-	31	1.40
	5	Carus 8600	8.02	22.9	2.05	901	4.25	288	-	-	-	-	-	26	2.80
	6	Carus 8700	7.76	22.9	1.97	900	3.39	284	-	-	-	-	-	26	1.31
	7	Carus 8700	7.95	22.9	2.05	865	5.22	288	-	-	-	-	-	29	2.54
	8	Carus 3900	7.70	23.0	1.97	915	3.76	286	-	-	-	-	-	36	0.11
	9	Carus 3900	7.83	22.9	1.95	928	3.40	296	-	-	-	-	-	44	0.07

Test	Beaker No.	Product	pH	Temp., °C	Total Cl2, mg/L	Conductivity, µS/ cm	Turbidity, NTU	Alkalinity, mg/L as CaCO3	Free Ammonia, NH3 – N	Calcium, mg/L as CaCO3	Iron, mg/L	Chloride, mg/L	Sulfate, mg/L	Color, Pt-Co	Ortho P, mg/L
4	-	Raw Water	7.87	22.4	0.01	910	2.69	290	0.044	154	0.26	69.1	19	7	0.21
	0	Blank	7.86	22.6	3.72	866	1.76	286	-	-	-	-	-	15	0.03
	1	Sodium Hex	7.74	22.3	3.74	891	1.53	286	-	-	-	-	-	10	0.06
	2	Carus 8400	7.73	22.5	4.04	871	1.54	284	-	-	-	-	-	10	1.39
	3	Carus 8400	7.56	22.4	3.64	870	1.50	280	-	-	-	-	-	8	2.78
	4	Carus 8600	7.57	22.4	3.00	863	1.62	284	-	-	-	-	-	12	1.44
	5	Carus 8600	7.72	22.4	3.98	872	1.53	282	-	-	-	-	-	7	3.30
	6	Carus 8700	7.57	22.4	4.16	870	1.55	282	-	-	-	-	-	12	1.64
	7	Carus 8700	7.94	22.4	3.82	866	1.65	282	-	-	-	-	-	15	2.62
	8	Carus 3900	7.91	22.7	3.84	876	1.82	280	-	-	-	-	-	15	0.18
	9	Carus 3900	8.05	22.7	3.60	894	2.93	290	-	-	-	-	-	16	0.12
5	-	Raw Water	8.00	23.5	0.01	920	5.18	284	0.056	156	0.51	67.5	26	13	0.16
	0	Blank	7.81	23.0	2.64	869	7.90	288	-	-	-	-	-	26	0.04
	1	Sodium Hex	7.83	22.9	2.84	868	7.04	288	-	-	-	-	-	23	0.28
	2	Carus 8400	7.84	22.9	2.86	871	4.93	286	-	-	-	-	-	19	1.52
	3	Carus 8400	7.68	22.9	3.02	867	9.04	288	-	-	-	-	-	24	2.66
	4	Carus 8600	7.77	23.0	2.90	867	8.12	286	-	-	-	-	-	28	1.39
	5	Carus 8600	7.70	22.8	2.86	872	5.31	280	-	-	-	-	-	29	1.52
	6	Carus 8700	7.75	22.8	2.90	866	4.58	290	-	-	-	-	-	21	2.74
	7	Carus 8700	7.84	22.9	0.78	875	4.84	286	-	-	-	-	-	33	1.37
	8	Carus 3900	7.97	22.7	1.70	882	4.43	288	-	-	-	-	-	19	2.56
	9	Carus 3900	7.96	22.8	2.28	893	9.79	292	-	-	-	-	-	28	1.39
6	-	Raw Water	7.74	21.2	0.02	1129	9.79	290	0.100	174	0.58	48.2	22	13	0.03
	0	Blank	8.11	21.7	2.84	1152	8.59	284	-	-	-	-	-	27	0.07
	1	Sodium Hex	8.22	21.9	2.94	1131	10.9	284	-	-	-	-	-	29	0.06
	2	Carus 8400	8.14	21.9	2.98	1136	8.89	278	-	-	-	-	-	26	1.40
	3	Carus 8400	8.16	22.1	2.98	1139	13.7	272	-	-	-	-	-	38	2.74
	4	Carus 8600	8.18	21.9	3.08	1150	9.60	288	-	-	-	-	-	37	1.35
	5	Carus 8600	8.21	22.3	2.74	1159	9.97	288	-	-	-	-	-	33	2.90
	6	Carus 8700	8.25	22.1	3.00	1124	11.4	288	-	-	-	-	-	34	1.23
	7	Carus 8700	8.18	22.1	2.80	1129	11.3	288	-	-	-	-	-	36	2.76
	8	Carus 3900	8.24	22.3	2.04	1150	11.9	288	-	-	-	-	-	34	0.25
	9	Carus 3900	8.24	22.6	2.12	1155	7.70	288	-	-	-	-	-	34	0.09

Test	Beaker No.	Product	pH	Temp., °C	Total Cl2, mg/L	Conductivity, µS/ cm	Turbidity, NTU	Alkalinity, mg/L as CaCO3	Free Ammonia, NH3 – N	Calcium, mg/L as CaCO3	Iron, mg/L	Chloride, mg/L	Sulfate, mg/L	Color, Pt-Co	Ortho P, mg/L
7	-	Raw Water	7.92	22.3	0.02	1171	6.51	290	0.079	160	2.66	46.8	22	29	0.08
	0	Blank	8.04	23.4	2.96	1150	15.6	286	-	-	-	-	-	47	0.02
	1	Sodium Hex	8.07	23.1	2.90	1141	14.4	284	-	-	-	-	-	41	0.08
	2	Carus 8400	8.14	23.0	2.80	1152	11.2	286	-	-	-	-	-	40	1.43
	3	Carus 8400	8.06	23.1	2.04	1135	12.9	282	-	-	-	-	-	25	2.62
	4	Carus 8600	8.05	23.2	2.96	1146	5.95	280	-	-	-	-	-	24	1.47
	5	Carus 8600	8.13	23.2	2.90	1147	4.91	284	-	-	-	-	-	26	3.38
	6	Carus 8700	8.18	23.1	2.82	1132	5.58	284	-	-	-	-	-	28	1.36
	7	Carus 8700	8.24	23.2	2.40	1151	5.29	282	-	-	-	-	-	27	2.68
	8	Carus 3900	8.33	23.2	2.16	1163	7.03	292	-	-	-	-	-	33	0.14
8	-	Raw Water	7.95	22.1	0.01	1201	11.4	290	0.108	150	1.18	50.3	21	63	0.04
	0	Blank	8.03	22.3	0.66	1134	24.2	272	-	-	-	-	-	72	0.01
	1	Sodium Hex	8.05	22.4	2.44	1143	20.0	270	-	-	-	-	-	60	0.10
	2	Carus 8400	8.07	22.3	2.84	1142	13.6	270	-	-	-	-	-	51	1.56
	3	Carus 8400	8.13	22.5	2.70	1140	13.9	274	-	-	-	-	-	55	3.26
	4	Carus 8600	8.05	22.4	1.18	1137	12.5	284	-	-	-	-	-	59	1.52
	5	Carus 8600	7.98	22.4	2.18	1142	8.64	282	-	-	-	-	-	51	2.74
	6	Carus 8700	7.95	22.5	2.88	1142	9.61	280	-	-	-	-	-	49	3.90
	7	Carus 8700	8.05	22.5	2.48	1135	8.21	286	-	-	-	-	-	53	2.50
	8	Carus 3900	8.11	22.5	2.76	1163	7.20	290	-	-	-	-	-	53	0.16
9	-	Raw Water	8.05	24.1	0.02	1208	5.52	294	0.027	156	0.26	82.0	44	15	1.72
	0	Blank	7.97	23.7	0.03	1157	4.33	276	-	-	-	-	-	17	1.44
	1	Sodium Hex	8.07	23.3	3.42	1155	5.40	290	-	-	-	-	-	13	0.10
	2	Carus 8400	8.25	23.3	3.10	1132	3.36	288	-	-	-	-	-	20	1.34
	3	Carus 8400	8.05	23.6	3.22	1146	2.64	286	-	-	-	-	-	26	2.80
	4	Carus 8600	8.24	23.8	3.04	1151	2.39	286	-	-	-	-	-	12	1.40
	5	Carus 8600	8.09	23.3	3.40	1151	2.44	284	-	-	-	-	-	10	2.72
	6	Carus 8700	8.05	23.5	3.34	1134	2.41	288	-	-	-	-	-	12	1.36
	7	Carus 8700	8.03	23.5	3.12	1157	2.23	290	-	-	-	-	-	10	2.46
	8	Carus 3900	8.12	23.5	2.92	1154	1.96	294	-	-	-	-	-	10	0.20
	9	Carus 3900	8.27	23.1	3.10	1165	2.56	292	-	-	-	-	-	40	0.76

Test	Beaker No.	Product	pH	Temp., °C	Total Cl2, mg/L	Conductivity, µS/ cm	Turbidity, NTU	Alkalinity, mg/L as CaCO3	Free Ammonia, NH3 – N	Calcium, mg/L as CaCO3	Iron, mg/L	Chloride, mg/L	Sulfate, mg/L	Color, Pt-Co	Ortho P, mg/L
10	-	Raw Water	7.74	21.3	0.02	1173	9.81	284	0.091	150	0.73	78.0	53	24	0.04
	0	Blank	8.03	21.6	2.51	1126	33.4	270	-	-	-	-	-	65	0.45
	1	Sodium Hex	7.88	21.4	2.52	1127	22.9	286	-	-	-	-	-	56	0.04
	2	Carus 8400	7.93	21.5	2.96	1114	16.4	268	-	-	-	-	-	24	1.38
	3	Carus 8400	7.90	21.8	2.67	1116	9.00	270	-	-	-	-	-	24	2.66
	4	Carus 8600	7.87	21.7	2.78	1140	7.82	274	-	-	-	-	-	16	1.18
	5	Carus 8600	7.82	21.7	2.52	1138	7.12	268	-	-	-	-	-	28	3.68
	6	Carus 8700	7.80	21.9	2.36	1102	7.54	274	-	-	-	-	-	32	1.44
	7	Carus 8700	7.83	21.7	2.34	1106	7.50	276	-	-	-	-	-	22	3.20
	8	Carus 3900	7.92	21.9	2.37	1148	7.19	276	-	-	-	-	-	32	0.02
11	-	Raw Water	7.99	22.2	0.01	1193	20.6	290	0.128	170	2.22	32.6	19	64	0.78
	0	Blank	7.75	19.8	2.78	1151	19.9	272	-	-	-	-	-	71	0.01
	1	Sodium Hex	7.66	20.4	2.58	1138	25.9	276	-	-	-	-	-	68	0.13
	2	Carus 8400	7.67	18.8	2.58	1138	17.4	270	-	-	-	-	-	68	1.36
	3	Carus 8400	7.72	23.2	2.04	1129	73.4	278	-	-	-	-	-	215	2.72
	4	Carus 8600	7.63	21.6	2.30	1120	25.0	284	-	-	-	-	-	76	1.38
	5	Carus 8600	7.60	21.5	2.62	1130	35.5	274	-	-	-	-	-	122	2.78
	6	Carus 8700	7.63	21.6	2.74	1139	22.4	280	-	-	-	-	-	93	1.37
	7	Carus 8700	7.78	21.4	2.86	1130	13.8	278	-	-	-	-	-	70	2.70
	8	Carus 3900	7.76	21.4	2.16	1151	14.2	284	-	-	-	-	-	71	0.03
12	-	Raw Water	7.83	20.9	0.01	1171	9.10	290	0.103	156	0.79	5.33	16	33	-
	0	Blank	7.86	21.5	2.62	1155	29.9	290	-	-	-	-	-	72	-
	1	Sodium Hex	7.87	21.3	2.68	1136	17.9	280	-	-	-	-	-	63	-
	2	Carus 8400	7.84	21.3	2.62	1104	21.1	288	-	-	-	-	-	50	-
	3	Carus 8400	7.77	21.6	2.74	1139	16.4	282	-	-	-	-	-	63	-
	4	Carus 8600	7.83	21.6	2.70	1135	15.0	286	-	-	-	-	-	41	-
	5	Carus 8600	7.85	21.5	2.44	1144	11.8	294	-	-	-	-	-	39	-
	6	Carus 8700	7.81	21.8	2.58	1165	12.4	286	-	-	-	-	-	41	-
	7	Carus 8700	7.95	21.7	2.48	1159	12.6	284	-	-	-	-	-	33	-
	8	Carus 3900	8.01	21.7	2.62	1171	10.3	290	-	-	-	-	-	34	-
	9	Carus 3900	8.04	21.9	2.86	1159	10.8	290	-	-	-	-	-	31	-

Test	Beaker No.	Product	pH	Temp., °C	Total Cl2, mg/L	Conductivity, µS/ cm	Turbidity, NTU	Alkalinity, mg/L as CaCO3	Free Ammonia, NH3 – N	Calcium, mg/L as CaCO3	Iron, mg/L	Chloride, mg/L	Sulfate, mg/L	Color, Pt-Co	Ortho P, mg/L
13	-	Raw Water	7.84	16.5	0.01	1134	25.50	284	0.118	166	1.67	3.78	-	106	0.73
	0	Blank	7.75	23.8	2.00	1213	41.8	274	-	-	-	-	-	80	0.00
	1	Sodium Hex	7.75	23.2	2.66	1199	41.3	276	-	-	-	-	-	101	0.02
	2	Carus 8400	7.76	22.1	2.60	1198	36.7	270	-	-	-	-	-	97	1.43
	3	Carus 8400	7.66	21.3	2.60	1199	26.3	276	-	-	-	-	-	98	2.70
	4	Carus 8600	7.74	20.9	2.68	1196	30.1	276	-	-	-	-	-	96	1.33
	5	Carus 8600	7.73	18.7	2.48	1185	34.0	270	-	-	-	-	-	83	2.60
	6	Carus 8700	7.64	20.2	2.60	1192	27.4	274	-	-	-	-	-	104	1.31
	7	Carus 8700	7.74	19.6	2.58	1180	22.4	268	-	-	-	-	-	98	2.50
	8	Carus 3900	7.80	19.5	1.38	1207	24.3	270	-	-	-	-	-	86	0.03
	9	Carus 3900	7.90	20.2	2.48	1152	23.8	282	-	-	-	-	-	96	0.04

Table A- 2. Spent Solution Water Quality

Test	Beaker No.	Product	pH	Temp., °C	Total Cl ₂ , mg/L	Conductivity, µS/ cm	Turbidity, NTU	Alkalinity, mg/L as CaCO ₃	Color, Pt-Co	Ortho P, mg/L
1	0	Blank	7.82	22.2	0.06	926	1.19	300	28	0.04
	1	Sodium Hex	7.92	22.1	0.01	930	1.08	300	20	0.06
	2	Carus 8400	7.97	21.9	0.06	932	1.86	250	24	1.39
	3	Carus 8400	7.85	22.1	0.01	930	1.14	300	7	2.70
	4	Carus 8600	7.84	22.3	0.03	933	1.32	300	24	1.54
	5	Carus 8600	7.84	22.4	0.01	820	1.36	200	11	2.76
	6	Carus 8700	7.94	22.4	0.60	937	1.48	250	3	1.26
	7	Carus 8700	7.87	22.5	1.89	944	1.52	300	20	2.41
	8	Carus 3900	7.98	22.7	0.73	938	1.02	800	54	0.05
	9	Carus 3900	-	-	0.39	934	1.20	300	41	0.10
2	0	Blank	8.08	22.6	0.43	871	0.86	292	20	0.13
	1	Sodium Hex	7.98	22.6	0.32	853	1.06	286	18	0.13
	2	Carus 8400	7.87	22.6	0.03	910	0.84	280	16	1.50
	3	Carus 8400	7.58	22.8	0.53	876	1.16	280	20	2.70
	4	Carus 8600	7.96	22.5	0.07	877	1.07	286	18	1.48
	5	Carus 8600	8.00	22.4	0.17	876	1.41	290	22	2.74
	6	Carus 8700	7.63	22.5	0.15	883	1.20	272	20	1.60
	7	Carus 8700	7.70	22.4	0.31	883	1.26	286	24	2.66
	8	Carus 3900	7.93	22.4	0.50	889	0.99	292	31	0.12
	9	Carus 3900	7.94	22.6	0.30	881	1.30	296	30	0.14

Test	Beaker No.	Product	pH	Temp., °C	Total Cl ₂ , mg/L	Conductivity, µS/ cm	Turbidity, NTU	Alkalinity, mg/L as CaCO ₃	Color, Pt-Co	Ortho P, mg/L
3	0	Blank	7.87	22.3	0.54	927	0.77	282	20	0.06
	1	Sodium Hex	8.03	22.3	0.42	932	0.98	284	13	0.12
	2	Carus 8400	7.85	22.3	0.41	932	1.22	288	22	1.53
	3	Carus 8400	7.99	22.3	0.93	931	1.02	280	14	3.24
	4	Carus 8600	7.95	22.3	0.63	925	1.12	282	13	1.42
	5	Carus 8600	8.01	22.5	0.52	883	1.10	288	16	2.98
	6	Carus 8700	7.97	22.4	0.49	929	0.93	286	13	1.46
	7	Carus 8700	7.94	22.3	0.31	882	0.94	290	6	2.68
	8	Carus 3900	7.84	22.3	0.80	886	0.77	290	8	0.14
	9	Carus 3900	7.79	22.4	0.61	897	0.79	292	39	0.32
4	0	Blank	7.66	22.5	1.30	933	0.39	286	8	0.09
	1	Sodium Hex	7.76	22.8	1.30	932	0.79	286	16	0.14
	2	Carus 8400	7.43	22.4	2.44	895	0.88	286	10	1.60
	3	Carus 8400	7.73	22.7	2.76	936	0.86	288	10	2.80
	4	Carus 8600	7.86	22.7	1.26	891	0.84	286	12	1.48
	5	Carus 8600	7.96	22.8	0.78	894	0.97	288	12	2.94
	6	Carus 8700	7.96	22.7	1.56	896	0.99	288	6	2.03
	7	Carus 8700	7.99	22.7	2.28	897	0.84	290	13	2.80
	8	Carus 3900	8.05	22.7	2.38	900	0.58	294	7	0.11
	9	Carus 3900	8.08	22.7	2.06	905	0.69	292	9	0.12

Test	Beaker No.	Product	pH	Temp., °C	Total Cl ₂ , mg/L	Conductivity, µS/ cm	Turbidity, NTU	Alkalinity, mg/L as CaCO ₃	Color, Pt-Co	Ortho P, mg/L
5	0	Blank	8.16	22.4	0.18	1170	0.59	278	8	0.08
	1	Sodium Hex	8.47	22.2	1.03	1216	0.78	282	9	0.25
	2	Carus 8400	8.10	22.4	1.72	1227	0.73	286	11	1.62
	3	Carus 8400	8.08	22.4	2.02	1205	0.85	288	11	2.94
	4	Carus 8600	7.96	22.4	1.86	1223	0.85	278	10	2.66
	5	Carus 8600	8.07	22.3	1.61	1168	0.89	286	12	2.86
	6	Carus 8700	8.15	22.3	1.74	1170	0.89	286	11	1.56
	7	Carus 8700	8.19	22.3	1.71	1170	0.76	284	10	2.76
	8	Carus 3900	8.30	22.3	1.83	1177	0.62	290	8	0.65
	9	Carus 3900	8.30	22.3	1.72	1183	0.91	294	15	0.15
6	0	Blank	7.85	2.3	0.54	1228	0.50	284	6	0.19
	1	Sodium Hex	8.06	22.9	0.48	1163	0.74	276	5	0.33
	2	Carus 8400	8.05	22.7	1.37	1168	0.79	282	9	1.66
	3	Carus 8400	8.05	22.7	0.36	1236	0.94	280	10	3.20
	4	Carus 8600	8.13	22.7	1.36	1241	0.78	284	9	3.26
	5	Carus 8600	8.10	22.6	1.40	1231	0.98	280	10	2.98
	6	Carus 8700	8.11	22.7	1.16	1241	0.88	284	11	1.74
	7	Carus 8700	8.12	22.6	0.82	1236	0.87	282	11	2.86
	8	Carus 3900	8.17	22.6	1.51	1248	0.65	286	7	0.15
	9	Carus 3900	8.17	22.5	1.54	1263	0.68	288	8	0.19

Test	Beaker No.	Product	pH	Temp., °C	Total Cl ₂ , mg/L	Conductivity, µS/ cm	Turbidity, NTU	Alkalinity, mg/L as CaCO ₃	Color, Pt-Co	Ortho P, mg/L
7	0	Blank	7.95	22.8	1.41	1230	1.14	280	46	2.41
	1	Sodium Hex	8.07	22.7	1.18	1164	1.26	288	23	0.14
	2	Carus 8400	8.03	22.6	1.86	1166	1.29	280	18	1.54
	3	Carus 8400	7.98	22.8	1.92	1161	1.41	282	22	3.60
	4	Carus 8600	8.02	22.8	1.93	1164	1.24	286	22	1.62
	5	Carus 8600	7.98	22.8	1.91	1163	1.36	282	17	2.78
	6	Carus 8700	8.06	22.8	1.93	1168	1.31	288	13	2.26
	7	Carus 8700	8.02	22.7	1.58	1171	1.30	282	12	3.80
	8	Carus 3900	8.15	22.7	2.02	1177	1.10	294	21	0.09
	9	Carus 3900	8.22	22.9	2.16	1180	1.20	296	26	0.13
8	0	Blank	8.05	22.9	0.01	1148	15.6	294	20	0.12
	1	Sodium Hex	8.12	22.8	0.01	1120	8.21	284	26	0.84
	2	Carus 8400	8.10	22.6	1.22	1154	8.33	284	17	2.23
	3	Carus 8400	8.11	22.6	0.94	1158	6.45	286	19	4.12
	4	Carus 8600	8.06	22.7	1.20	1175	3.66	288	21	3.64
	5	Carus 8600	8.03	22.6	1.17	1175	5.41	284	21	4.42
	6	Carus 8700	8.08	22.6	1.13	1129	0.79	288	11	1.52
	7	Carus 8700	8.11	22.6	1.36	1165	2.27	286	29	2.74
	8	Carus 3900	8.18	22.5	1.06	1187	1.88	298	23	0.20
	9	Carus 3900	8.10	22.6	0.91	1191	17.5	288	34	0.24

Test	Beaker No.	Product	pH	Temp., °C	Total Cl ₂ , mg/L	Conductivity, µS/ cm	Turbidity, NTU	Alkalinity, mg/L as CaCO ₃	Color, Pt-Co	Ortho P, mg/L
9	0	Blank	7.96	22.1	0.02	1166	3.73	276	1	0.55
	1	Sodium Hex	7.97	22.2	0.02	1169	1.77	288	1	0.14
	2	Carus 8400	8.01	22.2	1.98	1171	0.63	284	52	1.83
	3	Carus 8400	7.98	22.3	1.81	1154	0.64	286	7	3.42
	4	Carus 8600	8.01	22.3	1.95	1139	0.98	288	14	2.00
	5	Carus 8600	7.96	22.3	1.93	1161	0.60	284	5	3.26
	6	Carus 8700	8.01	22.3	1.90	1173	0.51	288	2	1.86
	7	Carus 8700	8.03	22.3	1.05	1169	0.55	286	0	3.06
	8	Carus 3900	8.13	22.4	2.14	1179	0.31	292	0	0.61
	9	Carus 3900	8.21	22.4	2.04	1178	0.57	296	6	0.46
10	0	Blank	7.70	22.4	1.07	1151	4.57	274	28	0.02
	1	Sodium Hex	7.65	22.4	1.13	1149	1.92	272	40	0.10
	2	Carus 8400	7.63	22.4	1.73	1156	3.04	274	31	2.01
	3	Carus 8400	7.60	22.4	1.67	1149	1.08	270	17	3.26
	4	Carus 8600	7.62	22.4	1.54	1153	0.89	270	20	1.66
	5	Carus 8600	7.60	22.4	1.66	1161	2.01	278	23	3.42
	6	Carus 8700	7.62	22.2	1.05	1150	1.88	272	27	1.49
	7	Carus 8700	7.61	22.3	1.74	1149	1.65	272	21	2.70
	8	Carus 3900	7.73	22.4	1.64	1157	1.14	274	20	0.15
	9	Carus 3900	7.73	22.7	1.43	1160	0.99	274	15	0.23

Test	Beaker No.	Product	pH	Temp., °C	Total Cl ₂ , mg/L	Conductivity, µS/ cm	Turbidity, NTU	Alkalinity, mg/L as CaCO ₃	Color, Pt-Co	Ortho P, mg/L
11	0	Blank	7.80	22.4	1.42	1165	3.88	284	14	0.02
	1	Sodium Hex	7.80	22.4	1.42	1166	1.82	282	21	0.51
	2	Carus 8400	7.73	22.4	1.72	1162	2.99	278	19	1.64
	3	Carus 8400	7.80	22.6	1.06	1162	9.42	282	44	2.98
	4	Carus 8600	7.81	22.2	1.49	1166	1.18	280	12	1.42
	5	Carus 8600	7.81	22.6	1.55	1167	1.66	282	16	2.98
	6	Carus 8700	7.82	22.7	1.74	1166	1.81	282	13	1.32
	7	Carus 8700	7.83	22.7	1.83	1166	1.61	284	26	2.82
	8	Carus 3900	7.94	22.8	1.77	1179	1.47	284	20	0.13
	9	Carus 3900	8.06	22.7	1.60	1184	2.40	292	18	0.17
12	0	Blank	7.84	21.7	1.00	1166	1.07	270	14	0.25
	1	Sodium Hex	7.73	21.8	0.51	1172	1.64	280	26	1.04
	2	Carus 8400	7.80	21.8	1.19	1177	0.74	280	16	2.03
	3	Carus 8400	7.76	21.8	1.52	1175	0.96	282	8	4.30
	4	Carus 8600	7.79	21.8	0.77	1178	0.78	280	16	1.41
	5	Carus 8600	7.84	21.8	1.23	1170	0.86	284	22	2.98
	6	Carus 8700	7.85	21.8	1.44	1175	1.09	284	17	1.32
	7	Carus 8700	7.92	21.8	1.40	1169	0.82	282	23	2.64
	8	Carus 3900	7.81	21.8	1.58	1178	0.59	290	13	0.60
	9	Carus 3900	8.03	22.0	1.10	1250	0.81	290	14	0.18

Test	Beaker No.	Product	pH	Temp., °C	Total Cl ₂ , mg/L	Conductivity, µS/ cm	Turbidity, NTU	Alkalinity, mg/L as CaCO ₃	Color, Pt-Co	Ortho P, mg/L
13	0	Blank	7.65	22.1	0.95	1133	4.65	270	23	0.36
	1	Sodium Hex	7.69	22.1	1.15	1140	3.23	264	26	0.15
	2	Carus 8400	7.73	22.1	1.57	1145	2.81	258	22	1.57
	3	Carus 8400	7.75	22.1	1.32	1143	1.90	260	19	3.10
	4	Carus 8600	7.77	22.1	1.57	1143	1.68	266	12	1.44
	5	Carus 8600	7.74	22.1	1.36	1141	2.07	270	18	2.90
	6	Carus 8700	7.77	22.1	1.45	1142	1.57	272	11	1.18
	7	Carus 8700	7.80	22.1	1.34	1139	1.56	270	18	2.74
	8	Carus 3900	7.86	22.2	1.09	1147	1.58	274	19	0.18
	9	Carus 3900	7.96	22.1	1.38	1157	2.39	278	24	0.18

APPENDIX B – LABORATORY WATER QUALITY RESULTS REPORT

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
11/22/2020

Vanessa Berry
EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 902540
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 902540
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **November 09, 2020 at 1207**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202011090106</u>	Day 1 NO.0	11/05/2020 1357
	@ICPMS	
<u>202011090107</u>	Day 1 NO.1	11/05/2020 1400
	@ICPMS	
<u>202011090108</u>	Day 1 NO.2	11/05/2020 1402
	@ICPMS	
<u>202011090109</u>	Day 1 NO.3	11/05/2020 1402
	@ICPMS	
<u>202011090110</u>	Day 1 NO.4	11/05/2020 1403
	@ICPMS	
<u>202011090111</u>	Day 1 NO.5	11/05/2020 1403
	@ICPMS	
<u>202011090112</u>	Day 1 NO.6	11/05/2020 1405
	@ICPMS	
<u>202011090113</u>	Day 1 NO.7	11/05/2020 1405
	@ICPMS	
<u>202011090114</u>	Day 1 NO.8	11/05/2020 1408
	@ICPMS	
<u>202011090115</u>	Day 1 NO.9	11/05/2020 1408
	@ICPMS	

Test Description

@ICPMS -- ICPMS Metals



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLE TEMP RECEIVED AT:

☒ (Other) IR Gun ID = 6499A (Observation = 2.4 °C) (check for yes)

☒ Monrovia IR Gun ID = 6499A (Observation = 2.2 °C) (Final = 2.2 °C)

Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic

No Ice

CONDITION OF ICE: Frozen

Partially Frozen

Thawed

N/A

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / DHL / Area Fast / Top Line / Other: FedEx

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME: <u>Tetra Tech. 201 E Pine St. Orlando</u>		PROJECT CODE:	COMPLIANCE SAMPLES <input type="checkbox"/> NON-COMPLIANCE SAMPLES <input type="checkbox"/>		(check for yes)	
EEA CLIENT CODE: <u>Tetrattech-orlan</u>		COC ID:	Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION (eg. SDWA, NPDES, etc.)		(check for yes)	
TAT requested: rush by adv notice only		SAMPLE GROUP: <u>Lead Solubility Test - Phase 1</u>		SEE ATTACHED KIT ORDER FOR ANALYSES		(check for yes) <u>OR</u>
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX	FIELD DATA	SAMPLER COMMENTS
11/5	13:57	DON 1 No. 20		FW		preserved
11/5	14:00	DON 1 No. 21				with
	14:02	DON 1 No. 22				nitric
	14:03	DON 1 No. 23				acid
	14:03	DON 1 No. 24				by
	14:03	DON 1 No. 25				Tetra Tech
	14:05	DON 1 No. 26				
	14:05	DON 1 No. 27				
	14:08	DON 1 No. 28				
	14:08	DON 1 No. 29				

* MATRIX TYPES: RSW = Raw Surface Water RGW = Raw Ground Water CFW = Chlor(am)inated Finished Water FW = Other Finished Water SEAW = Sea Water BW = Bottled Water SO = Soil WW = Waste Water SW = Storm Water SL = Sludge

SAMPLED BY:	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
M. Arenas		MARIA ISABEL ARENAS	Tetra Tech, Project Engineer	11/6/20	14:30
RELINQUISHED BY:		"		"	14:30
RECEIVED BY:		PAUL MILLS	EEA	11-9-20	1207
RELINQUISHED BY:					
RECEIVED BY:					

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments

Report: 902540

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Tel: (626) 386-1100
Fax: (866) 988-3757
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Laboratory Hits

Report: 902540
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/09/2020 1207

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
11/14/2020 13:53	202011090106 Lead Total ICAP/MS	<u>Day 1 NO.0</u>	290	15	ug/L	0.50
11/14/2020 13:54	202011090107 Lead Total ICAP/MS	<u>Day 1 NO.1</u>	360	15	ug/L	0.50
11/14/2020 13:55	202011090108 Lead Total ICAP/MS	<u>Day 1 NO.2</u>	930	15	ug/L	0.50
11/14/2020 13:58	202011090109 Lead Total ICAP/MS	<u>Day 1 NO.3</u>	370	15	ug/L	0.50
11/14/2020 14:03	202011090110 Lead Total ICAP/MS	<u>Day 1 NO.4</u>	730	15	ug/L	0.50
11/18/2020 17:07	202011090111 Lead Total ICAP/MS	<u>Day 1 NO.5</u>	460	15	ug/L	0.50
11/18/2020 17:09	202011090112 Lead Total ICAP/MS	<u>Day 1 NO.6</u>	450	15	ug/L	0.50
11/14/2020 14:05	202011090113 Lead Total ICAP/MS	<u>Day 1 NO.7</u>	620	15	ug/L	0.50
11/14/2020 14:07	202011090114 Lead Total ICAP/MS	<u>Day 1 NO.8</u>	1100	15	ug/L	0.50
11/14/2020 14:08	202011090115 Lead Total ICAP/MS	<u>Day 1 NO.9</u>	1600	15	ug/L	0.50

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
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Laboratory Data

Report: 902540
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/09/2020 1207

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
Day 1 NO.0 (202011090106)						Sampled on 11/05/2020 1357			
EPA 200.8 - ICPMS Metals									
11/10/20	11/14/20 13:53	1286981	1288241	(EPA 200.8)	Lead Total ICAP/MS	290	ug/L	0.50	1
Day 1 NO.1 (202011090107)						Sampled on 11/05/2020 1400			
EPA 200.8 - ICPMS Metals									
11/10/20	11/14/20 13:54	1286981	1288241	(EPA 200.8)	Lead Total ICAP/MS	360	ug/L	0.50	1
Day 1 NO.2 (202011090108)						Sampled on 11/05/2020 1402			
EPA 200.8 - ICPMS Metals									
11/10/20	11/14/20 13:55	1286981	1288241	(EPA 200.8)	Lead Total ICAP/MS	930	ug/L	0.50	1
Day 1 NO.3 (202011090109)						Sampled on 11/05/2020 1402			
EPA 200.8 - ICPMS Metals									
11/10/20	11/14/20 13:58	1286981	1288241	(EPA 200.8)	Lead Total ICAP/MS	370	ug/L	0.50	1
Day 1 NO.4 (202011090110)						Sampled on 11/05/2020 1403			
EPA 200.8 - ICPMS Metals									
11/10/20	11/14/20 14:03	1286981	1288242	(EPA 200.8)	Lead Total ICAP/MS	730	ug/L	0.50	1
Day 1 NO.5 (202011090111)						Sampled on 11/05/2020 1403			
EPA 200.8 - ICPMS Metals									
11/10/20	11/18/20 17:07	1286981	1288326	(EPA 200.8)	Lead Total ICAP/MS	460	ug/L	0.50	1
Day 1 NO.6 (202011090112)						Sampled on 11/05/2020 1405			
EPA 200.8 - ICPMS Metals									
11/10/20	11/18/20 17:09	1286981	1288326	(EPA 200.8)	Lead Total ICAP/MS	450	ug/L	0.50	1
Day 1 NO.7 (202011090113)						Sampled on 11/05/2020 1405			
EPA 200.8 - ICPMS Metals									
11/10/20	11/14/20 14:05	1286981	1288242	(EPA 200.8)	Lead Total ICAP/MS	620	ug/L	0.50	1
Day 1 NO.8 (202011090114)						Sampled on 11/05/2020 1408			
EPA 200.8 - ICPMS Metals									
11/10/20	11/14/20 14:07	1286981	1288242	(EPA 200.8)	Lead Total ICAP/MS	1100	ug/L	0.50	1
Day 1 NO.9 (202011090115)						Sampled on 11/05/2020 1408			
EPA 200.8 - ICPMS Metals									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

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Laboratory Data

Report: 902540
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/09/2020 1207

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
11/10/20	11/14/20 14:08	1286981	1288242	(EPA 200.8)	Lead Total ICAP/MS	1600	ug/L	0.50	1

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Laboratory QC Summary

Report: 902540
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

ICPMS Metals

Prep Batch: 1286981 Analytical Batch: 1288241

202011090106	Day 1 NO.0
202011090107	Day 1 NO.1
202011090108	Day 1 NO.2
202011090109	Day 1 NO.3

Analysis Date: 11/14/2020

Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE

ICPMS Metals

Prep Batch: 1286981 Analytical Batch: 1288242

202011090110	Day 1 NO.4
202011090113	Day 1 NO.7
202011090114	Day 1 NO.8
202011090115	Day 1 NO.9

Analysis Date: 11/14/2020

Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE

ICPMS Metals

Prep Batch: 1286981 Analytical Batch: 1288326

202011090111	Day 1 NO.5
202011090112	Day 1 NO.6

Analysis Date: 11/18/2020

Analyzed by: DHX7
Analyzed by: DHX7

Tel: (626) 386-1100
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Laboratory QC

Report: 902540
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
ICPMS Metals by EPA 200.8									
Analytical Batch: 1288241					Analysis Date: 11/14/2020				
LCS1	Lead Total ICAP/MS		50	50.6	ug/L	101	(85-115)		
LCS2	Lead Total ICAP/MS		50	50.6	ug/L	101	(85-115)	20	0.20
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.496	ug/L	99	(50-150)		
MS_202011050420	Lead Total ICAP/MS	ND	50	51.2	ug/L	102	(70-130)		
MS2_202011070020	Lead Total ICAP/MS	110	50	160	ug/L	100	(70-130)		
MSD_202011050420	Lead Total ICAP/MS	ND	50	49.7	ug/L	99	(70-130)	20	3.0
MSD2_202011070020	Lead Total ICAP/MS	110	50	158	ug/L	94	(70-130)	20	1.6
ICPMS Metals by EPA 200.8									
Analytical Batch: 1288242					Analysis Date: 11/14/2020				
LCS1	Lead Total ICAP/MS		50	51.3	ug/L	103	(85-115)		
LCS2	Lead Total ICAP/MS		50	51.6	ug/L	103	(85-115)	20	0.58
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.612	ug/L	122	(50-150)		
MS_202011090110	Lead Total ICAP/MS	730	50	786	ug/L	107	(70-130)		
MS2_202011110352	Lead Total ICAP/MS	710	50	763	ug/L	104	(70-130)		
MSD_202011090110	Lead Total ICAP/MS	730	50	782	ug/L	99	(70-130)	20	0.44
MSD2_202011110352	Lead Total ICAP/MS	710	50	769	ug/L	117	(70-130)	20	0.83
ICPMS Metals by EPA 200.8									
Analytical Batch: 1288326					Analysis Date: 11/18/2020				
LCS1	Lead Total ICAP/MS		50	49.6	ug/L	99	(85-115)		
LCS2	Lead Total ICAP/MS		50	49.9	ug/L	100	(85-115)	20	0.60
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.506	ug/L	101	(50-150)		
MS_202011180702	Lead Total ICAP/MS	ND	50	49.3	ug/L	98	(70-130)		
MS2_202011110335	Lead Total ICAP/MS	ND	50	48.8	ug/L	97	(70-130)		
MSD_202011180702	Lead Total ICAP/MS	ND	50	49.3	ug/L	98	(70-130)	20	0.057
MSD2_202011110335	Lead Total ICAP/MS	ND	50	47.9	ug/L	96	(70-130)	20	1.8

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

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Monrovia, California 91016-3629
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Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
11/24/2020

Vanessa Berry

EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 903756
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 903756
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **November 16, 2020** at **1306**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202011160172</u>	C.O.2 #1	11/09/2020 0812
	@ICPMS	
<u>202011160173</u>	C.O.2 #2	11/09/2020 0812
	@ICPMS	
<u>202011160174</u>	C.O.2 #3	11/09/2020 0813
	@ICPMS	
<u>202011160175</u>	C.O.2 #4	11/09/2020 0814
	@ICPMS	
<u>202011160176</u>	C.O.2 #5	11/09/2020 0816
	@ICPMS	
<u>202011160177</u>	C.O.2 #6	11/09/2020 0816
	@ICPMS	
<u>202011160178</u>	C.O.2 #7	11/09/2020 0817
	@ICPMS	
<u>202011160179</u>	C.O.2 #8	11/09/2020 0818
	@ICPMS	
<u>202011160180</u>	C.O.2 #9	11/09/2020 0819
	@ICPMS	

Test Description

@ICPMS -- ICPMS Metals



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLE TEMP RECEIVED AT:

☒ (Other) IR Gun ID =

☒ Monrovia IR Gun ID =

Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic

CONDITION OF ICE: Frozen

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other:

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:

Tetra Tech 201 E Pine St. Orlando

EEA CLIENT CODE:

TetraTech-Orlan

COC ID:

92845148923

SAMPLE GROUP:

Lead Solubility Test - Phase 4

STD 1 wk 3 day 1 day

COMPLIANCE SAMPLES

NON-COMPLIANCE SAMPLES

REGULATION INVOLVED:

(eg. SDWA, NPDES, etc.)

SEE ATTACHED KIT ORDER FOR ANALYSES

List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)

COMPLIANCE SAMPLES

NON-COMPLIANCE SAMPLES

REGULATION INVOLVED:

(eg. SDWA, NPDES, etc.)

COMPLIANCE SAMPLES

NON-COMPLIANCE SAMPLES

REGULATION INVOLVED:

(eg. SDWA, NPDES, etc.)

COMPLIANCE SAMPLES

NON-COMPLIANCE SAMPLES

REGULATION INVOLVED:

(eg. SDWA, NPDES, etc.)

COMPLIANCE SAMPLES

NON-COMPLIANCE SAMPLES

REGULATION INVOLVED:

(eg. SDWA, NPDES, etc.)

SAMPLE DATE

SAMPLE TIME

SAMPLE ID

CLIENT LAB ID

MATRIX

FIELD DATA

FIELD DATA

FIELD DATA

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FIELD DATA

FIELD DATA

FIELD DATA

FIELD DATA

FIELD DATA

SAMPLE COMMENTS

Preserved with

nitric acid by

Tetra Tech

Bottled used w/ 5% HCl

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* MATRIX TYPES: RSW = Raw Surface Water
RGW = Raw Ground Water

CFW = Chlor(am)inated Finished Water
FW = Other Finished Water

SEAW = Sea Water
WW = Waste Water

BW = Bottled Water
SW = Storm Water

SO = Soil
SL = Sludge

O = Other - Please Identify

SIGNATURE

PRINT NAME

COMPANY/TITLE

DATE

TIME

SAMPLED BY:

M. Arenas

RELINQUISHED BY:

Chuck Boerh

RECEIVED BY:

M. Arenas

RELINQUISHED BY:

Chuck Boerh

RECEIVED BY:

M. Arenas

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RELINQUISHED BY:

Chuck Boerh

RECEIVED BY:

M. Arenas

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments

Report: 903756

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Sample C.O.2 #0 was received with sulfuric acid preservation and was unable to be analyzed. VHB 11-17-20

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

Report: 903756
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/16/2020 1306

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
11/21/2020 16:21	202011160172 Lead Total ICAP/MS	<u>C.O.2 #1</u>	620	15	ug/L	0.50
11/21/2020 16:21	202011160173 Lead Total ICAP/MS	<u>C.O.2 #2</u>	1000	15	ug/L	0.50
11/21/2020 16:22	202011160174 Lead Total ICAP/MS	<u>C.O.2 #3</u>	380	15	ug/L	0.50
11/21/2020 16:23	202011160175 Lead Total ICAP/MS	<u>C.O.2 #4</u>	570	15	ug/L	0.50
11/21/2020 16:24	202011160176 Lead Total ICAP/MS	<u>C.O.2 #5</u>	550	15	ug/L	0.50
11/21/2020 16:29	202011160177 Lead Total ICAP/MS	<u>C.O.2 #6</u>	390	15	ug/L	0.50
11/21/2020 16:31	202011160178 Lead Total ICAP/MS	<u>C.O.2 #7</u>	610	15	ug/L	0.50
11/21/2020 16:32	202011160179 Lead Total ICAP/MS	<u>C.O.2 #8</u>	1200	15	ug/L	0.50
11/20/2020 17:56	202011160180 Lead Total ICAP/MS	<u>C.O.2 #9</u>	1500	15	ug/L	5.0

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 903756
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/16/2020 1306

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>C.O.2 #1 (202011160172)</u>						Sampled on 11/09/2020 0812			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:21	1288619	1289903	(EPA 200.8)	Lead Total ICAP/MS	620	ug/L	0.50	1
<u>C.O.2 #2 (202011160173)</u>						Sampled on 11/09/2020 0812			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:21	1288619	1289903	(EPA 200.8)	Lead Total ICAP/MS	1000	ug/L	0.50	1
<u>C.O.2 #3 (202011160174)</u>						Sampled on 11/09/2020 0813			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:22	1288619	1289903	(EPA 200.8)	Lead Total ICAP/MS	380	ug/L	0.50	1
<u>C.O.2 #4 (202011160175)</u>						Sampled on 11/09/2020 0814			
EPA 200.8 - ICPMS Metals									
	11/21/20 16:23	1288619	1289903	(EPA 200.8)	Lead Total ICAP/MS	570	ug/L	0.50	1
<u>C.O.2 #5 (202011160176)</u>						Sampled on 11/09/2020 0816			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:24	1288619	1289903	(EPA 200.8)	Lead Total ICAP/MS	550	ug/L	0.50	1
<u>C.O.2 #6 (202011160177)</u>						Sampled on 11/09/2020 0816			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:29	1288619	1289904	(EPA 200.8)	Lead Total ICAP/MS	390	ug/L	0.50	1
<u>C.O.2 #7 (202011160178)</u>						Sampled on 11/09/2020 0817			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:31	1288619	1289904	(EPA 200.8)	Lead Total ICAP/MS	610	ug/L	0.50	1
<u>C.O.2 #8 (202011160179)</u>						Sampled on 11/09/2020 0818			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:32	1288619	1289904	(EPA 200.8)	Lead Total ICAP/MS	1200	ug/L	0.50	1
<u>C.O.2 #9 (202011160180)</u>						Sampled on 11/09/2020 0819			
EPA 200.8 - ICPMS Metals									
11/17/20	11/20/20 17:56	1288619	1289026	(EPA 200.8)	Lead Total ICAP/MS	1500	ug/L	5.0	10

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 903756
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

ICPMS Metals

Prep Batch: 1288619 Analytical Batch: 1289026

202011160180 C.O.2 #9

Analysis Date: 11/20/2020

Analyzed by: DHX7

ICPMS Metals

Prep Batch: 1288619 Analytical Batch: 1289903

202011160172 C.O.2 #1
202011160173 C.O.2 #2
202011160174 C.O.2 #3
202011160175 C.O.2 #4
202011160176 C.O.2 #5

Analysis Date: 11/21/2020

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

ICPMS Metals

Prep Batch: 1288619 Analytical Batch: 1289904

202011160177 C.O.2 #6
202011160178 C.O.2 #7
202011160179 C.O.2 #8

Analysis Date: 11/21/2020

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Tel: (626) 386-1100
Fax: (626) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 903756
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
ICPMS Metals by EPA 200.8									
Analytical Batch: 1289026					Analysis Date: 11/20/2020				
LCS1	Lead Total ICAP/MS		50	51.2	ug/L	102	(85-115)		
LCS2	Lead Total ICAP/MS		50	50.6	ug/L	101	(85-115)	20	0.98
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.510	ug/L	102	(50-150)		
MS_202011100281	Lead Total ICAP/MS	ND	50	49.0	ug/L	98	(70-130)		
MS2_202011170169	Lead Total ICAP/MS	ND	50	53.6	ug/L	107	(70-130)		
MSD_202011100281	Lead Total ICAP/MS	ND	50	48.3	ug/L	96	(70-130)	20	1.4
MSD2_202011170169	Lead Total ICAP/MS	ND	50	51.0	ug/L	102	(70-130)	20	5.0
ICPMS Metals by EPA 200.8									
Analytical Batch: 1289903					Analysis Date: 11/21/2020				
LCS1	Lead Total ICAP/MS		50	51.6	ug/L	103	(85-115)		
LCS2	Lead Total ICAP/MS		50	51.9	ug/L	104	(85-115)	20	0.58
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.504	ug/L	101	(50-150)		
MS_202011140040	Lead Total ICAP/MS	64	50	112	ug/L	96	(70-130)		
MS2_202011140050	Lead Total ICAP/MS	5.9	50	53.1	ug/L	95	(70-130)		
MSD_202011140040	Lead Total ICAP/MS	64	50	114	ug/L	99	(70-130)	20	1.4
MSD2_202011140050	Lead Total ICAP/MS	5.9	50	52.1	ug/L	92	(70-130)	20	1.9
ICPMS Metals by EPA 200.8									
Analytical Batch: 1289904					Analysis Date: 11/21/2020				
LCS1	Lead Total ICAP/MS		50	53.0	ug/L	106	(85-115)		
LCS2	Lead Total ICAP/MS		50	52.5	ug/L	105	(85-115)	20	0.95
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.510	ug/L	102	(50-150)		
MS_202011160177	Lead Total ICAP/MS	390	50	443	ug/L	101	(70-130)		
MS2_202011160196	Lead Total ICAP/MS	460	50	502	ug/L	90	(70-130)		
MSD_202011160177	Lead Total ICAP/MS	390	50	445	ug/L	106	(70-130)	20	0.51
MSD2_202011160196	Lead Total ICAP/MS	460	50	511	ug/L	109	(70-130)	20	1.8

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
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Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
11/24/2020

Vanessa Berry
EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 903757
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN

Folder #: 903757

Project: KALAMAZOO

Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry

Phone: 503-310-3905

The following samples were received from you on **November 16, 2020** at **1306**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202011160189</u>	Test 3 #0	11/13/2020 0818
	@ICPMS	
<u>202011160190</u>	Test 3 #1	11/13/2020 0819
	@ICPMS	
<u>202011160191</u>	Test 3 #2	11/13/2020 0820
	@ICPMS	
<u>202011160192</u>	Test 3 #3	11/13/2020 0821
	@ICPMS	
<u>202011160193</u>	Test 3 #4	11/13/2020 0823
	@ICPMS	
<u>202011160194</u>	Test 3 #5	11/13/2020 0824
	@ICPMS	
<u>202011160195</u>	Test 3 #6	11/13/2020 0825
	@ICPMS	
<u>202011160196</u>	Test 3 #7	11/13/2020 0826
	@ICPMS	
<u>202011160197</u>	Test 3 #8	11/13/2020 0827
	@ICPMS	
<u>202011160198</u>	Test 3 #9	11/13/2020 0828
	@ICPMS	

Test Description

@ICPMS -- ICPMS Metals



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLES CHECKED AGAINST COC BY: 93

SAMPLES LOGGED IN BY: LD

SAMPLE TEMP RECEIVED AT:

(Other) IR Gun ID = 6116 (Observation = 0.18 °C) (check for yes)
(Monrovia) IR Gun ID = 6116 (Observation = 0.18 °C) (Final = 0.5 °C)
Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic ☐ No Ice ☐ CONDITION OF ICE: Frozen ☐ Partially Frozen ☒ Thawed ☐ N/A ☐

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: 9284511489723

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:		PROJECT CODE:	COMPLIANCE SAMPLES		NON-COMPLIANCE SAMPLES		(check for yes)	
Tetra Tech - 201 E Pine St. Orlando, FL			- Requires state forms		REGULATION INVOLVED:		(check for yes)	
EEA CLIENT CODE:		COC ID:	Type of samples (circle one):		ROUTINE SPECIAL CONFIRMATION		(eg. SDWA, NPDES, etc.)	
Tetra Tech - Orion			SEE ATTACHED KIT ORDER FOR ANALYSES		List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)		OR	
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX	FIELD DATA	FIELD DATA	SAMPLER COMMENTS	
11/13	8:18	Test 3 #0		FW			preserved with	
	8:19	Test 3 #1					nitric acid by	
	8:20	Test 3 #2					tetra tech	
	8:21	Test 3 #3						
	8:23	Test 3 #4						
	8:24	Test 3 #5						
	8:25	Test 3 #6						
	8:26	Test 3 #7						
	8:27	Test 3 #8						
	8:28	Test 3 #9						

* MATRIX TYPES: RSW = Raw Surface Water CFW = Chlor(am)inated Finished Water SEAW = Sea Water BW = Bottled Water SO = Soil
RGW = Raw Ground Water FW = Other Finished Water WW = Waste Water SW = Storm Water SL = Sludge
O = Other - Please Identify

SIGNATURE		PRINT NAME	COMPANY/TITLE	DATE	TIME
SAMPLED BY:	M. Arenas	Maria Isabel Arenas	Tetra Tech, Project Engineer	11/13/20	15:30
RELINQUISHED BY:					
RECEIVED BY:	Chen Beach	Chen Beach		11/16/20	1306
RELINQUISHED BY:					
RECEIVED BY:					

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments

Report: 903757

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

Report: 903757
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/16/2020 1306

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
11/21/2020 16:32	202011160189 Lead Total ICAP/MS	<u>Test 3 #0</u>	210	15	ug/L	0.50
11/21/2020 16:34	202011160190 Lead Total ICAP/MS	<u>Test 3 #1</u>	420	15	ug/L	0.50
11/21/2020 16:35	202011160191 Lead Total ICAP/MS	<u>Test 3 #2</u>	650	15	ug/L	0.50
11/21/2020 16:36	202011160192 Lead Total ICAP/MS	<u>Test 3 #3</u>	200	15	ug/L	0.50
11/21/2020 16:37	202011160193 Lead Total ICAP/MS	<u>Test 3 #4</u>	250	15	ug/L	0.50
11/21/2020 16:37	202011160194 Lead Total ICAP/MS	<u>Test 3 #5</u>	310	15	ug/L	0.50
11/21/2020 16:38	202011160195 Lead Total ICAP/MS	<u>Test 3 #6</u>	270	15	ug/L	0.50
11/21/2020 16:39	202011160196 Lead Total ICAP/MS	<u>Test 3 #7</u>	460	15	ug/L	0.50
11/21/2020 16:41	202011160197 Lead Total ICAP/MS	<u>Test 3 #8</u>	730	15	ug/L	0.50
11/21/2020 16:43	202011160198 Lead Total ICAP/MS	<u>Test 3 #9</u>	810	15	ug/L	0.50

SUMMARY OF POSITIVE DATA ONLY

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1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 903757
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/16/2020 1306

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>Test 3 #0 (202011160189)</u>						Sampled on 11/13/2020 0818			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:32	1288619	1289904	(EPA 200.8)	Lead Total ICAP/MS	210	ug/L	0.50	1
<u>Test 3 #1 (202011160190)</u>						Sampled on 11/13/2020 0819			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:34	1288619	1289904	(EPA 200.8)	Lead Total ICAP/MS	420	ug/L	0.50	1
<u>Test 3 #2 (202011160191)</u>						Sampled on 11/13/2020 0820			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:35	1288619	1289904	(EPA 200.8)	Lead Total ICAP/MS	650	ug/L	0.50	1
<u>Test 3 #3 (202011160192)</u>						Sampled on 11/13/2020 0821			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:36	1288619	1289904	(EPA 200.8)	Lead Total ICAP/MS	200	ug/L	0.50	1
<u>Test 3 #4 (202011160193)</u>						Sampled on 11/13/2020 0823			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:37	1288619	1289904	(EPA 200.8)	Lead Total ICAP/MS	250	ug/L	0.50	1
<u>Test 3 #5 (202011160194)</u>						Sampled on 11/13/2020 0824			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:37	1288619	1289904	(EPA 200.8)	Lead Total ICAP/MS	310	ug/L	0.50	1
<u>Test 3 #6 (202011160195)</u>						Sampled on 11/13/2020 0825			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:38	1288619	1289904	(EPA 200.8)	Lead Total ICAP/MS	270	ug/L	0.50	1
<u>Test 3 #7 (202011160196)</u>						Sampled on 11/13/2020 0826			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:39	1288619	1289904	(EPA 200.8)	Lead Total ICAP/MS	460	ug/L	0.50	1
<u>Test 3 #8 (202011160197)</u>						Sampled on 11/13/2020 0827			
EPA 200.8 - ICPMS Metals									
11/17/20	11/21/20 16:41	1288619	1289904	(EPA 200.8)	Lead Total ICAP/MS	730	ug/L	0.50	1
<u>Test 3 #9 (202011160198)</u>						Sampled on 11/13/2020 0828			
EPA 200.8 - ICPMS Metals									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
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Laboratory Data

Report: 903757
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/16/2020 1306

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
11/17/20	11/21/20 16:43	1288619	1289904	(EPA 200.8)	Lead Total ICAP/MS	810	ug/L	0.50	1

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 903757

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech

ICPMS Metals

Prep Batch: 1288619 Analytical Batch: 1289904

Analysis Date: 11/21/2020

202011160189	Test 3 #0
202011160190	Test 3 #1
202011160191	Test 3 #2
202011160192	Test 3 #3
202011160193	Test 3 #4
202011160194	Test 3 #5
202011160195	Test 3 #6
202011160196	Test 3 #7
202011160197	Test 3 #8
202011160198	Test 3 #9

Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE

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Report: 903757
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
ICPMS Metals by EPA 200.8									
Analytical Batch: 1289904					Analysis Date: 11/21/2020				
LCS1	Lead Total ICAP/MS		50	53.0	ug/L	106	(85-115)		
LCS2	Lead Total ICAP/MS		50	52.5	ug/L	105	(85-115)	20	0.95
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.510	ug/L	102	(50-150)		
MS_202011160177	Lead Total ICAP/MS	390	50	443	ug/L	101	(70-130)		
MS2_202011160196	Lead Total ICAP/MS	460	50	502	ug/L	90	(70-130)		
MSD_202011160177	Lead Total ICAP/MS	390	50	445	ug/L	106	(70-130)	20	0.51
MSD2_202011160196	Lead Total ICAP/MS	460	50	511	ug/L	109	(70-130)	20	1.8

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
11/30/2020

Vanessa Berry
EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 905131
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalart (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN

Folder #: 905131

Project: KALAMAZOO

Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry

Phone: 503-310-3905

The following samples were received from you on **November 23, 2020** at **1022**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202011230240</u>	Test 4 No.0 Final	11/17/2020 0803
	@ICPMS	
<u>202011230241</u>	Test 4 No.1 Final	11/17/2020 0805
	@ICPMS	
<u>202011230242</u>	Test 4 No.2 Final	11/17/2020 0806
	@ICPMS	
<u>202011230243</u>	Test 4 No.3 Final	11/17/2020 0807
	@ICPMS	
<u>202011230244</u>	Test 4 No.4 Final	11/17/2020 0808
	@ICPMS	
<u>202011230245</u>	Test 4 No.5 Final	11/17/2020 0810
	@ICPMS	
<u>202011230246</u>	Test 4 No.6 Final	11/17/2020 0811
	@ICPMS	
<u>202011230247</u>	Test 4 No.7 Final	11/17/2020 0812
	@ICPMS	
<u>202011230248</u>	Test 4 No.8 Final	11/17/2020 0814
	@ICPMS	
<u>202011230249</u>	Test 4 No.9 Final	11/17/2020 0815
	@ICPMS	

Test Description

@ICPMS -- ICPMS Metals

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments**Report:** 905131**Project:** KALAMAZOO**Group:** Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Flags Legend:

M3 - The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike recovery was acceptable.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 905131
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/23/2020 1022

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
11/27/2020 15:06	202011230240 Lead Total ICAP/MS	<u>Test 4 No.0 Final</u>	280	15	ug/L	0.50
11/27/2020 15:12	202011230241 Lead Total ICAP/MS	<u>Test 4 No.1 Final</u>	550	15	ug/L	0.50
11/27/2020 15:15	202011230242 Lead Total ICAP/MS	<u>Test 4 No.2 Final</u>	590	15	ug/L	0.50
11/27/2020 15:16	202011230243 Lead Total ICAP/MS	<u>Test 4 No.3 Final</u>	220	15	ug/L	0.50
11/27/2020 15:17	202011230244 Lead Total ICAP/MS	<u>Test 4 No.4 Final</u>	300	15	ug/L	0.50
11/27/2020 15:17	202011230245 Lead Total ICAP/MS	<u>Test 4 No.5 Final</u>	360	15	ug/L	0.50
11/27/2020 15:18	202011230246 Lead Total ICAP/MS	<u>Test 4 No.6 Final</u>	500	15	ug/L	0.50
11/27/2020 15:21	202011230247 Lead Total ICAP/MS	<u>Test 4 No.7 Final</u>	320	15	ug/L	0.50
11/27/2020 15:21	202011230248 Lead Total ICAP/MS	<u>Test 4 No.8 Final</u>	960	15	ug/L	0.50
11/27/2020 15:22	202011230249 Lead Total ICAP/MS	<u>Test 4 No.9 Final</u>	1100	15	ug/L	0.50

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 905131
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/23/2020 1022

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>Test 4 No.0 Final (202011230240)</u>						Sampled on 11/17/2020 0803			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:06	1290246	1290931	(EPA 200.8)	Lead Total ICAP/MS	280	ug/L	0.50	1
<u>Test 4 No.1 Final (202011230241)</u>						Sampled on 11/17/2020 0805			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:12	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	550 (M3)	ug/L	0.50	1
<u>Test 4 No.2 Final (202011230242)</u>						Sampled on 11/17/2020 0806			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:15	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	590	ug/L	0.50	1
<u>Test 4 No.3 Final (202011230243)</u>						Sampled on 11/17/2020 0807			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:16	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	220	ug/L	0.50	1
<u>Test 4 No.4 Final (202011230244)</u>						Sampled on 11/17/2020 0808			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:17	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	300	ug/L	0.50	1
<u>Test 4 No.5 Final (202011230245)</u>						Sampled on 11/17/2020 0810			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:17	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	360	ug/L	0.50	1
<u>Test 4 No.6 Final (202011230246)</u>						Sampled on 11/17/2020 0811			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:18	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	500	ug/L	0.50	1
<u>Test 4 No.7 Final (202011230247)</u>						Sampled on 11/17/2020 0812			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:21	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	320	ug/L	0.50	1
<u>Test 4 No.8 Final (202011230248)</u>						Sampled on 11/17/2020 0814			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:21	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	960	ug/L	0.50	1
<u>Test 4 No.9 Final (202011230249)</u>						Sampled on 11/17/2020 0815			
EPA 200.8 - ICPMS Metals									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 905131
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/23/2020 1022

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
11/24/20	11/27/20 15:22	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	1100	ug/L	0.50	1

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 905131

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech

ICPMS Metals

Prep Batch: 1290246 Analytical Batch: 1290931

202011230240 Test 4 No.0 Final

Analysis Date: 11/27/2020

Analyzed by: URDE

ICPMS Metals

Prep Batch: 1290246 Analytical Batch: 1290932

202011230241 Test 4 No.1 Final

202011230242 Test 4 No.2 Final

202011230243 Test 4 No.3 Final

202011230244 Test 4 No.4 Final

202011230245 Test 4 No.5 Final

202011230246 Test 4 No.6 Final

202011230247 Test 4 No.7 Final

202011230248 Test 4 No.8 Final

202011230249 Test 4 No.9 Final

Analysis Date: 11/27/2020

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

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1 800 566 LABS (1 800 566 5227)

Report: 905131
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
ICPMS Metals by EPA 200.8									
Analytical Batch: 1290931					Analysis Date: 11/27/2020				
LCS1	Lead Total ICAP/MS		50	51.0	ug/L	102	(85-115)		
LCS2	Lead Total ICAP/MS		50	50.4	ug/L	101	(85-115)	20	1.2
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.496	ug/L	99	(50-150)		
MS_202011240133	Lead Total ICAP/MS	ND	50	48.6	ug/L	97	(70-130)		
MS2_202011190431	Lead Total ICAP/MS	0.88	50	47.9	ug/L	94	(70-130)		
MSD_202011240133	Lead Total ICAP/MS	ND	50	46.8	ug/L	94	(70-130)	20	3.7
MSD2_202011190431	Lead Total ICAP/MS	0.88	50	48.7	ug/L	96	(70-130)	20	1.6
ICPMS Metals by EPA 200.8									
Analytical Batch: 1290932					Analysis Date: 11/27/2020				
LCS1	Lead Total ICAP/MS		50	50.3	ug/L	101	(85-115)		
LCS2	Lead Total ICAP/MS		50	50.0	ug/L	100	(85-115)	20	0.60
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.508	ug/L	102	(50-150)		
MS_202011230241	Lead Total ICAP/MS	550	50	599	ug/L	106	(70-130)		
MS2_202011230253	Lead Total ICAP/MS	550	50	586	ug/L	72	(70-130)		
MSD_202011230241	Lead Total ICAP/MS	550	50	614	ug/L	<u>136</u>	(70-130)	20	2.4
MSD2_202011230253	Lead Total ICAP/MS	550	50	592	ug/L	85	(70-130)	20	1.2

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue

12/08/2020

Vanessa Berry

**EUROFINS EATON
ANALYTICAL, LLC**



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 905134
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 905134
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **November 23, 2020** at **1022**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202011230252</u>	Test 5 No.0 Final	11/20/2020 0804
	@ICPMS	
<u>202011230253</u>	Test 5 No.1 Final	11/20/2020 0804
	@ICPMS	
<u>202011230254</u>	Test 5 No.2 Final	11/20/2020 0805
	@ICPMS	
<u>202011230255</u>	Test 5 No.3 Final	11/20/2020 0806
	@ICPMS	
<u>202011230256</u>	Test 5 No.4 Final	11/20/2020 0807
	@ICPMS	
<u>202011230257</u>	Test 5 No.5 Final	11/20/2020 0808
	@ICPMS	
<u>202011230258</u>	Test 5 No.6 Final	11/20/2020 0808
	@ICPMS	
<u>202011230259</u>	Test 5 No.7 Final	11/20/2020 0809
	@ICPMS	
<u>202011230260</u>	Test 5 No.8 Final	11/20/2020 0810
	@ICPMS	
<u>202011230261</u>	Test 5 No.9 Final	11/20/2020 0811
	@ICPMS	

Test Description

@ICPMS -- ICPMS Metals



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

FedEx
TRK# 9284 5115 4859
TO BE COMPLETED BY SA

COMPANY/AGENCY NAME: Tetra Tech 201 E Pine St Orlando				PROJECT CODE:		COMPLIANCE SAMPLES - Requires state forms		NON-COMPLIANCE SAMPLES REGULATION INVOLVED:	
EEA CLIENT CODE: Tetra Tech - Orion		COC ID:		SAMPLE GROUP: Lead Solubility Test - Phase 1		Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION		(eg. SDWA, NPDES, etc.)	
TAT requested: rush by adv notice only				STD 1 wk 3 day 2 day 1 day		SEE ATTACHED KIT ORDER FOR ANALYSES List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)			
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX	FIELD DATA	FIELD DATA	SAMPLER COMMENTS		
11/20	8:04	Test 5 No.0 final		fw					
	8:04	No. 1							Preserved with
	8:05	No. 2							nitric acid by
	8:06	No. 3							Tetra Tech
	8:07	No. 4							
	8:08	No. 5							
	8:08	No. 6							
	8:09	No. 7							
	8:10	No. 8							
	8:11	No. 9							

TYPE OF ICE: Real <input checked="" type="checkbox"/> Synthetic <input type="checkbox"/> No Ice <input type="checkbox"/>		CONDITION OF ICE: Frozen <input checked="" type="checkbox"/> Partially Frozen <input type="checkbox"/> Thawed <input type="checkbox"/> N/A <input type="checkbox"/>	
METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx UPS / DHL / Area Fast / Top Line / Other:			

LOGIN COMMENTS:		SAMPLES CHECKED AGAINST COC BY:	
SAMPLE TEMP RECEIVED AT: (Other) IR Gun ID = (Observation = °C) (check for yes) <input type="checkbox"/> Monrovia IR Gun ID = 63119 (Observation = 2-7 °C) (Final = 2-5 °C)		SAMPLES LOGGED IN BY: <i>[Signature]</i>	

COMPLIANCE ACCEPTANCE CRITERIA: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)	
TYPE OF ICE: Real <input checked="" type="checkbox"/> Synthetic <input type="checkbox"/> No Ice <input type="checkbox"/>	
METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx UPS / DHL / Area Fast / Top Line / Other:	

SAMPLED BY: M. Arenas		PRINT NAME: Maria Isabel Arenas		COMPANY/TITLE: Tetra Tech, Project Engineer		DATE: 11/20/20		TIME: 4:00 PM	
RELINQUISHED BY: "		RELINQUISHED BY: "		RELINQUISHED BY: "		RELINQUISHED BY: "		RELINQUISHED BY: "	
RECEIVED BY: "		RECEIVED BY: "		RECEIVED BY: "		RECEIVED BY: "		RECEIVED BY: "	
RECEIVED BY: "		RECEIVED BY: "		RECEIVED BY: "		RECEIVED BY: "		RECEIVED BY: "	

* MATRIX TYPES: RSW = Raw Surface Water RGW = Raw Ground Water CFW = Chlor(am)inated Finished Water FW = Other Finished Water SEAW = Sea Water BW = Bottled Water SW = Storm Water WW = Waste Water SO = Soil SL = Sludge O = Other - Please Identify	
---	--

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments

Report: 905134

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 905134
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/23/2020 1022

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
11/27/2020 15:23	202011230252 Lead Total ICAP/MS	<u>Test 5 No.0 Final</u>	350	15	ug/L	0.50
11/27/2020 15:24	202011230253 Lead Total ICAP/MS	<u>Test 5 No.1 Final</u>	550	15	ug/L	0.50
11/27/2020 15:26	202011230254 Lead Total ICAP/MS	<u>Test 5 No.2 Final</u>	500	15	ug/L	0.50
11/27/2020 15:27	202011230255 Lead Total ICAP/MS	<u>Test 5 No.3 Final</u>	200	15	ug/L	0.50
11/27/2020 15:28	202011230256 Lead Total ICAP/MS	<u>Test 5 No.4 Final</u>	270	15	ug/L	0.50
11/27/2020 15:30	202011230257 Lead Total ICAP/MS	<u>Test 5 No.5 Final</u>	280	15	ug/L	0.50
11/27/2020 15:31	202011230258 Lead Total ICAP/MS	<u>Test 5 No.6 Final</u>	300	15	ug/L	0.50
11/27/2020 15:32	202011230259 Lead Total ICAP/MS	<u>Test 5 No.7 Final</u>	210	15	ug/L	0.50
11/27/2020 15:33	202011230260 Lead Total ICAP/MS	<u>Test 5 No.8 Final</u>	800	15	ug/L	0.50
12/06/2020 16:19	202011230261 Lead Total ICAP/MS	<u>Test 5 No.9 Final</u>	890	15	ug/L	0.50

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
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Laboratory Data

Report: 905134
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/23/2020 1022

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>Test 5 No.0 Final (202011230252)</u>						Sampled on 11/20/2020 0804			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:23	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	350	ug/L	0.50	1
<u>Test 5 No.1 Final (202011230253)</u>						Sampled on 11/20/2020 0804			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:24	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	550	ug/L	0.50	1
<u>Test 5 No.2 Final (202011230254)</u>						Sampled on 11/20/2020 0805			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:26	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	500	ug/L	0.50	1
<u>Test 5 No.3 Final (202011230255)</u>						Sampled on 11/20/2020 0806			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:27	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	200	ug/L	0.50	1
<u>Test 5 No.4 Final (202011230256)</u>						Sampled on 11/20/2020 0807			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:28	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	270	ug/L	0.50	1
<u>Test 5 No.5 Final (202011230257)</u>						Sampled on 11/20/2020 0808			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:30	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	280	ug/L	0.50	1
<u>Test 5 No.6 Final (202011230258)</u>						Sampled on 11/20/2020 0808			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:31	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	300	ug/L	0.50	1
<u>Test 5 No.7 Final (202011230259)</u>						Sampled on 11/20/2020 0809			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:32	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	210	ug/L	0.50	1
<u>Test 5 No.8 Final (202011230260)</u>						Sampled on 11/20/2020 0810			
EPA 200.8 - ICPMS Metals									
11/24/20	11/27/20 15:33	1290246	1290932	(EPA 200.8)	Lead Total ICAP/MS	800	ug/L	0.50	1
<u>Test 5 No.9 Final (202011230261)</u>						Sampled on 11/20/2020 0811			
EPA 200.8 - ICPMS Metals									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

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Laboratory Data

Report: 905134
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/23/2020 1022

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
11/24/20	12/06/20 16:19	1290246	1290471	(EPA 200.8)	Lead Total ICAP/MS	890	ug/L	0.50	1

Tel: (626) 386-1100
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Laboratory QC Summary

Report: 905134

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech

ICPMS Metals

Prep Batch: 1290246 Analytical Batch: 1290471

202011230261 Test 5 No.9 Final

Analysis Date: 12/06/2020

Analyzed by: DHX7

ICPMS Metals

Prep Batch: 1290246 Analytical Batch: 1290932

202011230252 Test 5 No.0 Final

202011230253 Test 5 No.1 Final

202011230254 Test 5 No.2 Final

202011230255 Test 5 No.3 Final

202011230256 Test 5 No.4 Final

202011230257 Test 5 No.5 Final

202011230258 Test 5 No.6 Final

202011230259 Test 5 No.7 Final

202011230260 Test 5 No.8 Final

Analysis Date: 11/27/2020

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

Analyzed by: URDE

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Report: 905134
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
ICPMS Metals by EPA 200.8									
Analytical Batch: 1290471					Analysis Date: 12/06/2020				
LCS1	Lead Total ICAP/MS		50	51.4	ug/L	103	(85-115)		
LCS2	Lead Total ICAP/MS		50	51.5	ug/L	103	(85-115)	20	0.19
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.523	ug/L	105	(50-150)		
MS_202011190100	Lead Total ICAP/MS	ND	50	51.4	ug/L	103	(70-130)		
MS2_202011180137	Lead Total ICAP/MS	ND	50	51.4	ug/L	102	(70-130)		
MSD_202011190100	Lead Total ICAP/MS	ND	50	52.1	ug/L	104	(70-130)	20	1.3
MSD2_202011180137	Lead Total ICAP/MS	ND	50	51.2	ug/L	102	(70-130)	20	0.38
ICPMS Metals by EPA 200.8									
Analytical Batch: 1290932					Analysis Date: 11/27/2020				
LCS1	Lead Total ICAP/MS		50	50.3	ug/L	101	(85-115)		
LCS2	Lead Total ICAP/MS		50	50.0	ug/L	100	(85-115)	20	0.60
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.508	ug/L	102	(50-150)		
MS_202011230241	Lead Total ICAP/MS	550	50	599	ug/L	106	(70-130)		
MS2_202011230253	Lead Total ICAP/MS	550	50	586	ug/L	72	(70-130)		
MSD_202011230241	Lead Total ICAP/MS	550	50	614	ug/L	<u>136</u>	(70-130)	20	2.4
MSD2_202011230253	Lead Total ICAP/MS	550	50	592	ug/L	85	(70-130)	20	1.2

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
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Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
12/11/2020

Vanessa Berry
EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 906151
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 906151
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 01, 2020 at 1128**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012010640</u>	Test 6 No.0 Final	11/24/2020 0802
	@ICPMS	
<u>202012010641</u>	Test 6 No.1 Final	11/24/2020 0803
	@ICPMS	
<u>202012010642</u>	Test 6 No.2 Final	11/24/2020 0804
	@ICPMS	
<u>202012010643</u>	Test 6 No.3 Final	11/24/2020 0805
	@ICPMS	
<u>202012010644</u>	Test 6 No.4 Final	11/24/2020 0806
	@ICPMS	
<u>202012010645</u>	Test 6 No.5 Final	11/24/2020 0807
	@ICPMS	
<u>202012010646</u>	Test 6 No.6 Final	11/24/2020 0808
	@ICPMS	
<u>202012010647</u>	Test 6 No.7 Final	11/24/2020 0809
	@ICPMS	
<u>202012010648</u>	Test 6 No.8 Final	11/24/2020 0810
	@ICPMS	
<u>202012010649</u>	Test 6 No.9 Final	11/24/2020 0811
	@ICPMS	

Test Description

@ICPMS -- ICPMS Metals



Eaton Analytical

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

LOGIN COMMENTS:

SAMPLES CHECKED AGAINST COC BY: CB

750 Royal Oaks Drive, Suite 100

Monrovia, CA 91016-3629

Phone: 626 386 1100

Fax: 626 386 1101

800 566 LABS (800 566 5227)

Website: www.EatonAnalytical.com

SAMPLE TEMP RECEIVED AT:

☐ (Other) IR Gun ID = _____ (Observation = _____ °C) (check for yes)

☒ Monrovia IR Gun ID = 031A (Observation = 1-8 °C) (Final = 1-6 °C)

Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic ☐ No Ice ☒

CONDITION OF ICE: Frozen ☒ Partially Frozen ☐ Thawed ☐ N/A ☐

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / DHL / UPS / Area Fast / Top Line / Other: _____

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:

Tetra Tech 201 E Pine St Orlando

EEA CLIENT CODE:

Tetra Tech-Orlando

COC ID:

928451141252

SAMPLE GROUP:

Lead Solubility Test - Phase 1

TAT requested: rush by adv notice only

STD _____ 1 wk _____ 3 day _____ 1 day _____

SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX *	FIELD DATA	FIELD DATA	SEE ATTACHED KIT ORDER FOR ANALYSES										SAMPLER COMMENTS	
11/23	8:02	Test 6 NO. 0 Final		FW														analyzed with nitric acid by Tetra Tech
	8:03	NO. 1																
	8:04	NO. 2																
	8:05	NO. 3																
	8:06	4																
	8:07	5																
	8:08	6																
	8:09	7																
	8:10	8																
	8:11	9																

* MATRIX TYPES: RSW = Raw Surface Water CFW = Chlor(am)inated Finished Water SEAW = Sea Water BW = Bottled Water SO = Soil
RGW = Raw Ground Water FW = Other Finished Water WW = Waste Water SW = Storm Water SL = Sludge O = Other - Please Identify

SIGNATURE		PRINT NAME		COMPANY/TITLE		DATE		TIME	
SAMPLED BY:	<u>M. Arenas</u>		<u>Maria Isabel Arenas</u>		<u>Tetra Tech, Project engineer</u>	<u>11/30/20</u>	<u>4:30 PM</u>		
RELINQUISHED BY:	<u>"</u>		<u>"</u>		<u>"</u>	<u>"</u>	<u>"</u>		
RECEIVED BY:	<u>"</u>		<u>Joe Sanchez</u>		<u>EEA</u>	<u>12/1/20</u>	<u>1128</u>		
RELINQUISHED BY:									
RECEIVED BY:									

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments**Report:** 906151**Project:** KALAMAZOO**Group:** Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Flags Legend:

B4 - Target analyte detected in blank at or above method acceptance criteria.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 906151
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/01/2020 1128

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/06/2020 11:55	202012010640 Lead Total ICAP/MS	<u>Test 6 No.0 Final</u>	250	15	ug/L	0.50
12/06/2020 11:56	202012010641 Lead Total ICAP/MS	<u>Test 6 No.1 Final</u>	660	15	ug/L	0.50
12/06/2020 11:57	202012010642 Lead Total ICAP/MS	<u>Test 6 No.2 Final</u>	560	15	ug/L	0.50
12/08/2020 18:14	202012010643 Lead Total ICAP/MS	<u>Test 6 No.3 Final</u>	230	15	ug/L	0.50
12/06/2020 11:57	202012010644 Lead Total ICAP/MS	<u>Test 6 No.4 Final</u>	320	15	ug/L	0.50
12/08/2020 18:16	202012010645 Lead Total ICAP/MS	<u>Test 6 No.5 Final</u>	310	15	ug/L	0.50
12/06/2020 11:58	202012010646 Lead Total ICAP/MS	<u>Test 6 No.6 Final</u>	290	15	ug/L	0.50
12/08/2020 18:18	202012010647 Lead Total ICAP/MS	<u>Test 6 No.7 Final</u>	220	15	ug/L	0.50
12/06/2020 11:59	202012010648 Lead Total ICAP/MS	<u>Test 6 No.8 Final</u>	920	15	ug/L	0.50
12/08/2020 18:34	202012010649 Lead Total ICAP/MS	<u>Test 6 No.9 Final</u>	1000	15	ug/L	5.0

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 906151
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/01/2020 1128

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>Test 6 No.0 Final (202012010640)</u>						Sampled on 11/24/2020 0802			
EPA 200.8 - ICPMS Metals									
12/02/20	12/06/20 11:55	1291502	1292379	(EPA 200.8)	Lead Total ICAP/MS	250	ug/L	0.50	1
<u>Test 6 No.1 Final (202012010641)</u>						Sampled on 11/24/2020 0803			
EPA 200.8 - ICPMS Metals									
12/02/20	12/06/20 11:56	1291502	1292379	(EPA 200.8)	Lead Total ICAP/MS	660	ug/L	0.50	1
<u>Test 6 No.2 Final (202012010642)</u>						Sampled on 11/24/2020 0804			
EPA 200.8 - ICPMS Metals									
12/02/20	12/06/20 11:57	1291502	1292379	(EPA 200.8)	Lead Total ICAP/MS	560	ug/L	0.50	1
<u>Test 6 No.3 Final (202012010643)</u>						Sampled on 11/24/2020 0805			
EPA 200.8 - ICPMS Metals									
12/02/20	12/08/20 18:14	1291502	1291550	(EPA 200.8)	Lead Total ICAP/MS	230 (B4)	ug/L	0.50	1
<u>Test 6 No.4 Final (202012010644)</u>						Sampled on 11/24/2020 0806			
EPA 200.8 - ICPMS Metals									
12/02/20	12/06/20 11:57	1291502	1292379	(EPA 200.8)	Lead Total ICAP/MS	320	ug/L	0.50	1
<u>Test 6 No.5 Final (202012010645)</u>						Sampled on 11/24/2020 0807			
EPA 200.8 - ICPMS Metals									
12/02/20	12/08/20 18:16	1291502	1291550	(EPA 200.8)	Lead Total ICAP/MS	310 (B4)	ug/L	0.50	1
<u>Test 6 No.6 Final (202012010646)</u>						Sampled on 11/24/2020 0808			
EPA 200.8 - ICPMS Metals									
12/02/20	12/06/20 11:58	1291502	1292379	(EPA 200.8)	Lead Total ICAP/MS	290	ug/L	0.50	1
<u>Test 6 No.7 Final (202012010647)</u>						Sampled on 11/24/2020 0809			
EPA 200.8 - ICPMS Metals									
12/02/20	12/08/20 18:18	1291502	1291550	(EPA 200.8)	Lead Total ICAP/MS	220 (B4)	ug/L	0.50	1
<u>Test 6 No.8 Final (202012010648)</u>						Sampled on 11/24/2020 0810			
EPA 200.8 - ICPMS Metals									
12/02/20	12/06/20 11:59	1291502	1292379	(EPA 200.8)	Lead Total ICAP/MS	920	ug/L	0.50	1
<u>Test 6 No.9 Final (202012010649)</u>						Sampled on 11/24/2020 0811			
EPA 200.8 - ICPMS Metals									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

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Laboratory Data

Report: 906151
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/01/2020 1128

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
12/02/20	12/08/20 18:34	1291502	1291550	(EPA 200.8)	Lead Total ICAP/MS	1000 (B4)	ug/L	5.0	10

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Laboratory QC Summary

Report: 906151
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

ICPMS Metals

Prep Batch: 1291502 Analytical Batch: 1291550

202012010643	Test 6 No.3 Final
202012010645	Test 6 No.5 Final
202012010647	Test 6 No.7 Final
202012010649	Test 6 No.9 Final

Analysis Date: 12/08/2020

Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7

ICPMS Metals

Prep Batch: 1291502 Analytical Batch: 1292379

202012010640	Test 6 No.0 Final
202012010641	Test 6 No.1 Final
202012010642	Test 6 No.2 Final
202012010644	Test 6 No.4 Final
202012010646	Test 6 No.6 Final
202012010648	Test 6 No.8 Final

Analysis Date: 12/06/2020

Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE

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1 800 566 LABS (1 800 566 5227)

Report: 906151
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
ICPMS Metals by EPA 200.8									
Analytical Batch: 1291550					Analysis Date: 12/08/2020				
LCS1	Lead Total ICAP/MS		50	51.1	ug/L	102	(85-115)		
LCS2	Lead Total ICAP/MS		50	49.1	ug/L	98	(85-115)	20	4.0
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.513	ug/L	103	(50-150)		
MS_202002070534	Lead Total ICAP/MS	ND	50	48.0	ug/L	96	(70-130)		
MS2_202011300341	Lead Total ICAP/MS	ND	50	50.9	ug/L	102	(70-130)		
MSD_202002070534	Lead Total ICAP/MS	ND	50	47.9	ug/L	96	(70-130)	20	0.29
MSD2_202011300341	Lead Total ICAP/MS	ND	50	49.7	ug/L	99	(70-130)	20	2.5
ICPMS Metals by EPA 200.8									
Analytical Batch: 1292379					Analysis Date: 12/06/2020				
LCS1	Lead Total ICAP/MS		50	51.0	ug/L	102	(85-115)		
LCS2	Lead Total ICAP/MS		50	49.8	ug/L	100	(85-115)	20	2.4
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.499	ug/L	100	(50-150)		
MS_202012010060	Lead Total ICAP/MS	190	50	223	ug/L	<u>66</u>	(70-130)		
MS2_202012010381	Lead Total ICAP/MS	ND	50	48.2	ug/L	96	(70-130)		
MSD_202012010060	Lead Total ICAP/MS	190	50	223	ug/L	<u>65</u>	(70-130)	20	0.20
MSD2_202012010381	Lead Total ICAP/MS	ND	50	47.1	ug/L	94	(70-130)	20	2.3

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
12/11/2020

Vanessa Berry

EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 906153
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 906153
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 01, 2020 at 1127**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012010662</u>	Test 7 No.0 Final	11/26/2020 0843
	@ICPMS	
<u>202012010663</u>	Test 7 No.1 Final	11/26/2020 0844
	@ICPMS	
<u>202012010664</u>	Test 7 No.2 Final	11/26/2020 0846
	@ICPMS	
<u>202012010665</u>	Test 7 No.3 Final	11/26/2020 0848
	@ICPMS	
<u>202012010666</u>	Test 7 No.4 Final	11/26/2020 0850
	@ICPMS	
<u>202012010667</u>	Test 7 No.5 Final	11/26/2020 0852
	@ICPMS	
<u>202012010668</u>	Test 7 No.6 Final	11/26/2020 0853
	@ICPMS	
<u>202012010669</u>	Test 7 No.7 Final	11/26/2020 0855
	@ICPMS	
<u>202012010670</u>	Test 7 No.8 Final	11/26/2020 0856
	@ICPMS	
<u>202012010671</u>	Test 7 No.9 Final	11/26/2020 0858
	@ICPMS	

Test Description

@ICPMS -- ICPMS Metals

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

Phone: 626 386 1100
Fax: 626 386 1101

800 566 LABS (800 566 5227)

Website: www.EatonAnalytical.com

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:

Tetra Tech 201 Pine St Orlando

EEA CLIENT CODE:

Tetra Tech - Orland

TAT requested: rush by adv notice only

SAMPLE DATE	SAMPLE TIME
-------------	-------------

11/26	8:43	Test 7 No.0 final
-------	------	-------------------

8.44	1	1
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8:46	97:8	7
------	------	---

2:45 3

4	2:50
---	------

5	75:8	
---	------	--

8:53	6
------	---

۴۵۴

8	95:8	1
---	------	---

$$\begin{array}{r} 85:8 \\ 4 \end{array}$$

* MATRIX TYPES: RSW = Raw Surface Water

RGW = Raw Ground Water

SIGNATURE

SAMPLED BY: M. Arenas

RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY:

QA FO 0029.2 (Version 2) (08/28/2014)

PAGE _____ OF _____

PAGE _____ OF _____

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments

Report: 906153

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Flags Legend:

B4 - Target analyte detected in blank at or above method acceptance criteria.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 906153
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/01/2020 1127

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/06/2020 12:00	202012010662 Lead Total ICAP/MS	<u>Test 7 No.0 Final</u>	250	15	ug/L	0.50
12/05/2020 19:28	202012010663 Lead Total ICAP/MS	<u>Test 7 No.1 Final</u>	420	15	ug/L	0.50
12/05/2020 19:30	202012010664 Lead Total ICAP/MS	<u>Test 7 No.2 Final</u>	320	15	ug/L	0.50
12/08/2020 18:27	202012010665 Lead Total ICAP/MS	<u>Test 7 No.3 Final</u>	600	15	ug/L	0.50
12/05/2020 19:31	202012010666 Lead Total ICAP/MS	<u>Test 7 No.4 Final</u>	180	15	ug/L	0.50
12/05/2020 19:32	202012010667 Lead Total ICAP/MS	<u>Test 7 No.5 Final</u>	130	15	ug/L	0.50
12/05/2020 19:32	202012010668 Lead Total ICAP/MS	<u>Test 7 No.6 Final</u>	170	15	ug/L	0.50
12/05/2020 19:35	202012010669 Lead Total ICAP/MS	<u>Test 7 No.7 Final</u>	110	15	ug/L	0.50
12/05/2020 19:35	202012010670 Lead Total ICAP/MS	<u>Test 7 No.8 Final</u>	550	15	ug/L	0.50
12/05/2020 19:36	202012010671 Lead Total ICAP/MS	<u>Test 7 No.9 Final</u>	550	15	ug/L	0.50

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 906153
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/01/2020 1127

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>Test 7 No.0 Final (202012010662)</u>						Sampled on 11/26/2020 0843			
EPA 200.8 - ICPMS Metals									
12/02/20	12/06/20 12:00	1291502	1292379	(EPA 200.8)	Lead Total ICAP/MS	250	ug/L	0.50	1
<u>Test 7 No.1 Final (202012010663)</u>						Sampled on 11/26/2020 0844			
EPA 200.8 - ICPMS Metals									
12/02/20	12/05/20 19:28	1291502	1292380	(EPA 200.8)	Lead Total ICAP/MS	420	ug/L	0.50	1
<u>Test 7 No.2 Final (202012010664)</u>						Sampled on 11/26/2020 0846			
EPA 200.8 - ICPMS Metals									
12/02/20	12/05/20 19:30	1291502	1292380	(EPA 200.8)	Lead Total ICAP/MS	320	ug/L	0.50	1
<u>Test 7 No.3 Final (202012010665)</u>						Sampled on 11/26/2020 0848			
EPA 200.8 - ICPMS Metals									
12/02/20	12/08/20 18:27	1291502	1291550	(EPA 200.8)	Lead Total ICAP/MS	600 (B4)	ug/L	0.50	1
<u>Test 7 No.4 Final (202012010666)</u>						Sampled on 11/26/2020 0850			
EPA 200.8 - ICPMS Metals									
12/02/20	12/05/20 19:31	1291502	1292380	(EPA 200.8)	Lead Total ICAP/MS	180	ug/L	0.50	1
<u>Test 7 No.5 Final (202012010667)</u>						Sampled on 11/26/2020 0852			
EPA 200.8 - ICPMS Metals									
12/02/20	12/05/20 19:32	1291502	1292380	(EPA 200.8)	Lead Total ICAP/MS	130	ug/L	0.50	1
<u>Test 7 No.6 Final (202012010668)</u>						Sampled on 11/26/2020 0853			
EPA 200.8 - ICPMS Metals									
12/02/20	12/05/20 19:32	1291502	1292380	(EPA 200.8)	Lead Total ICAP/MS	170	ug/L	0.50	1
<u>Test 7 No.7 Final (202012010669)</u>						Sampled on 11/26/2020 0855			
EPA 200.8 - ICPMS Metals									
12/02/20	12/05/20 19:35	1291502	1292380	(EPA 200.8)	Lead Total ICAP/MS	110	ug/L	0.50	1
<u>Test 7 No.8 Final (202012010670)</u>						Sampled on 11/26/2020 0856			
EPA 200.8 - ICPMS Metals									
12/02/20	12/05/20 19:35	1291502	1292380	(EPA 200.8)	Lead Total ICAP/MS	550	ug/L	0.50	1
<u>Test 7 No.9 Final (202012010671)</u>						Sampled on 11/26/2020 0858			
EPA 200.8 - ICPMS Metals									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

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Laboratory Data

Report: 906153
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/01/2020 1127

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
12/02/20	12/05/20 19:36	1291502	1292380	(EPA 200.8)	Lead Total ICAP/MS	550	ug/L	0.50	1

Tel: (626) 386-1100
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Laboratory QC Summary

Report: 906153
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

ICPMS Metals

Prep Batch: 1291502 Analytical Batch: 1291550

202012010665 Test 7 No.3 Final

Analysis Date: 12/08/2020

Analyzed by: DHX7

ICPMS Metals

Prep Batch: 1291502 Analytical Batch: 1292379

202012010662 Test 7 No.0 Final

Analysis Date: 12/06/2020

Analyzed by: URDE

ICPMS Metals

Prep Batch: 1291502 Analytical Batch: 1292380

202012010663 Test 7 No.1 Final
202012010664 Test 7 No.2 Final
202012010666 Test 7 No.4 Final
202012010667 Test 7 No.5 Final
202012010668 Test 7 No.6 Final
202012010669 Test 7 No.7 Final
202012010670 Test 7 No.8 Final
202012010671 Test 7 No.9 Final

Analysis Date: 12/05/2020

Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE

Tel: (626) 386-1100
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Report: 906153
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
ICPMS Metals by EPA 200.8									
Analytical Batch: 1291550					Analysis Date: 12/08/2020				
LCS1	Lead Total ICAP/MS		50	51.1	ug/L	102	(85-115)		
LCS2	Lead Total ICAP/MS		50	49.1	ug/L	98	(85-115)	20	4.0
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.513	ug/L	103	(50-150)		
MS_202002070534	Lead Total ICAP/MS	ND	50	48.0	ug/L	96	(70-130)		
MS2_202011300341	Lead Total ICAP/MS	ND	50	50.9	ug/L	102	(70-130)		
MSD_202002070534	Lead Total ICAP/MS	ND	50	47.9	ug/L	96	(70-130)	20	0.29
MSD2_202011300341	Lead Total ICAP/MS	ND	50	49.7	ug/L	99	(70-130)	20	2.5
ICPMS Metals by EPA 200.8									
Analytical Batch: 1292379					Analysis Date: 12/06/2020				
LCS1	Lead Total ICAP/MS		50	51.0	ug/L	102	(85-115)		
LCS2	Lead Total ICAP/MS		50	49.8	ug/L	100	(85-115)	20	2.4
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.499	ug/L	100	(50-150)		
MS_202012010060	Lead Total ICAP/MS	190	50	223	ug/L	<u>66</u>	(70-130)		
MS2_202012010381	Lead Total ICAP/MS	ND	50	48.2	ug/L	96	(70-130)		
MSD_202012010060	Lead Total ICAP/MS	190	50	223	ug/L	<u>65</u>	(70-130)	20	0.20
MSD2_202012010381	Lead Total ICAP/MS	ND	50	47.1	ug/L	94	(70-130)	20	2.3
ICPMS Metals by EPA 200.8									
Analytical Batch: 1292380					Analysis Date: 12/05/2020				
LCS1	Lead Total ICAP/MS		50	52.8	ug/L	106	(85-115)		
LCS2	Lead Total ICAP/MS		50	52.9	ug/L	106	(85-115)	20	0.19
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.502	ug/L	101	(50-150)		
MS_202012010663	Lead Total ICAP/MS	420	50	475	ug/L	100	(70-130)		
MS2_202012030039	Lead Total ICAP/MS	ND	50	45.0	ug/L	90	(70-130)		
MSD_202012010663	Lead Total ICAP/MS	420	50	472	ug/L	95	(70-130)	20	0.61
MSD2_202012030039	Lead Total ICAP/MS	ND	50	46.4	ug/L	93	(70-130)	20	3.0

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher

Date of Issue

12/17/2020

Vanessa Berry

**EUROFINS EATON
ANALYTICAL, LLC**



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report,

Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 906979
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1
Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 05, 2020 at 1202**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012050020</u>	Test 8 No. 0 Final	12/01/2020 0805
	@ICPMS	
<u>202012050021</u>	Test 8 No. 1 Final	12/01/2020 0808
	@ICPMS	
<u>202012050022</u>	Test 8 No. 2 Final	12/01/2020 0809
	@ICPMS	
<u>202012050023</u>	Test 8 No. 3 Final	12/01/2020 0810
	@ICPMS	
<u>202012050024</u>	Test 8 No. 4 Final	12/01/2020 0812
	@ICPMS	
<u>202012050025</u>	Test 8 No. 5 Final	12/01/2020 0814
	@ICPMS	
<u>202012050026</u>	Test 8 No. 6 Final	12/01/2020 0815
	@ICPMS	
<u>202012050027</u>	Test 8 No. 7 Final	12/01/2020 0816
	@ICPMS	
<u>202012050028</u>	Test 8 No. 8 Final	12/01/2020 0817
	@ICPMS	
<u>202012050029</u>	Test 8 No. 9 Final	12/01/2020 0818
	@ICPMS	
<u>202012050030</u>	Test 9 No. 0 Final	12/04/2020 0810
	@ICPMS	
<u>202012050031</u>	Test 9 No. 1 Final	12/04/2020 0812
	@ICPMS	
<u>202012050032</u>	Test 9 No. 2 Final	12/04/2020 0814
	@ICPMS	

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 906979
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1
Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 05, 2020 at 1202**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012050033</u>	Test 9 No. 3 Final	12/04/2020 0815
	@ICPMS	
<u>202012050034</u>	Test 9 No. 4 Final	12/04/2020 0816
	@ICPMS	
<u>202012050035</u>	Test 9 No. 5 Final	12/04/2020 0817
	@ICPMS	
<u>202012050036</u>	Test 9 No. 6 Final	12/04/2020 0819
	@ICPMS	
<u>202012050037</u>	Test 9 No. 7 Final	12/04/2020 0820
	@ICPMS	
<u>202012050038</u>	Test 9 No. 8 Final	12/04/2020 0821
	@ICPMS	
<u>202012050039</u>	Test 9 No. 9 Final	12/04/2020 0822
	@ICPMS	
<u>202012050040</u>	Test 9 No. 0 Initial	11/30/2020 0815
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050041</u>	Test 9 No. 1 Initial	11/30/2020 0818
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050042</u>	Test 9 No. 2 Initial	11/30/2020 0820
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050043</u>	Test 9 No. 3 Initial	11/30/2020 0847
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050044</u>	Test 9 No. 4 Initial	11/30/2020 0850
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050045</u>	Test 9 No. 5 Initial	11/30/2020 0852
	Total phosphorus as P	Total phosphorus as PO4- Calc.

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN

Folder #: 906979

Project: KALAMAZOO

Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry

Phone: 503-310-3905

The following samples were received from you on **December 05, 2020 at 1202**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012050046</u>	Test 9 No. 6 Initial	11/30/2020 0920
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050047</u>	Test 9 No. 7 Initial	11/30/2020 0922
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050048</u>	Test 9 No. 8 Initial	11/30/2020 0925
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050049</u>	Test 9 No. 9 Initial	11/30/2020 0950
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050050</u>	Test 10 No. 0 Initial	12/03/2020 0804
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050051</u>	Test 10 No. 1 Initial	12/03/2020 0806
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050052</u>	Test 10 No. 2 Initial	12/03/2020 0809
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050053</u>	Test 10 No. 3 Initial	12/03/2020 0835
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050054</u>	Test 10 No. 4 Initial	12/03/2020 0838
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050055</u>	Test 10 No. 5 Initial	12/03/2020 0840
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050056</u>	Test 10 No. 6 Initial	12/03/2020 0907
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050057</u>	Test 10 No. 7 Initial	12/03/2020 0910
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050058</u>	Test 10 No. 8 Initial	12/03/2020 0913
	Total phosphorus as P	Total phosphorus as PO4- Calc.

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN

Folder #: 906979

Project: KALAMAZOO

Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry

Phone: 503-310-3905

The following samples were received from you on **December 05, 2020 at 1202**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
202012050059	Test 10 No. 9 Initial	12/03/2020 0938
Total phosphorus as P		Total phosphorus as PO4- Calc.

Test Description

@ICPMS -- ICPMS Metals



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS: _____

SAMPLES CHECKED AGAINST COC BY: 906979

SAMPLES LOGGED IN BY: gr

SAMPLE TEMP RECEIVED AT: _____ (check for yes)

(Other) IR Gun ID = _____ (Observation = _____ °C) (Corr. Factor = _____ °C) (Final = _____ °C)

Monrovia IR Gun ID = 63114 (Observation = 1.2 °C) (Corr. Factor = 0.8 °C) (Final = _____ °C)

Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic ☐ No ice ☐ CONDITION OF ICE: Frozen ☒ Partially Frozen _____ Thawed _____ N/A _____

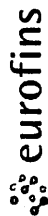
METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx UPS / DHL / Area Fast / Top Line / Other: _____

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:		PROJECT CODE:		COMPLIANCE SAMPLES		NON-COMPLIANCE SAMPLES	
TETA TECH 201 E Pine St Orlando				- Requires state forms		REGULATION INVOLVED:	
EEA CLIENT CODE:		COC ID:		Type of samples (circle one):		(eg. SDWA, NPDES, etc.)	
TETA TECH-ORION				ROUTINE SPECIAL CONFIRMATION			
TAT requested: rush by adv notice only		SAMPLE GROUP:		SEE ATTACHED KIT ORDER FOR ANALYSES		(check for yes) <u>OR</u>	
		STD 1 wk 3 day 2 day 1 day		List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)			
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX	FIELD DATA	FIELD DATA	SAMPLER COMMENTS
12/18/05	8:05	Test 8 No.0 Find 1					
1	8:08	1		fw			Preserved with nitric acid
2	8:09	2					
3	8:10	3					
4	8:12	4					
5	8:14	5					
6	8:15	6					
7	8:16	7					
8	8:17	8					
9	8:18	9					

* MATRIX TYPES: RSW = Raw Surface Water RGW = Raw Ground Water CFW = Chlor(am)inated Finished Water FW = Other Finished Water
BW = Bottled Water SW = Storm Water SEAW = Sea Water WW = Waste Water SO = Soil SL = Sludge
O = Other - Please Identify

SIGNATURE		PRINT NAME		COMPANY/TITLE		DATE		TIME	
SAMPLED BY:	<u>M. Arenas</u>	<u>Maria Isabel Arenas</u>	<u>Tetra Tech, Project Engineer</u>	<u>12/14/20</u>	<u>4:30 PM</u>				
RELINQUISHED BY:									
RECEIVED BY:									
RELINQUISHED BY:									
RECEIVED BY:									



Eaton Analytical

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED AGAINST COC BY: 906973

SAMPLES LOGGED IN BY: R

SAMPLE TEMP RECEIVED AT:
☐ (Other) IR Gun ID = _____ (Observation = _____ °C) (check for yes)
☒ Monrovia IR Gun ID = 631A (Observation = 1.2 °C) (Final = 0.2 °C)
Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic ☐ No Ice ☐ **CONDITION OF ICE:** Frozen ☒ Partially Frozen ☐ Thawed ☐ N/A ☐

METHOD OF SHIPMENT: Pick-Up / Walk-In ☒ UPS / DHL / Area Fast / Top Line / Other: _____

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:		PROJECT CODE:	COMPLIANCE SAMPLES <input type="checkbox"/> NON-COMPLIANCE SAMPLES <input type="checkbox"/>					
			REGULATION INVOLVED: (eg. SDWA, NPDES, etc.)					
EEA CLIENT CODE:		COC ID:	Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION					
			SEE ATTACHED KIT ORDER FOR ANALYSES (check for yes) <input type="checkbox"/> OR					
			List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)					
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX	FIELD DATA	FIELD DATA	FIELD DATA	SAMPLER COMMENTS
11/30	8:15	Test 9 No.0 initial		fw				
	8:18							
	8:20							
	8:47							
	8:50							
	8:52							
	9:10							
	9:22							
	9:25							
	9:50							

* **MATRIX TYPES:** RSW = Raw Surface Water CFW = Chlor(am)inated Finished Water SEAW = Sea Water BW = Bottled Water SO = Soil
RGW = Raw Ground Water FW = Other Finished Water WW = Waste Water SW = Storm Water SL = Sludge O = Other - Please Identify

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
<u>M. Alegus</u>	MARIA ISABEL ALEGUS	Tetra Tech	12/14/20	4:30 PM
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:	<u>Schleder Mon</u>	<u>Gen</u>	12-5-20	12:02



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

Phone: 626 386 1100
Fax: 626 386 1101

800 566 LABS (800 566 5227)

Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLE TEMP RECEIVED AT:

☐ (Other)

IR Gun ID =

(Observation =

°C)

(check for yes)

SAMPLES LOGGED IN BY:

☒ Monrovia

IR Gun ID =

(Observation =

°C)

(check for yes)

SAMPLES LOGGED IN BY:

Compliance Acceptance Criteria: (Chemistry: $\pm 2^{\circ}\text{C}$) (Microbiology: $< 10^{\circ}\text{C}$)

TYPE OF ICE: Real ☒ Synthetic ☐

No Ice ☒

CONDITION OF ICE: Frozen ☒

Partially Frozen ☐

Thawed ☐

N/A

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other:

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:

PROJECT CODE:

SAMPLE GROUP:

COMPLIANCE SAMPLES

- Requires state forms

NON-COMPLIANCE SAMPLES

REGULATION INVOLVED:

Type of samples (circle one):

ROUTINE

SPECIAL

CONFIRMATION

(eg. SDWA, NPDES, etc.)

SEE ATTACHED KIT ORDER FOR ANALYSES

(check for yes), OR

List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)

EEA CLIENT CODE:

COC ID:

STD

1 wk 3 day 2 day 1 day

TAT requested: rush by adv notice only

SAMPLE ID

CLIENT LAB ID

MATRIX

FIELD DATA

FIELD DATA

SAMPLE DATE

SAMPLE TIME

12/13 8:04

test 10 No. 0 initial

1

8:06

2

8:04

3

8:35

4

8:38

5

8:40

6

9:09

7

9:10

8

9:13

9

9:38

SAMPLER COMMENTS

note 1

SEAW = Sea Water

BW = Bottled Water

SO = Soil

SW = Storm Water

SL = Sludge

O = Other - Please Identify

SAMPLED BY: M. ARENGAS

RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY:

SIGNATURE

PRINT NAME

COMPANY/TITLE

DATE

TIME

12/14/20

4:30 PM

12-5-20

12/22

PAGE

OF

QA FO 0029.2 (Version 2) (08/28/2014)

Page 11 of 26 pages



Eaton Analytical

Kit Order for Tetra Tech Inc.

Vanessa Berry is your Eurofins Eaton Analytical, LLC Service Manager

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
(626) 386-1100 FAX (866) 988-3757

Created Date & Time: 10/24/2020 12:10:38AM

Note: Sampler Please return this paper with your samples

Kit #: 275596
Created By: - [AutoGenerated]
Deliver By: 11/23/2020
STG: Bottle Orders
Ice Type: W

Client ID: TETRATECH-ORLAN
Project Code: KALAMAZOO Bottle Orders
Group Name: Lead Solubility Testing - Phase 1
PO#/JOB#:
Description: Every 1 week on Mon

Ship Sample Kits to
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

Send Report to
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

Billing Address
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

# of Sample Tests	Bottle Qty - Type [preservative information]	Total	UN DOT #
20	Total phosphorus as P	20	UN1830
20	@ICPMS	20	
Sum Tests: 40		Sum Bottles: 40	
Comments			
include return shipping labels ship in one cooler COCs			
Total lead containers are preserved with nitric acid by the client.			

9284 5115 4860

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments**Report:** 906979**Project:** KALAMAZOO**Group:** Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Flags Legend:

M1 - Matrix spike recovery was high; the associated blank spike recovery was acceptable.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/05/2020 1202

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/12/2020 15:24	202012050020 Lead Total ICAP/MS	<u>Test 8 No. 0 Final</u>	400	15	ug/L	0.50
12/12/2020 15:25	202012050021 Lead Total ICAP/MS	<u>Test 8 No. 1 Final</u>	640	15	ug/L	0.50
12/08/2020 21:59	202012050022 Lead Total ICAP/MS	<u>Test 8 No. 2 Final</u>	580	15	ug/L	0.50
12/08/2020 22:01	202012050023 Lead Total ICAP/MS	<u>Test 8 No. 3 Final</u>	390	15	ug/L	0.50
12/12/2020 15:26	202012050024 Lead Total ICAP/MS	<u>Test 8 No. 4 Final</u>	190	15	ug/L	0.50
12/12/2020 15:26	202012050025 Lead Total ICAP/MS	<u>Test 8 No. 5 Final</u>	760	15	ug/L	0.50
12/12/2020 15:27	202012050026 Lead Total ICAP/MS	<u>Test 8 No. 6 Final</u>	380	15	ug/L	0.50
12/12/2020 15:28	202012050027 Lead Total ICAP/MS	<u>Test 8 No. 7 Final</u>	260	15	ug/L	0.50
12/12/2020 15:29	202012050028 Lead Total ICAP/MS	<u>Test 8 No. 8 Final</u>	1200	15	ug/L	0.50
12/08/2020 22:16	202012050029 Lead Total ICAP/MS	<u>Test 8 No. 9 Final</u>	1700	15	ug/L	5.0
12/12/2020 15:39	202012050030 Lead Total ICAP/MS	<u>Test 9 No. 0 Final</u>	150	15	ug/L	0.50
12/12/2020 15:41	202012050031 Lead Total ICAP/MS	<u>Test 9 No. 1 Final</u>	190	15	ug/L	0.50
12/12/2020 15:42	202012050032 Lead Total ICAP/MS	<u>Test 9 No. 2 Final</u>	240	15	ug/L	0.50
12/12/2020 15:43	202012050033 Lead Total ICAP/MS	<u>Test 9 No. 3 Final</u>	440	15	ug/L	0.50
12/08/2020 22:05	202012050034 Lead Total ICAP/MS	<u>Test 9 No. 4 Final</u>	380	15	ug/L	0.50
	202012050035	<u>Test 9 No. 5 Final</u>				

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/05/2020 1202

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/12/2020 15:44	Lead Total ICAP/MS		210	15	ug/L	0.50
	202012050036	<u>Test 9 No. 6 Final</u>				
12/12/2020 15:46	Lead Total ICAP/MS		210	15	ug/L	0.50
	202012050037	<u>Test 9 No. 7 Final</u>				
12/12/2020 15:47	Lead Total ICAP/MS		130	15	ug/L	0.50
	202012050038	<u>Test 9 No. 8 Final</u>				
12/12/2020 15:48	Lead Total ICAP/MS		610	15	ug/L	0.50
	202012050039	<u>Test 9 No. 9 Final</u>				
12/12/2020 15:49	Lead Total ICAP/MS		690	15	ug/L	0.50
	202012050041	<u>Test 9 No. 1 Initial</u>				
12/14/2020 12:25	Total phosphorus as P		0.096		mg/L	0.020
12/15/2020 06:57	Total phosphorus as PO4- Calc.		0.29		mg/L	0.030
	202012050042	<u>Test 9 No. 2 Initial</u>				
12/14/2020 12:28	Total phosphorus as P		1.0		mg/L	0.040
12/15/2020 06:57	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
	202012050043	<u>Test 9 No. 3 Initial</u>				
12/16/2020 09:10	Total phosphorus as P		2.0		mg/L	0.10
12/15/2020 06:57	Total phosphorus as PO4- Calc.		6.1		mg/L	0.030
	202012050044	<u>Test 9 No. 4 Initial</u>				
12/14/2020 12:30	Total phosphorus as P		0.61		mg/L	0.040
12/15/2020 06:57	Total phosphorus as PO4- Calc.		1.9		mg/L	0.030
	202012050045	<u>Test 9 No. 5 Initial</u>				
12/14/2020 12:31	Total phosphorus as P		1.3		mg/L	0.040
12/15/2020 06:57	Total phosphorus as PO4- Calc.		4.0		mg/L	0.030
	202012050046	<u>Test 9 No. 6 Initial</u>				
12/14/2020 12:31	Total phosphorus as P		0.55		mg/L	0.040
12/15/2020 06:57	Total phosphorus as PO4- Calc.		1.7		mg/L	0.030
	202012050047	<u>Test 9 No. 7 Initial</u>				
12/14/2020 12:32	Total phosphorus as P		1.2		mg/L	0.040
12/15/2020 06:58	Total phosphorus as PO4- Calc.		3.7		mg/L	0.030
	202012050048	<u>Test 9 No. 8 Initial</u>				
12/14/2020 12:33	Total phosphorus as P		0.46		mg/L	0.040

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/05/2020 1202

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/15/2020 06:58	Total phosphorus as PO4- Calc.		1.4		mg/L	0.030
	202012050049	<u>Test 9 No. 9 Initial</u>				
12/14/2020 12:34	Total phosphorus as P		1.0		mg/L	0.040
12/15/2020 06:58	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
	202012050051	<u>Test 10 No. 1 Initial</u>				
12/16/2020 09:11	Total phosphorus as P		0.10		mg/L	0.020
12/16/2020 14:01	Total phosphorus as PO4- Calc.		0.31		mg/L	0.030
	202012050052	<u>Test 10 No. 2 Initial</u>				
12/16/2020 09:12	Total phosphorus as P		1.0		mg/L	0.040
12/16/2020 14:04	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
	202012050053	<u>Test 10 No. 3 Initial</u>				
12/16/2020 09:30	Total phosphorus as P		1.0		mg/L	0.040
12/16/2020 14:04	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
	202012050054	<u>Test 10 No. 4 Initial</u>				
12/16/2020 09:31	Total phosphorus as P		0.58		mg/L	0.040
12/16/2020 14:05	Total phosphorus as PO4- Calc.		1.8		mg/L	0.030
	202012050055	<u>Test 10 No. 5 Initial</u>				
12/16/2020 09:32	Total phosphorus as P		1.2		mg/L	0.040
12/16/2020 14:05	Total phosphorus as PO4- Calc.		3.7		mg/L	0.030
	202012050056	<u>Test 10 No. 6 Initial</u>				
12/16/2020 09:33	Total phosphorus as P		0.55		mg/L	0.040
12/16/2020 14:05	Total phosphorus as PO4- Calc.		1.7		mg/L	0.030
	202012050057	<u>Test 10 No. 7 Initial</u>				
12/16/2020 09:34	Total phosphorus as P		1.0		mg/L	0.040
12/16/2020 14:05	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
	202012050058	<u>Test 10 No. 8 Initial</u>				
12/16/2020 09:35	Total phosphorus as P		0.46		mg/L	0.040
12/16/2020 14:05	Total phosphorus as PO4- Calc.		1.4		mg/L	0.030
	202012050059	<u>Test 10 No. 9 Initial</u>				
12/16/2020 09:36	Total phosphorus as P		0.95		mg/L	0.040
12/16/2020 14:05	Total phosphorus as PO4- Calc.		2.9		mg/L	0.030

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/05/2020 1202

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>Test 8 No. 0 Final (202012050020)</u>						Sampled on 12/01/2020 0805			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:24	1292485	1293889	(EPA 200.8)	Lead Total ICAP/MS	400	ug/L	0.50	1
<u>Test 8 No. 1 Final (202012050021)</u>						Sampled on 12/01/2020 0808			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:25	1292485	1293889	(EPA 200.8)	Lead Total ICAP/MS	640	ug/L	0.50	1
<u>Test 8 No. 2 Final (202012050022)</u>						Sampled on 12/01/2020 0809			
EPA 200.8 - ICPMS Metals									
12/07/20	12/08/20 21:59	1292485	1292499	(EPA 200.8)	Lead Total ICAP/MS	580	ug/L	0.50	1
<u>Test 8 No. 3 Final (202012050023)</u>						Sampled on 12/01/2020 0810			
EPA 200.8 - ICPMS Metals									
12/07/20	12/08/20 22:01	1292485	1292499	(EPA 200.8)	Lead Total ICAP/MS	390	ug/L	0.50	1
<u>Test 8 No. 4 Final (202012050024)</u>						Sampled on 12/01/2020 0812			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:26	1292485	1293889	(EPA 200.8)	Lead Total ICAP/MS	190	ug/L	0.50	1
<u>Test 8 No. 5 Final (202012050025)</u>						Sampled on 12/01/2020 0814			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:26	1292485	1293889	(EPA 200.8)	Lead Total ICAP/MS	760	ug/L	0.50	1
<u>Test 8 No. 6 Final (202012050026)</u>						Sampled on 12/01/2020 0815			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:27	1292485	1293889	(EPA 200.8)	Lead Total ICAP/MS	380	ug/L	0.50	1
<u>Test 8 No. 7 Final (202012050027)</u>						Sampled on 12/01/2020 0816			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:28	1292485	1293889	(EPA 200.8)	Lead Total ICAP/MS	260	ug/L	0.50	1
<u>Test 8 No. 8 Final (202012050028)</u>						Sampled on 12/01/2020 0817			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:29	1292485	1293889	(EPA 200.8)	Lead Total ICAP/MS	1200	ug/L	0.50	1
<u>Test 8 No. 9 Final (202012050029)</u>						Sampled on 12/01/2020 0818			
EPA 200.8 - ICPMS Metals									

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Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
12/07/20	12/08/20 22:16	1292485	1292499	(EPA 200.8)	Lead Total ICAP/MS	1700	ug/L	5.0	10
<u>Test 9 No. 0 Final (202012050030)</u>						Sampled on 12/04/2020 0810			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:39	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	150	ug/L	0.50	1
<u>Test 9 No. 1 Final (202012050031)</u>						Sampled on 12/04/2020 0812			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:41	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	190	ug/L	0.50	1
<u>Test 9 No. 2 Final (202012050032)</u>						Sampled on 12/04/2020 0814			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:42	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	240	ug/L	0.50	1
<u>Test 9 No. 3 Final (202012050033)</u>						Sampled on 12/04/2020 0815			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:43	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	440	ug/L	0.50	1
<u>Test 9 No. 4 Final (202012050034)</u>						Sampled on 12/04/2020 0816			
EPA 200.8 - ICPMS Metals									
12/07/20	12/08/20 22:05	1292485	1292499	(EPA 200.8)	Lead Total ICAP/MS	380	ug/L	0.50	1
<u>Test 9 No. 5 Final (202012050035)</u>						Sampled on 12/04/2020 0817			
EPA 200.8 - ICPMS Metals									
	12/12/20 15:44	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	210	ug/L	0.50	1
<u>Test 9 No. 6 Final (202012050036)</u>						Sampled on 12/04/2020 0819			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:46	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	210	ug/L	0.50	1
<u>Test 9 No. 7 Final (202012050037)</u>						Sampled on 12/04/2020 0820			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:47	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	130	ug/L	0.50	1
<u>Test 9 No. 8 Final (202012050038)</u>						Sampled on 12/04/2020 0821			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:48	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	610	ug/L	0.50	1
<u>Test 9 No. 9 Final (202012050039)</u>						Sampled on 12/04/2020 0822			

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Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:49	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	690	ug/L	0.50	1
Test 9 No. 0 Initial (202012050040)						Sampled on 11/30/2020 0815			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:57			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	ND (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:22		1294151	(SM4500-PE/EPA 365.1)	Total phosphorus as P	ND (M1)	mg/L	0.020	1
Test 9 No. 1 Initial (202012050041)						Sampled on 11/30/2020 0818			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:57			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.29 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:25		1294151	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.096	mg/L	0.020	1
Test 9 No. 2 Initial (202012050042)						Sampled on 11/30/2020 0820			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:57			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:28		1294151	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
Test 9 No. 3 Initial (202012050043)						Sampled on 11/30/2020 0847			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:57			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	6.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/16/20 09:10		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	2.0	mg/L	0.10	5
Test 9 No. 4 Initial (202012050044)						Sampled on 11/30/2020 0850			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:57			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.9 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:30		1294151	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.61	mg/L	0.040	2
Test 9 No. 5 Initial (202012050045)						Sampled on 11/30/2020 0852			

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Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:57			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	4.0 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:31	1294151		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.3	mg/L	0.040	2
Test 9 No. 6 Initial (202012050046)						Sampled on 11/30/2020 0920			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:57			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.7 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:31	1294151		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.55	mg/L	0.040	2
Test 9 No. 7 Initial (202012050047)						Sampled on 11/30/2020 0922			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:58			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.7 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:32	1294151		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.2	mg/L	0.040	2
Test 9 No. 8 Initial (202012050048)						Sampled on 11/30/2020 0925			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:58			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.4 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:33	1294151		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.46	mg/L	0.040	2
Test 9 No. 9 Initial (202012050049)						Sampled on 11/30/2020 0950			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:58			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:34	1294151		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
Test 10 No. 0 Initial (202012050050)						Sampled on 12/03/2020 0804			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									

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12/05/2020 1202

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	12/16/20 14:00			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	ND (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/16/20 09:07		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	ND	mg/L	0.020	1
Test 10 No. 1 Initial (202012050051)						Sampled on 12/03/2020 0806			
					SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.				
	12/16/20 14:01			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.31 (c)	mg/L	0.030	1
					SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)				
	12/16/20 09:11		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.10	mg/L	0.020	1
Test 10 No. 2 Initial (202012050052)						Sampled on 12/03/2020 0809			
					SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.				
	12/16/20 14:04			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
					SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)				
	12/16/20 09:12		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
Test 10 No. 3 Initial (202012050053)						Sampled on 12/03/2020 0835			
					SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.				
	12/16/20 14:04			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
					SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)				
	12/16/20 09:30		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
Test 10 No. 4 Initial (202012050054)						Sampled on 12/03/2020 0838			
					SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.				
	12/16/20 14:05			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.8 (c)	mg/L	0.030	1
					SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)				
	12/16/20 09:31		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.58	mg/L	0.040	2
Test 10 No. 5 Initial (202012050055)						Sampled on 12/03/2020 0840			
					SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.				
	12/16/20 14:05			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.7 (c)	mg/L	0.030	1
					SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)				

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Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	12/16/20 09:32		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.2	mg/L	0.040	2
<u>Test 10 No. 6 Initial (202012050056)</u>						Sampled on 12/03/2020 0907			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/16/20 14:05			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.7 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/16/20 09:33		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.55	mg/L	0.040	2
<u>Test 10 No. 7 Initial (202012050057)</u>						Sampled on 12/03/2020 0910			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/16/20 14:05			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/16/20 09:34		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
<u>Test 10 No. 8 Initial (202012050058)</u>						Sampled on 12/03/2020 0913			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/16/20 14:05			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.4 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/16/20 09:35		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.46	mg/L	0.040	2
<u>Test 10 No. 9 Initial (202012050059)</u>						Sampled on 12/03/2020 0938			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/16/20 14:05			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.9 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/16/20 09:36		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.95	mg/L	0.040	2

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Tetra Tech

ICPMS Metals

Prep Batch: 1292485 Analytical Batch: 1292499

202012050022	Test 8 No. 2 Final
202012050023	Test 8 No. 3 Final
202012050029	Test 8 No. 9 Final
202012050034	Test 9 No. 4 Final

Analysis Date: 12/08/2020

Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7

ICPMS Metals

Prep Batch: 1292485 Analytical Batch: 1293889

202012050020	Test 8 No. 0 Final
202012050021	Test 8 No. 1 Final
202012050024	Test 8 No. 4 Final
202012050025	Test 8 No. 5 Final
202012050026	Test 8 No. 6 Final
202012050027	Test 8 No. 7 Final
202012050028	Test 8 No. 8 Final

Analysis Date: 12/12/2020

Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE

ICPMS Metals

Prep Batch: 1292485 Analytical Batch: 1293890

202012050030	Test 9 No. 0 Final
202012050031	Test 9 No. 1 Final
202012050032	Test 9 No. 2 Final
202012050033	Test 9 No. 3 Final
202012050035	Test 9 No. 5 Final
202012050036	Test 9 No. 6 Final
202012050037	Test 9 No. 7 Final
202012050038	Test 9 No. 8 Final
202012050039	Test 9 No. 9 Final

Analysis Date: 12/12/2020

Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE

Total phosphorus as P (T-P)

Analytical Batch: 1294151

202012050040	Test 9 No. 0 Initial
202012050041	Test 9 No. 1 Initial
202012050042	Test 9 No. 2 Initial
202012050044	Test 9 No. 4 Initial
202012050045	Test 9 No. 5 Initial
202012050046	Test 9 No. 6 Initial
202012050047	Test 9 No. 7 Initial
202012050048	Test 9 No. 8 Initial
202012050049	Test 9 No. 9 Initial

Analysis Date: 12/14/2020

Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG

Total phosphorus as P (T-P)

Analytical Batch: 1294580

202012050043	Test 9 No. 3 Initial
202012050050	Test 10 No. 0 Initial
202012050051	Test 10 No. 1 Initial
202012050052	Test 10 No. 2 Initial
202012050053	Test 10 No. 3 Initial

Analysis Date: 12/16/2020

Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 906979**Project:** KALAMAZOO**Group:** Lead Solubility Testing - Phase 1

Tetra Tech

202012050054	Test 10 No. 4 Initial	Analyzed by: H5VG
202012050055	Test 10 No. 5 Initial	Analyzed by: H5VG
202012050056	Test 10 No. 6 Initial	Analyzed by: H5VG
202012050057	Test 10 No. 7 Initial	Analyzed by: H5VG
202012050058	Test 10 No. 8 Initial	Analyzed by: H5VG
202012050059	Test 10 No. 9 Initial	Analyzed by: H5VG

Tel: (626) 386-1100
Fax: (626) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
ICPMS Metals by EPA 200.8									
Analytical Batch: 1292499					Analysis Date: 12/08/2020				
LCS1	Lead Total ICAP/MS		50	52.3	ug/L	105	(85-115)		
LCS2	Lead Total ICAP/MS		50	52.0	ug/L	104	(85-115)	20	0.57
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.552	ug/L	110	(50-150)		
MS_202012020254	Lead Total ICAP/MS	ND	50	49.7	ug/L	99	(70-130)		
MS2_202012040143	Lead Total ICAP/MS	ND	50	48.9	ug/L	98	(70-130)		
MSD_202012020254	Lead Total ICAP/MS	ND	50	49.2	ug/L	98	(70-130)	20	1.1
MSD2_202012040143	Lead Total ICAP/MS	ND	50	49.3	ug/L	98	(70-130)	20	0.84
ICPMS Metals by EPA 200.8									
Analytical Batch: 1293889					Analysis Date: 12/12/2020				
LCS1	Lead Total ICAP/MS		50	50.8	ug/L	102	(85-115)		
LCS2	Lead Total ICAP/MS		50	51.4	ug/L	103	(85-115)	20	1.2
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.491	ug/L	98	(50-150)		
MS_202012030654	Lead Total ICAP/MS	1300	50	1310	ug/L	88	(70-130)		
MS2_202012030664	Lead Total ICAP/MS	880	50	922	ug/L	91	(70-130)		
MSD_202012030654	Lead Total ICAP/MS	1300	50	1320	ug/L	108	(70-130)	20	0.77
MSD2_202012030664	Lead Total ICAP/MS	880	50	922	ug/L	90	(70-130)	20	0.052
ICPMS Metals by EPA 200.8									
Analytical Batch: 1293890					Analysis Date: 12/12/2020				
LCS1	Lead Total ICAP/MS		50	51.8	ug/L	104	(85-115)		
LCS2	Lead Total ICAP/MS		50	51.3	ug/L	103	(85-115)	20	1.2
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.480	ug/L	96	(50-150)		
MS_202012050030	Lead Total ICAP/MS	150	50	199	ug/L	102	(70-130)		
MS2_202012080203	Lead Total ICAP/MS	ND	50	44.1	ug/L	88	(70-130)		
MSD_202012050030	Lead Total ICAP/MS	150	50	197	ug/L	98	(70-130)	20	1.2
MSD2_202012080203	Lead Total ICAP/MS	ND	50	44.1	ug/L	88	(70-130)	20	0.084
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1294151					Analysis Date: 12/14/2020				
LCS1	Total phosphorus as P		0.4	0.414	mg/L	104	(90-110)		
LCS2	Total phosphorus as P		0.4	0.415	mg/L	104	(90-110)	20	0.24
MBLK	Total phosphorus as P			<0.01	mg/L				

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

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1 800 566 LABS (1 800 566 5227)

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
MRL_CHK	Total phosphorus as P		0.02	0.0212	mg/L	106	(50-150)		
MS_202012030370	Total phosphorus as P	0.075	0.4	0.504	mg/L	107	(90-110)		
MS_202012050040	Total phosphorus as P	ND	0.4	0.404	mg/L	101	(90-110)		
MSD_202012030370	Total phosphorus as P	0.075	0.4	0.499	mg/L	106	(90-110)	20	1
MSD_202012050040	Total phosphorus as P	ND	0.4	0.536	mg/L	<u>134</u>	(90-110)	20	<u>28</u>

Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1

Analytical Batch: 1294580

Analysis Date: 12/16/2020

LCS1	Total phosphorus as P		0.4	0.416	mg/L	104	(90-110)		
LCS2	Total phosphorus as P		0.4	0.409	mg/L	102	(90-110)	20	1.7
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0206	mg/L	103	(50-150)		
MS_202012050050	Total phosphorus as P	ND	0.4	0.423	mg/L	103	(90-110)		
MS_202012050059	Total phosphorus as P	0.95	0.8	1.78	mg/L	104	(90-110)		
MSD_202012050050	Total phosphorus as P	ND	0.4	0.421	mg/L	102	(90-110)	20	0.43
MSD_202012050059	Total phosphorus as P	0.95	0.8	1.78	mg/L	104	(90-110)	20	0.21

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
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Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
12/21/2020

Vanessa Berry
EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 908292
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 908292
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 14, 2020 at 10:43**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012140050</u>	Test 10 No. 0 Final	12/08/2020 0807
	@ICPMS	
<u>202012140051</u>	Test 10 No. 1 Final	12/08/2020 0808
	@ICPMS	
<u>202012140052</u>	Test 10 No. 2 Final	12/08/2020 0809
	@ICPMS	
<u>202012140053</u>	Test 10 No. 3 Final	12/08/2020 0810
	@ICPMS	
<u>202012140054</u>	Test 10 No. 4 Final	12/08/2020 0811
	@ICPMS	
<u>202012140055</u>	Test 10 No. 5 Final	12/08/2020 0812
	@ICPMS	
<u>202012140056</u>	Test 10 No. 6 Final	12/08/2020 0813
	@ICPMS	
<u>202012140057</u>	Test 10 No. 7 Final	12/08/2020 0814
	@ICPMS	
<u>202012140058</u>	Test 10 No. 8 Final	12/08/2020 0815
	@ICPMS	
<u>202012140059</u>	Test 10 No. 9 Final	12/08/2020 0816
	@ICPMS	

Test Description

@ICPMS -- ICPMS Metals



Eaton Analytical

CHAIN OF CUSTODY RECORD

908292

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLES CHECKED AGAINST COC BY: 13

SAMPLES LOGGED IN BY: 35

SAMPLE TEMP RECEIVED AT:

☐ (Other) IR Gun ID = _____

☒ Monrovia IR Gun ID = 616

(Observation = 2.7 °C) (Final = 2.5 °C)

(Observation = 2.7 °C) (Final = 2.5 °C)

Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic ☐ No Ice ☐

CONDITION OF ICE: Frozen ☐ Partially Frozen ☒ Thawed ☐ N/A

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx UPS / DHL / Area Fast / Top Line / Other: _____

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:

Tetra Tech 201 E Pine St Orlando

EEA CLIENT CODE:

Tetra Tech-Orlan

COC ID:

Lead Solubility Test Phase 1

TAT requested: rush by adv notice only

STD 1 wk 3 day 2 day 1 day

PROJECT CODE:

92845116437

SAMPLE GROUP:

Lead Solubility Test Phase 1

COMPLIANCE SAMPLES ☐ NON-COMPLIANCE SAMPLES ☐

- Requires state forms

REGULATION INVOLVED: (eg. SDWA, NPDES, etc.)

Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION

SEE ATTACHED KIT ORDER FOR ANALYSES

List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)

SAMPLER COMMENTS

Lead

Preserved with nitric acid by Tetra Tech

12/18 8:07

1

2

3

4

5

6

7

8

9

Test 10 No. 0 Final

12/18 8:08

1

2

3

4

5

6

7

8

9

* MATRIX TYPES: RSW = Raw Surface Water

RGW = Raw Ground Water

CFW = Chlor(am)inated Finished Water

FW = Other Finished Water

SEAW = Sea Water

WW = Waste Water

BW = Bottled Water

SW = Storm Water

SO = Soil

SL = Sludge

O = Other - Please Identify

SIGNATURE

SAMPLED BY: M. Arenas

RELINQUISHED BY: Chuck Becker

RECEIVED BY: Chuck Becker

RELINQUISHED BY: Chuck Becker

RECEIVED BY: Chuck Becker

PRINT NAME

Maria Isabel Arenas

"

Chuck Becker

"

Chuck Becker

COMPANY/TITLE

Tetra Tech, Project Engineer

"

CTA

"

CTA

DATE

12/11/20

"

12-14/20

"

1043

TIME

4:30 PM

"

"

"

"

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments

Report: 908292

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 908292
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/14/2020 10:43

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/17/2020 15:40	202012140050 Lead Total ICAP/MS	<u>Test 10 No. 0 Final</u>	180	15	ug/L	0.50
12/17/2020 15:42	202012140051 Lead Total ICAP/MS	<u>Test 10 No. 1 Final</u>	220	15	ug/L	0.50
12/17/2020 15:43	202012140052 Lead Total ICAP/MS	<u>Test 10 No. 2 Final</u>	310	15	ug/L	0.50
12/17/2020 15:45	202012140053 Lead Total ICAP/MS	<u>Test 10 No. 3 Final</u>	240	15	ug/L	0.50
12/17/2020 15:47	202012140054 Lead Total ICAP/MS	<u>Test 10 No. 4 Final</u>	320	15	ug/L	0.50
12/17/2020 15:53	202012140055 Lead Total ICAP/MS	<u>Test 10 No. 5 Final</u>	290	15	ug/L	0.50
12/19/2020 14:18	202012140056 Lead Total ICAP/MS	<u>Test 10 No. 6 Final</u>	280	15	ug/L	0.50
12/17/2020 15:55	202012140057 Lead Total ICAP/MS	<u>Test 10 No. 7 Final</u>	190	15	ug/L	0.50
12/19/2020 14:21	202012140058 Lead Total ICAP/MS	<u>Test 10 No. 8 Final</u>	790	15	ug/L	0.50
12/17/2020 16:24	202012140059 Lead Total ICAP/MS	<u>Test 10 No. 9 Final</u>	980	15	ug/L	5.0

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 908292
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/14/2020 10:43

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>Test 10 No. 0 Final (202012140050)</u>						Sampled on 12/08/2020 0807			
EPA 200.8 - ICPMS Metals									
12/14/20	12/17/20 15:40	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	180	ug/L	0.50	1
<u>Test 10 No. 1 Final (202012140051)</u>						Sampled on 12/08/2020 0808			
EPA 200.8 - ICPMS Metals									
12/14/20	12/17/20 15:42	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	220	ug/L	0.50	1
<u>Test 10 No. 2 Final (202012140052)</u>						Sampled on 12/08/2020 0809			
EPA 200.8 - ICPMS Metals									
12/14/20	12/17/20 15:43	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	310	ug/L	0.50	1
<u>Test 10 No. 3 Final (202012140053)</u>						Sampled on 12/08/2020 0810			
EPA 200.8 - ICPMS Metals									
12/14/20	12/17/20 15:45	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	240	ug/L	0.50	1
<u>Test 10 No. 4 Final (202012140054)</u>						Sampled on 12/08/2020 0811			
EPA 200.8 - ICPMS Metals									
	12/17/20 15:47	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	320	ug/L	0.50	1
<u>Test 10 No. 5 Final (202012140055)</u>						Sampled on 12/08/2020 0812			
EPA 200.8 - ICPMS Metals									
12/14/20	12/17/20 15:53	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	290	ug/L	0.50	1
<u>Test 10 No. 6 Final (202012140056)</u>						Sampled on 12/08/2020 0813			
EPA 200.8 - ICPMS Metals									
12/14/20	12/19/20 14:18	1294033	1295227	(EPA 200.8)	Lead Total ICAP/MS	280	ug/L	0.50	1
<u>Test 10 No. 7 Final (202012140057)</u>						Sampled on 12/08/2020 0814			
EPA 200.8 - ICPMS Metals									
12/14/20	12/17/20 15:55	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	190	ug/L	0.50	1
<u>Test 10 No. 8 Final (202012140058)</u>						Sampled on 12/08/2020 0815			
EPA 200.8 - ICPMS Metals									
12/14/20	12/19/20 14:21	1294033	1295227	(EPA 200.8)	Lead Total ICAP/MS	790	ug/L	0.50	1
<u>Test 10 No. 9 Final (202012140059)</u>						Sampled on 12/08/2020 0816			
EPA 200.8 - ICPMS Metals									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 908292
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/14/2020 10:43

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
12/14/20	12/17/20 16:24	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	980	ug/L	5.0	10

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

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Laboratory QC Summary

Report: 908292
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

ICPMS Metals

Prep Batch: 1294033 Analytical Batch: 1294416

202012140050	Test 10 No. 0 Final
202012140051	Test 10 No. 1 Final
202012140052	Test 10 No. 2 Final
202012140053	Test 10 No. 3 Final
202012140054	Test 10 No. 4 Final
202012140055	Test 10 No. 5 Final
202012140057	Test 10 No. 7 Final
202012140059	Test 10 No. 9 Final

Analysis Date: 12/17/2020

Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7

ICPMS Metals

Prep Batch: 1294033 Analytical Batch: 1295227

202012140056	Test 10 No. 6 Final
202012140058	Test 10 No. 8 Final

Analysis Date: 12/19/2020

Analyzed by: URDE
Analyzed by: URDE

Tel: (626) 386-1100
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1 800 566 LABS (1 800 566 5227)

Report: 908292
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
ICPMS Metals by EPA 200.8									
Analytical Batch: 1294416					Analysis Date: 12/17/2020				
LCS1	Lead Total ICAP/MS		50	51.8	ug/L	104	(85-115)		
LCS2	Lead Total ICAP/MS		50	51.6	ug/L	103	(85-115)	20	0.39
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.534	ug/L	107	(50-150)		
MS_202012150315	Lead Total ICAP/MS	ND	50	50.6	ug/L	101	(70-130)		
MS2_202012151087	Lead Total ICAP/MS	ND	50	49.9	ug/L	100	(70-130)		
MSD_202012150315	Lead Total ICAP/MS	ND	50	50.7	ug/L	101	(70-130)	20	0.19
MSD2_202012151087	Lead Total ICAP/MS	ND	50	50.2	ug/L	100	(70-130)	20	0.61
ICPMS Metals by EPA 200.8									
Analytical Batch: 1295227					Analysis Date: 12/19/2020				
LCS1	Lead Total ICAP/MS		50	51.2	ug/L	102	(85-115)		
LCS2	Lead Total ICAP/MS		50	50.5	ug/L	101	(85-115)	20	1.4
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.538	ug/L	108	(50-150)		
MS_202012140056	Lead Total ICAP/MS	280	50	322	ug/L	82	(70-130)		
MS2_202012150405	Lead Total ICAP/MS	ND	50	48.2	ug/L	96	(70-130)		
MSD_202012140056	Lead Total ICAP/MS	280	50	339	ug/L	115	(70-130)	20	5.0
MSD2_202012150405	Lead Total ICAP/MS	ND	50	47.5	ug/L	95	(70-130)	20	1.6

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
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Fax: (866) 988-3757
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Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
12/21/2020

Vanessa Berry

**EUROFINS EATON
ANALYTICAL, LLC**



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 908293
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 908293
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 14, 2020 at 10:43**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012140060</u>	Test 11 No. 0 Final	12/11/2020 0801
	@ICPMS	
<u>202012140061</u>	Test 11 No. 1 Final	12/11/2020 0802
	@ICPMS	
<u>202012140062</u>	Test 11 No. 2 Final	12/11/2020 0803
	@ICPMS	
<u>202012140063</u>	Test 11 No. 3 Final	12/11/2020 0804
	@ICPMS	
<u>202012140064</u>	Test 11 No. 4 Final	12/11/2020 0804
	@ICPMS	
<u>202012140065</u>	Test 11 No. 5 Final	12/11/2020 0805
	@ICPMS	
<u>202012140066</u>	Test 11 No. 6 Final	12/11/2020 0806
	@ICPMS	
<u>202012140067</u>	Test 11 No. 7 Final	12/11/2020 0807
	@ICPMS	
<u>202012140068</u>	Test 11 No. 8 Final	12/11/2020 0808
	@ICPMS	
<u>202012140069</u>	Test 11 No. 9 Final	12/11/2020 0809
	@ICPMS	

Test Description

@ICPMS -- ICPMS Metals

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Laboratory Comments

Report: 908293

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
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Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

Report: 908293
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/14/2020 10:43

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/19/2020 14:23	202012140060 Lead Total ICAP/MS	<u>Test 11 No. 0 Final</u>	140	15	ug/L	0.50
12/17/2020 15:58	202012140061 Lead Total ICAP/MS	<u>Test 11 No. 1 Final</u>	170	15	ug/L	0.50
12/17/2020 16:00	202012140062 Lead Total ICAP/MS	<u>Test 11 No. 2 Final</u>	220	15	ug/L	0.50
12/17/2020 16:02	202012140063 Lead Total ICAP/MS	<u>Test 11 No. 3 Final</u>	370	15	ug/L	0.50
12/17/2020 16:04	202012140064 Lead Total ICAP/MS	<u>Test 11 No. 4 Final</u>	240	15	ug/L	0.50
12/17/2020 16:06	202012140065 Lead Total ICAP/MS	<u>Test 11 No. 5 Final</u>	180	15	ug/L	0.50
12/17/2020 16:07	202012140066 Lead Total ICAP/MS	<u>Test 11 No. 6 Final</u>	250	15	ug/L	0.50
12/17/2020 16:09	202012140067 Lead Total ICAP/MS	<u>Test 11 No. 7 Final</u>	160	15	ug/L	0.50
12/19/2020 14:24	202012140068 Lead Total ICAP/MS	<u>Test 11 No. 8 Final</u>	660	15	ug/L	0.50
12/17/2020 16:15	202012140069 Lead Total ICAP/MS	<u>Test 11 No. 9 Final</u>	690	15	ug/L	0.50

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 908293
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/14/2020 10:43

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>Test 11 No. 0 Final (202012140060)</u>						Sampled on 12/11/2020 0801			
EPA 200.8 - ICPMS Metals									
12/14/20	12/19/20 14:23	1294033	1295227	(EPA 200.8)	Lead Total ICAP/MS	140	ug/L	0.50	1
<u>Test 11 No. 1 Final (202012140061)</u>						Sampled on 12/11/2020 0802			
EPA 200.8 - ICPMS Metals									
12/14/20	12/17/20 15:58	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	170	ug/L	0.50	1
<u>Test 11 No. 2 Final (202012140062)</u>						Sampled on 12/11/2020 0803			
EPA 200.8 - ICPMS Metals									
12/14/20	12/17/20 16:00	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	220	ug/L	0.50	1
<u>Test 11 No. 3 Final (202012140063)</u>						Sampled on 12/11/2020 0804			
EPA 200.8 - ICPMS Metals									
12/14/20	12/17/20 16:02	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	370	ug/L	0.50	1
<u>Test 11 No. 4 Final (202012140064)</u>						Sampled on 12/11/2020 0804			
EPA 200.8 - ICPMS Metals									
12/14/20	12/17/20 16:04	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	240	ug/L	0.50	1
<u>Test 11 No. 5 Final (202012140065)</u>						Sampled on 12/11/2020 0805			
EPA 200.8 - ICPMS Metals									
12/14/20	12/17/20 16:06	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	180	ug/L	0.50	1
<u>Test 11 No. 6 Final (202012140066)</u>						Sampled on 12/11/2020 0806			
EPA 200.8 - ICPMS Metals									
12/14/20	12/17/20 16:07	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	250	ug/L	0.50	1
<u>Test 11 No. 7 Final (202012140067)</u>						Sampled on 12/11/2020 0807			
EPA 200.8 - ICPMS Metals									
12/14/20	12/17/20 16:09	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	160	ug/L	0.50	1
<u>Test 11 No. 8 Final (202012140068)</u>						Sampled on 12/11/2020 0808			
EPA 200.8 - ICPMS Metals									
12/14/20	12/19/20 14:24	1294033	1295227	(EPA 200.8)	Lead Total ICAP/MS	660	ug/L	0.50	1
<u>Test 11 No. 9 Final (202012140069)</u>						Sampled on 12/11/2020 0809			
EPA 200.8 - ICPMS Metals									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

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Laboratory Data

Report: 908293
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/14/2020 10:43

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
12/14/20	12/17/20 16:15	1294033	1294416	(EPA 200.8)	Lead Total ICAP/MS	690	ug/L	0.50	1

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 908293
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

ICPMS Metals

Prep Batch: 1294033 Analytical Batch: 1294416

202012140061	Test 11 No. 1 Final
202012140062	Test 11 No. 2 Final
202012140063	Test 11 No. 3 Final
202012140064	Test 11 No. 4 Final
202012140065	Test 11 No. 5 Final
202012140066	Test 11 No. 6 Final
202012140067	Test 11 No. 7 Final
202012140069	Test 11 No. 9 Final

Analysis Date: 12/17/2020

Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7

ICPMS Metals

Prep Batch: 1294033 Analytical Batch: 1295227

202012140060	Test 11 No. 0 Final
202012140068	Test 11 No. 8 Final

Analysis Date: 12/19/2020

Analyzed by: URDE
Analyzed by: URDE

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 908293
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
ICPMS Metals by EPA 200.8									
Analytical Batch: 1294416					Analysis Date: 12/17/2020				
LCS1	Lead Total ICAP/MS		50	51.8	ug/L	104	(85-115)		
LCS2	Lead Total ICAP/MS		50	51.6	ug/L	103	(85-115)	20	0.39
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.534	ug/L	107	(50-150)		
MS_202012150315	Lead Total ICAP/MS	ND	50	50.6	ug/L	101	(70-130)		
MS2_202012151087	Lead Total ICAP/MS	ND	50	49.9	ug/L	100	(70-130)		
MSD_202012150315	Lead Total ICAP/MS	ND	50	50.7	ug/L	101	(70-130)	20	0.19
MSD2_202012151087	Lead Total ICAP/MS	ND	50	50.2	ug/L	100	(70-130)	20	0.61
ICPMS Metals by EPA 200.8									
Analytical Batch: 1295227					Analysis Date: 12/19/2020				
LCS1	Lead Total ICAP/MS		50	51.2	ug/L	102	(85-115)		
LCS2	Lead Total ICAP/MS		50	50.5	ug/L	101	(85-115)	20	1.4
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.538	ug/L	108	(50-150)		
MS_202012140056	Lead Total ICAP/MS	280	50	322	ug/L	82	(70-130)		
MS2_202012150405	Lead Total ICAP/MS	ND	50	48.2	ug/L	96	(70-130)		
MSD_202012140056	Lead Total ICAP/MS	280	50	339	ug/L	115	(70-130)	20	5.0
MSD2_202012150405	Lead Total ICAP/MS	ND	50	47.5	ug/L	95	(70-130)	20	1.6

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
01/12/2021

Vanessa Berry
EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 910145
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalart (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 910145
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 23, 2020 at 1725**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012230687</u>	Test 12 No. 0 Final	12/15/2020 0745
	@ICPMS	
<u>202012230688</u>	Test 12 No. 1 Final	12/15/2020 0746
	@ICPMS	
<u>202012230689</u>	Test 12 No. 2 Final	12/15/2020 0747
	@ICPMS	
<u>202012230690</u>	Test 12 No. 3 Final	12/15/2020 0748
	@ICPMS	
<u>202012230691</u>	Test 12 No. 4 Final	12/15/2020 0749
	@ICPMS	
<u>202012230692</u>	Test 12 No. 5 Final	12/15/2020 0750
	@ICPMS	
<u>202012230693</u>	Test 12 No. 6 Final	12/15/2020 0751
	@ICPMS	
<u>202012230694</u>	Test 12 No. 7 Final	12/15/2020 0752
	@ICPMS	
<u>202012230695</u>	Test 12 No. 8 Final	12/15/2020 0753
	@ICPMS	
<u>202012230696</u>	Test 12 No. 9 Final	12/15/2020 0754
	@ICPMS	

Test Description

@ICPMS -- ICPMS Metals



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLE TEMP RECEIVED AT:

☒ (Other) IR Gun ID = 616A (Observation = 0.6 °C) (check for yes)
☒ Monrovia IR Gun ID = 616A (Observation = 0.6 °C) (check for yes)

Compliance Acceptance Criteria: (Chemistry: ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic ☐ No Ice ☐ CONDITION OF ICE: Frozen ☒ Partially Frozen ☐ Thawed ☐ N/A

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: FedEx

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:		PROJECT CODE:		COMPLIANCE SAMPLES		NON-COMPLIANCE SAMPLES		(check for yes)	
Tetra Tech 2016 Pine St Orlando				- Requires state forms		REGULATION INVOLVED:		(check for yes)	
EEA CLIENT CODE:		COC ID:		Type of samples (circle one):		ROUTINE SPECIAL CONFIRMATION		(eg. SDWA, NPDES, etc.)	
Tetra Tech Orion				SEE ATTACHED KIT ORDER FOR ANALYSES				(check for yes), OR	
TAT requested: rush by adv notice only		STD 1 wk 3 day 2 day 1 day		List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)					
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX	FIELD DATA	FIELD DATA	SAMPLER COMMENTS		
12/15	7:45	Test 12 No. 0 Final							
	7:46	1		fw					Preserved with
	7:47	2							Nitric Acid by
	7:48	3							Tetra Tech
	7:49	4							
	7:50	5							
	7:51	6							
	7:52	7							
	7:53	8							
	7:54	9							

* MATRIX TYPES: RSW = Raw Surface Water
RGW = Raw Ground Water

CFW = Chlor(am)inated Finished Water
FW = Other Finished Water

SEAW = Sea Water
WW = Waste Water

BW = Bottled Water
SW = Storm Water

SO = Soil
SL = Sludge

O = Other - Please Identify

SIGNATURE

PRINT NAME

COMPANY/TITLE

DATE

TIME

SAMPLED BY:	M. Arenas	Tetra Tech, Project Eng, need	12/22/20	4:30 PM
RELINQUISHED BY:	"	"	"	"
RECEIVED BY:	Py Gel	"	12/23/20	12:15
RELINQUISHED BY:				
RECEIVED BY:				

ORIGIN ID: ORLA (407) 480-3907
JAMES CHRISTOPHER
TETRATECH
201 EAST PINE STREET
SUITE 1000
ORLANDO, FL 32801
UNITED STATES US

SHIP DATE: 07DEC20
ACTWGT: 25.00 LB
CAD: 106700140/INET4280
DIMS: 36x24x17 IN

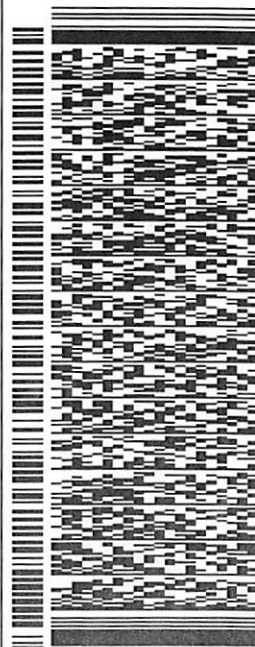
BILL SENDER

TO **JOE SANCHEZ**
EUROFINS EATON ANALYTICAL
750 ROYAL OAKS, STE 100

MONROVIA CA 91016
(626) 386-1100
INV
PO

REF: OTHER

DEPT



J202020071401uv

TUE - 08 DEC 10:30A
PRIORITY OVERNIGHT

TRK# **7722 8437 8837**

0201

NH WHPA
91016
CA-US **BUR**



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Laboratory Comments

Report: 910145

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

Report: 910145
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/23/2020 1725

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/30/2020 15:01	202012230687 Lead Total ICAP/MS	<u>Test 12 No. 0 Final</u>	210	15	ug/L	0.50
12/30/2020 15:03	202012230688 Lead Total ICAP/MS	<u>Test 12 No. 1 Final</u>	210	15	ug/L	0.50
01/08/2021 15:33	202012230689 Lead Total ICAP/MS	<u>Test 12 No. 2 Final</u>	290	15	ug/L	0.50
01/08/2021 15:34	202012230690 Lead Total ICAP/MS	<u>Test 12 No. 3 Final</u>	260	15	ug/L	0.50
01/08/2021 15:40	202012230691 Lead Total ICAP/MS	<u>Test 12 No. 4 Final</u>	320	15	ug/L	0.50
01/08/2021 15:42	202012230692 Lead Total ICAP/MS	<u>Test 12 No. 5 Final</u>	200	15	ug/L	0.50
12/30/2020 15:05	202012230693 Lead Total ICAP/MS	<u>Test 12 No. 6 Final</u>	280	15	ug/L	0.50
01/08/2021 15:44	202012230694 Lead Total ICAP/MS	<u>Test 12 No. 7 Final</u>	200	15	ug/L	0.50
01/08/2021 15:46	202012230695 Lead Total ICAP/MS	<u>Test 12 No. 8 Final</u>	830	15	ug/L	0.50
01/08/2021 15:47	202012230696 Lead Total ICAP/MS	<u>Test 12 No. 9 Final</u>	900	15	ug/L	0.50

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 910145
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/23/2020 1725

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>Test 12 No. 0 Final (202012230687)</u>						Sampled on 12/15/2020 0745			
EPA 200.8 - ICPMS Metals									
12/29/20	12/30/20 15:01	1296562	1296870	(EPA 200.8)	Lead Total ICAP/MS	210	ug/L	0.50	1
<u>Test 12 No. 1 Final (202012230688)</u>						Sampled on 12/15/2020 0746			
EPA 200.8 - ICPMS Metals									
12/29/20	12/30/20 15:03	1296562	1296870	(EPA 200.8)	Lead Total ICAP/MS	210	ug/L	0.50	1
<u>Test 12 No. 2 Final (202012230689)</u>						Sampled on 12/15/2020 0747			
EPA 200.8 - ICPMS Metals									
12/29/20	01/08/21 15:33	1296562	1297562	(EPA 200.8)	Lead Total ICAP/MS	290	ug/L	0.50	1
<u>Test 12 No. 3 Final (202012230690)</u>						Sampled on 12/15/2020 0748			
EPA 200.8 - ICPMS Metals									
12/29/20	01/08/21 15:34	1296562	1297562	(EPA 200.8)	Lead Total ICAP/MS	260	ug/L	0.50	1
<u>Test 12 No. 4 Final (202012230691)</u>						Sampled on 12/15/2020 0749			
EPA 200.8 - ICPMS Metals									
12/29/20	01/08/21 15:40	1296562	1297562	(EPA 200.8)	Lead Total ICAP/MS	320	ug/L	0.50	1
<u>Test 12 No. 5 Final (202012230692)</u>						Sampled on 12/15/2020 0750			
EPA 200.8 - ICPMS Metals									
12/29/20	01/08/21 15:42	1296562	1297562	(EPA 200.8)	Lead Total ICAP/MS	200	ug/L	0.50	1
<u>Test 12 No. 6 Final (202012230693)</u>						Sampled on 12/15/2020 0751			
EPA 200.8 - ICPMS Metals									
12/29/20	12/30/20 15:05	1296562	1296870	(EPA 200.8)	Lead Total ICAP/MS	280	ug/L	0.50	1
<u>Test 12 No. 7 Final (202012230694)</u>						Sampled on 12/15/2020 0752			
EPA 200.8 - ICPMS Metals									
12/29/20	01/08/21 15:44	1296562	1297562	(EPA 200.8)	Lead Total ICAP/MS	200	ug/L	0.50	1
<u>Test 12 No. 8 Final (202012230695)</u>						Sampled on 12/15/2020 0753			
EPA 200.8 - ICPMS Metals									
12/29/20	01/08/21 15:46	1296562	1297562	(EPA 200.8)	Lead Total ICAP/MS	830	ug/L	0.50	1
<u>Test 12 No. 9 Final (202012230696)</u>						Sampled on 12/15/2020 0754			
EPA 200.8 - ICPMS Metals									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 910145
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/23/2020 1725

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
12/29/20	01/08/21 15:47	1296562	1297562	(EPA 200.8)	Lead Total ICAP/MS	900	ug/L	0.50	1

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 910145
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

ICPMS Metals

Prep Batch: 1296562 Analytical Batch: 1296870

202012230687	Test 12 No. 0 Final
202012230688	Test 12 No. 1 Final
202012230693	Test 12 No. 6 Final

Analysis Date: 12/30/2020

Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7

ICPMS Metals

Prep Batch: 1296562 Analytical Batch: 1297562

202012230689	Test 12 No. 2 Final
202012230690	Test 12 No. 3 Final
202012230691	Test 12 No. 4 Final
202012230692	Test 12 No. 5 Final
202012230694	Test 12 No. 7 Final
202012230695	Test 12 No. 8 Final
202012230696	Test 12 No. 9 Final

Analysis Date: 01/08/2021

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

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 910145
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
ICPMS Metals by EPA 200.8									
Analytical Batch: 1296870					Analysis Date: 12/30/2020				
LCS1	Lead Total ICAP/MS		50	50.7	ug/L	101	(85-115)		
LCS2	Lead Total ICAP/MS		50	51.3	ug/L	103	(85-115)	20	1.2
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.526	ug/L	105	(50-150)		
MS_202012280230	Lead Total ICAP/MS	ND	50	48.6	ug/L	96	(70-130)		
MS2_202012230733	Lead Total ICAP/MS	ND	50	50.0	ug/L	100	(70-130)		
MSD_202012280230	Lead Total ICAP/MS	ND	50	48.3	ug/L	96	(70-130)	20	0.63
MSD2_202012230733	Lead Total ICAP/MS	ND	50	49.1	ug/L	98	(70-130)	20	1.9
ICPMS Metals by EPA 200.8									
Analytical Batch: 1297562					Analysis Date: 01/08/2021				
LCS1	Lead Total ICAP/MS		50	50.8	ug/L	102	(85-115)		
LCS2	Lead Total ICAP/MS		50	50.7	ug/L	101	(85-115)	20	0.20
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.536	ug/L	107	(50-150)		
MS_202012300161	Lead Total ICAP/MS	ND	50	51.2	ug/L	102	(70-130)		
MS2_202012230985	Lead Total ICAP/MS	ND	50	45.2	ug/L	90	(70-130)		
MSD_202012300161	Lead Total ICAP/MS	ND	50	50.8	ug/L	101	(70-130)	20	0.86
MSD2_202012230985	Lead Total ICAP/MS	ND	50	44.1	ug/L	88	(70-130)	20	2.4

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
01/12/2021

Vanessa Berry

EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 910169
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalart (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 910169
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 23, 2020 at 1337**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012230779</u>	Test 13 No. 0 Final	12/17/2020 0812
	@ICPMS	
<u>202012230780</u>	Test 13 No. 1 Final	12/17/2020 0816
	@ICPMS	
<u>202012230781</u>	Test 13 No. 2 Final	12/17/2020 0817
	@ICPMS	
<u>202012230782</u>	Test 13 No. 3 Final	12/17/2020 0818
	@ICPMS	
<u>202012230783</u>	Test 13 No. 4 Final	12/17/2020 0819
	@ICPMS	
<u>202012230784</u>	Test 13 No. 5 Final	12/17/2020 0820
	@ICPMS	
<u>202012230785</u>	Test 13 No. 6 Final	12/17/2020 0821
	@ICPMS	
<u>202012230786</u>	Test 13 No. 7 Final	12/17/2020 0822
	@ICPMS	
<u>202012230787</u>	Test 13 No. 8 Final	12/17/2020 0823
	@ICPMS	
<u>202012230788</u>	Test 13 No. 9 Final	12/17/2020 0824
	@ICPMS	

Test Description

@ICPMS -- ICPMS Metals



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLE TEMP RECEIVED AT:

☐ (Other) IR Gun ID = 6314 (Observation = 1.0 °C) (check for yes)
☒ Monrovia IR Gun ID = 6314 (Observation = 0.2 °C) (Final = 0.2 °C)

Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic ☐ No Ice ☐

CONDITION OF ICE: Frozen ☒ Partially Frozen ☐ Thawed ☐ N/A ☐

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx ☒ UPS / DHL / Area Fast / Top Line / Other:

SAMPLES CHECKED AGAINST COC BY: fw

SAMPLES LOGGED IN BY: fw

SAMPLES REC'D DAY OF COLLECTION? ☐ (check for yes)

°C (Corr. Factor = °C) (Final = °C)

°C (Corr. Factor = °C) (Final = °C)

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:		PROJECT CODE:		COMPLIANCE SAMPLES		NON-COMPLIANCE SAMPLES		(check for yes)	
Tetra Tech 201 E Pine St Orlando				- Requires state forms		REGULATION INVOLVED:			
EEA CLIENT CODE:		COC ID:		Type of samples (circle one):		ROUTINE SPECIAL CONFIRMATION		(eg. SDWA, NPDES, etc.)	
Tetra Tech-Orlan				SEE ATTACHED KIT ORDER FOR ANALYSES				(check for yes), OR	
TAT requested: rush by adv notice only		STD 1 wk 3 day 1 day		List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)					
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX	FIELD DATA	FIELD DATA	SAMPLER COMMENTS		
12/17	8:12	Test 13 No. 0 final		FW			preserved with		
	8:16	1					nitric acid by		
	8:17	2					Tetra Tech		
	8:18	3							
	8:19	4							
	8:20	5							
	8:21	6							
	8:22	7							
	8:23	8							
	8:24	9							

* MATRIX TYPES: RSW = Raw Surface Water
RGW = Raw Ground Water

CFW = Chlor(am)inated Finished Water
FW = Other Finished Water

SEAW = Sea Water
WW = Waste Water

BW = Bottled Water
SW = Storm Water

SO = Soil
SL = Sludge

O = Other - Please Identify

SIGNATURE

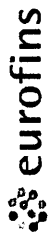
PRINT NAME

COMPANY/TITLE

DATE

TIME

SAMPLED BY: M. Arenas	Maria Isabel Arenas	Tetra Tech, Project Engineer	12/22/20	4:30 PM
RELINQUISHED BY: Maria J. Arenas	Salvador "Muh"	"	"	"
RECEIVED BY:			12-23-20	1:33
RELINQUISHED BY:				
RECEIVED BY:				



Eaton Analytical

Kit Order for Tetra Tech Inc.

Vanessa Berry is your Eurofins Eaton Analytical, LLC Service Manager

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
(626) 386-1100 FAX (866) 988-3757

Kit #: 278808



Created By: Vanessa Berry - [ZIA8]
Deliver By: 12/21/2020
STG: Bottle Orders
Ice Type: W

Client ID: TETRATECH-ORLAN



Project Code: KALAMAZOO Bottle Orders
Group Name: Lead Solubility Testing - Phase 1
PO#JOB#:

Description: No Schedule

Created Date & Time: 12/15/2020 9:21:18AM

Note: Sampler Please return this paper with your samples

Ship Sample Kits to
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

Send Report to
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

Billing Address
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

# of Sample Tests	Bottle Qty - Type [preservative information]	Total	UN DOT #
20 @ICPMS	1 - 250ml poly [no preservative]	20	
Sum Tests: 20	Sum Bottles: 20		
Comments			
include return shipping labels			
COCs			

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments

Report: 910169

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 910169
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/23/2020 1337

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/30/2020 15:07	202012230779 Lead Total ICAP/MS	<u>Test 13 No. 0 Final</u>	150	15	ug/L	0.50
12/30/2020 15:08	202012230780 Lead Total ICAP/MS	<u>Test 13 No. 1 Final</u>	160	15	ug/L	0.50
01/08/2021 15:49	202012230781 Lead Total ICAP/MS	<u>Test 13 No. 2 Final</u>	240	15	ug/L	0.50
01/08/2021 15:51	202012230782 Lead Total ICAP/MS	<u>Test 13 No. 3 Final</u>	290	15	ug/L	0.50
01/08/2021 15:53	202012230783 Lead Total ICAP/MS	<u>Test 13 No. 4 Final</u>	270	15	ug/L	0.50
01/08/2021 15:55	202012230784 Lead Total ICAP/MS	<u>Test 13 No. 5 Final</u>	190	15	ug/L	0.50
12/30/2020 15:14	202012230785 Lead Total ICAP/MS	<u>Test 13 No. 6 Final</u>	260	15	ug/L	0.50
01/08/2021 15:57	202012230786 Lead Total ICAP/MS	<u>Test 13 No. 7 Final</u>	180	15	ug/L	0.50
12/30/2020 15:16	202012230787 Lead Total ICAP/MS	<u>Test 13 No. 8 Final</u>	700	15	ug/L	0.50
01/08/2021 16:02	202012230788 Lead Total ICAP/MS	<u>Test 13 No. 9 Final</u>	800	15	ug/L	0.50

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 910169
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/23/2020 1337

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>Test 13 No. 0 Final (202012230779)</u>						Sampled on 12/17/2020 0812			
EPA 200.8 - ICPMS Metals									
12/29/20	12/30/20 15:07	1296562	1296870	(EPA 200.8)	Lead Total ICAP/MS	150	ug/L	0.50	1
<u>Test 13 No. 1 Final (202012230780)</u>						Sampled on 12/17/2020 0816			
EPA 200.8 - ICPMS Metals									
12/29/20	12/30/20 15:08	1296562	1296870	(EPA 200.8)	Lead Total ICAP/MS	160	ug/L	0.50	1
<u>Test 13 No. 2 Final (202012230781)</u>						Sampled on 12/17/2020 0817			
EPA 200.8 - ICPMS Metals									
12/29/20	01/08/21 15:49	1296562	1297562	(EPA 200.8)	Lead Total ICAP/MS	240	ug/L	0.50	1
<u>Test 13 No. 3 Final (202012230782)</u>						Sampled on 12/17/2020 0818			
EPA 200.8 - ICPMS Metals									
12/29/20	01/08/21 15:51	1296562	1297562	(EPA 200.8)	Lead Total ICAP/MS	290	ug/L	0.50	1
<u>Test 13 No. 4 Final (202012230783)</u>						Sampled on 12/17/2020 0819			
EPA 200.8 - ICPMS Metals									
12/29/20	01/08/21 15:53	1296562	1297562	(EPA 200.8)	Lead Total ICAP/MS	270	ug/L	0.50	1
<u>Test 13 No. 5 Final (202012230784)</u>						Sampled on 12/17/2020 0820			
EPA 200.8 - ICPMS Metals									
12/29/20	01/08/21 15:55	1296562	1297562	(EPA 200.8)	Lead Total ICAP/MS	190	ug/L	0.50	1
<u>Test 13 No. 6 Final (202012230785)</u>						Sampled on 12/17/2020 0821			
EPA 200.8 - ICPMS Metals									
12/29/20	12/30/20 15:14	1296562	1296870	(EPA 200.8)	Lead Total ICAP/MS	260	ug/L	0.50	1
<u>Test 13 No. 7 Final (202012230786)</u>						Sampled on 12/17/2020 0822			
EPA 200.8 - ICPMS Metals									
12/29/20	01/08/21 15:57	1296562	1297562	(EPA 200.8)	Lead Total ICAP/MS	180	ug/L	0.50	1
<u>Test 13 No. 8 Final (202012230787)</u>						Sampled on 12/17/2020 0823			
EPA 200.8 - ICPMS Metals									
12/29/20	12/30/20 15:16	1296562	1296870	(EPA 200.8)	Lead Total ICAP/MS	700	ug/L	0.50	1
<u>Test 13 No. 9 Final (202012230788)</u>						Sampled on 12/17/2020 0824			
EPA 200.8 - ICPMS Metals									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 910169
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/23/2020 1337

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
12/29/20	01/08/21 16:02	1296562	1297562	(EPA 200.8)	Lead Total ICAP/MS	800	ug/L	0.50	1

Tel: (626) 386-1100
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1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 910169
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

ICPMS Metals

Prep Batch: 1296562 Analytical Batch: 1296870

202012230779	Test 13 No. 0 Final
202012230780	Test 13 No. 1 Final
202012230785	Test 13 No. 6 Final
202012230787	Test 13 No. 8 Final

Analysis Date: 12/30/2020

Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7

ICPMS Metals

Prep Batch: 1296562 Analytical Batch: 1297562

202012230781	Test 13 No. 2 Final
202012230782	Test 13 No. 3 Final
202012230783	Test 13 No. 4 Final
202012230784	Test 13 No. 5 Final
202012230786	Test 13 No. 7 Final
202012230788	Test 13 No. 9 Final

Analysis Date: 01/08/2021

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

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 910169
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
ICPMS Metals by EPA 200.8									
Analytical Batch: 1296870					Analysis Date: 12/30/2020				
LCS1	Lead Total ICAP/MS		50	50.7	ug/L	101	(85-115)		
LCS2	Lead Total ICAP/MS		50	51.3	ug/L	103	(85-115)	20	1.2
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.526	ug/L	105	(50-150)		
MS_202012280230	Lead Total ICAP/MS	ND	50	48.6	ug/L	96	(70-130)		
MS2_202012230733	Lead Total ICAP/MS	ND	50	50.0	ug/L	100	(70-130)		
MSD_202012280230	Lead Total ICAP/MS	ND	50	48.3	ug/L	96	(70-130)	20	0.63
MSD2_202012230733	Lead Total ICAP/MS	ND	50	49.1	ug/L	98	(70-130)	20	1.9
ICPMS Metals by EPA 200.8									
Analytical Batch: 1297562					Analysis Date: 01/08/2021				
LCS1	Lead Total ICAP/MS		50	50.8	ug/L	102	(85-115)		
LCS2	Lead Total ICAP/MS		50	50.7	ug/L	101	(85-115)	20	0.20
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.536	ug/L	107	(50-150)		
MS_202012300161	Lead Total ICAP/MS	ND	50	51.2	ug/L	102	(70-130)		
MS2_202012230985	Lead Total ICAP/MS	ND	50	45.2	ug/L	90	(70-130)		
MSD_202012300161	Lead Total ICAP/MS	ND	50	50.8	ug/L	101	(70-130)	20	0.86
MSD2_202012230985	Lead Total ICAP/MS	ND	50	44.1	ug/L	88	(70-130)	20	2.4

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
11/16/2020

Vanessa Berry

**EUROFINS EATON
ANALYTICAL, LLC**



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 902542
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 902542
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **November 09, 2020 at 1207**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202011090118</u>	Day 1 NO.0	11/02/2020 1424
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090121</u>	Day 1 NO.1	11/02/2020 1424
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090122</u>	Day 1 NO.2	11/02/2020 1350
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090123</u>	Day 1 NO.3	11/02/2020 1346
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090124</u>	Day 1 NO.4	11/02/2020 1146
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090125</u>	Day 1 NO.5	11/02/2020 1145
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090126</u>	Day 1 NO.6	11/02/2020 1108
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090127</u>	Day 1 NO.7	11/02/2020 1100
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090128</u>	Day 1 NO.8	11/02/2020 1015
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090129</u>	Day 1 NO.9	11/02/2020 1008
	Total phosphorus as P	Total phosphorus as PO4- Calc.

Test Description



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

TO BE COMPLETED BY SA
COMPANY/AGENCY NAME: **Tetra Tech**

TRK# **9284 5114 3450**

Tetra Tech 201 E Pine St. O'Randogfe

EEA CLIENT CODE: **TETRA TECH - ORLAN**

COC ID:

SAMPLE GROUP: **Lead Solubility Testing - Phase 1**

PROJECT CODE: **KALUMAGZOO**

LOGIN COMMENTS:

SAMPLES CHECKED AGAINST COC BY: **LD**

SAMPLES LOGGED IN BY: **LD**

SAMPLES REC'D DAY OF COLLECTION? ☐ (check for yes)

(check for yes)

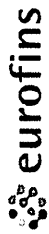
TAT requested: rush by adv notice only

STD 1 wk 3 day 2 day 1 day

SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX	FIELD DATA	FIELD DATA	SAMPLER COMMENTS
11/2	14:24	DON 1 No. 10		PW			Preserved
11/2	14:24	DON 1 No. 11					w/ sulfuric
11/2	13:46	DON 1 No. 12					acid by
11/2	13:46	DON 1 No. 13					EUROFINS
11/2	11:46	DON 1 No. 14					
11/2	11:46	DON 1 No. 15					
11/2	11:08	DON 1 No. 16					
11/2	11:00	DON 1 No. 17					
11/2	10:08	DON 1 No. 18					
11/2	10:08	DON 1 No. 19					

* MATRIX TYPES: RSW = Raw Surface Water RGW = Raw Ground Water CFW = Chlor(am)inated Finished Water FW = Other Finished Water
SEAW = Sea Water BW = Bottled Water SO = Soil
WW = Waste Water SW = Storm Water SL = Sludge

SAMPLED BY:	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
M. Arenas		MARIA ISABEL ARENAS	Tetra Tech, Project Engineer	11/12/20	14:30
RELINQUISHED BY:					
RECEIVED BY:		"	"	"	14:30
RELINQUISHED BY:					
RECEIVED BY:					



Eaton Analytical

Kit Order for Tetra Tech Inc.

Vanessa Berry is your Eurofins Eaton Analytical, LLC Service Manager

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
(626) 386-1100 FAX (866) 988-3757

Created Date & Time: 10/22/2020 1:01:20PM

Note: Sampler Please return this paper with your samples

Client ID: TETRATECH-ORLAN

Kit #: 275417

Project Code: KALAMAZOO Bottle Orders

Created By: - [AutoGenerated]

Group Name: Lead Solubility Testing - Phase 1

Deliver By: 11/02/2020

PO#/JOB#:

STG: Bottle Orders

Description: Every 1 week on Mon

Ice Type: W

Ship Sample Kits to
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

Send Report to
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

Billing Address
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

# of Sample Tests	Bottle Qty - Type [preservative information]	Total	UN DOT #
20	Total phosphorus as P	20	UN1830
20	@ICPMS	20	
Sum Tests: 40		Sum Bottles: 40	
Comments			
include return shipping labels COCs			
Total lead containers are preserved with nitric acid by the client.			

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments**Report:** 902542**Project:** KALAMAZOO**Group:** Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Flags Legend:

M1 - Matrix spike recovery was high; the associated blank spike recovery was acceptable.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

Report: 902542
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/09/2020 1207

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
202011090121 <u>Day 1 NO.1</u>						
11/12/2020 11:51	Total phosphorus as P		0.083		mg/L	0.020
11/13/2020 08:36	Total phosphorus as PO4- Calc.		0.25		mg/L	0.030
202011090122 <u>Day 1 NO.2</u>						
11/12/2020 12:37	Total phosphorus as P		1.1		mg/L	0.040
11/13/2020 08:37	Total phosphorus as PO4- Calc.		3.4		mg/L	0.030
202011090123 <u>Day 1 NO.3</u>						
11/12/2020 12:38	Total phosphorus as P		2.3		mg/L	0.10
11/13/2020 08:38	Total phosphorus as PO4- Calc.		7.1		mg/L	0.030
202011090124 <u>Day 1 NO.4</u>						
11/12/2020 11:56	Total phosphorus as P		0.64		mg/L	0.020
11/13/2020 08:37	Total phosphorus as PO4- Calc.		2.0		mg/L	0.030
202011090125 <u>Day 1 NO.5</u>						
11/12/2020 12:38	Total phosphorus as P		1.4		mg/L	0.040
11/13/2020 08:38	Total phosphorus as PO4- Calc.		4.3		mg/L	0.030
202011090126 <u>Day 1 NO.6</u>						
11/12/2020 11:58	Total phosphorus as P		0.56		mg/L	0.020
11/13/2020 08:37	Total phosphorus as PO4- Calc.		1.7		mg/L	0.030
202011090127 <u>Day 1 NO.7</u>						
11/12/2020 12:39	Total phosphorus as P		1.1		mg/L	0.040
11/13/2020 08:38	Total phosphorus as PO4- Calc.		3.4		mg/L	0.030
202011090128 <u>Day 1 NO.8</u>						
11/12/2020 12:00	Total phosphorus as P		0.48		mg/L	0.020
11/13/2020 08:37	Total phosphorus as PO4- Calc.		1.5		mg/L	0.030
202011090129 <u>Day 1 NO.9</u>						
11/12/2020 12:03	Total phosphorus as P		0.98		mg/L	0.020
11/13/2020 08:37	Total phosphorus as PO4- Calc.		3.0		mg/L	0.030

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 902542
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/09/2020 1207

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
Day 1 NO.0 (202011090118)						Sampled on 11/02/2020 1424			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/13/20 08:36				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	ND (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/12/20 11:50		1287640		(SM4500-PE/EPA 365.1)	Total phosphorus as P	ND	mg/L	0.020	1
Day 1 NO.1 (202011090121)						Sampled on 11/02/2020 1424			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/13/20 08:36				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.25 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/12/20 11:51		1287640		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.083	mg/L	0.020	1
Day 1 NO.2 (202011090122)						Sampled on 11/02/2020 1350			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/13/20 08:37				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.4 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/12/20 12:37		1287640		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.1	mg/L	0.040	2
Day 1 NO.3 (202011090123)						Sampled on 11/02/2020 1346			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/13/20 08:38				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	7.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/12/20 12:38		1287640		(SM4500-PE/EPA 365.1)	Total phosphorus as P	2.3	mg/L	0.10	5
Day 1 NO.4 (202011090124)						Sampled on 11/02/2020 1146			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/13/20 08:37				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.0 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/12/20 11:56		1287640		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.64	mg/L	0.020	1
Day 1 NO.5 (202011090125)						Sampled on 11/02/2020 1145			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
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Laboratory Data

Report: 902542
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/09/2020 1207

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	11/13/20 08:38			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	4.3 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	11/12/20 12:38		1287640	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.4	mg/L	0.040	2
Day 1 NO.6 (202011090126)						Sampled on 11/02/2020 1108			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	11/13/20 08:37			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.7 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	11/12/20 11:58		1287640	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.56	mg/L	0.020	1
Day 1 NO.7 (202011090127)						Sampled on 11/02/2020 1100			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	11/13/20 08:38			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.4 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	11/12/20 12:39		1287640	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.1	mg/L	0.040	2
Day 1 NO.8 (202011090128)						Sampled on 11/02/2020 1015			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	11/13/20 08:37			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.5 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	11/12/20 12:00		1287640	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.48 (M1)	mg/L	0.020	1
Day 1 NO.9 (202011090129)						Sampled on 11/02/2020 1008			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	11/13/20 08:37			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.0 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	11/12/20 12:03		1287640	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.98	mg/L	0.020	1

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

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Laboratory QC Summary

Report: 902542
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

Total phosphorus as P (T-P)**Analytical Batch: 1287640**

202011090118	Day 1 NO.0
202011090121	Day 1 NO.1
202011090122	Day 1 NO.2
202011090123	Day 1 NO.3
202011090124	Day 1 NO.4
202011090125	Day 1 NO.5
202011090126	Day 1 NO.6
202011090127	Day 1 NO.7
202011090128	Day 1 NO.8
202011090129	Day 1 NO.9

Analysis Date: 11/12/2020

Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
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Report: 902542
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1287640					Analysis Date: 11/12/2020				
LCS1	Total phosphorus as P		0.4	0.429	mg/L	107	(90-110)		
LCS2	Total phosphorus as P		0.4	0.421	mg/L	105	(90-110)	20	1.9
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0220	mg/L	110	(50-150)		
MS_202011060345	Total phosphorus as P	0.17	0.4	0.589	mg/L	105	(90-110)		
MS_202011090128	Total phosphorus as P	0.48	0.4	0.890	mg/L	102	(90-110)		
MSD_202011060345	Total phosphorus as P	0.17	0.4	0.573	mg/L	101	(90-110)	20	2.8
MSD_202011090128	Total phosphorus as P	0.48	0.4	0.927	mg/L	<u>111</u>	(90-110)	20	4.1

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
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Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
11/16/2020

Vanessa Berry

EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 902548
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 902548
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **November 09, 2020** at **1207**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202011090147</u>	Day 2 NO.1	11/05/2020 0955
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090148</u>	Day 2 NO.2	11/05/2020 1030
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090149</u>	Day 2 NO.3	11/05/2020 1025
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090150</u>	Day 2 NO.4	11/05/2020 1057
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090151</u>	Day 2 NO.5	11/05/2020 1100
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090152</u>	Day 2 NO.6	11/05/2020 1128
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090153</u>	Day 2 NO.7	11/05/2020 1132
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011090154</u>	Day 2 NO.0	11/05/2020 0958
	Total phosphorus as P	Total phosphorus as PO4- Calc.

Test Description

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1 800 566 LABS (1 800 566 5227)

Laboratory Comments

Report: 902548

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
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Tel: (626) 386-1100
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Laboratory Hits

Report: 902548
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/09/2020 1207

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
202011090147 <u>Day 2 NO.1</u>						
11/12/2020 12:06	Total phosphorus as P		0.090		mg/L	0.020
11/13/2020 08:37	Total phosphorus as PO4- Calc.		0.28		mg/L	0.030
202011090148 <u>Day 2 NO.2</u>						
11/12/2020 12:40	Total phosphorus as P		1.0		mg/L	0.040
11/13/2020 08:38	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
202011090149 <u>Day 2 NO.3</u>						
11/12/2020 12:41	Total phosphorus as P		2.1		mg/L	0.10
11/13/2020 08:38	Total phosphorus as PO4- Calc.		6.4		mg/L	0.030
202011090150 <u>Day 2 NO.4</u>						
11/12/2020 12:08	Total phosphorus as P		0.67		mg/L	0.020
11/13/2020 08:37	Total phosphorus as PO4- Calc.		2.0		mg/L	0.030
202011090151 <u>Day 2 NO.5</u>						
11/12/2020 12:42	Total phosphorus as P		1.3		mg/L	0.040
11/13/2020 08:38	Total phosphorus as PO4- Calc.		4.0		mg/L	0.030
202011090152 <u>Day 2 NO.6</u>						
11/12/2020 12:10	Total phosphorus as P		0.60		mg/L	0.020
11/13/2020 08:37	Total phosphorus as PO4- Calc.		1.8		mg/L	0.030
202011090153 <u>Day 2 NO.7</u>						
11/12/2020 12:43	Total phosphorus as P		1.6		mg/L	0.040
11/13/2020 08:38	Total phosphorus as PO4- Calc.		4.9		mg/L	0.030

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
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Laboratory Data

Report: 902548
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/09/2020 1207

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
Day 2 NO.1 (202011090147)						Sampled on 11/05/2020 0955			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/13/20 08:37				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.28 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/12/20 12:06		1287640		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.090	mg/L	0.020	1
Day 2 NO.2 (202011090148)						Sampled on 11/05/2020 1030			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/13/20 08:38				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/12/20 12:40		1287640		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
Day 2 NO.3 (202011090149)						Sampled on 11/05/2020 1025			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/13/20 08:38				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	6.4 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/12/20 12:41		1287640		(SM4500-PE/EPA 365.1)	Total phosphorus as P	2.1	mg/L	0.10	5
Day 2 NO.4 (202011090150)						Sampled on 11/05/2020 1057			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/13/20 08:37				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.0 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/12/20 12:08		1287640		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.67	mg/L	0.020	1
Day 2 NO.5 (202011090151)						Sampled on 11/05/2020 1100			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/13/20 08:38				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	4.0 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/12/20 12:42		1287640		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.3	mg/L	0.040	2
Day 2 NO.6 (202011090152)						Sampled on 11/05/2020 1128			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 902548
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/09/2020 1207

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	11/13/20 08:37			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.8 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	11/12/20 12:10		1287640	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.60	mg/L	0.020	1
Day 2 NO.7 (202011090153)						Sampled on 11/05/2020 1132			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	11/13/20 08:38			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	4.9 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	11/12/20 12:43		1287640	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.6	mg/L	0.040	2
Day 2 NO.0 (202011090154)						Sampled on 11/05/2020 0958			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	11/13/20 08:37			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	ND (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	11/12/20 12:12		1287640	(SM4500-PE/EPA 365.1)	Total phosphorus as P	ND	mg/L	0.020	1

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 902548
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

Total phosphorus as P (T-P)**Analytical Batch: 1287640**

202011090147	Day 2 NO.1
202011090148	Day 2 NO.2
202011090149	Day 2 NO.3
202011090150	Day 2 NO.4
202011090151	Day 2 NO.5
202011090152	Day 2 NO.6
202011090153	Day 2 NO.7
202011090154	Day 2 NO.0

Analysis Date: 11/12/2020

Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B

Tel: (626) 386-1100
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Report: 902548
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1287640					Analysis Date: 11/12/2020				
LCS1	Total phosphorus as P		0.4	0.429	mg/L	107	(90-110)		
LCS2	Total phosphorus as P		0.4	0.421	mg/L	105	(90-110)	20	1.9
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0220	mg/L	110	(50-150)		
MS_202011060345	Total phosphorus as P	0.17	0.4	0.589	mg/L	105	(90-110)		
MS_202011090128	Total phosphorus as P	0.48	0.4	0.890	mg/L	102	(90-110)		
MSD_202011060345	Total phosphorus as P	0.17	0.4	0.573	mg/L	101	(90-110)	20	2.8
MSD_202011090128	Total phosphorus as P	0.48	0.4	0.927	mg/L	<u>111</u>	(90-110)	20	4.1

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
11/27/2020

Vanessa Berry
EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 903743
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalart (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 903743
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **November 16, 2020 at 13:06**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
202011160122	C.O.3 #0	11/09/2020 0802
	Total phosphorus as P	Total phosphorus as PO4- Calc.
202011160128	C.O.3 #1	11/09/2020 0805
	Total phosphorus as P	Total phosphorus as PO4- Calc.
202011160129	C.O.3 #2	11/09/2020 0845
	Total phosphorus as P	Total phosphorus as PO4- Calc.
202011160130	C.O.3 #3	11/09/2020 0849
	Total phosphorus as P	Total phosphorus as PO4- Calc.
202011160131	C.O.3 #4	11/09/2020 0853
	Total phosphorus as P	Total phosphorus as PO4- Calc.
202011160132	C.O.3 #5	11/09/2020 0934
	@ICPMS	
202011160133	C.O.3 #6	11/09/2020 0928
	Total phosphorus as P	Total phosphorus as PO4- Calc.
202011160134	C.O.3 #7	11/09/2020 0930
	Total phosphorus as P	Total phosphorus as PO4- Calc.
202011160135	C.O.3 #8	11/09/2020 1000
	Total phosphorus as P	Total phosphorus as PO4- Calc.
202011160136	C.O.3 #9	11/09/2020 1002
	Total phosphorus as P	Total phosphorus as PO4- Calc.

Test Description

@ICPMS -- ICPMS Metals



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLE TEMP RECEIVED AT:

☐ (Other) IR Gun ID = 6066 (Observation = 0.18 °C) (Final = 0.5 °C)
☒ Monrovia IR Gun ID = 6066 (Observation = 0.13 °C) (Final = 0.5 °C)
Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic ☐ No Ice ☐

CONDITION OF ICE: Frozen ☐ Partially Frozen ☒ Thawed ☐ N/A ☐
METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: 928 451 488 23

SAMPLES CHECKED AGAINST COC BY: CP

SAMPLES LOGGED IN BY: CP

SAMPLES REC'D DAY OF COLLECTION? ☐ (check for yes)

(Corr. Factor 0.18 °C) (Final = 0.5 °C)

(Corr. Factor 0.13 °C) (Final = 0.5 °C)

TO BE COMPLETED BY SAMPLER:

(check for yes)

(check for yes)

PROJECT CODE:

COMPANY/AGENCY NAME: Tetra Tech - 201 E Pine St - Orlando

COMPLIANCE SAMPLES ☐ NON-COMPLIANCE SAMPLES ☐
- Requires state forms ☐ REGULATION INVOLVED: (eg. SDWA, NPDES, etc.)

Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION

SEE ATTACHED KIT ORDER FOR ANALYSES (check for yes) ☐ OR

List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)

STD 1 wk 3 day 2 day 1 day

TAT requested: rush by adv notice only

SAMPLE DATE SAMPLE TIME SAMPLE ID CLIENT LAB ID MATRIX FIELD DATA FIELD DATA

11/9 8:02 C-03 #0 AN

8:05 C-03 #1

8:45 C-03 #2

8:49 C-03 #3

8:53 C-03 #4

9:34 C-03 #5

9:28 C-03 #6

9:30 C-03 #7

10:00 C-03 #8

10:02 C-03 #9

SAMPLER COMMENTS

Preserved with H2SO4

No Preservative Analysis Perms

SEAW = Sea Water BW = Bottled Water SO = Soil

WW = Waste Water SW = Storm Water SL = Sludge

CFW = Chlor(am)inated Finished Water FW = Other Finished Water

RGW = Raw Ground Water RSW = Raw Surface Water

* MATRIX TYPES: RSW = Raw Surface Water RGW = Raw Ground Water

CFW = Chlor(am)inated Finished Water FW = Other Finished Water

RGW = Raw Ground Water RSW = Raw Surface Water

CFW = Chlor(am)inated Finished Water FW = Other Finished Water

RGW = Raw Ground Water RSW = Raw Surface Water

CFW = Chlor(am)inated Finished Water FW = Other Finished Water

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CFW = Chlor(am)inated Finished Water FW = Other Finished Water

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RGW = Raw Ground Water RSW = Raw Surface Water

CFW = Chlor(am)inated Finished Water FW = Other Finished Water

RGW = Raw Ground Water RSW = Raw Surface Water

CFW = Chlor(am)inated Finished Water FW = Other Finished Water

RGW = Raw Ground Water RSW = Raw Surface Water

CFW = Chlor(am)inated Finished Water FW = Other Finished Water

RGW = Raw Ground Water RSW = Raw Surface Water

CFW = Chlor(am)inated Finished Water FW = Other Finished Water

SIGNATURE

PRINT NAME

COMPANY/TITLE

DATE

TIME

SAMPLED BY: M. Arenas (maria.arenas@tetratech.com) Maria Isabel Arenas Tetra Tech, Project Engineer 11/13/20 15:30

RELINQUISHED BY: M. Arenas " " " "

RECEIVED BY: Chris Beach Chris Beach TTA 11/16/20 1306

RELINQUISHED BY: " " " " "

RECEIVED BY: " " " " "

RELINQUISHED BY: " " " " "

RECEIVED BY: " " " " "

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments

Report: 903743

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

Report: 903743
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/16/2020 13:06

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
202011160122 <u>C.O.3 #0</u>						
11/19/2020 09:29	Total phosphorus as P		0.025		mg/L	0.020
11/19/2020 10:49	Total phosphorus as PO4- Calc.		0.077		mg/L	0.030
202011160128 <u>C.O.3 #1</u>						
11/19/2020 09:38	Total phosphorus as P		0.10		mg/L	0.020
11/19/2020 10:50	Total phosphorus as PO4- Calc.		0.31		mg/L	0.030
202011160129 <u>C.O.3 #2</u>						
11/19/2020 10:23	Total phosphorus as P		1.0		mg/L	0.040
11/19/2020 10:51	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
202011160130 <u>C.O.3 #3</u>						
11/19/2020 10:24	Total phosphorus as P		2.3		mg/L	0.10
11/19/2020 10:51	Total phosphorus as PO4- Calc.		7.1		mg/L	0.030
202011160131 <u>C.O.3 #4</u>						
11/19/2020 09:41	Total phosphorus as P		0.61		mg/L	0.020
11/19/2020 10:50	Total phosphorus as PO4- Calc.		1.9		mg/L	0.030
202011160133 <u>C.O.3 #6</u>						
11/19/2020 09:42	Total phosphorus as P		0.54		mg/L	0.020
11/19/2020 10:50	Total phosphorus as PO4- Calc.		1.6		mg/L	0.030
202011160134 <u>C.O.3 #7</u>						
11/19/2020 10:25	Total phosphorus as P		1.1		mg/L	0.040
11/19/2020 10:51	Total phosphorus as PO4- Calc.		3.4		mg/L	0.030
202011160135 <u>C.O.3 #8</u>						
11/19/2020 09:46	Total phosphorus as P		0.46		mg/L	0.020
11/19/2020 10:51	Total phosphorus as PO4- Calc.		1.4		mg/L	0.030
202011160136 <u>C.O.3 #9</u>						
11/20/2020 10:47	Total phosphorus as P		0.94		mg/L	0.020
11/24/2020 07:23	Total phosphorus as PO4- Calc.		2.9		mg/L	0.030

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 903743
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/16/2020 13:06

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>C.O.3 #0 (202011160122)</u>						Sampled on 11/09/2020 0802			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/19/20 10:49				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.077 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/19/20 09:29		1289154		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.025	mg/L	0.020	1
<u>C.O.3 #1 (202011160128)</u>						Sampled on 11/09/2020 0805			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/19/20 10:50				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.31 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/19/20 09:38		1289154		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.10	mg/L	0.020	1
<u>C.O.3 #2 (202011160129)</u>						Sampled on 11/09/2020 0845			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/19/20 10:51				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/19/20 10:23		1289154		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
<u>C.O.3 #3 (202011160130)</u>						Sampled on 11/09/2020 0849			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/19/20 10:51				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	7.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/19/20 10:24		1289154		(SM4500-PE/EPA 365.1)	Total phosphorus as P	2.3	mg/L	0.10	5
<u>C.O.3 #4 (202011160131)</u>						Sampled on 11/09/2020 0853			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/19/20 10:50				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.9 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/19/20 09:41		1289154		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.61	mg/L	0.020	1
<u>C.O.3 #5 (202011160132)</u>						Sampled on 11/09/2020 0934			

EPA 200.8 - ICPMS Metals

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 903743
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/16/2020 13:06

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
11/18/20	11/21/20 16:20	1288897	1289903	(EPA 200.8)	Lead Total ICAP/MS	ND	ug/L	0.50	1
<u>C.O.3 #6 (202011160133)</u>						Sampled on 11/09/2020 0928			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/19/20 10:50				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.6 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/19/20 09:42		1289154		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.54	mg/L	0.020	1
<u>C.O.3 #7 (202011160134)</u>						Sampled on 11/09/2020 0930			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/19/20 10:51				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.4 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/19/20 10:25		1289154		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.1	mg/L	0.040	2
<u>C.O.3 #8 (202011160135)</u>						Sampled on 11/09/2020 1000			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/19/20 10:51				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.4 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/19/20 09:46		1289154		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.46	mg/L	0.020	1
<u>C.O.3 #9 (202011160136)</u>						Sampled on 11/09/2020 1002			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/24/20 07:23				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.9 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/20/20 10:47		1289614		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.94	mg/L	0.020	1

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 903743
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

Total phosphorus as P (T-P)**Analytical Batch: 1289154**

202011160122	C.O.3 #0
202011160128	C.O.3 #1
202011160129	C.O.3 #2
202011160130	C.O.3 #3
202011160131	C.O.3 #4
202011160133	C.O.3 #6
202011160134	C.O.3 #7
202011160135	C.O.3 #8

Analysis Date: 11/19/2020

Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B

Total phosphorus as P (T-P)**Analytical Batch: 1289614**

202011160136	C.O.3 #9
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Analysis Date: 11/20/2020

Analyzed by: KA9B

ICPMS Metals**Prep Batch: 1288897 Analytical Batch: 1289903**

202011160132	C.O.3 #5
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Analysis Date: 11/21/2020

Analyzed by: URDE

Tel: (626) 386-1100
Fax: (626) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 903743
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1289154					Analysis Date: 11/19/2020				
LCS1	Total phosphorus as P		0.4	0.417	mg/L	104	(90-110)		
LCS2	Total phosphorus as P		0.4	0.413	mg/L	103	(90-110)	20	0.96
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0242	mg/L	121	(50-150)		
MS_202011160122	Total phosphorus as P	0.025	0.4	0.402	mg/L	94	(90-110)		
MS_202011160134	Total phosphorus as P	1.1	0.8	ND	mg/L				
MSD_202011160122	Total phosphorus as P	0.025	0.4	0.405	mg/L	95	(90-110)	20	0.62
MSD_202011160134	Total phosphorus as P	1.1	0.8	ND	mg/L				
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1289614					Analysis Date: 11/20/2020				
LCS1	Total phosphorus as P		0.4	0.424	mg/L	106	(90-110)		
LCS2	Total phosphorus as P		0.4	0.428	mg/L	107	(90-110)	20	0.94
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0265	mg/L	133	(50-150)		
MS_202011110648	Total phosphorus as P	ND	0.4	0.410	mg/L	103	(90-110)		
MS_202011140057	Total phosphorus as P	1.2	0.8	ND	mg/L	99	(90-110)		
MSD_202011110648	Total phosphorus as P	ND	0.4	0.406	mg/L	102	(90-110)	20	0.78
MSD_202011140057	Total phosphorus as P	1.2	0.8	ND	mg/L				
ICPMS Metals by EPA 200.8									
Analytical Batch: 1289903					Analysis Date: 11/21/2020				
LCS1	Lead Total ICAP/MS		50	51.6	ug/L	103	(85-115)		
LCS2	Lead Total ICAP/MS		50	51.9	ug/L	104	(85-115)	20	0.58
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.504	ug/L	101	(50-150)		
MS_202011140040	Lead Total ICAP/MS	64	50	112	ug/L	96	(70-130)		
MS2_202011140050	Lead Total ICAP/MS	5.9	50	53.1	ug/L	95	(70-130)		
MSD_202011140040	Lead Total ICAP/MS	64	50	114	ug/L	99	(70-130)	20	1.4
MSD2_202011140050	Lead Total ICAP/MS	5.9	50	52.1	ug/L	92	(70-130)	20	1.9

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
11/27/2020

Vanessa Berry

**EUROFINS EATON
ANALYTICAL, LLC**



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 903759
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalart (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 903759
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **November 16, 2020** at **1306**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202011160200</u>	Test 4 #0	11/12/2020 0812
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011160201</u>	Test 4 #1	11/12/2020 0814
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011160202</u>	Test 4 #2	11/12/2020 0816
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011160203</u>	Test 4 #3	11/12/2020 0940
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011160204</u>	Test 4 #4	11/12/2020 0944
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011160205</u>	Test 4 #5	11/12/2020 0947
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011160206</u>	Test 4 #6	11/12/2020 1015
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011160207</u>	Test 4 #7	11/12/2020 1018
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011160208</u>	Test 4 #8	11/12/2020 1022
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011160209</u>	Test 4 #9	11/12/2020 1048
	Total phosphorus as P	Total phosphorus as PO4- Calc.

Test Description



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLES CHECKED AGAINST COC BY: CB

SAMPLES LOGGED IN BY: LD

SAMPLE TEMP RECEIVED AT:

(Other) IR Gun ID = 666 (Observation = 0.8 °C) (check for yes)
(☒ Monrovia) IR Gun ID = 666 (Observation = 0.8 °C) (Final = 0.5 °C)
Compliance Acceptance Criteria: (Chemistry: ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic ☒

CONDITION OF ICE: Frozen ☒ Partially Frozen ☒ Thawed ☐ N/A ☐
METHOD OF SHIPMENT: Pick-Up / Walk-In / DHL / Area Fast / Top Line / Other: FedEx

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME: Tetra Tech 201 E Pine St. Orlando

EEA CLIENT CODE: Tetrattech-orlan

COC ID: 201 E Pine St. Orlando

TAT requested: rush by adv notice only

STD 1 wk 3 day 2 day 1 day

SAMPLE GROUP: Lead Solubility Test - Phase 1

PROJECT CODE: 928451148923

COMPLIANCE SAMPLES ☐ NON-COMPLIANCE SAMPLES ☐

- Requires state forms

REGULATION INVOLVED: (eg. SDWA, NPDES, etc.)

Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION

SEE ATTACHED KIT ORDER FOR ANALYSES (check for yes) OR

List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)

SAMPLE ID

SAMPLE DATE

SAMPLE TIME

CLIENT LAB ID

MATRIX

FIELD DATA

FIELD DATA

SAMPLER COMMENTS

SEAW = Sea Water

WW = Waste Water

CFW = Chlor(am)inated Finished Water

FW = Other Finished Water

RGW = Raw Ground Water

BSW = Bottled Water

SW = Storm Water

SO = Soil

SL = Sludge

O = Other - Please Identify

SIGNATURE

PRINT NAME

COMPANY/TITLE

DATE

TIME

SAMPLED BY: M. Arenas (mana.arenas@tetratech.com)

RELINQUISHED BY: M. Arenas

RECEIVED BY: Chuck Boach

RELINQUISHED BY: Chuck Boach

RECEIVED BY: Chuck Boach

SAMPLED BY: M. Arenas (mana.arenas@tetratech.com)

RELINQUISHED BY: M. Arenas

RECEIVED BY: Chuck Boach

QA FO 0029.2 (Version 2) (08/28/2014)

PAGE 5 OF 11 pages

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments

Report: 903759

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

Report: 903759
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/16/2020 1306

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
202011160201 <u>Test 4 #1</u>						
11/20/2020 10:42	Total phosphorus as P		0.079		mg/L	0.020
11/24/2020 07:23	Total phosphorus as PO4- Calc.		0.24		mg/L	0.030
202011160202 <u>Test 4 #2</u>						
11/20/2020 11:25	Total phosphorus as P		1.0		mg/L	0.040
11/24/2020 07:23	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
202011160203 <u>Test 4 #3</u>						
11/24/2020 13:14	Total phosphorus as P		2.0		mg/L	0.10
11/25/2020 11:50	Total phosphorus as PO4- Calc.		6.1		mg/L	0.030
202011160204 <u>Test 4 #4</u>						
11/24/2020 12:30	Total phosphorus as P		0.64		mg/L	0.020
11/25/2020 11:49	Total phosphorus as PO4- Calc.		2.0		mg/L	0.030
202011160205 <u>Test 4 #5</u>						
11/24/2020 13:15	Total phosphorus as P		1.3		mg/L	0.040
11/25/2020 11:50	Total phosphorus as PO4- Calc.		4.0		mg/L	0.030
202011160206 <u>Test 4 #6</u>						
11/24/2020 12:34	Total phosphorus as P		0.57		mg/L	0.020
11/25/2020 11:49	Total phosphorus as PO4- Calc.		1.7		mg/L	0.030
202011160207 <u>Test 4 #7</u>						
11/24/2020 13:15	Total phosphorus as P		1.1		mg/L	0.040
11/25/2020 11:50	Total phosphorus as PO4- Calc.		3.4		mg/L	0.030
202011160208 <u>Test 4 #8</u>						
11/24/2020 12:36	Total phosphorus as P		0.46		mg/L	0.020
11/25/2020 11:49	Total phosphorus as PO4- Calc.		1.4		mg/L	0.030
202011160209 <u>Test 4 #9</u>						
11/24/2020 12:37	Total phosphorus as P		0.98		mg/L	0.020
11/25/2020 11:49	Total phosphorus as PO4- Calc.		3.0		mg/L	0.030

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
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Laboratory Data

Report: 903759
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/16/2020 1306

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
Test 4 #0 (202011160200)						Sampled on 11/12/2020 0812			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/24/20 07:24				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	ND (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/20/20 11:32		1289614		(SM4500-PE/EPA 365.1)	Total phosphorus as P	ND	mg/L	0.020	1
Test 4 #1 (202011160201)						Sampled on 11/12/2020 0814			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/24/20 07:23				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.24 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/20/20 10:42		1289614		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.079	mg/L	0.020	1
Test 4 #2 (202011160202)						Sampled on 11/12/2020 0816			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/24/20 07:23				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/20/20 11:25		1289614		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
Test 4 #3 (202011160203)						Sampled on 11/12/2020 0940			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/25/20 11:50				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	6.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/24/20 13:14		1290652		(SM4500-PE/EPA 365.1)	Total phosphorus as P	2.0	mg/L	0.10	5
Test 4 #4 (202011160204)						Sampled on 11/12/2020 0944			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
11/25/20 11:49				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.0 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
11/24/20 12:30		1290652		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.64	mg/L	0.020	1
Test 4 #5 (202011160205)						Sampled on 11/12/2020 0947			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

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Laboratory Data

Report: 903759
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/16/2020 1306

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	11/25/20 11:50			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	4.0 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	11/24/20 13:15		1290652	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.3	mg/L	0.040	2
Test 4 #6 (202011160206)						Sampled on 11/12/2020 1015			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	11/25/20 11:49			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.7 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	11/24/20 12:34		1290652	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.57	mg/L	0.020	1
Test 4 #7 (202011160207)						Sampled on 11/12/2020 1018			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	11/25/20 11:50			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.4 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	11/24/20 13:15		1290652	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.1	mg/L	0.040	2
Test 4 #8 (202011160208)						Sampled on 11/12/2020 1022			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	11/25/20 11:49			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.4 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	11/24/20 12:36		1290652	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.46	mg/L	0.020	1
Test 4 #9 (202011160209)						Sampled on 11/12/2020 1048			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	11/25/20 11:49			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.0 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	11/24/20 12:37		1290652	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.98	mg/L	0.020	1

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

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1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 903759
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

Total phosphorus as P (T-P)**Analytical Batch: 1289614**

202011160200	Test 4 #0
202011160201	Test 4 #1
202011160202	Test 4 #2

Analysis Date: 11/20/2020

Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B

Total phosphorus as P (T-P)**Analytical Batch: 1290652**

202011160203	Test 4 #3
202011160204	Test 4 #4
202011160205	Test 4 #5
202011160206	Test 4 #6
202011160207	Test 4 #7
202011160208	Test 4 #8
202011160209	Test 4 #9

Analysis Date: 11/24/2020

Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B
Analyzed by: KA9B

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Report: 903759
Project: KALAMAZOO
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Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1289614					Analysis Date: 11/20/2020				
LCS1	Total phosphorus as P		0.4	0.424	mg/L	106	(90-110)		
LCS2	Total phosphorus as P		0.4	0.428	mg/L	107	(90-110)	20	0.94
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0265	mg/L	133	(50-150)		
MS_202011110648	Total phosphorus as P	ND	0.4	0.410	mg/L	103	(90-110)		
MS_202011140057	Total phosphorus as P	1.2	0.8	ND	mg/L	99	(90-110)		
MSD_202011110648	Total phosphorus as P	ND	0.4	0.406	mg/L	102	(90-110)	20	0.78
MSD_202011140057	Total phosphorus as P	1.2	0.8	ND	mg/L				
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1290652					Analysis Date: 11/24/2020				
LCS1	Total phosphorus as P		0.4	0.408	mg/L	102	(90-110)		
LCS2	Total phosphorus as P		0.4	0.396	mg/L	99	(90-110)	20	2.7
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0229	mg/L	115	(50-150)		
MS_202011100283	Total phosphorus as P	ND	0.4	0.416	mg/L	104	(90-110)		
MS_202011110651	Total phosphorus as P	ND	0.4	0.397	mg/L	95	(90-110)		
MSD_202011100283	Total phosphorus as P	ND	0.4	0.406	mg/L	101	(90-110)	20	2.5
MSD_202011110651	Total phosphorus as P	ND	0.4	0.397	mg/L	95	(90-110)	20	0.0

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

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Monrovia, California 91016-3629
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Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
12/09/2020

Vanessa Berry

EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 905128
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 905128
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **November 23, 2020 at 1022**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202011230219</u>	Test 6 No.0 Initial	11/19/2020 0822
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230220</u>	Test 6 No.1 Initial	11/19/2020 0824
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230221</u>	Test 6 No.2 Initial	11/19/2020 0826
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230222</u>	Test 6 No.3 Initial	11/19/2020 0858
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230223</u>	Test 6 No.4 Initial	11/19/2020 0856
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230224</u>	Test 6 No.5 Initial	11/19/2020 0900
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230225</u>	Test 6 No.6 Initial	11/19/2020 0926
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230226</u>	Test 6 No.7 Initial	11/19/2020 0928
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230227</u>	Test 6 No.8 Initial	11/19/2020 0930
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230228</u>	Test 6 No.9 Initial	11/19/2020 0955
	Total phosphorus as P	Total phosphorus as PO4- Calc.

Test Description



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLES CHECKED AGAINST COC BY: 405125

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

Phone: 626 386 1100
Fax: 626 386 1101

800 566 LABS (800 566 5227)

Website: www.EatonAnalytical.com

SAMPLE TEMP RECEIVED AT:

☐ (Other) IR Gun ID =

(Observation = 63.4 °C)

SAMPLES LOGGED IN BY: 405125

SAMPLES REC'D DAY OF COLLECTION? ☐ (check for yes)

(Final = 2.5 °C)

☒ Monrovia

IR Gun ID = 63.4

(Observation = 2.7 °C)

(Final = 2.5 °C)

Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic

No Ice

CONDITION OF ICE: Frozen

Partially Frozen

Thawed

N/A

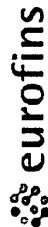
METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: FedEx

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:		PROJECT CODE:		COMPLIANCE SAMPLES		NON-COMPLIANCE SAMPLES	
Tetra Tech 201 E Pine St Orlando				- Requires state forms		REGULATION INVOLVED:	
EEA CLIENT CODE:		COC ID:		Type of samples (circle one):		(eg. SDWA, NPDES, etc.)	
Tetra Tech-Orlan				ROUTINE SPECIAL CONFIRMATION			
TAT requested: rush by adv notice only		SAMPLE GROUP:		SEE ATTACHED KIT ORDER FOR ANALYSES		(check for yes), OR	
STD 1 wk 3 day 2 day 1 day		LEAD SOLUBILITY TEST - Phase 1		List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)			
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX	FIELD DATA	FIELD DATA	SAMPLER COMMENTS
11/19	8:22	Test 6 No. 0 initial		FW			preserved with
	8:24	No. 1					H2SO4
	8:26	No. 2					
	8:58	No. 3					
	8:56	No. 4					
	9:00	No. 5					
	9:26	No. 6					
	9:28	No. 7					
	9:30	No. 8					
	9:55	No. 9					

* MATRIX TYPES: RSW = Raw Surface Water RGW = Raw Ground Water CFW = Chlor(am)inated Finished Water FW = Other Finished Water SEAW = Sea Water BW = Bottled Water SW = Storm Water SO = Soil SL = Sludge

SIGNATURE		PRINT NAME		COMPANY/TITLE		DATE		TIME	
SAMPLED BY:	M. Arenas	Maria Isabel Arenas		Tetra Tech, Project Engineer		11/20/20		4:00 PM	
RELINQUISHED BY:	"	"		"		"		"	
RECEIVED BY:									
RELINQUISHED BY:									
RECEIVED BY:		Salvador Morales				11/23/20		10:22	



Eaton Analytical

Kit Order for Tetra Tech Inc.

Vanessa Berry is your Eurofins Eaton Analytical, LLC Service Manager

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
(626) 386-1100 FAX (866) 988-3757

Created Date & Time: 10/22/2020 3:01:41PM

Note: Sampler Please return this paper with your samples

Client ID: TETRATECH-ORLAN
Project Code: KALAMAZOO Bottle Orders
Group Name: Lead Solubility Testing - Phase 1
PO#/JOB#: PO#
Description: Every 1 week on Mon

Kit #: 275440

Created By: - [AutoGenerated]
Deliver By: 11/16/2020
STG: Bottle Orders
Ice Type: W

Ship Sample Kits to
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

Send Report to
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

Billing Address
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

# of Sample Tests	Bottle Qty - Type [preservative information]	Total	UN DOT #
20 Total phosphorus as P	1 - 250ml poly [0.5 ml H2SO4 (50%)]	20	UN1830
20 @ICPMS	1 - 250ml poly [no preservative]	20	

Sum Tests: 40 **Sum Bottles: 40**

Comments

include return shipping labels
COCs

Total lead containers are preserved with nitric acid by the client.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments

Report: 905128

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

Report: 905128
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/23/2020 1022

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
202011230220 <u>Test 6 No.1 Initial</u>						
12/03/2020 16:54	Total phosphorus as P		0.059		mg/L	0.040
12/04/2020 11:48	Total phosphorus as PO4- Calc.		0.18		mg/L	0.030
202011230221 <u>Test 6 No.2 Initial</u>						
12/03/2020 16:54	Total phosphorus as P		0.91		mg/L	0.040
12/04/2020 11:48	Total phosphorus as PO4- Calc.		2.8		mg/L	0.030
202011230222 <u>Test 6 No.3 Initial</u>						
12/03/2020 16:55	Total phosphorus as P		1.9		mg/L	0.040
12/04/2020 11:48	Total phosphorus as PO4- Calc.		5.8		mg/L	0.030
202011230223 <u>Test 6 No.4 Initial</u>						
12/03/2020 16:56	Total phosphorus as P		0.58		mg/L	0.040
12/04/2020 11:48	Total phosphorus as PO4- Calc.		1.8		mg/L	0.030
202011230224 <u>Test 6 No.5 Initial</u>						
12/03/2020 16:57	Total phosphorus as P		1.2		mg/L	0.040
12/04/2020 11:48	Total phosphorus as PO4- Calc.		3.7		mg/L	0.030
202011230225 <u>Test 6 No.6 Initial</u>						
12/03/2020 12:37	Total phosphorus as P		0.51		mg/L	0.040
12/04/2020 11:58	Total phosphorus as PO4- Calc.		1.6		mg/L	0.030
202011230226 <u>Test 6 No.7 Initial</u>						
12/03/2020 12:40	Total phosphorus as P		1.0		mg/L	0.040
12/04/2020 11:58	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
202011230227 <u>Test 6 No.8 Initial</u>						
12/03/2020 12:41	Total phosphorus as P		0.48		mg/L	0.040
12/04/2020 11:58	Total phosphorus as PO4- Calc.		1.5		mg/L	0.030
202011230228 <u>Test 6 No.9 Initial</u>						
12/03/2020 12:42	Total phosphorus as P		0.91		mg/L	0.040
12/04/2020 11:58	Total phosphorus as PO4- Calc.		2.8		mg/L	0.030

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 905128
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/23/2020 1022

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
Test 6 No.0 Initial (202011230219)						Sampled on 11/19/2020 0822			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/04/20 11:48				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	ND (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/08/20 12:51		1292531		(SM4500-PE/EPA 365.1)	Total phosphorus as P	ND	mg/L	0.020	1
Test 6 No.1 Initial (202011230220)						Sampled on 11/19/2020 0824			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/04/20 11:48				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.18 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/03/20 16:54		1291544		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.059	mg/L	0.040	2
Test 6 No.2 Initial (202011230221)						Sampled on 11/19/2020 0826			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/04/20 11:48				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.8 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/03/20 16:54		1291544		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.91	mg/L	0.040	2
Test 6 No.3 Initial (202011230222)						Sampled on 11/19/2020 0858			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/04/20 11:48				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	5.8 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/03/20 16:55		1291544		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.9	mg/L	0.040	2
Test 6 No.4 Initial (202011230223)						Sampled on 11/19/2020 0856			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/04/20 11:48				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.8 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/03/20 16:56		1291544		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.58	mg/L	0.040	2
Test 6 No.5 Initial (202011230224)						Sampled on 11/19/2020 0900			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 905128
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/23/2020 1022

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	12/04/20 11:48			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.7 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/03/20 16:57		1291544	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.2	mg/L	0.040	2
Test 6 No.6 Initial (202011230225)						Sampled on 11/19/2020 0926			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/04/20 11:58			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.6 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/03/20 12:37		1291545	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.51	mg/L	0.040	2
Test 6 No.7 Initial (202011230226)						Sampled on 11/19/2020 0928			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/04/20 11:58			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/03/20 12:40		1291545	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
Test 6 No.8 Initial (202011230227)						Sampled on 11/19/2020 0930			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/04/20 11:58			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.5 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/03/20 12:41		1291545	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.48	mg/L	0.040	2
Test 6 No.9 Initial (202011230228)						Sampled on 11/19/2020 0955			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/04/20 11:58			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.8 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/03/20 12:42		1291545	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.91	mg/L	0.040	2

Rounding on totals after summation.
(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
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1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 905128
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

Total phosphorus as P (T-P)**Analytical Batch: 1291544**

202011230220	Test 6 No.1 Initial
202011230221	Test 6 No.2 Initial
202011230222	Test 6 No.3 Initial
202011230223	Test 6 No.4 Initial
202011230224	Test 6 No.5 Initial

Analysis Date: 12/03/2020

Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG

Total phosphorus as P (T-P)**Analytical Batch: 1291545**

202011230225	Test 6 No.6 Initial
202011230226	Test 6 No.7 Initial
202011230227	Test 6 No.8 Initial
202011230228	Test 6 No.9 Initial

Analysis Date: 12/03/2020

Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG

Total phosphorus as P (T-P)**Analytical Batch: 1292531**

202011230219	Test 6 No.0 Initial
--------------	---------------------

Analysis Date: 12/08/2020

Analyzed by: LQ3M

Tel: (626) 386-1100
Fax: (626) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 905128
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1291544					Analysis Date: 12/03/2020				
LCS1	Total phosphorus as P		0.4	0.383	mg/L	96	(90-110)		
LCS2	Total phosphorus as P		0.4	0.371	mg/L	93	(90-110)	20	3.2
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0129	mg/L	65	(50-150)		
MS_202011210084	Total phosphorus as P	1.1	0.8	1.83	mg/L	94	(90-110)		
MS_202011230237	Total phosphorus as P	0.58	0.8	1.15	mg/L	<u>72</u>	(90-110)		
MSD_202011210084	Total phosphorus as P	1.1	0.8	1.79	mg/L	<u>89</u>	(90-110)	20	2.1
MSD_202011230237	Total phosphorus as P	0.58	0.8	1.14	mg/L	<u>71</u>	(90-110)	20	0.35
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1291545					Analysis Date: 12/03/2020				
LCS1	Total phosphorus as P		0.4	0.391	mg/L	98	(90-110)		
LCS2	Total phosphorus as P		0.4	0.390	mg/L	97	(90-110)	20	0.26
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0178	mg/L	89	(50-150)		
MS_202011170201	Total phosphorus as P	0.11	0.4	0.326	mg/L	<u>55</u>	(90-110)		
MS_202011230225	Total phosphorus as P	0.51	0.8	1.23	mg/L	90	(90-110)		
MSD_202011170201	Total phosphorus as P	0.11	0.4	0.347	mg/L	<u>60</u>	(90-110)	20	6.2
MSD_202011230225	Total phosphorus as P	0.51	0.8	1.30	mg/L	99	(90-110)	20	5.2
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1292531					Analysis Date: 12/08/2020				
LCS1	Total phosphorus as P		0.4	0.395	mg/L	99	(90-110)		
LCS2	Total phosphorus as P		0.4	0.384	mg/L	96	(90-110)	20	2.8
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0262	mg/L	131	(50-150)		
MS_202011130113	Total phosphorus as P	0.060	0.4	0.408	mg/L	<u>87</u>	(90-110)		
MS_202011170303	Total phosphorus as P	0.048	0.4	0.424	mg/L	94	(90-110)		
MSD_202011130113	Total phosphorus as P	0.060	0.4	0.482	mg/L	106	(90-110)	20	17
MSD_202011170303	Total phosphorus as P	0.048	0.4	0.411	mg/L	91	(90-110)	20	3.1

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
12/09/2020

Vanessa Berry

EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 905129
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 905129
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **November 23, 2020 at 1022**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202011230229</u>	Test 5 No.0 Initial	11/16/2020 0801
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230230</u>	Test 5 No.1 Initial	11/16/2020 0815
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230231</u>	Test 5 No.2 Initial	11/16/2020 0807
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230232</u>	Test 5 No.3 Initial	11/16/2020 0839
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230233</u>	Test 5 No.4 Initial	11/16/2020 0841
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230234</u>	Test 5 No.5 Initial	11/16/2020 0843
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230235</u>	Test 5 No.6 Initial	11/16/2020 0912
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230236</u>	Test 5 No.7 Initial	11/16/2020 0914
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230237</u>	Test 5 No.8 Initial	11/16/2020 0916
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202011230238</u>	Test 5 No.9 Initial	11/16/2020 0941
	Total phosphorus as P	Total phosphorus as PO4- Calc.

Test Description

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

Phone: 626 386 1100
Fax: 626 386 1101

800 566 LABS (800 566 5227)

Website: www.EatonAnalytical.com

EUROFINS EATON ANALYTICAL USE ONLY:

LOGIN COMMENTS:

SAMPLES CHECKED AGAINST COC BY:

2

SAMPLES LOGGED IN BY:

SAMPLE TEMP RECEIVED AT:

(Other) IR Gun ID =

(Observation=

°C) (Corr.Factor °C) (Final = °C)

Monrovia

6/3/29
Observation= $\frac{\%C}{\%C} / \text{Corr Factor} = 0.2$

(1776-1800) 1776-1800

Website: www.EatonAnalytical.com

TYPE OF ICE:	Real	Synthetic	No Ice	CONDITION
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TYPE OF ICE:	CONDITION OF ICE:	
Real <input checked="" type="checkbox"/>	No Ice	Partially Frozen
Synthetic	Frozen	Frozen
		Thawed

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other:


TO BE COMPLETED BY SAMPLER:

(check for yes)

(check for yes)

COMPANY/AGENCY NAME:		PROJECT CODE:		COMPLIANCE SAMPLES		NON-COMPLIANCE SAMPLES	
Tetra Tech 201 E Ave St Orlando				- Requires state forms			
Tetra Tech - Orlando		COC ID:		Type of samples (circle one):		ROUTINE SPECIAL CONFIRMATION	
EEA CLIENT CODE:		SAMPLE GROUP:		SEE ATTACHED KIT ORDER FOR ANALYSES		(check for yes), <u>OR</u>	
Tetra Tech - Orlando		Lead Solubility Test - phase 1		List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)			
TAT requested: rush by adv notice only		STD 1 wk 3 day 1 day		Type of samples (circle one):		ROUTINE SPECIAL CONFIRMATION	
SAMPLE ID		CLIENT LAB ID		FIELD DATA		FIELD DATA	
Test 5 No. 0 Initial		fw					
No. 1							
No. 2							
No. 3							
No. 4							
No. 5							
No. 6							
No. 7							
No. 8							
No. 9							
11/16 8:01							
8:15							
8:07							
8:39							
8:41							
8:43							
9:12							
9:14							
9:16							
9:41							
SAMPLER COMMENTS							
preserved with H ₂ SO ₄							

* **MATRIX TYPES:** RSW = Raw Surface Water
RGW = Raw Ground Water
CFW = Chlor(am)inated Finished Water
FW = Other Finished Water
SEAW = Sea Water
BW = Bottled Water
SW = Storm Water
SO = Soil
SL = Sludge
O = Other - Please Identify

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
SAMPLED BY: M. Arenas (maria.arenas@tetratech.com)	Maria Isabel Arenas	Tetra Tech, Project Engineer	11/20/20	4:00 PM
RELINQUISHED BY: M. Arenas	"	"	"	"
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY: 	Salvador Mora	et GC-A	11/23/20	1022

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments**Report:** 905129**Project:** KALAMAZOO**Group:** Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Flags Legend:

M1 - Matrix spike recovery was high; the associated blank spike recovery was acceptable.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

Report: 905129
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/23/2020 1022

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
202011230230 <u>Test 5 No.1 Initial</u>						
12/08/2020 12:48	Total phosphorus as P		0.080		mg/L	0.020
12/04/2020 11:46	Total phosphorus as PO4- Calc.		0.24		mg/L	0.030
202011230231 <u>Test 5 No.2 Initial</u>						
12/03/2020 16:39	Total phosphorus as P		0.89		mg/L	0.040
12/04/2020 11:47	Total phosphorus as PO4- Calc.		2.7		mg/L	0.030
202011230232 <u>Test 5 No.3 Initial</u>						
12/03/2020 16:40	Total phosphorus as P		1.9		mg/L	0.040
12/04/2020 11:47	Total phosphorus as PO4- Calc.		5.8		mg/L	0.030
202011230233 <u>Test 5 No.4 Initial</u>						
12/03/2020 16:41	Total phosphorus as P		0.61		mg/L	0.040
12/04/2020 11:47	Total phosphorus as PO4- Calc.		1.9		mg/L	0.030
202011230234 <u>Test 5 No.5 Initial</u>						
12/03/2020 16:42	Total phosphorus as P		1.1		mg/L	0.040
12/04/2020 11:47	Total phosphorus as PO4- Calc.		3.4		mg/L	0.030
202011230235 <u>Test 5 No.6 Initial</u>						
12/03/2020 16:43	Total phosphorus as P		0.52		mg/L	0.040
12/04/2020 11:47	Total phosphorus as PO4- Calc.		1.6		mg/L	0.030
202011230236 <u>Test 5 No.7 Initial</u>						
12/03/2020 16:44	Total phosphorus as P		0.95		mg/L	0.040
12/04/2020 11:47	Total phosphorus as PO4- Calc.		2.9		mg/L	0.030
202011230237 <u>Test 5 No.8 Initial</u>						
12/03/2020 16:45	Total phosphorus as P		0.58		mg/L	0.040
12/04/2020 11:47	Total phosphorus as PO4- Calc.		1.8		mg/L	0.030
202011230238 <u>Test 5 No.9 Initial</u>						
12/03/2020 16:48	Total phosphorus as P		0.86		mg/L	0.040
12/04/2020 11:47	Total phosphorus as PO4- Calc.		2.6		mg/L	0.030

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 905129
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/23/2020 1022

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
Test 5 No.0 Initial (202011230229)						Sampled on 11/16/2020 0801			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/04/20 11:46				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	ND (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/08/20 12:47		1292531		(SM4500-PE/EPA 365.1)	Total phosphorus as P	ND	mg/L	0.020	1
Test 5 No.1 Initial (202011230230)						Sampled on 11/16/2020 0815			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/04/20 11:46				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.24 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/08/20 12:48		1292531		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.080	mg/L	0.020	1
Test 5 No.2 Initial (202011230231)						Sampled on 11/16/2020 0807			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/04/20 11:47				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.7 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/03/20 16:39		1291544		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.89	mg/L	0.040	2
Test 5 No.3 Initial (202011230232)						Sampled on 11/16/2020 0839			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/04/20 11:47				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	5.8 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/03/20 16:40		1291544		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.9	mg/L	0.040	2
Test 5 No.4 Initial (202011230233)						Sampled on 11/16/2020 0841			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/04/20 11:47				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.9 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/03/20 16:41		1291544		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.61	mg/L	0.040	2
Test 5 No.5 Initial (202011230234)						Sampled on 11/16/2020 0843			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
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1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 905129
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
11/23/2020 1022

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	12/04/20 11:47			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.4 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/03/20 16:42		1291544	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.1	mg/L	0.040	2
Test 5 No.6 Initial (202011230235)						Sampled on 11/16/2020 0912			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/04/20 11:47			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.6 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/03/20 16:43		1291544	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.52	mg/L	0.040	2
Test 5 No.7 Initial (202011230236)						Sampled on 11/16/2020 0914			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/04/20 11:47			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.9 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/03/20 16:44		1291544	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.95	mg/L	0.040	2
Test 5 No.8 Initial (202011230237)						Sampled on 11/16/2020 0916			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/04/20 11:47			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.8 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/03/20 16:45		1291544	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.58 (M1)	mg/L	0.040	2
Test 5 No.9 Initial (202011230238)						Sampled on 11/16/2020 0941			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/04/20 11:47			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.6 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/03/20 16:48		1291544	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.86	mg/L	0.040	2

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 905129
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

Total phosphorus as P (T-P)**Analytical Batch: 1291544**

202011230231	Test 5 No.2 Initial
202011230232	Test 5 No.3 Initial
202011230233	Test 5 No.4 Initial
202011230234	Test 5 No.5 Initial
202011230235	Test 5 No.6 Initial
202011230236	Test 5 No.7 Initial
202011230237	Test 5 No.8 Initial
202011230238	Test 5 No.9 Initial

Analysis Date: 12/03/2020

Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG

Total phosphorus as P (T-P)**Analytical Batch: 1292531**

202011230229	Test 5 No.0 Initial
202011230230	Test 5 No.1 Initial

Analysis Date: 12/08/2020

Analyzed by: LQ3M
Analyzed by: LQ3M

Tel: (626) 386-1100
Fax: (626) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 905129
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1291544					Analysis Date: 12/03/2020				
LCS1	Total phosphorus as P		0.4	0.383	mg/L	96	(90-110)		
LCS2	Total phosphorus as P		0.4	0.371	mg/L	93	(90-110)	20	3.2
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0129	mg/L	65	(50-150)		
MS_202011210084	Total phosphorus as P	1.1	0.8	1.83	mg/L	94	(90-110)		
MS_202011230237	Total phosphorus as P	0.58	0.8	1.15	mg/L	<u>72</u>	(90-110)		
MSD_202011210084	Total phosphorus as P	1.1	0.8	1.79	mg/L	<u>89</u>	(90-110)	20	2.1
MSD_202011230237	Total phosphorus as P	0.58	0.8	1.14	mg/L	<u>71</u>	(90-110)	20	0.35
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1292531					Analysis Date: 12/08/2020				
LCS1	Total phosphorus as P		0.4	0.395	mg/L	99	(90-110)		
LCS2	Total phosphorus as P		0.4	0.384	mg/L	96	(90-110)	20	2.8
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0262	mg/L	131	(50-150)		
MS_202011130113	Total phosphorus as P	0.060	0.4	0.408	mg/L	<u>87</u>	(90-110)		
MS_202011170303	Total phosphorus as P	0.048	0.4	0.424	mg/L	94	(90-110)		
MSD_202011130113	Total phosphorus as P	0.060	0.4	0.482	mg/L	106	(90-110)	20	17
MSD_202011170303	Total phosphorus as P	0.048	0.4	0.411	mg/L	91	(90-110)	20	3.1

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
12/11/2020

Vanessa Berry

EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 906140
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 906140
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 01, 2020 at 1128**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012010582</u>	Test 7 No.0 Initial	11/23/2020 0804
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010583</u>	Test 7 No.1 Initial	11/23/2020 0807
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010584</u>	Test 7 No.2 Initial	11/23/2020 0810
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010585</u>	Test 7 No.3 Initial	11/23/2020 0838
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010586</u>	Test 7 No.4 Initial	11/23/2020 0840
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010587</u>	Test 7 No.5 Initial	11/23/2020 0842
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010588</u>	Test 7 No.6 Initial	11/23/2020 0909
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010589</u>	Test 7 No.7 Initial	11/23/2020 0912
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010590</u>	Test 7 No.8 Initial	11/23/2020 0914
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010591</u>	Test 7 No.9 Initial	11/23/2020 0939
	Total phosphorus as P Total phosphorus as PO4- Calc.	

Test Description



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS: _____

SAMPLES CHECKED AGAINST COC BY: AB

SAMPLES LOGGED IN BY: AB

SAMPLE TEMP RECEIVED AT:

☐ (Other) IR Gun ID = _____ (Observation = _____ °C) (check for yes)

☒ Monrovia IR Gun ID = 631A (Observation = 1.8 °C) (Final = 1.6 °C)

Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic ☐ No Ice ☒ **CONDITION OF ICE:** Frozen ☒ Partially Frozen ☐ Thawed ☐ N/A ☐

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: _____

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME: Tetra Tech 201 E Pine St Orlando

PROJECT CODE: _____

EEA CLIENT CODE: Tetra Tech-Orlan **COC ID:** _____

SAMPLE GROUP: Lead Solubility Test - Phase 1

STD 1 wk 3 day 2 day 1 day

SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX	FIELD DATA	FIELD DATA
11/13	8:04	Test 7 No. 0 Initial		fw		
	8:07	1				
	8:10	2				
	8:38	3				
	8:40	4				
	8:42	5				
	9:09	6				
	9:12	7				
	9:14	8				
	9:39	9				

COMPLIANCE SAMPLES ☐ **NON-COMPLIANCE SAMPLES** ☐ **REGULATION INVOLVED:** _____ (eg. SDWA, NPDES, etc.)

SEE ATTACHED KIT ORDER FOR ANALYSES ☐ (check for yes) **OR** ☐ (check for yes)

List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)

SAMPLER COMMENTS
preserved with H ₂ SO ₄

*** MATRIX TYPES:** RSW = Raw Surface Water RGW = Raw Ground Water CFW = Chlor(am)inated Finished Water FW = Other Finished Water BW = Bottled Water SW = Storm Water SEAW = Sea Water WW = Waste Water SO = Soil SL = Sludge O = Other - Please Identify

SIGNATURE **PRINT NAME** **COMPANY/TITLE** **DATE** **TIME**

SAMPLED BY: M. Arenas MARIA ISABEL ARENAS Tetra Tech, Project Engineer 11/30/20 4:30 PM

RELINQUISHED BY: _____

RECEIVED BY: Joe Sanchez Joe Sanchez 12/1/20 1128

RELINQUISHED BY: _____

RECEIVED BY: _____

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments**Report:** 906140**Project:** KALAMAZOO**Group:** Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Flags Legend:

M2 - Matrix spike recovery was low; the associated blank spike recovery was acceptable.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 906140
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/01/2020 1128

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
202012010583 <u>Test 7 No.1 Initial</u>						
12/08/2020 13:24	Total phosphorus as P		0.098		mg/L	0.020
12/09/2020 08:28	Total phosphorus as PO4- Calc.		0.30		mg/L	0.030
202012010584 <u>Test 7 No.2 Initial</u>						
12/09/2020 09:38	Total phosphorus as P		1.0		mg/L	0.040
12/10/2020 07:27	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
202012010585 <u>Test 7 No.3 Initial</u>						
12/09/2020 09:41	Total phosphorus as P		2.0		mg/L	0.040
12/10/2020 07:27	Total phosphorus as PO4- Calc.		6.1		mg/L	0.030
202012010586 <u>Test 7 No.4 Initial</u>						
12/09/2020 09:42	Total phosphorus as P		0.53		mg/L	0.040
12/10/2020 07:27	Total phosphorus as PO4- Calc.		1.6		mg/L	0.030
202012010587 <u>Test 7 No.5 Initial</u>						
12/09/2020 09:43	Total phosphorus as P		1.2		mg/L	0.040
12/10/2020 07:28	Total phosphorus as PO4- Calc.		3.7		mg/L	0.030
202012010588 <u>Test 7 No.6 Initial</u>						
12/09/2020 09:46	Total phosphorus as P		0.55		mg/L	0.040
12/10/2020 07:28	Total phosphorus as PO4- Calc.		1.7		mg/L	0.030
202012010589 <u>Test 7 No.7 Initial</u>						
12/09/2020 09:47	Total phosphorus as P		1.0		mg/L	0.040
12/10/2020 07:28	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
202012010590 <u>Test 7 No.8 Initial</u>						
12/09/2020 09:48	Total phosphorus as P		0.47		mg/L	0.040
12/10/2020 07:28	Total phosphorus as PO4- Calc.		1.4		mg/L	0.030
202012010591 <u>Test 7 No.9 Initial</u>						
12/09/2020 09:49	Total phosphorus as P		0.95		mg/L	0.040
12/10/2020 07:28	Total phosphorus as PO4- Calc.		2.9		mg/L	0.030

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 906140
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/01/2020 1128

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
Test 7 No.0 Initial (202012010582)						Sampled on 11/23/2020 0804			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/09/20 08:28				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	ND (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/08/20 13:23		1292531		(SM4500-PE/EPA 365.1)	Total phosphorus as P	ND	mg/L	0.020	1
Test 7 No.1 Initial (202012010583)						Sampled on 11/23/2020 0807			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/09/20 08:28				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.30 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/08/20 13:24		1292531		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.098	mg/L	0.020	1
Test 7 No.2 Initial (202012010584)						Sampled on 11/23/2020 0810			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/10/20 07:27				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/09/20 09:38		1292880		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0 (M2)	mg/L	0.040	2
Test 7 No.3 Initial (202012010585)						Sampled on 11/23/2020 0838			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/10/20 07:27				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	6.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/09/20 09:41		1292880		(SM4500-PE/EPA 365.1)	Total phosphorus as P	2.0	mg/L	0.040	2
Test 7 No.4 Initial (202012010586)						Sampled on 11/23/2020 0840			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/10/20 07:27				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.6 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/09/20 09:42		1292880		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.53	mg/L	0.040	2
Test 7 No.5 Initial (202012010587)						Sampled on 11/23/2020 0842			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
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Laboratory Data

Report: 906140
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/01/2020 1128

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	12/10/20 07:28			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.7 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/09/20 09:43		1292880	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.2	mg/L	0.040	2
Test 7 No.6 Initial (202012010588)						Sampled on 11/23/2020 0909			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/10/20 07:28			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.7 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/09/20 09:46		1292880	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.55	mg/L	0.040	2
Test 7 No.7 Initial (202012010589)						Sampled on 11/23/2020 0912			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/10/20 07:28			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/09/20 09:47		1292880	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
Test 7 No.8 Initial (202012010590)						Sampled on 11/23/2020 0914			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/10/20 07:28			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.4 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/09/20 09:48		1292880	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.47	mg/L	0.040	2
Test 7 No.9 Initial (202012010591)						Sampled on 11/23/2020 0939			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/10/20 07:28			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.9 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/09/20 09:49		1292880	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.95	mg/L	0.040	2

Rounding on totals after summation.
(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 906140
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

Total phosphorus as P (T-P)**Analytical Batch: 1292531**

202012010582	Test 7 No.0 Initial
202012010583	Test 7 No.1 Initial

Analysis Date: 12/08/2020

Analyzed by: LQ3M
Analyzed by: LQ3M

Total phosphorus as P (T-P)**Analytical Batch: 1292880**

202012010584	Test 7 No.2 Initial
202012010585	Test 7 No.3 Initial
202012010586	Test 7 No.4 Initial
202012010587	Test 7 No.5 Initial
202012010588	Test 7 No.6 Initial
202012010589	Test 7 No.7 Initial
202012010590	Test 7 No.8 Initial
202012010591	Test 7 No.9 Initial

Analysis Date: 12/09/2020

Analyzed by: LQ3M
Analyzed by: LQ3M
Analyzed by: LQ3M
Analyzed by: LQ3M
Analyzed by: LQ3M
Analyzed by: LQ3M
Analyzed by: LQ3M
Analyzed by: LQ3M

Tel: (626) 386-1100
Fax: (626) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 906140
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1292531					Analysis Date: 12/08/2020				
LCS1	Total phosphorus as P		0.4	0.395	mg/L	99	(90-110)		
LCS2	Total phosphorus as P		0.4	0.384	mg/L	96	(90-110)	20	2.8
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0262	mg/L	131	(50-150)		
MS_202011130113	Total phosphorus as P	0.060	0.4	0.408	mg/L	<u>87</u>	(90-110)		
MS_202011170303	Total phosphorus as P	0.048	0.4	0.424	mg/L	94	(90-110)		
MSD_202011130113	Total phosphorus as P	0.060	0.4	0.482	mg/L	106	(90-110)	20	17
MSD_202011170303	Total phosphorus as P	0.048	0.4	0.411	mg/L	91	(90-110)	20	3.1
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1292880					Analysis Date: 12/09/2020				
LCS1	Total phosphorus as P		0.4	0.395	mg/L	99	(90-110)		
LCS2	Total phosphorus as P		0.4	0.413	mg/L	103	(90-110)	20	4.5
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0242	mg/L	121	(50-150)		
MS_202012010584	Total phosphorus as P	1.0	0.8	1.70	mg/L	<u>88</u>	(90-110)		
MS_202012010607	Total phosphorus as P	1.0	0.8	1.69	mg/L	<u>86</u>	(90-110)		
MSD_202012010584	Total phosphorus as P	1.0	0.8	1.74	mg/L	94	(90-110)	20	2.8
MSD_202012010607	Total phosphorus as P	1.0	0.8	1.75	mg/L	94	(90-110)	20	3.6

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue

12/11/2020

Vanessa Berry

**EUROFINS EATON
ANALYTICAL, LLC**



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 906144
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 906144
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 01, 2020 at 1129**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012010605</u>	Test 8 No.0 Initial	11/25/2020 0800
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010606</u>	Test 8 No.1 Initial	11/25/2020 0802
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010607</u>	Test 8 No.2 Initial	11/25/2020 0805
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010609</u>	Test 8 No.3 Initial	11/25/2020 0831
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010610</u>	Test 8 No.4 Initial	11/25/2020 0834
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010611</u>	Test 8 No.5 Initial	11/25/2020 0836
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010612</u>	Test 8 No.6 Initial	11/25/2020 0903
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010613</u>	Test 8 No.7 Initial	11/25/2020 0905
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010614</u>	Test 8 No.8 Initial	11/25/2020 0907
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012010619</u>	Test 8 No.9 Initial	11/25/2020 0936
	Total phosphorus as P Total phosphorus as PO4- Calc.	

Test Description



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLE TEMP RECEIVED AT:

☐ (Other)

IR Gun ID =

(Observation =

°C)

(check for yes)

°C

☒ Monrovia

IR Gun ID = 6314

(Observation = 1.6

°C)

(check for yes)

°C

Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real

Synthetic

No Ice

CONDITION OF ICE: Frozen

Partially Frozen

Thawed

N/A

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / DHL / Area Fast / Top Line / Other:

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:

PROJECT CODE:

SAMPLE GROUP:

COMPLIANCE SAMPLES

NON-COMPLIANCE SAMPLES

(check for yes)

REGULATION INVOLVED:

(check for yes)

Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION (eg. SDWA, NPDES, etc.)

SAMPLE ID:

COC ID:

SEE ATTACHED KIT ORDER FOR ANALYSES

(check for yes)

OR

TAT requested: rush by adv notice only

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Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments

Report: 906144

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Flags Legend:

M2 - Matrix spike recovery was low; the associated blank spike recovery was acceptable.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

Report: 906144
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/01/2020 1129

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
202012010605 <u>Test 8 No.0 Initial</u>						
12/09/2020 09:50	Total phosphorus as P		0.10		mg/L	0.020
12/10/2020 07:28	Total phosphorus as PO4- Calc.		0.31		mg/L	0.030
202012010606 <u>Test 8 No.1 Initial</u>						
12/09/2020 09:51	Total phosphorus as P		0.067		mg/L	0.020
12/10/2020 07:28	Total phosphorus as PO4- Calc.		0.20		mg/L	0.030
202012010607 <u>Test 8 No.2 Initial</u>						
12/09/2020 09:52	Total phosphorus as P		1.0		mg/L	0.040
12/10/2020 07:28	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
202012010609 <u>Test 8 No.3 Initial</u>						
12/09/2020 09:55	Total phosphorus as P		2.0		mg/L	0.040
12/10/2020 07:30	Total phosphorus as PO4- Calc.		6.1		mg/L	0.030
202012010610 <u>Test 8 No.4 Initial</u>						
12/09/2020 09:58	Total phosphorus as P		0.57		mg/L	0.040
12/10/2020 07:30	Total phosphorus as PO4- Calc.		1.7		mg/L	0.030
202012010611 <u>Test 8 No.5 Initial</u>						
12/09/2020 09:58	Total phosphorus as P		1.2		mg/L	0.040
12/10/2020 07:30	Total phosphorus as PO4- Calc.		3.7		mg/L	0.030
202012010612 <u>Test 8 No.6 Initial</u>						
12/09/2020 09:59	Total phosphorus as P		0.53		mg/L	0.040
12/10/2020 07:30	Total phosphorus as PO4- Calc.		1.6		mg/L	0.030
202012010613 <u>Test 8 No.7 Initial</u>						
12/09/2020 10:00	Total phosphorus as P		1.0		mg/L	0.040
12/10/2020 07:30	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
202012010614 <u>Test 8 No.8 Initial</u>						
12/09/2020 10:01	Total phosphorus as P		0.47		mg/L	0.040
12/10/2020 07:30	Total phosphorus as PO4- Calc.		1.4		mg/L	0.030
202012010619 <u>Test 8 No.9 Initial</u>						
12/09/2020 10:02	Total phosphorus as P		0.97		mg/L	0.040
12/10/2020 07:30	Total phosphorus as PO4- Calc.		3.0		mg/L	0.030

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 906144
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/01/2020 1129

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
Test 8 No.0 Initial (202012010605)						Sampled on 11/25/2020 0800			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/10/20 07:28				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.31 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/09/20 09:50		1292880		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.10	mg/L	0.020	1
Test 8 No.1 Initial (202012010606)						Sampled on 11/25/2020 0802			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/10/20 07:28				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.20 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/09/20 09:51		1292880		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.067	mg/L	0.020	1
Test 8 No.2 Initial (202012010607)						Sampled on 11/25/2020 0805			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/10/20 07:28				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/09/20 09:52		1292880		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0 (M2)	mg/L	0.040	2
Test 8 No.3 Initial (202012010609)						Sampled on 11/25/2020 0831			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/10/20 07:30				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	6.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/09/20 09:55		1292880		(SM4500-PE/EPA 365.1)	Total phosphorus as P	2.0	mg/L	0.040	2
Test 8 No.4 Initial (202012010610)						Sampled on 11/25/2020 0834			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/10/20 07:30				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.7 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/09/20 09:58		1292880		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.57	mg/L	0.040	2
Test 8 No.5 Initial (202012010611)						Sampled on 11/25/2020 0836			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 906144
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/01/2020 1129

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	12/10/20 07:30			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.7 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/09/20 09:58		1292880	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.2	mg/L	0.040	2
Test 8 No.6 Initial (202012010612)						Sampled on 11/25/2020 0903			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/10/20 07:30			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.6 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/09/20 09:59		1292880	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.53	mg/L	0.040	2
Test 8 No.7 Initial (202012010613)						Sampled on 11/25/2020 0905			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/10/20 07:30			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/09/20 10:00		1292880	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
Test 8 No.8 Initial (202012010614)						Sampled on 11/25/2020 0907			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/10/20 07:30			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.4 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/09/20 10:01		1292880	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.47	mg/L	0.040	2
Test 8 No.9 Initial (202012010619)						Sampled on 11/25/2020 0936			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/10/20 07:30			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.0 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/09/20 10:02		1292880	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.97	mg/L	0.040	2

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

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Laboratory QC Summary

Report: 906144
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

Total phosphorus as P (T-P)**Analytical Batch: 1292880**

202012010605	Test 8 No.0 Initial
202012010606	Test 8 No.1 Initial
202012010607	Test 8 No.2 Initial
202012010609	Test 8 No.3 Initial
202012010610	Test 8 No.4 Initial
202012010611	Test 8 No.5 Initial
202012010612	Test 8 No.6 Initial
202012010613	Test 8 No.7 Initial
202012010614	Test 8 No.8 Initial
202012010619	Test 8 No.9 Initial

Analysis Date: 12/09/2020

Analyzed by: LQ3M
Analyzed by: LQ3M
Analyzed by: LQ3M
Analyzed by: LQ3M
Analyzed by: LQ3M
Analyzed by: LQ3M
Analyzed by: LQ3M
Analyzed by: LQ3M
Analyzed by: LQ3M
Analyzed by: LQ3M

Tel: (626) 386-1100
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1 800 566 LABS (1 800 566 5227)

Report: 906144
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1292880					Analysis Date: 12/09/2020				
LCS1	Total phosphorus as P		0.4	0.395	mg/L	99	(90-110)		
LCS2	Total phosphorus as P		0.4	0.413	mg/L	103	(90-110)	20	4.5
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0242	mg/L	121	(50-150)		
MS_202012010584	Total phosphorus as P	1.0	0.8	1.70	mg/L	<u>88</u>	(90-110)		
MS_202012010607	Total phosphorus as P	1.0	0.8	1.69	mg/L	<u>86</u>	(90-110)		
MSD_202012010584	Total phosphorus as P	1.0	0.8	1.74	mg/L	94	(90-110)	20	2.8
MSD_202012010607	Total phosphorus as P	1.0	0.8	1.75	mg/L	94	(90-110)	20	3.6

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher

Date of Issue

12/17/2020

Vanessa Berry

**EUROFINS EATON
ANALYTICAL, LLC**



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report,

Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 906979
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1
Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 05, 2020 at 1202**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012050020</u>	Test 8 No. 0 Final	12/01/2020 0805
	@ICPMS	
<u>202012050021</u>	Test 8 No. 1 Final	12/01/2020 0808
	@ICPMS	
<u>202012050022</u>	Test 8 No. 2 Final	12/01/2020 0809
	@ICPMS	
<u>202012050023</u>	Test 8 No. 3 Final	12/01/2020 0810
	@ICPMS	
<u>202012050024</u>	Test 8 No. 4 Final	12/01/2020 0812
	@ICPMS	
<u>202012050025</u>	Test 8 No. 5 Final	12/01/2020 0814
	@ICPMS	
<u>202012050026</u>	Test 8 No. 6 Final	12/01/2020 0815
	@ICPMS	
<u>202012050027</u>	Test 8 No. 7 Final	12/01/2020 0816
	@ICPMS	
<u>202012050028</u>	Test 8 No. 8 Final	12/01/2020 0817
	@ICPMS	
<u>202012050029</u>	Test 8 No. 9 Final	12/01/2020 0818
	@ICPMS	
<u>202012050030</u>	Test 9 No. 0 Final	12/04/2020 0810
	@ICPMS	
<u>202012050031</u>	Test 9 No. 1 Final	12/04/2020 0812
	@ICPMS	
<u>202012050032</u>	Test 9 No. 2 Final	12/04/2020 0814
	@ICPMS	

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 906979
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1
Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 05, 2020 at 1202**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012050033</u>	Test 9 No. 3 Final	12/04/2020 0815
	@ICPMS	
<u>202012050034</u>	Test 9 No. 4 Final	12/04/2020 0816
	@ICPMS	
<u>202012050035</u>	Test 9 No. 5 Final	12/04/2020 0817
	@ICPMS	
<u>202012050036</u>	Test 9 No. 6 Final	12/04/2020 0819
	@ICPMS	
<u>202012050037</u>	Test 9 No. 7 Final	12/04/2020 0820
	@ICPMS	
<u>202012050038</u>	Test 9 No. 8 Final	12/04/2020 0821
	@ICPMS	
<u>202012050039</u>	Test 9 No. 9 Final	12/04/2020 0822
	@ICPMS	
<u>202012050040</u>	Test 9 No. 0 Initial	11/30/2020 0815
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050041</u>	Test 9 No. 1 Initial	11/30/2020 0818
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050042</u>	Test 9 No. 2 Initial	11/30/2020 0820
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050043</u>	Test 9 No. 3 Initial	11/30/2020 0847
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050044</u>	Test 9 No. 4 Initial	11/30/2020 0850
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050045</u>	Test 9 No. 5 Initial	11/30/2020 0852
	Total phosphorus as P	Total phosphorus as PO4- Calc.

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN

Folder #: 906979

Project: KALAMAZOO

Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry

Phone: 503-310-3905

The following samples were received from you on **December 05, 2020 at 1202**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012050046</u>	Test 9 No. 6 Initial	11/30/2020 0920
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050047</u>	Test 9 No. 7 Initial	11/30/2020 0922
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050048</u>	Test 9 No. 8 Initial	11/30/2020 0925
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050049</u>	Test 9 No. 9 Initial	11/30/2020 0950
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050050</u>	Test 10 No. 0 Initial	12/03/2020 0804
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050051</u>	Test 10 No. 1 Initial	12/03/2020 0806
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050052</u>	Test 10 No. 2 Initial	12/03/2020 0809
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050053</u>	Test 10 No. 3 Initial	12/03/2020 0835
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050054</u>	Test 10 No. 4 Initial	12/03/2020 0838
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050055</u>	Test 10 No. 5 Initial	12/03/2020 0840
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050056</u>	Test 10 No. 6 Initial	12/03/2020 0907
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050057</u>	Test 10 No. 7 Initial	12/03/2020 0910
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012050058</u>	Test 10 No. 8 Initial	12/03/2020 0913
	Total phosphorus as P	Total phosphorus as PO4- Calc.

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN

Folder #: 906979

Project: KALAMAZOO

Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry

Phone: 503-310-3905

The following samples were received from you on **December 05, 2020 at 1202**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
202012050059	Test 10 No. 9 Initial	12/03/2020 0938
Total phosphorus as P		Total phosphorus as PO4- Calc.

Test Description

@ICPMS -- ICPMS Metals



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS: _____

SAMPLES CHECKED AGAINST COC BY: 906979

SAMPLES LOGGED IN BY: gr

SAMPLE TEMP RECEIVED AT: _____ (check for yes)

(Other) IR Gun ID = _____ (Observation = _____ °C) (Corr. Factor = _____ °C) (Final = _____ °C)

Monrovia IR Gun ID = 63114 (Observation = 1.2 °C) (Corr. Factor = 0.8 °C) (Final = _____ °C)

Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic ☐ No ice ☐ CONDITION OF ICE: Frozen ☒ Partially Frozen _____ Thawed _____ N/A _____

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx UPS / DHL / Area Fast / Top Line / Other: _____

TO BE COMPLETED BY SAMPLER:

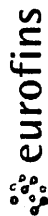
COMPANY/AGENCY NAME:		PROJECT CODE:		COMPLIANCE SAMPLES		NON-COMPLIANCE SAMPLES	
TETA TECH 201 E Pine St Orlando				- Requires state forms		REGULATION INVOLVED:	
EEA CLIENT CODE:		COC ID:		Type of samples (circle one):		(eg. SDWA, NPDES, etc.)	
TETA TECH-ORION				ROUTINE SPECIAL CONFIRMATION			
TAT requested: rush by adv notice only		SAMPLE GROUP:		SEE ATTACHED KIT ORDER FOR ANALYSES		(check for yes) <u>OR</u>	
SAMPLE ID		CLIENT LAB ID		List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)		SAMPLER COMMENTS	
SAMPLE DATE	SAMPLE TIME	MATRIX	FIELD DATA	FIELD DATA			
12/18/05	8:05	Test 8 No.0 Find 1					
1	8:08	fw					Preserved with nitric acid
2	8:09						
3	8:10						
4	8:12						
5	8:14						
6	8:15						
7	8:16						
8	8:17						
9	8:18						

* MATRIX TYPES: RSW = Raw Surface Water RGW = Raw Ground Water CFW = Chlor(am)inated Finished Water FW = Other Finished Water

SEAW = Sea Water BW = Bottled Water SO = Soil

WW = Waste Water SW = Storm Water SL = Sludge

SIGNATURE		PRINT NAME		COMPANY/TITLE		DATE		TIME	
SAMPLED BY: <u>M. Arenas</u>		<u>Maria Isabel Arenas</u>		<u>Tetra Tech, Project Engineer</u>		<u>12/14/20</u>		<u>4:30 PM</u>	
RELINQUISHED BY:									
RECEIVED BY:									
RELINQUISHED BY:									
RECEIVED BY:		<u>Schneider M. B.</u>		<u>Gen</u>		<u>12-5-20</u>		<u>17:02</u>	



Eaton Analytical

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED AGAINST COC BY: 906973

SAMPLES LOGGED IN BY: R

SAMPLE TEMP RECEIVED AT:

☐ (Other) IR Gun ID = _____ (Observation = _____ °C) (check for yes)

☒ Monrovia IR Gun ID = 631A (Observation = 1.2 °C) (Final = 0.2 °C)

Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic ☐ No Ice ☐ **CONDITION OF ICE:** Frozen ☒ Partially Frozen ☐ Thawed ☐ N/A ☐

METHOD OF SHIPMENT: Pick-Up / Walk-In ☒ UPS / DHL / Area Fast / Top Line / Other: _____

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:		PROJECT CODE:	COMPLIANCE SAMPLES <input type="checkbox"/> NON-COMPLIANCE SAMPLES <input type="checkbox"/>					
			REGULATION INVOLVED: (eg. SDWA, NPDES, etc.)					
EEA CLIENT CODE:		COC ID:	Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION					
			SEE ATTACHED KIT ORDER FOR ANALYSES (check for yes) <input type="checkbox"/> OR					
			List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)					
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX	FIELD DATA	FIELD DATA	FIELD DATA	SAMPLER COMMENTS
11/30	8:15	Test 9 No.0 initial		FW				
	8:18							
	8:20							
	8:47							
	8:50							
	8:52							
	9:10							
	9:22							
	9:25							
	9:50							

* **MATRIX TYPES:** RSW = Raw Surface Water CFW = Chlor(am)inated Finished Water SEAW = Sea Water BW = Bottled Water SO = Soil
RGW = Raw Ground Water FW = Other Finished Water WW = Waste Water SW = Storm Water SL = Sludge
O = Other - Please Identify

SAMPLED BY:	PRINT NAME	COMPANY/TITLE	DATE	TIME
M. Alegus	MARIA ISABEL ALEGUS	Tetra Tech	12/14/20	4:30 PM
RELINQUISHED BY:				
RECEIVED BY:				
RELINQUISHED BY:				
RECEIVED BY:				



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

Phone: 626 386 1100
Fax: 626 386 1101

800 566 LABS (800 566 5227)

Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLE TEMP RECEIVED AT:

☐ (Other)

IR Gun ID =

(Observation =

°C) (Corr. Factor

°C) (Final =

°C) (check for yes)

☒ Monrovia

IR Gun ID =

(Observation =

°C) (Corr. Factor

°C) (Final =

°C) (check for yes)

Compliance Acceptance Criteria: (Chemistry: $\pm 2^{\circ}\text{C}$) (Microbiology: $< 10^{\circ}\text{C}$)

TYPE OF ICE: Real

☒ Synthetic

No Ice

CONDITION OF ICE: Frozen

Partially Frozen

Thawed

N/A

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other:

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:

PROJECT CODE:

SAMPLE GROUP:

COMPLIANCE SAMPLES

- Requires state forms

NON-COMPLIANCE SAMPLES

REGULATION INVOLVED:

(check for yes)

EEA CLIENT CODE:

COC ID:

SEE ATTACHED KIT ORDER FOR ANALYSES

ROUTINE SPECIAL CONFIRMATION

(eg. SDWA, NPDES, etc.)

(check for yes)

OR

(check for yes)

TAT requested: rush by adv notice only

STD 1 wk 3 day 2 day 1 day

CLIENT LAB ID

MATRIX

FIELD DATA

FIELD DATA

SAMPLE ID

SAMPLER COMMENTS

1213 8:04 test 10 No. 0 initial

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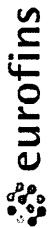
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Eaton Analytical

Kit Order for Tetra Tech Inc.

Vanessa Berry is your Eurofins Eaton Analytical, LLC Service Manager

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
(626) 386-1100 FAX (866) 988-3757

Created Date & Time: 10/24/2020 12:10:38AM

Note: Sampler Please return this paper with your samples

Kit #: 275596
Created By: - [AutoGenerated]
Deliver By: 11/23/2020
STG: Bottle Orders
Ice Type: W

Client ID: TETRATECH-ORLAN
Project Code: KALAMAZOO Bottle Orders
Group Name: Lead Solubility Testing - Phase 1
PO#/JOB#:
Description: Every 1 week on Mon

Ship Sample Kits to
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

Send Report to
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

Billing Address
Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attn: James Christopher
Phone: 407-480-3907
Fax: 407-839-3790

# of Sample Tests	Bottle Qty - Type [preservative information]	Total	UN DOT #
20	1 - 250ml poly [0.5 ml H2SO4 (50%)]	20	UN1830
20	1 - 250ml poly [no preservative]	20	

Sum Tests: 40

Comments

include return shipping labels
ship in one cooler
COCs

Total lead containers are preserved with nitric acid by the client.

9284 5115 4860

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Flags Legend:

M1 - Matrix spike recovery was high; the associated blank spike recovery was acceptable.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/05/2020 1202

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/12/2020 15:24	202012050020 Lead Total ICAP/MS	<u>Test 8 No. 0 Final</u>	400	15	ug/L	0.50
12/12/2020 15:25	202012050021 Lead Total ICAP/MS	<u>Test 8 No. 1 Final</u>	640	15	ug/L	0.50
12/08/2020 21:59	202012050022 Lead Total ICAP/MS	<u>Test 8 No. 2 Final</u>	580	15	ug/L	0.50
12/08/2020 22:01	202012050023 Lead Total ICAP/MS	<u>Test 8 No. 3 Final</u>	390	15	ug/L	0.50
12/12/2020 15:26	202012050024 Lead Total ICAP/MS	<u>Test 8 No. 4 Final</u>	190	15	ug/L	0.50
12/12/2020 15:26	202012050025 Lead Total ICAP/MS	<u>Test 8 No. 5 Final</u>	760	15	ug/L	0.50
12/12/2020 15:27	202012050026 Lead Total ICAP/MS	<u>Test 8 No. 6 Final</u>	380	15	ug/L	0.50
12/12/2020 15:28	202012050027 Lead Total ICAP/MS	<u>Test 8 No. 7 Final</u>	260	15	ug/L	0.50
12/12/2020 15:29	202012050028 Lead Total ICAP/MS	<u>Test 8 No. 8 Final</u>	1200	15	ug/L	0.50
12/08/2020 22:16	202012050029 Lead Total ICAP/MS	<u>Test 8 No. 9 Final</u>	1700	15	ug/L	5.0
12/12/2020 15:39	202012050030 Lead Total ICAP/MS	<u>Test 9 No. 0 Final</u>	150	15	ug/L	0.50
12/12/2020 15:41	202012050031 Lead Total ICAP/MS	<u>Test 9 No. 1 Final</u>	190	15	ug/L	0.50
12/12/2020 15:42	202012050032 Lead Total ICAP/MS	<u>Test 9 No. 2 Final</u>	240	15	ug/L	0.50
12/12/2020 15:43	202012050033 Lead Total ICAP/MS	<u>Test 9 No. 3 Final</u>	440	15	ug/L	0.50
12/08/2020 22:05	202012050034 Lead Total ICAP/MS	<u>Test 9 No. 4 Final</u>	380	15	ug/L	0.50
	202012050035	<u>Test 9 No. 5 Final</u>				

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/05/2020 1202

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/12/2020 15:44	Lead Total ICAP/MS		210	15	ug/L	0.50
	202012050036	<u>Test 9 No. 6 Final</u>				
12/12/2020 15:46	Lead Total ICAP/MS		210	15	ug/L	0.50
	202012050037	<u>Test 9 No. 7 Final</u>				
12/12/2020 15:47	Lead Total ICAP/MS		130	15	ug/L	0.50
	202012050038	<u>Test 9 No. 8 Final</u>				
12/12/2020 15:48	Lead Total ICAP/MS		610	15	ug/L	0.50
	202012050039	<u>Test 9 No. 9 Final</u>				
12/12/2020 15:49	Lead Total ICAP/MS		690	15	ug/L	0.50
	202012050041	<u>Test 9 No. 1 Initial</u>				
12/14/2020 12:25	Total phosphorus as P		0.096		mg/L	0.020
12/15/2020 06:57	Total phosphorus as PO4- Calc.		0.29		mg/L	0.030
	202012050042	<u>Test 9 No. 2 Initial</u>				
12/14/2020 12:28	Total phosphorus as P		1.0		mg/L	0.040
12/15/2020 06:57	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
	202012050043	<u>Test 9 No. 3 Initial</u>				
12/16/2020 09:10	Total phosphorus as P		2.0		mg/L	0.10
12/15/2020 06:57	Total phosphorus as PO4- Calc.		6.1		mg/L	0.030
	202012050044	<u>Test 9 No. 4 Initial</u>				
12/14/2020 12:30	Total phosphorus as P		0.61		mg/L	0.040
12/15/2020 06:57	Total phosphorus as PO4- Calc.		1.9		mg/L	0.030
	202012050045	<u>Test 9 No. 5 Initial</u>				
12/14/2020 12:31	Total phosphorus as P		1.3		mg/L	0.040
12/15/2020 06:57	Total phosphorus as PO4- Calc.		4.0		mg/L	0.030
	202012050046	<u>Test 9 No. 6 Initial</u>				
12/14/2020 12:31	Total phosphorus as P		0.55		mg/L	0.040
12/15/2020 06:57	Total phosphorus as PO4- Calc.		1.7		mg/L	0.030
	202012050047	<u>Test 9 No. 7 Initial</u>				
12/14/2020 12:32	Total phosphorus as P		1.2		mg/L	0.040
12/15/2020 06:58	Total phosphorus as PO4- Calc.		3.7		mg/L	0.030
	202012050048	<u>Test 9 No. 8 Initial</u>				
12/14/2020 12:33	Total phosphorus as P		0.46		mg/L	0.040

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/05/2020 1202

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
12/15/2020 06:58	Total phosphorus as PO4- Calc.		1.4		mg/L	0.030
	202012050049	<u>Test 9 No. 9 Initial</u>				
12/14/2020 12:34	Total phosphorus as P		1.0		mg/L	0.040
12/15/2020 06:58	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
	202012050051	<u>Test 10 No. 1 Initial</u>				
12/16/2020 09:11	Total phosphorus as P		0.10		mg/L	0.020
12/16/2020 14:01	Total phosphorus as PO4- Calc.		0.31		mg/L	0.030
	202012050052	<u>Test 10 No. 2 Initial</u>				
12/16/2020 09:12	Total phosphorus as P		1.0		mg/L	0.040
12/16/2020 14:04	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
	202012050053	<u>Test 10 No. 3 Initial</u>				
12/16/2020 09:30	Total phosphorus as P		1.0		mg/L	0.040
12/16/2020 14:04	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
	202012050054	<u>Test 10 No. 4 Initial</u>				
12/16/2020 09:31	Total phosphorus as P		0.58		mg/L	0.040
12/16/2020 14:05	Total phosphorus as PO4- Calc.		1.8		mg/L	0.030
	202012050055	<u>Test 10 No. 5 Initial</u>				
12/16/2020 09:32	Total phosphorus as P		1.2		mg/L	0.040
12/16/2020 14:05	Total phosphorus as PO4- Calc.		3.7		mg/L	0.030
	202012050056	<u>Test 10 No. 6 Initial</u>				
12/16/2020 09:33	Total phosphorus as P		0.55		mg/L	0.040
12/16/2020 14:05	Total phosphorus as PO4- Calc.		1.7		mg/L	0.030
	202012050057	<u>Test 10 No. 7 Initial</u>				
12/16/2020 09:34	Total phosphorus as P		1.0		mg/L	0.040
12/16/2020 14:05	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
	202012050058	<u>Test 10 No. 8 Initial</u>				
12/16/2020 09:35	Total phosphorus as P		0.46		mg/L	0.040
12/16/2020 14:05	Total phosphorus as PO4- Calc.		1.4		mg/L	0.030
	202012050059	<u>Test 10 No. 9 Initial</u>				
12/16/2020 09:36	Total phosphorus as P		0.95		mg/L	0.040
12/16/2020 14:05	Total phosphorus as PO4- Calc.		2.9		mg/L	0.030

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/05/2020 1202

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>Test 8 No. 0 Final (202012050020)</u>						Sampled on 12/01/2020 0805			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:24	1292485	1293889	(EPA 200.8)	Lead Total ICAP/MS	400	ug/L	0.50	1
<u>Test 8 No. 1 Final (202012050021)</u>						Sampled on 12/01/2020 0808			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:25	1292485	1293889	(EPA 200.8)	Lead Total ICAP/MS	640	ug/L	0.50	1
<u>Test 8 No. 2 Final (202012050022)</u>						Sampled on 12/01/2020 0809			
EPA 200.8 - ICPMS Metals									
12/07/20	12/08/20 21:59	1292485	1292499	(EPA 200.8)	Lead Total ICAP/MS	580	ug/L	0.50	1
<u>Test 8 No. 3 Final (202012050023)</u>						Sampled on 12/01/2020 0810			
EPA 200.8 - ICPMS Metals									
12/07/20	12/08/20 22:01	1292485	1292499	(EPA 200.8)	Lead Total ICAP/MS	390	ug/L	0.50	1
<u>Test 8 No. 4 Final (202012050024)</u>						Sampled on 12/01/2020 0812			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:26	1292485	1293889	(EPA 200.8)	Lead Total ICAP/MS	190	ug/L	0.50	1
<u>Test 8 No. 5 Final (202012050025)</u>						Sampled on 12/01/2020 0814			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:26	1292485	1293889	(EPA 200.8)	Lead Total ICAP/MS	760	ug/L	0.50	1
<u>Test 8 No. 6 Final (202012050026)</u>						Sampled on 12/01/2020 0815			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:27	1292485	1293889	(EPA 200.8)	Lead Total ICAP/MS	380	ug/L	0.50	1
<u>Test 8 No. 7 Final (202012050027)</u>						Sampled on 12/01/2020 0816			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:28	1292485	1293889	(EPA 200.8)	Lead Total ICAP/MS	260	ug/L	0.50	1
<u>Test 8 No. 8 Final (202012050028)</u>						Sampled on 12/01/2020 0817			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:29	1292485	1293889	(EPA 200.8)	Lead Total ICAP/MS	1200	ug/L	0.50	1
<u>Test 8 No. 9 Final (202012050029)</u>						Sampled on 12/01/2020 0818			
EPA 200.8 - ICPMS Metals									

Rounding on totals after summation.
(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/05/2020 1202

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
12/07/20	12/08/20 22:16	1292485	1292499	(EPA 200.8)	Lead Total ICAP/MS	1700	ug/L	5.0	10
<u>Test 9 No. 0 Final (202012050030)</u>						Sampled on 12/04/2020 0810			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:39	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	150	ug/L	0.50	1
<u>Test 9 No. 1 Final (202012050031)</u>						Sampled on 12/04/2020 0812			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:41	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	190	ug/L	0.50	1
<u>Test 9 No. 2 Final (202012050032)</u>						Sampled on 12/04/2020 0814			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:42	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	240	ug/L	0.50	1
<u>Test 9 No. 3 Final (202012050033)</u>						Sampled on 12/04/2020 0815			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:43	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	440	ug/L	0.50	1
<u>Test 9 No. 4 Final (202012050034)</u>						Sampled on 12/04/2020 0816			
EPA 200.8 - ICPMS Metals									
12/07/20	12/08/20 22:05	1292485	1292499	(EPA 200.8)	Lead Total ICAP/MS	380	ug/L	0.50	1
<u>Test 9 No. 5 Final (202012050035)</u>						Sampled on 12/04/2020 0817			
EPA 200.8 - ICPMS Metals									
	12/12/20 15:44	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	210	ug/L	0.50	1
<u>Test 9 No. 6 Final (202012050036)</u>						Sampled on 12/04/2020 0819			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:46	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	210	ug/L	0.50	1
<u>Test 9 No. 7 Final (202012050037)</u>						Sampled on 12/04/2020 0820			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:47	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	130	ug/L	0.50	1
<u>Test 9 No. 8 Final (202012050038)</u>						Sampled on 12/04/2020 0821			
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:48	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	610	ug/L	0.50	1
<u>Test 9 No. 9 Final (202012050039)</u>						Sampled on 12/04/2020 0822			

Rounding on totals after summation.

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Laboratory Data

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/05/2020 1202

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
EPA 200.8 - ICPMS Metals									
12/07/20	12/12/20 15:49	1292485	1293890	(EPA 200.8)	Lead Total ICAP/MS	690	ug/L	0.50	1
Test 9 No. 0 Initial (202012050040)						Sampled on 11/30/2020 0815			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:57			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	ND (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:22		1294151	(SM4500-PE/EPA 365.1)	Total phosphorus as P	ND (M1)	mg/L	0.020	1
Test 9 No. 1 Initial (202012050041)						Sampled on 11/30/2020 0818			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:57			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.29 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:25		1294151	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.096	mg/L	0.020	1
Test 9 No. 2 Initial (202012050042)						Sampled on 11/30/2020 0820			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:57			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:28		1294151	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
Test 9 No. 3 Initial (202012050043)						Sampled on 11/30/2020 0847			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:57			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	6.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/16/20 09:10		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	2.0	mg/L	0.10	5
Test 9 No. 4 Initial (202012050044)						Sampled on 11/30/2020 0850			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:57			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.9 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:30		1294151	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.61	mg/L	0.040	2
Test 9 No. 5 Initial (202012050045)						Sampled on 11/30/2020 0852			

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Project: KALAMAZOO
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Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:57			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	4.0 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:31	1294151		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.3	mg/L	0.040	2
Test 9 No. 6 Initial (202012050046)						Sampled on 11/30/2020 0920			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:57			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.7 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:31	1294151		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.55	mg/L	0.040	2
Test 9 No. 7 Initial (202012050047)						Sampled on 11/30/2020 0922			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:58			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.7 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:32	1294151		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.2	mg/L	0.040	2
Test 9 No. 8 Initial (202012050048)						Sampled on 11/30/2020 0925			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:58			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.4 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:33	1294151		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.46	mg/L	0.040	2
Test 9 No. 9 Initial (202012050049)						Sampled on 11/30/2020 0950			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/15/20 06:58			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/14/20 12:34	1294151		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
Test 10 No. 0 Initial (202012050050)						Sampled on 12/03/2020 0804			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									

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Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	12/16/20 14:00			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	ND (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/16/20 09:07		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	ND	mg/L	0.020	1
Test 10 No. 1 Initial (202012050051)						Sampled on 12/03/2020 0806			
					SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.				
	12/16/20 14:01			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.31 (c)	mg/L	0.030	1
					SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)				
	12/16/20 09:11		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.10	mg/L	0.020	1
Test 10 No. 2 Initial (202012050052)						Sampled on 12/03/2020 0809			
					SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.				
	12/16/20 14:04			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
					SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)				
	12/16/20 09:12		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
Test 10 No. 3 Initial (202012050053)						Sampled on 12/03/2020 0835			
					SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.				
	12/16/20 14:04			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
					SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)				
	12/16/20 09:30		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
Test 10 No. 4 Initial (202012050054)						Sampled on 12/03/2020 0838			
					SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.				
	12/16/20 14:05			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.8 (c)	mg/L	0.030	1
					SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)				
	12/16/20 09:31		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.58	mg/L	0.040	2
Test 10 No. 5 Initial (202012050055)						Sampled on 12/03/2020 0840			
					SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.				
	12/16/20 14:05			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.7 (c)	mg/L	0.030	1
					SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)				

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Laboratory Data

Report: 906979
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James Christopher
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Samples Received on:
12/05/2020 1202

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	12/16/20 09:32		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.2	mg/L	0.040	2
<u>Test 10 No. 6 Initial (202012050056)</u>						Sampled on 12/03/2020 0907			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/16/20 14:05			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.7 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/16/20 09:33		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.55	mg/L	0.040	2
<u>Test 10 No. 7 Initial (202012050057)</u>						Sampled on 12/03/2020 0910			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/16/20 14:05			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/16/20 09:34		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
<u>Test 10 No. 8 Initial (202012050058)</u>						Sampled on 12/03/2020 0913			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/16/20 14:05			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.4 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/16/20 09:35		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.46	mg/L	0.040	2
<u>Test 10 No. 9 Initial (202012050059)</u>						Sampled on 12/03/2020 0938			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
	12/16/20 14:05			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.9 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	12/16/20 09:36		1294580	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.95	mg/L	0.040	2

Report: 906979
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

ICPMS Metals

Prep Batch: 1292485 Analytical Batch: 1292499

202012050022	Test 8 No. 2 Final
202012050023	Test 8 No. 3 Final
202012050029	Test 8 No. 9 Final
202012050034	Test 9 No. 4 Final

Analysis Date: 12/08/2020

Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7
Analyzed by: DHX7

ICPMS Metals

Prep Batch: 1292485 Analytical Batch: 1293889

202012050020	Test 8 No. 0 Final
202012050021	Test 8 No. 1 Final
202012050024	Test 8 No. 4 Final
202012050025	Test 8 No. 5 Final
202012050026	Test 8 No. 6 Final
202012050027	Test 8 No. 7 Final
202012050028	Test 8 No. 8 Final

Analysis Date: 12/12/2020

Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE

ICPMS Metals

Prep Batch: 1292485 Analytical Batch: 1293890

202012050030	Test 9 No. 0 Final
202012050031	Test 9 No. 1 Final
202012050032	Test 9 No. 2 Final
202012050033	Test 9 No. 3 Final
202012050035	Test 9 No. 5 Final
202012050036	Test 9 No. 6 Final
202012050037	Test 9 No. 7 Final
202012050038	Test 9 No. 8 Final
202012050039	Test 9 No. 9 Final

Analysis Date: 12/12/2020

Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE
Analyzed by: URDE

Total phosphorus as P (T-P)

Analytical Batch: 1294151

202012050040	Test 9 No. 0 Initial
202012050041	Test 9 No. 1 Initial
202012050042	Test 9 No. 2 Initial
202012050044	Test 9 No. 4 Initial
202012050045	Test 9 No. 5 Initial
202012050046	Test 9 No. 6 Initial
202012050047	Test 9 No. 7 Initial
202012050048	Test 9 No. 8 Initial
202012050049	Test 9 No. 9 Initial

Analysis Date: 12/14/2020

Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG

Total phosphorus as P (T-P)

Analytical Batch: 1294580

202012050043	Test 9 No. 3 Initial
202012050050	Test 10 No. 0 Initial
202012050051	Test 10 No. 1 Initial
202012050052	Test 10 No. 2 Initial
202012050053	Test 10 No. 3 Initial

Analysis Date: 12/16/2020

Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG

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Laboratory QC Summary

Report: 906979**Project:** KALAMAZOO**Group:** Lead Solubility Testing - Phase 1

Tetra Tech

202012050054	Test 10 No. 4 Initial	Analyzed by: H5VG
202012050055	Test 10 No. 5 Initial	Analyzed by: H5VG
202012050056	Test 10 No. 6 Initial	Analyzed by: H5VG
202012050057	Test 10 No. 7 Initial	Analyzed by: H5VG
202012050058	Test 10 No. 8 Initial	Analyzed by: H5VG
202012050059	Test 10 No. 9 Initial	Analyzed by: H5VG

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Report: 906979
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Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
ICPMS Metals by EPA 200.8									
Analytical Batch: 1292499					Analysis Date: 12/08/2020				
LCS1	Lead Total ICAP/MS		50	52.3	ug/L	105	(85-115)		
LCS2	Lead Total ICAP/MS		50	52.0	ug/L	104	(85-115)	20	0.57
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.552	ug/L	110	(50-150)		
MS_202012020254	Lead Total ICAP/MS	ND	50	49.7	ug/L	99	(70-130)		
MS2_202012040143	Lead Total ICAP/MS	ND	50	48.9	ug/L	98	(70-130)		
MSD_202012020254	Lead Total ICAP/MS	ND	50	49.2	ug/L	98	(70-130)	20	1.1
MSD2_202012040143	Lead Total ICAP/MS	ND	50	49.3	ug/L	98	(70-130)	20	0.84
ICPMS Metals by EPA 200.8									
Analytical Batch: 1293889					Analysis Date: 12/12/2020				
LCS1	Lead Total ICAP/MS		50	50.8	ug/L	102	(85-115)		
LCS2	Lead Total ICAP/MS		50	51.4	ug/L	103	(85-115)	20	1.2
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.491	ug/L	98	(50-150)		
MS_202012030654	Lead Total ICAP/MS	1300	50	1310	ug/L	88	(70-130)		
MS2_202012030664	Lead Total ICAP/MS	880	50	922	ug/L	91	(70-130)		
MSD_202012030654	Lead Total ICAP/MS	1300	50	1320	ug/L	108	(70-130)	20	0.77
MSD2_202012030664	Lead Total ICAP/MS	880	50	922	ug/L	90	(70-130)	20	0.052
ICPMS Metals by EPA 200.8									
Analytical Batch: 1293890					Analysis Date: 12/12/2020				
LCS1	Lead Total ICAP/MS		50	51.8	ug/L	104	(85-115)		
LCS2	Lead Total ICAP/MS		50	51.3	ug/L	103	(85-115)	20	1.2
MBLK	Lead Total ICAP/MS			<0.25	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.480	ug/L	96	(50-150)		
MS_202012050030	Lead Total ICAP/MS	150	50	199	ug/L	102	(70-130)		
MS2_202012080203	Lead Total ICAP/MS	ND	50	44.1	ug/L	88	(70-130)		
MSD_202012050030	Lead Total ICAP/MS	150	50	197	ug/L	98	(70-130)	20	1.2
MSD2_202012080203	Lead Total ICAP/MS	ND	50	44.1	ug/L	88	(70-130)	20	0.084
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1294151					Analysis Date: 12/14/2020				
LCS1	Total phosphorus as P		0.4	0.414	mg/L	104	(90-110)		
LCS2	Total phosphorus as P		0.4	0.415	mg/L	104	(90-110)	20	0.24
MBLK	Total phosphorus as P			<0.01	mg/L				

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

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Report: 906979
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Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
MRL_CHK	Total phosphorus as P		0.02	0.0212	mg/L	106	(50-150)		
MS_202012030370	Total phosphorus as P	0.075	0.4	0.504	mg/L	107	(90-110)		
MS_202012050040	Total phosphorus as P	ND	0.4	0.404	mg/L	101	(90-110)		
MSD_202012030370	Total phosphorus as P	0.075	0.4	0.499	mg/L	106	(90-110)	20	1
MSD_202012050040	Total phosphorus as P	ND	0.4	0.536	mg/L	<u>134</u>	(90-110)	20	<u>28</u>

Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1

Analytical Batch: 1294580

Analysis Date: 12/16/2020

LCS1	Total phosphorus as P		0.4	0.416	mg/L	104	(90-110)		
LCS2	Total phosphorus as P		0.4	0.409	mg/L	102	(90-110)	20	1.7
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0206	mg/L	103	(50-150)		
MS_202012050050	Total phosphorus as P	ND	0.4	0.423	mg/L	103	(90-110)		
MS_202012050059	Total phosphorus as P	0.95	0.8	1.78	mg/L	104	(90-110)		
MSD_202012050050	Total phosphorus as P	ND	0.4	0.421	mg/L	102	(90-110)	20	0.43
MSD_202012050059	Total phosphorus as P	0.95	0.8	1.78	mg/L	104	(90-110)	20	0.21

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher

Date of Issue

12/28/2020

Vanessa Berry

**EUROFINS EATON
ANALYTICAL, LLC**



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 908296
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report,

Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 908296
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1
Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 14, 2020 at 1043**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012140073</u>	Test 12 No. 0 Initial	12/10/2020 0812
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012140078</u>	Test 12 No. 1 Initial	12/10/2020 0815
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012140079</u>	Test 12 No. 2 Initial	12/10/2020 0817
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012140080</u>	Test 12 No. 3 Initial	12/10/2020 0843
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012140081</u>	Test 12 No. 4 Initial	12/10/2020 0846
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012140082</u>	Test 12 No. 5 Initial	12/10/2020 0848
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012140083</u>	Test 12 No. 6 Initial	12/10/2020 0914
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012140084</u>	Test 12 No. 7 Initial	12/10/2020 0916
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012140085</u>	Test 12 No. 8 Initial	12/10/2020 0919
	Total phosphorus as P	Total phosphorus as PO4- Calc.
<u>202012140086</u>	Test 12 No. 9 Initial	12/10/2020 0945
	Total phosphorus as P	Total phosphorus as PO4- Calc.

Test Description



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLE TEMP RECEIVED AT:

☐ (Other) IR Gun ID =

(Observation = °C)

☒ Monrovia IR Gun ID =

(Observation = °C)

Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real ☒ Synthetic ☐ No Ice ☐

CONDITION OF ICE: Frozen ☐ Partially Frozen ☐ Thawed ☒ N/A

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other:

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:

Tetra Tech 201 E Pine St Orlando

EEA CLIENT CODE:

COC ID:

Tetra Tech-Orlando

SAMPLE GROUP:

Lead Solubility Test Phase 1

TAT requested: rush by adv notice only

STD 1 wk 3 day 2 day 1 day

SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX	FIELD DATA	FIELD DATA	SAMPLER COMMENTS
12/10	8:12	Test 12 No. 0 Initial		fw			Preserved with H ₂ SO ₄
	8:15	1					
	8:17	2					
	8:43	3					
	8:46	4					
	8:48	5					
	9:14	6					
	9:16	7					
	9:19	8					
	9:45	9					

* MATRIX TYPES: RSW = Raw Surface Water
RGW = Raw Ground Water

CFW = Chlor(am)inated Finished Water
FW = Other Finished Water

SEAW = Sea Water
WW = Waste Water

BW = Bottled Water
SW = Storm Water

SO = Soil
SL = Sludge

O = Other - Please Identify

SIGNATURE

PRINT NAME

COMPANY/TITLE

DATE

TIME

SAMPLED BY:	M. Arenas	Tetra Tech	12/11/20	4:30
RELINQUISHED BY:				
RECEIVED BY:	Chuck Baecker		12-14-20	1043
RELINQUISHED BY:				
RECEIVED BY:				

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments**Report:** 908296**Project:** KALAMAZOO**Group:** Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Flags Legend:

M1 - Matrix spike recovery was high; the associated blank spike recovery was acceptable.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

Report: 908296
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/14/2020 1043

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
202012140078 <u>Test 12 No. 1 Initial</u>						
12/21/2020 07:53	Total phosphorus as P		0.11		mg/L	0.020
12/21/2020 12:53	Total phosphorus as PO4- Calc.		0.34		mg/L	0.030
202012140079 <u>Test 12 No. 2 Initial</u>						
12/21/2020 07:54	Total phosphorus as P		1.0		mg/L	0.040
12/21/2020 12:53	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
202012140080 <u>Test 12 No. 3 Initial</u>						
12/21/2020 07:55	Total phosphorus as P		2.0		mg/L	0.040
12/21/2020 12:53	Total phosphorus as PO4- Calc.		6.1		mg/L	0.030
202012140081 <u>Test 12 No. 4 Initial</u>						
12/21/2020 07:55	Total phosphorus as P		0.63		mg/L	0.040
12/21/2020 12:53	Total phosphorus as PO4- Calc.		1.9		mg/L	0.030
202012140082 <u>Test 12 No. 5 Initial</u>						
12/21/2020 07:56	Total phosphorus as P		1.3		mg/L	0.040
12/21/2020 12:53	Total phosphorus as PO4- Calc.		4.0		mg/L	0.030
202012140083 <u>Test 12 No. 6 Initial</u>						
12/21/2020 07:57	Total phosphorus as P		0.58		mg/L	0.040
12/21/2020 12:54	Total phosphorus as PO4- Calc.		1.8		mg/L	0.030
202012140084 <u>Test 12 No. 7 Initial</u>						
12/21/2020 07:58	Total phosphorus as P		1.1		mg/L	0.040
12/21/2020 12:54	Total phosphorus as PO4- Calc.		3.4		mg/L	0.030
202012140085 <u>Test 12 No. 8 Initial</u>						
12/21/2020 09:03	Total phosphorus as P		0.46		mg/L	0.040
12/21/2020 12:32	Total phosphorus as PO4- Calc.		1.4		mg/L	0.030
202012140086 <u>Test 12 No. 9 Initial</u>						
12/21/2020 09:15	Total phosphorus as P		0.96		mg/L	0.040
12/21/2020 12:32	Total phosphorus as PO4- Calc.		2.9		mg/L	0.030

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 908296
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/14/2020 1043

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>Test 12 No. 0 Initial (202012140073)</u>						Sampled on 12/10/2020 0812			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/21/20 12:53				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	ND (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/21/20 07:52		1294918		(SM4500-PE/EPA 365.1)	Total phosphorus as P	ND	mg/L	0.020	1
<u>Test 12 No. 1 Initial (202012140078)</u>						Sampled on 12/10/2020 0815			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/21/20 12:53				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.34 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/21/20 07:53		1294918		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.11	mg/L	0.020	1
<u>Test 12 No. 2 Initial (202012140079)</u>						Sampled on 12/10/2020 0817			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/21/20 12:53				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/21/20 07:54		1294918		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
<u>Test 12 No. 3 Initial (202012140080)</u>						Sampled on 12/10/2020 0843			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/21/20 12:53				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	6.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/21/20 07:55		1294918		(SM4500-PE/EPA 365.1)	Total phosphorus as P	2.0	mg/L	0.040	2
<u>Test 12 No. 4 Initial (202012140081)</u>						Sampled on 12/10/2020 0846			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/21/20 12:53				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.9 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/21/20 07:55		1294918		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.63	mg/L	0.040	2
<u>Test 12 No. 5 Initial (202012140082)</u>						Sampled on 12/10/2020 0848			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 908296
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/14/2020 1043

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	12/21/20 12:53			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	4.0 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/21/20 07:56		1294918	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.3	mg/L	0.040	2
Test 12 No. 6 Initial (202012140083)						Sampled on 12/10/2020 0914			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/21/20 12:54			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.8 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/21/20 07:57		1294918	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.58	mg/L	0.040	2
Test 12 No. 7 Initial (202012140084)						Sampled on 12/10/2020 0916			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/21/20 12:54			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.4 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/21/20 07:58		1294918	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.1	mg/L	0.040	2
Test 12 No. 8 Initial (202012140085)						Sampled on 12/10/2020 0919			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/21/20 12:32			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.4 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/21/20 09:03		1295351	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.46 (M1)	mg/L	0.040	2
Test 12 No. 9 Initial (202012140086)						Sampled on 12/10/2020 0945			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/21/20 12:32			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.9 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/21/20 09:15		1295351	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.96	mg/L	0.040	2

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 908296
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

Total phosphorus as P (T-P)**Analytical Batch: 1294918**

202012140073	Test 12 No. 0 Initial
202012140078	Test 12 No. 1 Initial
202012140079	Test 12 No. 2 Initial
202012140080	Test 12 No. 3 Initial
202012140081	Test 12 No. 4 Initial
202012140082	Test 12 No. 5 Initial
202012140083	Test 12 No. 6 Initial
202012140084	Test 12 No. 7 Initial

Analysis Date: 12/21/2020

Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG

Total phosphorus as P (T-P)**Analytical Batch: 1295351**

202012140085	Test 12 No. 8 Initial
202012140086	Test 12 No. 9 Initial

Analysis Date: 12/21/2020

Analyzed by: H5VG
Analyzed by: H5VG

Tel: (626) 386-1100
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Report: 908296
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1294918					Analysis Date: 12/21/2020				
LCS1	Total phosphorus as P		0.4	0.432	mg/L	108	(90-110)		
LCS2	Total phosphorus as P		0.4	0.428	mg/L	107	(90-110)	20	0.93
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0179	mg/L	90	(50-150)		
MS_202012100178	Total phosphorus as P	ND	0.4	0.413	mg/L	103	(90-110)		
MS_202012140100	Total phosphorus as P	0.46	0.8	1.37	mg/L	<u>114</u>	(90-110)		
MSD_202012100178	Total phosphorus as P	ND	0.4	0.417	mg/L	104	(90-110)	20	1.1
MSD_202012140100	Total phosphorus as P	0.46	0.8	1.36	mg/L	<u>113</u>	(90-110)	20	0.97
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1295351					Analysis Date: 12/21/2020				
LCS1	Total phosphorus as P		0.4	0.427	mg/L	107	(90-110)		
LCS2	Total phosphorus as P		0.4	0.434	mg/L	109	(90-110)	20	1.6
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0106	mg/L	53	(50-150)		
MS_202012030066	Total phosphorus as P		0.4	0.456	mg/L	108	(90-110)		
MS_202012140085	Total phosphorus as P	0.46	0.8	1.39	mg/L	<u>117</u>	(90-110)		
MSD_202012030066	Total phosphorus as P		0.4	0.449	mg/L	106	(90-110)	20	1.6
MSD_202012140085	Total phosphorus as P	0.46	0.8	1.39	mg/L	<u>116</u>	(90-110)	20	0.34

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
12/21/2020

Vanessa Berry
EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 908299
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 908299
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 14, 2020 at 1043**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012140092</u>	Test 11 No. 0 Initial	12/07/2020 0812
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012140093</u>	Test 11 No. 1 Initial	12/07/2020 0814
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012140094</u>	Test 11 No. 2 Initial	12/07/2020 0817
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012140095</u>	Test 11 No. 3 Initial	12/07/2020 0911
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012140096</u>	Test 11 No. 4 Initial	12/07/2020 0914
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012140097</u>	Test 11 No. 5 Initial	12/07/2020 0917
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012140098</u>	Test 11 No. 6 Initial	12/07/2020 0941
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012140099</u>	Test 11 No. 7 Initial	12/07/2020 0943
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012140100</u>	Test 11 No. 8 Initial	12/07/2020 0948
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012140101</u>	Test 11 No. 9 Initial	12/07/2020 1008
	Total phosphorus as P Total phosphorus as PO4- Calc.	

Test Description



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLE TEMP RECEIVED AT:

☐ (Other) IR Gun ID = 1016 (Observation = 2.7 °C) (check for yes)

☒ Monrovia IR Gun ID = 1016 (Observation = 2.5 °C)

Compliance Acceptance Criteria: (Chemistry: ± 2 °C) (Microbiology: $< 10^6$ C)

TYPE OF ICE: Real ☒ Synthetic

CONDITION OF ICE: No Ice ☒ Frozen ☐ Partially Frozen ☐ Thawed ☐ N/A

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: 928451164437

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:		PROJECT CODE:		COMPLIANCE SAMPLES		NON-COMPLIANCE SAMPLES		(check for yes)	
Tetra Tech 201 E Pine St Orlando				- Requires state forms		REGULATION INVOLVED:		(check for yes)	
EEA CLIENT CODE:		COC ID:		Type of samples (circle one):		ROUTINE SPECIAL CONFIRMATION		(eg. SDWA, NPDES, etc.)	
Tetra Tech - Orlando				SEE ATTACHED KIT ORDER FOR ANALYSES					
TAT requested: rush by adv notice only		SAMPLE GROUP:		List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)					
STD 1 wk 3 day 2 day 1 day		Lead Solubility Test Phase 1							
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX	FIELD DATA	FIELD DATA	SAMPLER COMMENTS		
12/7	8:12	Test 41 No. 0 initial		fw					
	8:14	1							Preserved with H2SO4
	8:17	2							
	9:11	3							
	9:14	4							
	9:17	5							
	9:41	6							
	9:43	7							
	9:48	8							
	10:08	9							

* MATRIX TYPES: RSW = Raw Surface Water
RGW = Raw Ground Water

CFW = Chlor(am)inated Finished Water
FW = Other Finished Water

SEAW = Sea Water
WW = Waste Water

BW = Bottled Water
SW = Storm Water

SO = Soil
SL = Sludge

SIGNATURE

PRINT NAME

COMPANY/TITLE

DATE

TIME

SAMPLED BY:	M. Arenas	Tetra Tech, Project Engineer	12/11/20	4:30
RELINQUISHED BY:		"	"	"
RECEIVED BY:	Chuck Brooks	"	12-14-20	1043
RELINQUISHED BY:				
RECEIVED BY:				

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments**Report:** 908299**Project:** KALAMAZOO**Group:** Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Flags Legend:

M1 - Matrix spike recovery was high; the associated blank spike recovery was acceptable.

Tel: (626) 386-1100
Fax: (866) 988-3757
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Laboratory Hits

Report: 908299
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/14/2020 1043

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
202012140093 <u>Test 11 No. 1 Initial</u>						
12/21/2020 07:38	Total phosphorus as P		0.093		mg/L	0.020
12/21/2020 12:51	Total phosphorus as PO4- Calc.		0.28		mg/L	0.030
202012140094 <u>Test 11 No. 2 Initial</u>						
12/21/2020 07:41	Total phosphorus as P		1.0		mg/L	0.040
12/21/2020 12:52	Total phosphorus as PO4- Calc.		3.1		mg/L	0.030
202012140095 <u>Test 11 No. 3 Initial</u>						
12/21/2020 08:33	Total phosphorus as P		2.3		mg/L	0.080
12/21/2020 12:54	Total phosphorus as PO4- Calc.		7.1		mg/L	0.030
202012140096 <u>Test 11 No. 4 Initial</u>						
12/21/2020 07:43	Total phosphorus as P		0.62		mg/L	0.040
12/21/2020 12:52	Total phosphorus as PO4- Calc.		1.9		mg/L	0.030
202012140097 <u>Test 11 No. 5 Initial</u>						
12/21/2020 07:44	Total phosphorus as P		1.4		mg/L	0.040
12/21/2020 12:52	Total phosphorus as PO4- Calc.		4.3		mg/L	0.030
202012140098 <u>Test 11 No. 6 Initial</u>						
12/21/2020 07:45	Total phosphorus as P		0.57		mg/L	0.040
12/21/2020 12:53	Total phosphorus as PO4- Calc.		1.7		mg/L	0.030
202012140099 <u>Test 11 No. 7 Initial</u>						
12/21/2020 07:45	Total phosphorus as P		1.1		mg/L	0.040
12/21/2020 12:53	Total phosphorus as PO4- Calc.		3.4		mg/L	0.030
202012140100 <u>Test 11 No. 8 Initial</u>						
12/21/2020 07:46	Total phosphorus as P		0.46		mg/L	0.040
12/21/2020 12:53	Total phosphorus as PO4- Calc.		1.4		mg/L	0.030
202012140101 <u>Test 11 No. 9 Initial</u>						
12/21/2020 07:49	Total phosphorus as P		0.99		mg/L	0.040
12/21/2020 12:53	Total phosphorus as PO4- Calc.		3.0		mg/L	0.030

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 908299
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/14/2020 1043

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
<u>Test 11 No. 0 Initial (202012140092)</u>						Sampled on 12/07/2020 0812			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/21/20 12:51				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	ND (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/21/20 07:37		1294918		(SM4500-PE/EPA 365.1)	Total phosphorus as P	ND	mg/L	0.020	1
<u>Test 11 No. 1 Initial (202012140093)</u>						Sampled on 12/07/2020 0814			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/21/20 12:51				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.28 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/21/20 07:38		1294918		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.093	mg/L	0.020	1
<u>Test 11 No. 2 Initial (202012140094)</u>						Sampled on 12/07/2020 0817			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/21/20 12:52				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/21/20 07:41		1294918		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.0	mg/L	0.040	2
<u>Test 11 No. 3 Initial (202012140095)</u>						Sampled on 12/07/2020 0911			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/21/20 12:54				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	7.1 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/21/20 08:33		1294918		(SM4500-PE/EPA 365.1)	Total phosphorus as P	2.3	mg/L	0.080	4
<u>Test 11 No. 4 Initial (202012140096)</u>						Sampled on 12/07/2020 0914			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/21/20 12:52				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.9 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/21/20 07:43		1294918		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.62	mg/L	0.040	2
<u>Test 11 No. 5 Initial (202012140097)</u>						Sampled on 12/07/2020 0917			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 908299
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/14/2020 1043

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	12/21/20 12:52			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	4.3 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/21/20 07:44		1294918	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.4	mg/L	0.040	2
Test 11 No. 6 Initial (202012140098)						Sampled on 12/07/2020 0941			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/21/20 12:53			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.7 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/21/20 07:45		1294918	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.57	mg/L	0.040	2
Test 11 No. 7 Initial (202012140099)						Sampled on 12/07/2020 0943			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/21/20 12:53			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.4 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/21/20 07:45		1294918	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.1	mg/L	0.040	2
Test 11 No. 8 Initial (202012140100)						Sampled on 12/07/2020 0948			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/21/20 12:53			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.4 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/21/20 07:46		1294918	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.46 (M1)	mg/L	0.040	2
Test 11 No. 9 Initial (202012140101)						Sampled on 12/07/2020 1008			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/21/20 12:53			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.0 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/21/20 07:49		1294918	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.99	mg/L	0.040	2

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory QC Summary

Report: 908299
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech

Total phosphorus as P (T-P)**Analytical Batch: 1294918**

202012140092	Test 11 No. 0 Initial
202012140093	Test 11 No. 1 Initial
202012140094	Test 11 No. 2 Initial
202012140095	Test 11 No. 3 Initial
202012140096	Test 11 No. 4 Initial
202012140097	Test 11 No. 5 Initial
202012140098	Test 11 No. 6 Initial
202012140099	Test 11 No. 7 Initial
202012140100	Test 11 No. 8 Initial
202012140101	Test 11 No. 9 Initial

Analysis Date: 12/21/2020

Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
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Tetra Tech

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1294918					Analysis Date: 12/21/2020				
LCS1	Total phosphorus as P		0.4	0.432	mg/L	108	(90-110)		
LCS2	Total phosphorus as P		0.4	0.428	mg/L	107	(90-110)	20	0.93
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0179	mg/L	90	(50-150)		
MS_202012100178	Total phosphorus as P	ND	0.4	0.413	mg/L	103	(90-110)		
MS_202012140100	Total phosphorus as P	0.46	0.8	1.37	mg/L	<u>114</u>	(90-110)		
MSD_202012100178	Total phosphorus as P	ND	0.4	0.417	mg/L	104	(90-110)	20	1.1
MSD_202012140100	Total phosphorus as P	0.46	0.8	1.36	mg/L	<u>113</u>	(90-110)	20	0.97

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tetra Tech
201 East Pine Street
Suite 1000
Orlando, FL 32801
Attention: James Christopher
Fax: 407-839-3790

Date of Issue
01/04/2021

Vanessa Berry
EUROFINS EATON
ANALYTICAL, LLC



Utah ELCP CA00006

ZIA8: Vanessa Berry
Project Manager

Report: 910171
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

* Test results relate only to the sample(s) tested.

* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

* This report shall not be reproduced except in full, without the written approval of the laboratory.

* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	Certified
Arkansas	Certified	Nevada	CA000062018
California	2813	New Hampshire *	2959
Colorado	Certified	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	Certified
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	18-005R	Oregon *	CA200003-005
Hawaii	Certified	Pennsylvania *	68-565
Idaho	Certified	Puerto Rico	Certified
Illinois *	200033	Rhode Island	LAO00326
Indiana	C-CA-01	South Carolina	87016
Iowa - Asbestos	413	South Dakota	Certified
Kansas *	E-10268	Tennessee	TN02839
Kentucky	90107	Texas *	T104704230-18-15
Louisiana *	LA180000	Utah (Primary AB) *	CA00006
Maine	CA0006	Vermont	VT0114
Maryland	224	Virginia *	460260
Commonwealth of Northern Marianas Is.	MP0004	Washington	C838
Massachusetts	M-CA006	EPA Region 5	Certified
Michigan	9906	Los Angeles County Sanitation Districts	10264
Mississippi	Certified		

* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO/IEC 17025 as verified by the ANSI-ASQ National Accreditation Board/A2LA.
Refer to Certificate and scope of accreditation (5890) found at: <https://www.eurofinsus.com/Eaton>

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,2,3-TCP (5 PPT & 0.5 PPT)	CA SRL 524M-TCP	x		x
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Algal Toxins/Microcystin	In House Method (3570)			
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D Palin Test	x		x
Chlorine -Total/Free/ Combined Residual	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Glyphosate	EPA 547	x		x
Glyphosate + AMPA	In House Method (3618)	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	Legiolert	x		x
Mercury	EPA 200.8	x		x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
Microcystin, Total	EPA 546	x		x
NDMA	EEA/Agilent 521.1 In house method (2425)	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphorous	SM 4500P E	x		x
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
Perfluorinated Pollutant	In house Method (2434)	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-S ⁻ D		x	
Sulfite	SM 4500-SO ³ B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure SM 9223	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Triazine Pesticides & Degradates	In House (3617)	x		x
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x
Field Sampling	N/A			

Acknowledgement of Samples Received

Addr: **Tetra Tech**
201 East Pine Street
Suite 1000
Orlando, FL 32801

Attn: James Christopher
Phone: 407-480-3907

Client ID: TETRATECH-ORLAN
Folder #: 910171
Project: KALAMAZOO
Sample Group: Lead Solubility Testing - Phase 1

Project Manager: Vanessa Berry
Phone: 503-310-3905

The following samples were received from you on **December 23, 2020 at 1035**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
<u>202012230790</u>	Test 13 No. 0 Initial	12/14/2020 1209
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012230795</u>	Test 13 No.1 Initial	12/14/2020 1220
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012230796</u>	Test 13 No. 2 Initial	12/14/2020 1223
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012230797</u>	Test 13 No. 3 Initial	12/14/2020 1224
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012230798</u>	Test 13 No. 4 Initial	12/14/2020 1225
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012230799</u>	Test 13 No. 5 Initial	12/14/2020 1226
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012230800</u>	Test 13 No. 6 Initial	12/14/2020 1305
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012230801</u>	Test 13 No. 7 Initial	12/14/2020 1306
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012230802</u>	Test 13 No. 8 Initial	12/14/2020 1307
	Total phosphorus as P Total phosphorus as PO4- Calc.	
<u>202012230803</u>	Test 13 No. 9 Initial	12/14/2020 1308
	Total phosphorus as P Total phosphorus as PO4- Calc.	

Test Description



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

LOGIN COMMENTS:

SAMPLE TEMP RECEIVED AT:

☐ (Other)

IR Gun ID =

(Observation =

°C)

(check for yes)

SAMPLES CHECKED AGAINST COC BY:

9/10/17

☒ Monrovia

IR Gun ID =

(Observation =

°C)

(check for yes)

SAMPLES LOGGED IN BY:

Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10 °C)

TYPE OF ICE: Real

Synthetic

No Ice

CONDITION OF ICE: Frozen

Partially Frozen

Thawed

N/A

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other:

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:

9284 5117 8683

DE:

Tetra Tech 201 E Pine St Orlando

EEA CLIENT CODE:

COC ID:

SAMPLE GROUP:

Lead solubility test - phase 1

TAT requested: rush by adv notice only

STD 1 wk 3 day 2 day 1 day

SAMPLE DATE

SAMPLE TIME

SAMPLE ID

CLIENT LAB ID

MATRIX

FIELD DATA

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12/14 12:09

1

Test 13 No. 0 initial

FW

12:20

2

12:23

3

12:24

4

12:25

5

12:26

6

13:05

7

13:06

8

13:07

9

13:08

10

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Comments

Report: 910171

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Report: 910171
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/23/2020 1035

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
202012230790 <u>Test 13 No. 0 Initial</u>						
12/31/2020 10:31	Total phosphorus as P		0.065		mg/L	0.020
12/31/2020 13:36	Total phosphorus as PO4- Calc.		0.20		mg/L	0.030
202012230795 <u>Test 13 No.1 Initial</u>						
12/31/2020 11:36	Total phosphorus as P		1.1		mg/L	0.040
12/31/2020 13:38	Total phosphorus as PO4- Calc.		3.4		mg/L	0.030
202012230796 <u>Test 13 No. 2 Initial</u>						
12/31/2020 10:32	Total phosphorus as P		0.18		mg/L	0.040
12/31/2020 13:36	Total phosphorus as PO4- Calc.		0.55		mg/L	0.030
202012230797 <u>Test 13 No. 3 Initial</u>						
12/31/2020 10:36	Total phosphorus as P		1.8		mg/L	0.040
12/31/2020 13:36	Total phosphorus as PO4- Calc.		5.5		mg/L	0.030
202012230798 <u>Test 13 No. 4 Initial</u>						
12/31/2020 10:39	Total phosphorus as P		0.66		mg/L	0.040
12/31/2020 13:36	Total phosphorus as PO4- Calc.		2.0		mg/L	0.030
202012230799 <u>Test 13 No. 5 Initial</u>						
12/31/2020 10:40	Total phosphorus as P		1.3		mg/L	0.040
12/31/2020 13:37	Total phosphorus as PO4- Calc.		4.0		mg/L	0.030
202012230800 <u>Test 13 No. 6 Initial</u>						
12/31/2020 10:40	Total phosphorus as P		0.53		mg/L	0.040
12/31/2020 13:37	Total phosphorus as PO4- Calc.		1.6		mg/L	0.030
202012230801 <u>Test 13 No. 7 Initial</u>						
12/31/2020 10:41	Total phosphorus as P		0.78		mg/L	0.040
12/31/2020 13:37	Total phosphorus as PO4- Calc.		2.4		mg/L	0.030
202012230802 <u>Test 13 No. 8 Initial</u>						
12/31/2020 10:42	Total phosphorus as P		0.48		mg/L	0.040
12/31/2020 13:37	Total phosphorus as PO4- Calc.		1.5		mg/L	0.030
202012230803 <u>Test 13 No. 9 Initial</u>						
12/31/2020 11:39	Total phosphorus as P		0.99		mg/L	0.080
12/31/2020 13:38	Total phosphorus as PO4- Calc.		3.0		mg/L	0.030

SUMMARY OF POSITIVE DATA ONLY

Tel: (626) 386-1100
Fax: (866) 988-3757
1 800 566 LABS (1 800 566 5227)

Laboratory Data

Report: 910171
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/23/2020 1035

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
Test 13 No. 0 Initial (202012230790)						Sampled on 12/14/2020 1209			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/31/20 13:36				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.20 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/31/20 10:31		1297062		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.065	mg/L	0.020	1
Test 13 No.1 Initial (202012230795)						Sampled on 12/14/2020 1220			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/31/20 13:38				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.4 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/31/20 11:36		1297062		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.1	mg/L	0.040	2
Test 13 No. 2 Initial (202012230796)						Sampled on 12/14/2020 1223			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/31/20 13:36				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	0.55 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/31/20 10:32		1297062		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.18	mg/L	0.040	2
Test 13 No. 3 Initial (202012230797)						Sampled on 12/14/2020 1224			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/31/20 13:36				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	5.5 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/31/20 10:36		1297062		(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.8	mg/L	0.040	2
Test 13 No. 4 Initial (202012230798)						Sampled on 12/14/2020 1225			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									
12/31/20 13:36				(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.0 (c)	mg/L	0.030	1
SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
12/31/20 10:39		1297062		(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.66	mg/L	0.040	2
Test 13 No. 5 Initial (202012230799)						Sampled on 12/14/2020 1226			
SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.									

Rounding on totals after summation.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

Tel: (626) 386-1100
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Laboratory Data

Report: 910171
Project: KALAMAZOO
Group: Lead Solubility Testing - Phase 1

Tetra Tech
James Christopher
201 East Pine Street
Suite 1000
Orlando, FL 32801

Samples Received on:
12/23/2020 1035

Prepped	Analyzed	Prep Batch	Analytical Batch	Method	Analyte	Result	Units	MRL	Dilution
	12/31/20 13:37			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	4.0 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/31/20 10:40		1297062	(SM4500-PE/EPA 365.1)	Total phosphorus as P	1.3	mg/L	0.040	2
Test 13 No. 6 Initial (202012230800)						Sampled on 12/14/2020 1305			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/31/20 13:37			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.6 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/31/20 10:40		1297062	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.53	mg/L	0.040	2
Test 13 No. 7 Initial (202012230801)						Sampled on 12/14/2020 1306			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/31/20 13:37			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	2.4 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/31/20 10:41		1297062	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.78	mg/L	0.040	2
Test 13 No. 8 Initial (202012230802)						Sampled on 12/14/2020 1307			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/31/20 13:37			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	1.5 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/31/20 10:42		1297062	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.48	mg/L	0.040	2
Test 13 No. 9 Initial (202012230803)						Sampled on 12/14/2020 1308			
	SM4500-PE/EPA 365.1 - Total phosphorus as PO4- Calc.								
	12/31/20 13:38			(SM4500-PE/EPA 365.1)	Total phosphorus as PO4- Calc.	3.0 (c)	mg/L	0.030	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)								
	12/31/20 11:39		1297062	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.99	mg/L	0.080	4

Rounding on totals after summation.

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Laboratory QC Summary

Report: 910171

Project: KALAMAZOO

Group: Lead Solubility Testing - Phase 1

Tetra Tech

Total phosphorus as P (T-P)

Analytical Batch: 1297062

202012230790	Test 13 No. 0 Initial
202012230795	Test 13 No.1 Initial
202012230796	Test 13 No. 2 Initial
202012230797	Test 13 No. 3 Initial
202012230798	Test 13 No. 4 Initial
202012230799	Test 13 No. 5 Initial
202012230800	Test 13 No. 6 Initial
202012230801	Test 13 No. 7 Initial
202012230802	Test 13 No. 8 Initial
202012230803	Test 13 No. 9 Initial

Analysis Date: 12/31/2020

Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
Analyzed by: H5VG
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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield(%)	Limits (%)	RPD Limit(%)	RPD%
Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1									
Analytical Batch: 1297062					Analysis Date: 12/31/2020				
LCS1	Total phosphorus as P		0.4	0.411	mg/L	103	(90-110)		
LCS2	Total phosphorus as P		0.4	0.417	mg/L	104	(90-110)	20	1.5
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0198	mg/L	99	(50-150)		
MS_202012220599	Total phosphorus as P	0.044	0.4	0.437	mg/L	98	(90-110)		
MS_202012230795	Total phosphorus as P	1.1	0.4	1.49	mg/L	95	(90-110)		
MSD_202012220599	Total phosphorus as P	0.044	0.4	0.430	mg/L	96	(90-110)	20	1.5
MSD_202012230795	Total phosphorus as P	1.1	0.4	1.48	mg/L	92	(90-110)	20	0.74

Spike recovery is already corrected for native results.

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

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

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

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

(S) - Indicates surrogate compound.

(I) - Indicates internal standard compound.

APPENDIX C – COUPON WEIGHT LOSS REPORT



Lead

Product:

B5235	0	11/2/20	12/17/20	18.0691	18.046	0.0231	45	1080	0.43
A0274	1	11/2/20	12/17/20	16.51	16.476	0.034	45	1080	0.63
B5237	2	11/2/20	12/17/20	17.8592	17.837	0.0222	45	1080	0.41
A0276	3	11/2/20	12/17/20	16.24	16.207	0.033	45	1080	0.61
B5236	4	11/2/20	12/17/20	17.9298	17.912	0.0178	45	1080	0.33
B2841	5	11/2/20	12/17/20	19.0219	19.004	0.0179	45	1080	0.33
B5252	6	11/2/20	12/17/20		17.88	-17.88	45	1080	-332.59
B5234	7	11/2/20	12/17/20	17.8668	17.845	0.0218	45	1080	0.41
A0275	8	11/2/20	12/17/20	16.582	16.556	0.026	45	1080	0.48
B2840	9	11/2/20	12/17/20	19.2359	19.209	0.0269	45	1080	0.50

Recent Coupon Photos:

