

# SAN ANTONIO WATER SYSTEM

## MITCHELL LAKE WETLANDS QUALITY TREATMENT INITIATIVE - PHASE I

### MITCHELL LAKE WATER AND SEDIMENT QUALITY

FINAL

MARCH 2020



**PLUMMER**

0535-012-01

**Mitchell Lake Water and Sediment Quality Report**  
**Table of Contents**

1	Project Purpose .....	1
2	Procedures .....	2
2.1	Station Locations .....	2
2.2	Sampling Schedule.....	4
2.2.1	Dry Weather Events .....	4
2.2.2	Wet Weather Events .....	4
2.3	Water Quality .....	5
2.3.1	Field Observations .....	5
2.3.2	Field Measurements .....	5
2.3.3	Conventional Parameters, Metals, and Pollutants of Potential Concern.....	6
2.4	Sediment quality .....	6
3	Study Results.....	9
3.1	Field Conditions.....	9
3.2	Mitchell Lake Elevations and Station Depths .....	10
3.3	Water Quality Data .....	11
3.3.1	Alkalinity, pH, and Dissolved Oxygen .....	12
3.3.2	Conductivity and Total Dissolved Solids .....	14
3.3.3	Secchi Depth, Total Suspended Solids, and Volatile Suspended Solids .....	15
3.3.4	Nitrogen, Phosphorus, and Chlorophyll-a .....	17
3.3.5	Metals .....	19
3.3.6	Pollutants of Potential Concern.....	19
3.3.7	Summary of Water Quality Data .....	20
3.4	Sediment Quality .....	20
3.4.1	Conventional Parameters .....	21
3.4.2	Calcium, Magnesium, and Sodium .....	22
3.4.3	Metals .....	22
3.4.4	Pollutants of Potential Concern.....	23
3.4.5	Summary of Sediment Quality Data.....	24

4	Mitchell Lake Historical Data .....	25
4.1	August 1989 – City of San Antonio, Water Quality Sampling Program .....	25
4.2	July 1991 – CH2M Hill, Mitchell Lake Rehabilitation Project Water Quality Modeling..	26
4.3	July 1994 – Certificate of Adjudication Application for Amendment .....	26
4.4	October 1994 – San Antonio Water System Sampling Program .....	27
4.5	1995 – San Antonio Water System, Mitchell Lake Sampling .....	28
4.6	May 1995 – San Antonio River Authority, Mitchell Lake Sampling.....	29
4.7	May 1996 – Simpson Group, Water Quality Data Collection for Mitchell Lake Intake Structure and Booster Station Project.....	32
4.8	May 2006 – University of Texas at San Antonio, Effects of Sewage Sludge Disposal On Metal Content in the Sediment and Water Of Mitchell Lake.....	34
4.9	2013-2016 – Leon Creek Water Recycling Center Effluent Quality Data .....	36
4.10	2013-2018 – Mitchell Lake Effluent Quality Data .....	36
5	Conclusions .....	39
5.1	Existing Water Quality .....	39
5.2	Trends .....	40
5.2.1	Concentration of Conventional Parameters in Water.....	40
5.2.2	Concentration of Metals in the Water Column .....	41
5.2.3	Concentration of Metals in Sediment.....	42
6	References .....	43

## **List of Appendices**

### Appendix A Field Data Sheets and Chain-of-Custody Forms

A-1 Dry weather event 1

A-2 Dry weather event 2

A-3 Dry weather event 3

A-4 Wet weather event

### Appendix B Laboratory Reports

B-1 Dry weather event 1

B-2 Dry weather event 2

B-3 Dry weather event 3

B-4 Wet weather event

### Appendix C Water Quality Data

Table C-1 Dissolved Oxygen, Temperature, pH, and Alkalinity

Table C-2 Conductivity and TDS

Table C-3 TSS, VSS, and Secchi depth

Table C-4 Nitrogen, Phosphorus, and Chlorophyll-a

Table C-5 Metals

Table C-6 Pollutants of Potential Concern

### Appendix D Sediment Quality Data

Table D-1 Conventional Parameters

Table D-2 Calcium, Magnesium, and Sodium

Table D-3 Metals

Table D-4 Pollutants of Potential Concern



## List of Tables

<b>Table No.</b>	<b>Description</b>	<b>Page</b>
Table 1	Sampling Locations .....	2
Table 2	Sampling Schedule .....	4
Table 3	Water Sample Analytical Methods .....	7
Table 4	Sediment Sample Analytical Methods.....	8
Table 5	Lake Elevations and Storage Volumes During Sampling .....	11
Table 6	Summary of Sediment Quality Data, Nitrogen, Phosphorus, Conductivity, pH, Solids, and Total Organic Carbon .....	22
Table 7	Sediment Quality Data, Calcium, Magnesium, and Sodium.....	22
Table 8	Sediment Quality Data, Metals.....	23
Table 9	Sediment Quality Data, Pollutants of Potential Concern .....	24
Table 10	August 1989 - City of San Antonio, Water Quality Data .....	25
Table 11	July 1991 - CH2MHill, Mitchell Lake Rehabilitation Project Water Quality Modeling .....	26
Table 12	July 1994 - Certificate of Adjudication Amendment Application .....	27
Table 13	October 1994 - San Antonio Water System, Wetlands Influent .....	28
Table 14	1995 – San Antonio Water System, Water Quality Data .....	30
Table 15	May 1995 – San Antonio River Authority, Water Quality Data .....	31
Table 16	May 1996 - Simpson Group, Water Quality Data .....	33
Table 17	May 2006 – University of Texas at San Antonio, Metals in Sediment (mg/kg).....	35
Table 18	May 2006 – University of Texas at San Antonio, Metals in Surface Water (µg/L)..	36
Table 19	2013-2016 - Leon Creek Water Recycling Center Effluent Quality Data (mg/L) ....	37
Table 20	2013-2018 - Mitchell Lake Discharge Self Reporting Data .....	38
Table 21	Current and Historic Water Quality Comparison, Conventional Parameters in Water .....	41
Table 22	Current and Historic Water Quality Comparison, Metals in Water .....	41

## List of Figures

<b>Figure No.</b>	<b>Description</b>	<b>Page</b>
Figure 1	Sampling Location Map.....	3
Figure 2	Station Depths .....	10
Figure 3	Elevations and Storage Volumes During Sampling .....	11
Figure 4	Water Quality, Alkalinity .....	12
Figure 5	Water Quality, pH .....	13
Figure 6	Water Quality, Dissolved Oxygen Percent Saturation .....	13
Figure 7	Water Quality, Conductivity .....	14
Figure 8	Water Quality, Total Dissolved Solids .....	15
Figure 9	Water Quality, Secchi Depth .....	16
Figure 10	Water Quality, Total Suspended Solids.....	16
Figure 11	Water Quality, Volatile Suspended Solids.....	17
Figure 12	Water Quality, Total Kjeldahl Nitrogen .....	18
Figure 13	Water Quality, Total Phosphorus .....	18
Figure 14	Water Quality, Chlorophyll-a .....	19
Figure 15	May 1995 - San Antonio River Authority, Surface DO Concentrations on Mitchell Lake.....	31
Figure 16	May 1996 - Simpson Group, Surface DO Concentrations on Mitchell Lake .....	33

## List of Abbreviations

ac-ft	acre-feet
BOD	biochemical oxygen demand
°C	degrees Celsius
DL	detection limit
DO	dissolved oxygen
DO%	dissolved oxygen percent saturation
ft msl	feet above mean sea level
GPS	global positioning system
in	inch
LCWRC	Leon Creek Water Recycling Center
MAL	minimum analytical level
max	maximum
mg/L	milligram per liter
min	minimum
MS4	Municipal Separate Storm Sewer System
N	nitrogen
NH <sub>3</sub> -N	ammonia-nitrogen
PEC	probable effect concentration
Plummer	Plummer Associates, Inc.
POPC	pollutants of potential concern
PQL	practical quantitation limit
RL	reporting limit

SARA	San Antonio River Authority
SAWS	San Antonio Water System
s.u.	standard units
TCEQ	Texas Commission on Environmental Quality
TPDES	Texas Pollutant Discharge Elimination System
TDS	total dissolved solids
TKN	total Kjeldahl nitrogen
TSS	total suspended solids
$\mu\text{S/cm}$	micro siemens per centimeter
$\mu\text{g/kg}$	micrograms per kilogram
$\mu\text{g/L}$	micrograms per liter
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VSS	volatile suspended solids

# 1 Project Purpose

---

Mitchell Lake is located in south Bexar County, Texas. The lake surface covers approximately 474 acres at an average water level elevation of 519.5 feet above mean sea level (ft msl). The lake is an on-channel impoundment with an earthen dam. There is a diked area located immediately adjacent to the upper portion of the lake that was previously used for sludge disposal (this area is referred to as the basin/polder complex). This previous sludge disposal area is separate from the lake, and water does not flow from it into Mitchell Lake. The contributing watershed of the lake is approximately 8.7 square miles, excluding the area of the lake itself. The lake discharges periodically in response to significant rainfall events. Discharges occur through a spillway structure into Cottonmouth Creek, which flows into the Medina River.

The San Antonio Water System (SAWS) is exploring the concept of constructing approximately 115 acres of treatment wetlands downstream of the dam to improve the quality of water discharged from the lake. The lake-wetland system would operate through the coordinated management of inflows from stormwater runoff and discharges from the Leon Creek Water Recycling Center (LCWRC) into the lake and discharges from the lake to the constructed wetland.

To advance the concept of using a constructed wetland downstream of the Mitchell Lake dam to improve the water quality discharged from the lake, water and sediment quality data were collected. The data collected for this water quality report are considered the baseline for water and sediment quality that currently exist in Mitchell Lake. The data will be used to assist in the design of the wetland.

In conjunction with the development of the constructed wetland, SAWS is pursuing permitting Mitchell Lake under a Municipal Separate Storm Sewer System (MS4) permit rather than the current Texas Pollutant Discharge Elimination System (TPDES) wastewater treatment facility permit. If Mitchell Lake is permitted under the MS4 program, it will be necessary to identify water quality criteria for the lake. The data collected for this study will be used to assist in identifying appropriate water quality criteria.

## 2 Procedures

---

A water and sediment quality study plan titled “Mitchell Lake Wetlands Quality Treatment Initiatives, Phase I, Water and Sediment Quality Study Plan”, prepared by Plummer Associates, Inc., (Plummer) January 2018, provided guidance for collecting the necessary data. The following section provides a description of the sampling locations, sampling schedule, field observations, field measurements, and parameters that were collected. The data obtained by the study are summarized in this report.

### 2.1 STATION LOCATIONS

Both water and sediment samples were collected. Water samples were collected in the open water. Sediment samples were collected near the shoreline and in the open water area. All sampling locations are described in Table 1 and depicted on Figure 1.

**Table 1**  
**Sampling Locations**

<b>Station Number</b>	<b>Station Description</b>		<b>Sample Type</b>	<b>Coordinates</b>
1	Far North	Centerline of Upper Lake	Water and Sediment	29.289845, -98.493625
2	Northwest	Near Shore	Sediment	29.287263, -98.495810
3	Northeast	Near Shore	Sediment	29.287386, -98.487841
4	Mid-Lake/West	Near Shore	Sediment	29.282009, -98.492964
5	Mid-Lake/East	Near Shore	Sediment	29.281367, -98.487922
6	Mid-Lake	Centerline of Lake	Water and Sediment	29.276405, -98.490778
7	Southwest	Near Shore	Sediment	29.275344, -98.494397
8	Southeast	Near Shore	Sediment	29.275537, -98.488209
9	Far South	Near Spillway	Water and Sediment	29.272393, -98.489635



**Figure 1**  
**Sampling Location Map**

## 2.2 SAMPLING SCHEDULE

Sampling was conducted over a one-year period in 2018. A total of four water quality sampling events took place, which were comprised of three dry weather events and one wet weather event. One set of sediment samples was collected; it was collected in conjunction with the second set of dry weather event water quality samples. Table 2 identifies the sampling dates and the type of sampling event that occurred.

**Table 2  
Sampling Schedule**

<b>Date</b>	<b>Sample Type</b>	<b>Event Type</b>
1/25/2018	Water	Dry weather
5/31/2018	Water and sediment	Dry weather
8/15/2018	Water	Dry weather
11/1/2018	Water	Wet weather

### 2.2.1 Dry Weather Events

The preferred condition for conducting a dry weather sampling event, as identified in the Study Plan, was an antecedent condition of approximately 14 days without significant rainfall in the watershed and at least ten days after the last discharge from the lake. Significant rainfall was defined as a 24-hour event greater than 0.5 inches. The rainfall gage at the United States Geological Survey (USGS) Station 08181500, Medina River at San Antonio, served as the reference point for rainfall amounts in the area.

### 2.2.2 Wet Weather Events

Wet weather sampling was to be conducted after a significant rainfall event. The Study Plan specified that wet weather sampling would only occur if there were a discharge from the lake as a result of the volume of rainfall runoff entering the lake. However, there was an extended period in 2018 when very little rainfall occurred in the Mitchell Lake watershed. Consequently, the lake levels became very low. Therefore, when a rainfall event occurred that resulted in sufficient runoff such that approximately 80% of the lake volume was runoff, it was concluded that the conditions were conducive to evaluating the effect of runoff on water quality in the lake; and a wet weather sampling event was conducted.



The study plan proposed that two wet weather sampling events would be conducted. However, it was determined that the sampling program proposed in conjunction with the operation of the pilot wetlands would provide sufficient information on the variability of water quality in the lake, and the second wet weather sampling event would not be necessary.

## **2.3 WATER QUALITY**

The following section provides a description of the water quality samples that were collected. The field observations, field measurements, and types of samples are described.

### **2.3.1 Field Observations**

The following field observations were documented at each sampling location and event:

- Date
- Time of day
- Wind direction
- Lake discharge occurring (Y or N)
- Cloud cover
- Last day of prior rain event
- Air temperature
- Color of water
- Clarity of water
- Presence/absence of odor
- Total water depth
- Approximate lake elevation
- Global Positioning System (GPS) coordinates
- Wind speed

Copies of the field data sheets documenting these observations and chain of custody forms are presented in Appendix A.

### **2.3.2 Field Measurements**

Measurements were taken at the surface and near-bottom depths to assess the vertical variation in the water quality. The study plan provided for the measurement of water quality at mid-depth, also, but the shallowness of the lake made this unnecessary (the maximum depth at any location during any sampling event was 4.8 feet.) Water quality analysis was conducted in the field for the following parameters:

- Temperature
- pH
- Dissolved oxygen (DO)
- Conductivity
- Secchi depth

The above parameters, except Secchi depth, were measured directly by submerging one or more calibrated probes in the water. A Secchi disc was used to measure light penetration. Results of the field measurements are included in the field data sheets in Appendix A.

### **2.3.3 Conventional Parameters, Metals, and Pollutants of Potential Concern**

Samples for the measurement of conventional parameters, metals, and pollutants of potential concern (POPC) were collected by grab sample at each of the stations. Most of the samples were collected within the top one foot of water. On some occasions, samples were taken near the bottom to assess the vertical variation in the water quality. The samples were taken to the San Antonio Testing Laboratory and SAWS Environmental Laboratory Services for analysis.

Table 3 lists the parameters that were analyzed for conventional parameters, metals, and POPC. Additionally, Table 3 lists the analytical method, minimum analytical level (MAL), detection limit (DL), preservation technique, and sample holding time for each analyte. Copies of the laboratory reports for the water quality analyses are presented in Appendix B.

## **2.4 SEDIMENT QUALITY**

Sediment samples were collected with an Ekman dredge or Ponar dredge. The sediment samples were collected after the water quality samples at each sampling location. A minimum of three separate dredge grabs were collected at each sediment sampling location. The three grabs were mixed in a clean pan or bucket with a Teflon scoop or spoon. The pan and dredge were cleaned with native water between sites.

Sediment samples, also, were analyzed for conventional parameters, metals, and POPC. Table 4 identifies the parameters measured, as well as the analytical method, MAL, DL, and sample holding time for each parameter. The preservation method for sediment samples is cooling to less than six degrees Celsius (°C).

**Table 3**  
**Water Sample Analytical Methods, Preservation, and**  
**Holding Times**

Category	Parameter	Analytical* Method	Minimum Analytical Level (mg/L)	Detection Limit (mg/L)	Preservation	Holding Time
Conventional Parameters	CBOD <sub>5</sub>	SM 5210 B	2	2	Cool, ≤6 °C	48 hours
	Total Kjeldahl nitrogen	351.3 <sup>(1)</sup>	1	1	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Ammonia	SM 4500-NH <sub>3</sub> B/C <sup>(1)</sup>	1	1	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Nitrate+nitrite	300	0.1	0.01	Cool, ≤6 °C	48 hours
	Total phosphorus	200.7	0.01	0.0013	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Total suspended solids	SM 2540-D	2.5	2.5	Cool, ≤6 °C	7 days
	Volatile suspended solids	SM 2540-E	0.1	0.1	Cool, ≤6 °C	7 days
	Total dissolved solids	SM 2540-C	2	2	Cool, ≤6 °C	7 days
	Alkalinity	SM 2320-B	20	20	Cool, ≤6 °C	14 days
	Chlorophyll-a	SM 10200 H Modified	(2)	(2)	Cool, ≤6 °C, amber bottle	24 hours
Pollutants of Potential Concern Parameters	Metals digestion	200.7	N/A		HNO <sub>3</sub> to pH <2	6 months
	Antimony	200.7	0.01	0.0016		
	Arsenic	200.7	0.01	0.0009		
	Beryllium	200.7	0.01	0.0003		
	Cadmium	200.7	0.01	0.0003		
	Chromium, Total	200.7	0.01	0.0031		
	Chromium (III)	Cacl.	0.01	0.0006		
	Copper	200.7	0.01	0.0006		
	Lead	200.7	0.01	0.0006		
	Nickel	200.7	0.01	0.0003		
	Selenium	200.7	0.01	0.0019		
	Silver	200.7	0.005	0.0006		
	Thallium	200.7	0.01	0.0019		
	Zinc	200.7	0.01	0.0003		
	Mercury	245.1	0.002	0.000031	HNO <sub>3</sub> to pH <2, Cool, <6 °C	28 days
	Chromium (VI)	USGS 1-1230-85	0.005	0.0031	Cool, ≤6 °C, NaOH to pH 9.3 - 9.7 or Cool, ≤6 °C, (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	48 hrs
	Cyanide, Total	SM 4500 CN C/E	0.02	0.0041	Cool, ≤6 °C, NaOH to pH>12	14 days
	Phenols, total	420.1	0.05	0.005	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days until extraction
	<b>Organochlorine pesticides</b>	608	<b>ug/L</b>	<b>ug/L</b>	Cool, ≤6 °C	7 days until extraction, 40 days after extraction.
	Aldrin		0.1	0.02		
	Chlordane		0.1	0.02		
	4,4-DDD		0.1	0.02		
	4,4-DDE		0.1	0.01		
	4,4-DDT		0.1	0.03		
	Dieldrin		0.1	0.02		
	Endosulphan, alpha		0.1	0.02		
	Endosulphan, beta		0.1	0.02		
	Endosulphan, sulfate		0.1	0.03		
	Endrin		0.1	0.03		
	Endrin aldehyde		0.1	0.03		
	Heptachlor		0.1	0.04		
	Heptachlor epoxide		0.1	0.02		
	alpha Hexachlorocyclohexane		0.1	0.01		
beta Hexachlorocyclohexane	0.1		0.03			
delta Hexachlorocyclohexane	0.1		0.02			
Lindane	0.1		0.02			
PCB 1242	0.2		0.04			
PCB 1254	0.2		0.04			
PCB 1221	0.2		0.04			
PCB 1232	0.2	0.04				
PCB 1248	0.2	0.04				
PCB 1260	0.2	0.02				
PCB 1016	0.2	0.04				
Toxaphene	1	0.5				

(1)Sensitivity and method are for SATL. SAWS method is SM 4500-NH<sub>3</sub>-C and Reporting Limit (RL) is 1.2 mg/L for TKN and 0.25 mg/L for ammonia.

(2)RL is 5 ug/L based on 1,000 ml of sample; due to nature of sample, staff expects to use 5 ml of sample with RL of 1,000 ug/L.

**Table 4**  
**Sediment Sample Analytical Methods, Preservation, and**  
**Holding Times**

Category	Parameter	Analytical Method*	Minimum Analytical Level	Detection Limit	Preservation	Holding Time
Conventional Parameters	% Solids	SM 2540G	0.0002%	0.0002%	Cool, ≤6 °C	
	% Volatile solids	SM 2540G	0.0002%	0.0002%		7 days
	pH	EPA 9045	N/A	N/A		Within 15 min of collection or ASAP
	Total Kjeldahl nitrogen	EPA 351.3	1 mg/kg	1 mg/kg		28 days
	Ammonia	SM 4500-NH3B/C	10 mg/kg	10 mg/kg		28 days
	Calcium	EPA 6020	1 mg/kg	0.5 mg/kg		6 months
	Magnesium	EPA 6020	1 mg/kg	0.5 mg/kg		6 months
	Total organic carbon	EPA 9060	1 mg/kg	0.5 mg/kg		28 days
	Total phosphorus	EPA 200.7	1 mg/kg	0.069 mg/kg		6 months
Conductivity	SM 2510-B	1 µmho/cm	N/A	Immediately or filter w/in 24 hrs		
Pollutants of Potential Concern Parameters	Metals digestion	EPA 3010	N/A		Cool, ≤6 °C	6 months
	Arsenic	EPA 6010	—	0.05 mg/kg		
	Boron	EPA 6010	0.5 mg/kg	0.03 mg/kg		
	Cadmium	EPA 6010	0.5 mg/kg	0.011 mg/kg		
	Chromium, total	EPA 6010	0.5 mg/kg	0.063 mg/kg		
	Copper	EPA 6010	0.5 mg/kg	0.027 mg/kg		
	Iron	EPA 6010	0.5 mg/kg	0.024 mg/kg		
	Lead	EPA 6010	0.5 mg/kg	0.027 mg/kg		
	Manganese	EPA 6010	0.5 mg/kg	0.018 mg/kg		
	Mercury	EPA 7471	0.04 ug/kg	0.0028 ug/kg		
	Nickel	EPA 6010	0.5 mg/kg	0.02 mg/kg		
	Selenium	EPA 6010	0.5 mg/kg	0.096 mg/kg		
	Sodium	EPA 6010	1.0 mg/kg	0.497 mg/kg		
	Zinc	EPA 6010	0.5 mg/kg	0.079 mg/kg		
	<b>Chlorinated Herbicides</b>		EPA 8151			14 days until extraction and 40 days after extraction (soil)
	2,4,5-T			3.3 ug/kg	1.4 ug/kg	
	2,4,5-TP (Silvex)			3.3 ug/kg	1.7 ug/kg	
	2,4-D			6.6 ug/kg	07 ug/kg	
	2,4-DB			6.6 ug/kg	0.9 ug/kg	
	Dalapon			3.3 ug/kg	1.2 ug/kg	
Dicamba		3.3 ug/kg		1.3 ug/kg		
Dichloroprop		6.6 ug/kg		1.6 ug/kg		
Dinoseb		3.3 ug/kg		1.4 ug/kg		
MCPA		660 ug/kg		100 ug/kg		
MCPP		660 ug/kg	100 ug/kg			

\*Methods are SW-846, unless indicated otherwise.

## 3 Study Results

---

The following section presents the study results. The field conditions, lake elevations, lake depths, water quality, and sediment quality during the study are summarized.

### 3.1 FIELD CONDITIONS

The field data sheets for each of the sampling events are found in Appendix A. Following is a description of the field conditions during each sampling event.

The first sampling event took place on January 25, 2018, between 10:40 a.m. and 2:40 p.m. The weather was cool and cloudy with the wind blowing out of the northeast. The water level in the lake was moderately low (4.5 feet in the deepest portion of the lake). No lake discharge was occurring. The water was green with significant amounts of algae and green scum on the water surface. Water clarity was low. There was no odor present during this sampling event. The last prior rain event occurred January 19-20, 2018, when approximately 0.09 inches of rain fell.

The second sampling event took place on May 30, 2018, between 10:05 a.m. and 1:20 p.m. The weather was warm and partly cloudy with the wind blowing out of the south-southeast. The water level in the lake was approximately the same as during the January sampling event. No lake discharge was occurring. The water was bright green in color, and water clarity was low. There was no odor present during this sampling event. The last prior rain event occurred on May 20, 2018, when approximately 1.76 inches of rain fell at the USGS gage site. It is assumed that this amount of rain did not occur over the entire Mitchell Lake watershed since there was not a noticeable increase in lake levels.

The third sampling event took place on August 15, 2018, between 9:00 a.m. and 12:00 p.m. The weather was warm and partly cloudy with the wind blowing out of the south. The lake level was significantly lower, and no lake discharge was occurring. The water was green in color, and water clarity was low. There was no odor present during this sampling event. The last prior rain event occurred on August 12, 2018, when approximately 2.69 inches of rain fell at the USGS gage site. It is assumed that this amount of rain did not occur over the entire Mitchell Lake watershed since there was not a noticeable increase in lake levels.

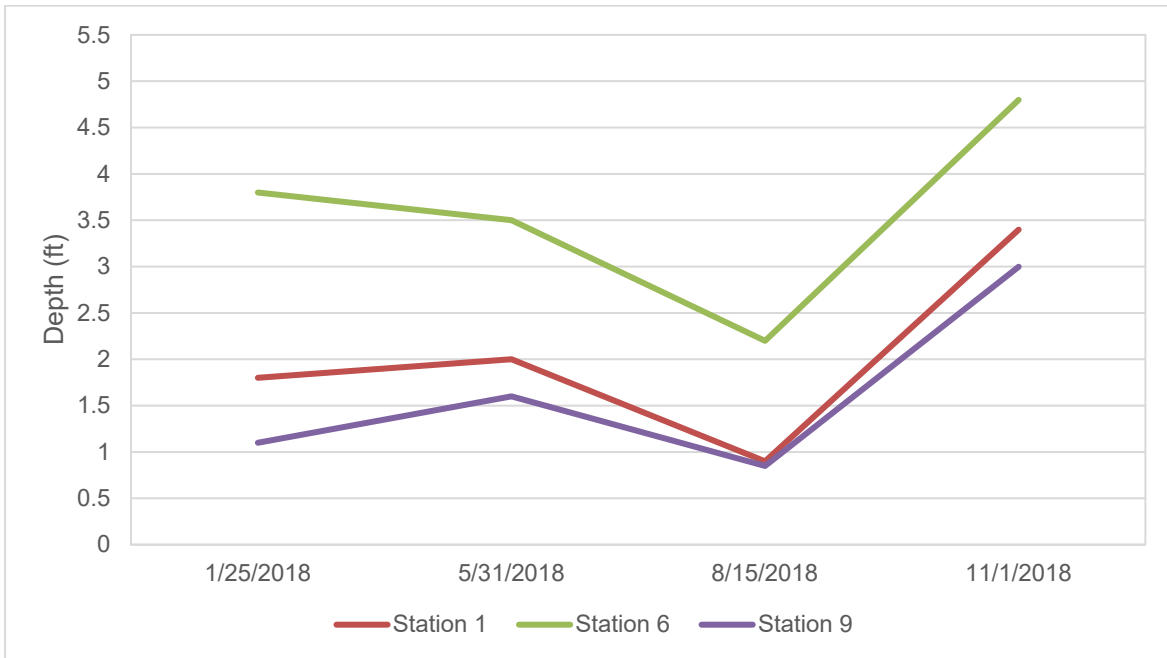
The last sampling event took place on November 1, 2018, between 10:30 a.m. and 12:10 p.m. The weather was fair and sunny with the wind blowing out of the north-northwest. The lake water level was close to the level at which it would discharge. The water was green in color, and water clarity was low. A strong odor of sulfur and sewage permeated all around the lake. Several dead

Gambusia and sailfin molly were found near where the sampling boat was launched. The last prior rain event occurred on October 22-24, 2018, when approximately 1.07 inches of rain fell at the USGS gage site.

### 3.2 MITCHELL LAKE ELEVATIONS AND STATION DEPTHS

The water depths at the various stations ranged from 0.85 feet to 3.8 feet during the dry weather events and 3.0 feet to 4.8 feet during the wet weather event.

Figure 2 graphically represents the station depths. An approximation of the Mitchell Lake elevation and storage volume during each sampling event can be found in Table 5. The depths at Station 6 were used to approximate the lake elevation because this is the mid-lake station and the deepest portion of the lake. Figure 3 graphically represents the lake elevation and storage volume over the study period.

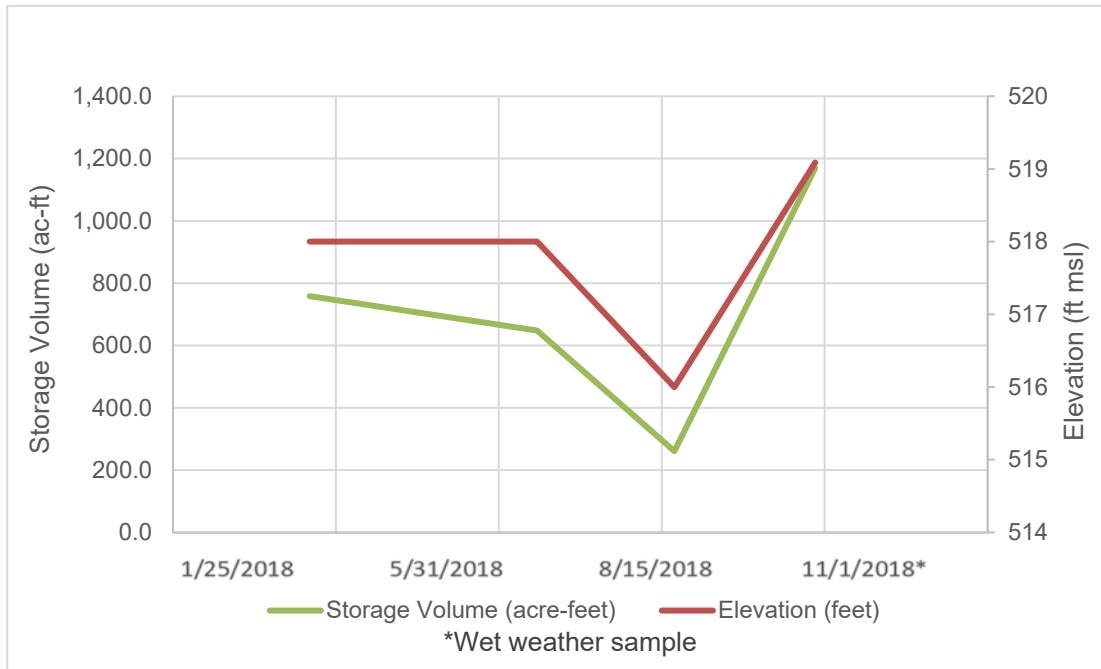


**Figure 2**  
**Station Depths**

**Table 5  
Lake Elevations and Storage Volumes During Sampling**

Station	Date	Depth (feet)	Elevation (ft msl)	Storage Volume (acre-feet)
6	1/25/2018	3.8	517.8	758
6	5/31/2018	3.5	517.5	648
6	8/15/2018	2.2	516.2	261
6	11/1/2018*	4.8	518.8	1,170

\*Wet weather sample



**Figure 3  
Elevations and Storage Volumes During Sampling**

### 3.3 WATER QUALITY DATA

There are three stations where water quality data were collected; they are along the centerline of the lake at locations extending from the upper lake to the dam. The samples were collected seasonally; one sample set was runoff dominated. The field data sheets and laboratory reports are presented in Appendices A and B, respectively. The water quality data are tabulated in Tables C-1 through C-6 of Appendix C and are summarized below.

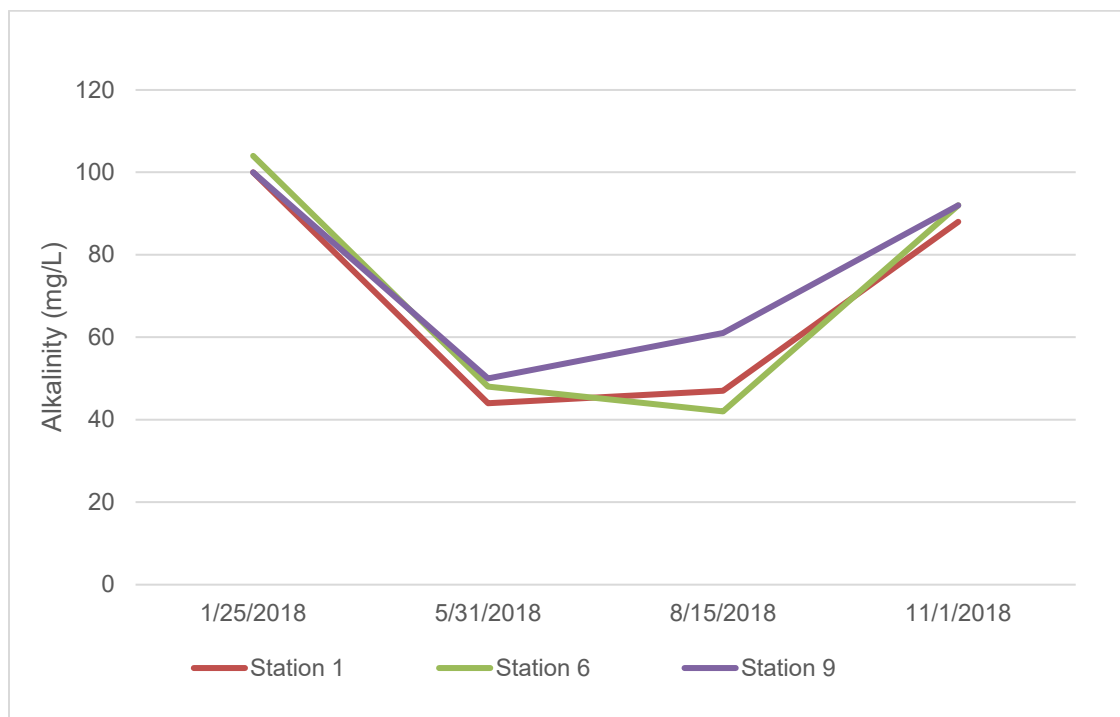
### 3.3.1 Alkalinity, pH, and Dissolved Oxygen

Following are graphical summaries of the data for alkalinity, pH, and DO on Figures 4, 5, and 6, respectively. The plots present the quality data for each station during each sampling event. A tabular summary of DO, pH, temperature, and alkalinity is presented on Table C-1 in Appendix C.

Alkalinity - The measurements of alkalinity indicate that the quality does not change significantly between stations, as shown in Figure 4. The summer concentrations are significantly lower than winter and fall concentrations.

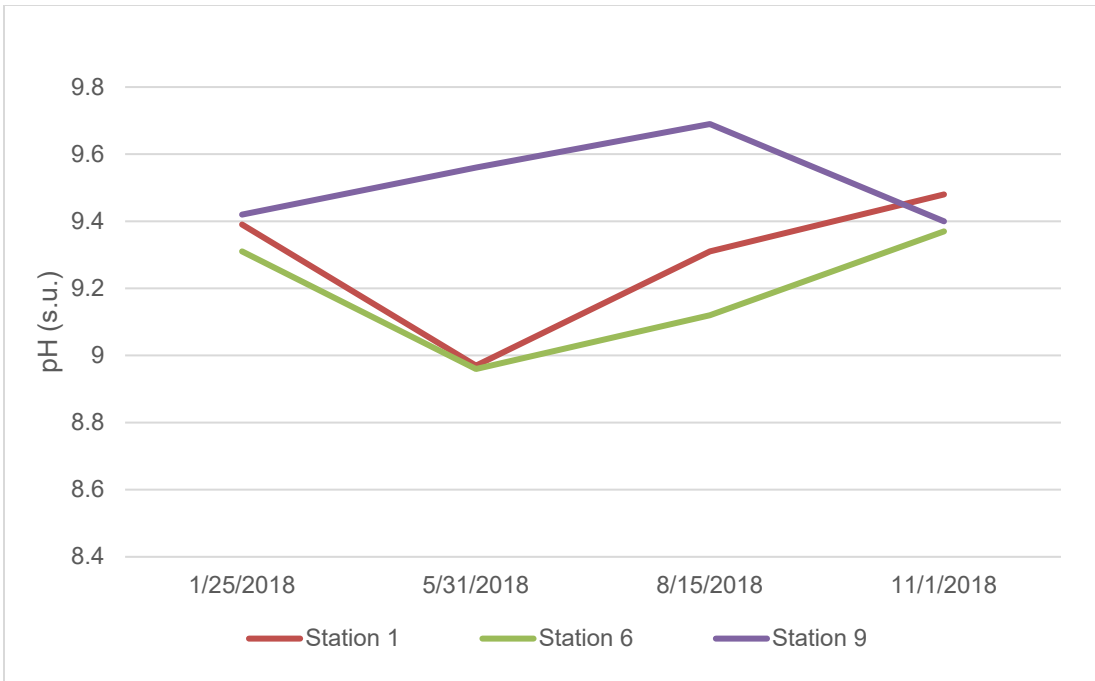
pH - pH measurements tend to be relatively high. The pH is highest at Station 9 near the dam in the summer, as shown in Figure 5.

Dissolved Oxygen - There is a clear diurnal pattern to DO. DO is presented as percent saturation (DO%) in Figure 6. Values range from 70% to 256%. Most measurements were above 100% saturation, with Station 9 exhibiting the highest values.

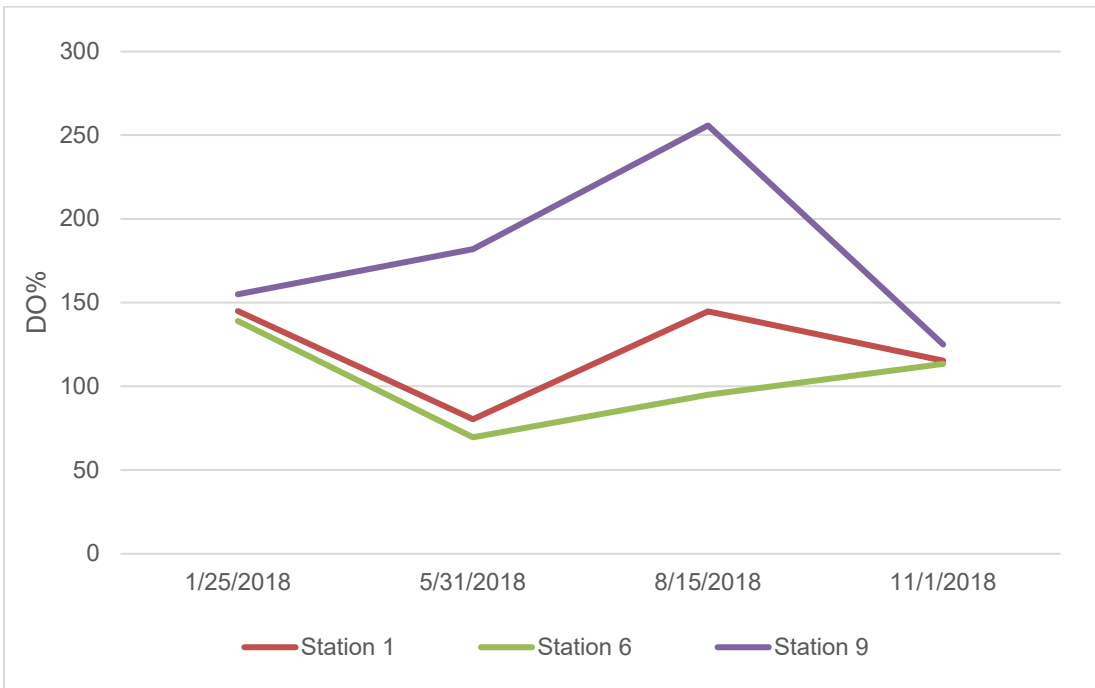


**Figure 4**  
**Water Quality, Alkalinity**





**Figure 5**  
**Water Quality, pH**

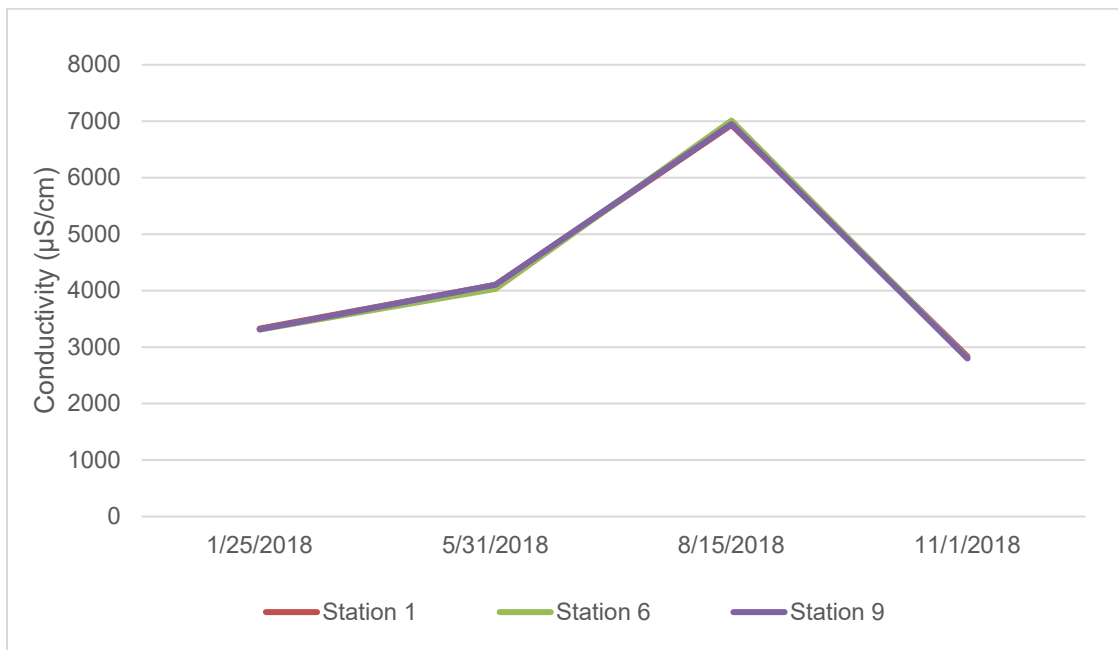


**Figure 6**  
**Water Quality, Dissolved Oxygen Percent Saturation**

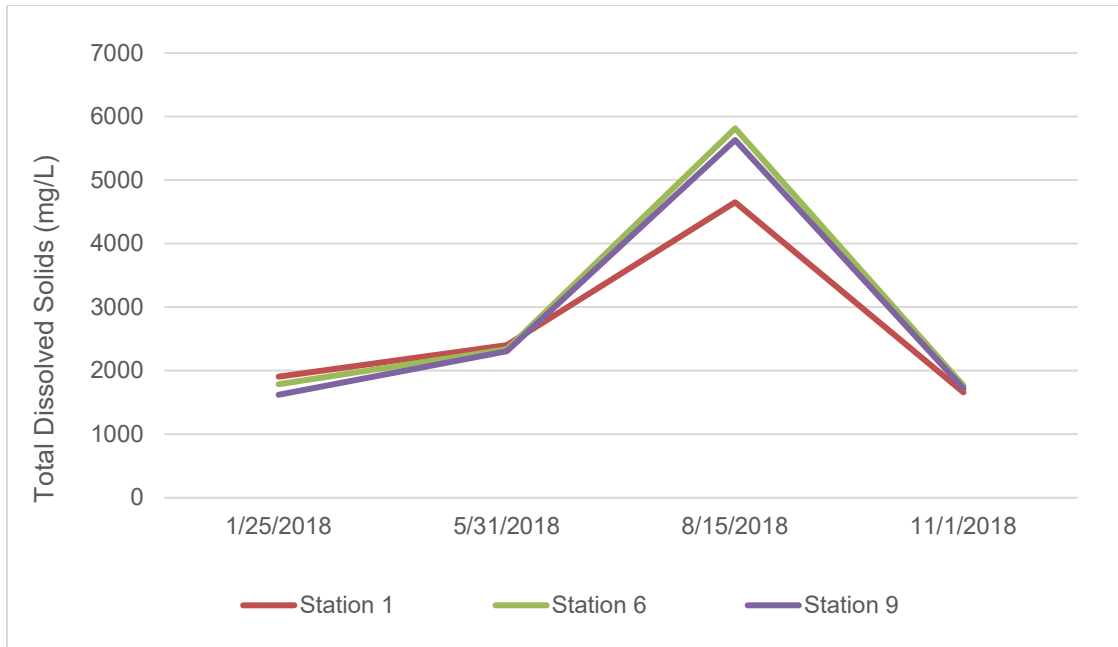
### 3.3.2 Conductivity and Total Dissolved Solids

Following are graphical summaries of the data for conductivity and total dissolved solids (TDS) on Figure 7 and Figure 8, respectively. The plots present the quality data for each station during each sampling event. A tabular summary of conductivity and TDS is presented on Table C-2 in Appendix C.

Conductivity and TDS concentrations are generally the same throughout the lake. The conductivity and TDS concentrations increased significantly over the summer due to evaporation, as the lake level dropped. The lake volume decreased from 835 acre-feet (ac-ft) to 214 ac-ft between January and August of 2018. There was very little runoff to the lake during this period. There was substantial rainfall at the end of October 2018. The runoff increased the lake volume to 1,260 ac-ft, which lowered the conductivity and TDS concentration significantly. The average ratio of TDS to conductivity in these samples is 0.62. Conductivity measurements at the three stations were nearly identical during each sampling event so they appear as a single line on the graph.



**Figure 7**  
**Water Quality, Conductivity**



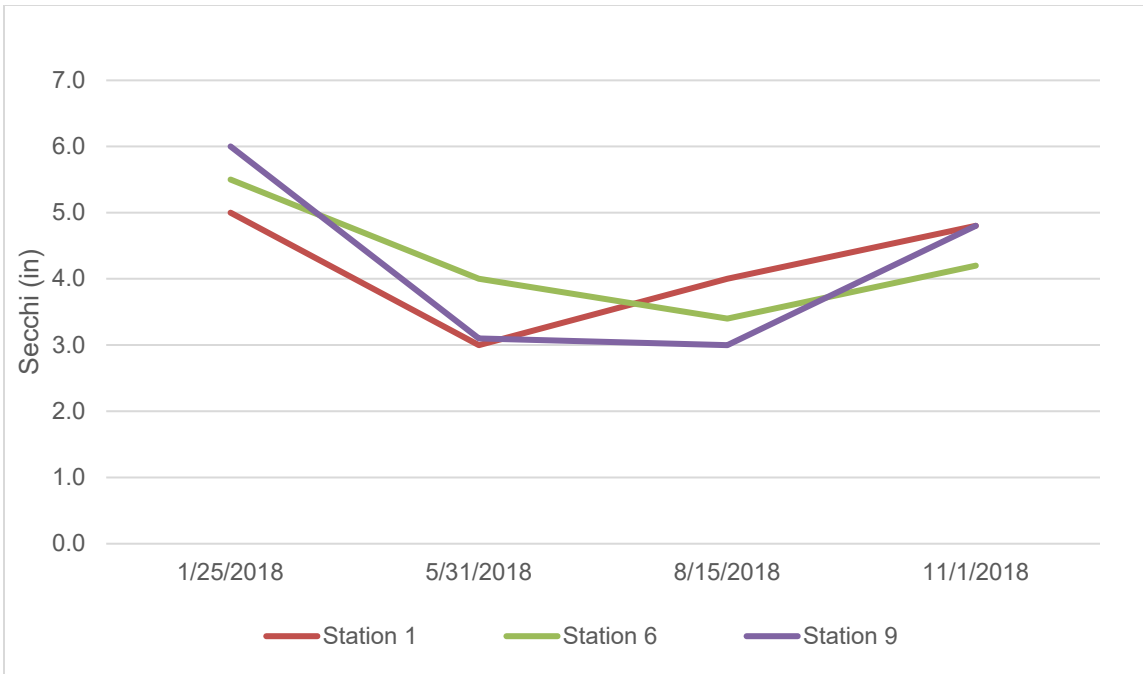
**Figure 8**  
**Water Quality, Total Dissolved Solids**

**3.3.3 Secchi Depth, Total Suspended Solids, and Volatile Suspended Solids**

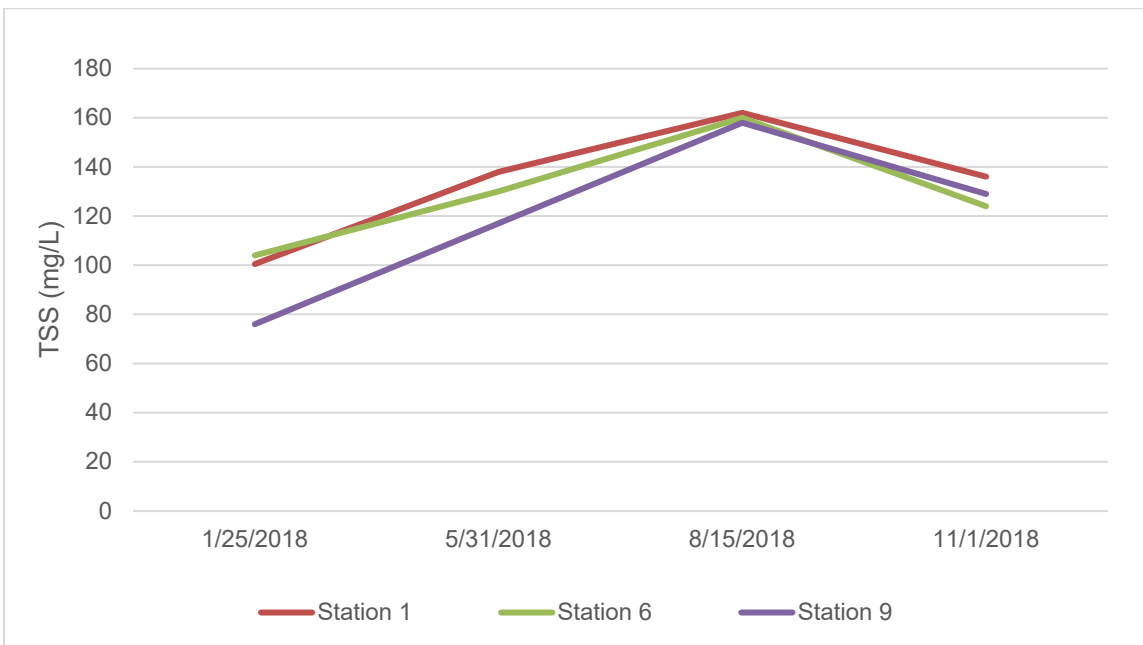
Following are graphical summaries of the data for Secchi depth, total suspended solids (TSS), and volatile suspended solids (VSS) on Figure 9, Figure 10, and Figure 11, respectively. The plots present the quality data for each station during each sampling event. A tabular summary of Secchi depths, TSS concentrations, and VSS concentrations is presented on Table C-3 in Appendix C.

There is very little variation in the data collected for Secchi depth at each lake location. Transparency is very low. The Secchi depth is slightly higher in the winter (5-6 inches) as compared to the summer (3-4 inches).

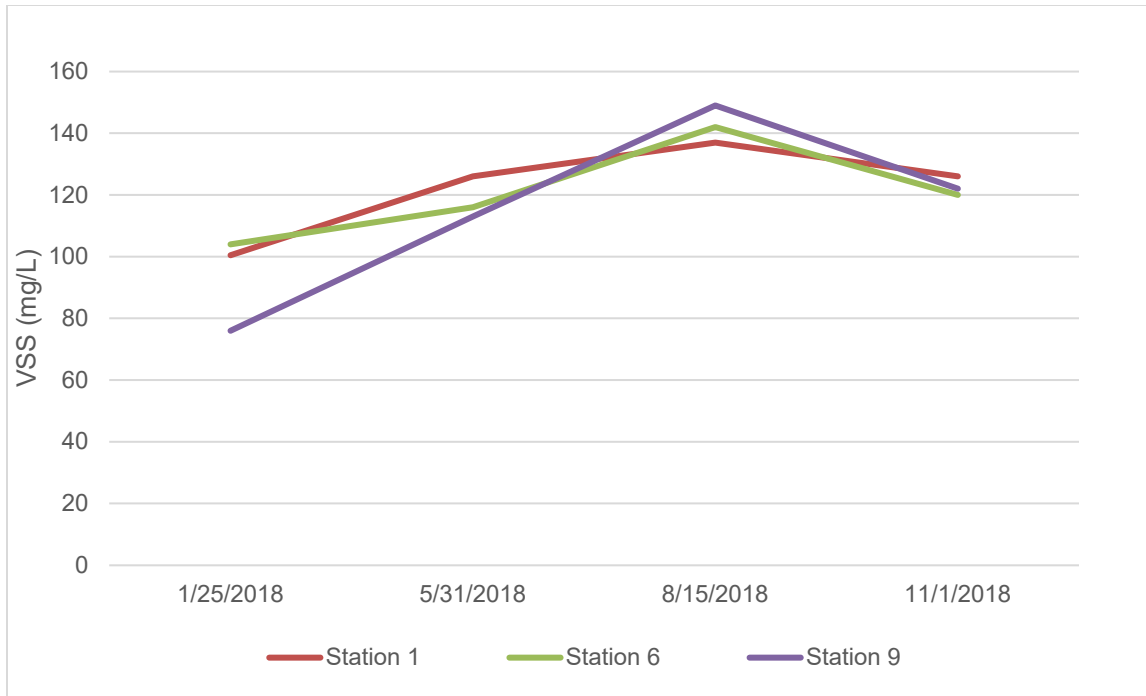
TSS concentrations are high throughout the lake and are almost entirely organic in nature. The ratio of VSS to TSS ranges from 85%-100% with 75% of the ratios being greater than 90% (see Table C-3 in Appendix C).



**Figure 9**  
**Water Quality, Secchi Depth**



**Figure 10**  
**Water Quality, Total Suspended Solids**



**Figure 11**  
**Water Quality, Volatile Suspended Solids**

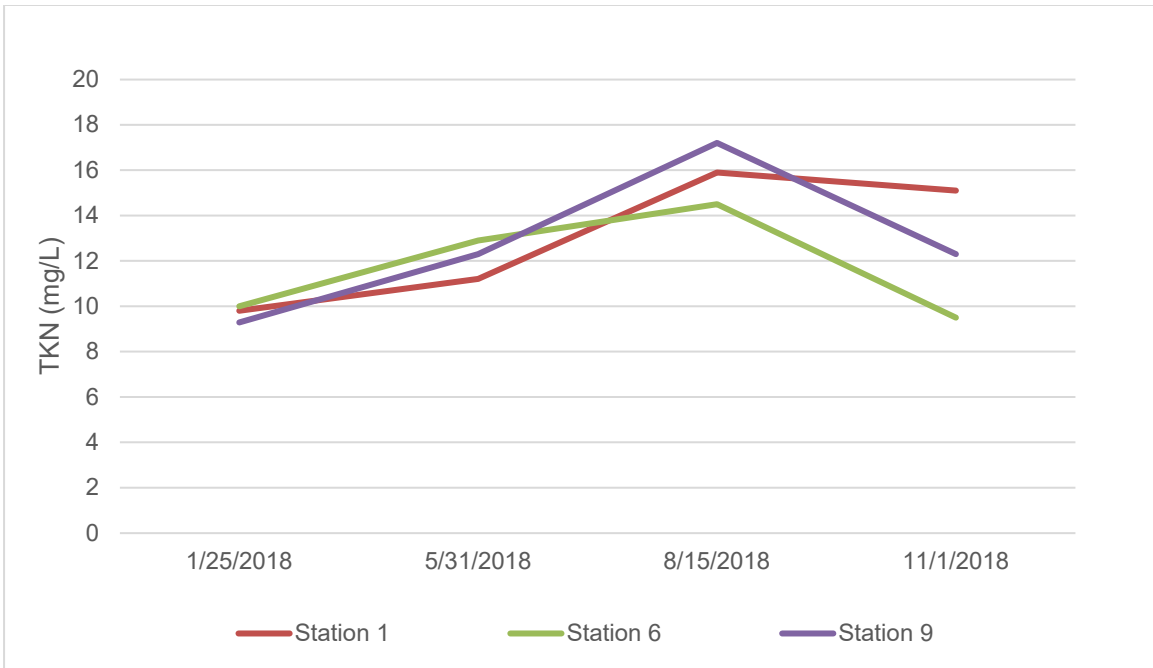
### 3.3.4 Nitrogen, Phosphorus, and Chlorophyll-a

Following are graphical summaries of the data for Total Kjeldahl Nitrogen (TKN), total phosphorus, and chlorophyll-a on Figure 12, Figure 13, and Figure 14, respectively. The plots present the quality data for each station during each sampling event. A tabular summary of TKN, total phosphorus, and chlorophyll-a is presented on Table C-4 in Appendix C.

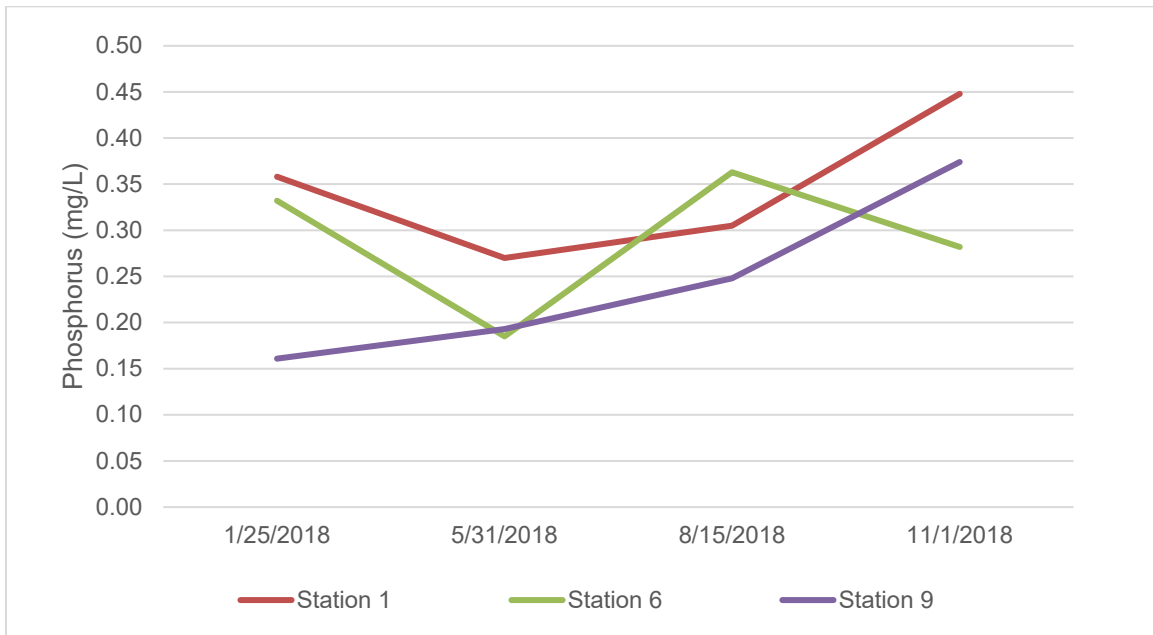
Nitrogen - Nitrogen was measured as TKN, nitrate, nitrite, nitrate-plus-nitrite, and ammonia-nitrogen (NH<sub>3</sub>-N). The NH<sub>3</sub>-N concentrations are less than 1 mg/L. The nitrate-N and nitrite-N concentrations are less than 0.1 mg/L. TKN concentrations vary from 8 mg/L to 17 mg/L. Therefore, the nitrogen concentrations in Mitchell Lake are virtually entirely composed of organic nitrogen. The highest concentrations occurred in August.

Phosphorus - The total phosphorus concentrations range from approximately 0.2-0.5 mg/L.

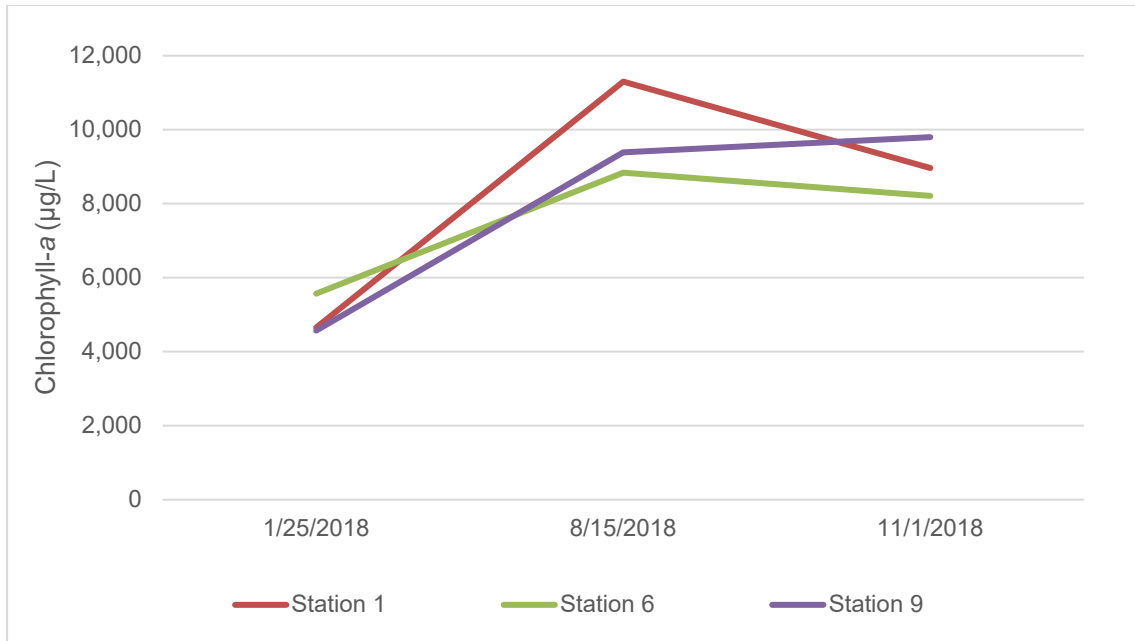
Chlorophyll-a - The chlorophyll-a concentrations are highest in the summer, but they are very high year-round. Samples from the May sampling event were not analyzed for chlorophyll-a.



**Figure 12**  
**Water Quality, Total Kjeldahl Nitrogen**



**Figure 13**  
**Water Quality, Total Phosphorus**



**Figure 14**  
**Water Quality, Chlorophyll-a**

### **3.3.5 Metals**

A tabular summary of metals concentrations is presented on Table C-5 in Appendix C. Except for zinc, no detectable concentrations of metals were found in the samples tested. Two of the four samples tested for zinc have reported concentrations that are slightly above the detection limit. These two samples have zinc concentrations of 15 micrograms per liter ( $\mu\text{g/L}$ ) and 17  $\mu\text{g/L}$ ; the practical quantitation limit (PQL) is 10  $\mu\text{g/L}$ . The total zinc concentrations detected are well below the dissolved zinc water quality standard of 783  $\mu\text{g/L}$  for Segment No. 1903, the first classified segment downstream of Mitchell Lake.

### **3.3.6 Pollutants of Potential Concern**

A tabular summary of measured concentrations of POPC is presented on Table C-6 in Appendix C. None of the POPC that were measured are present at a concentration that is above the PQL.

### **3.3.7 Summary of Water Quality Data**

The following conclusions are based on the water quality data collected during the 2018 water and sediment quality study of Mitchell Lake:

- Mitchell Lake is very shallow. In August 2018 the maximum depth was 2.2 feet. When the lake is at the elevation of the existing spillway (520.7 ft msl), the maximum depth is approximately 6 feet. Therefore, stratification is not expected.
- The lake tends to be well-mixed horizontally.
- There is significant diurnal variability in the DO concentrations.
- TDS concentrations are high and can increase significantly during the summer due to evaporation if there are no releases from LCWRC and no significant runoff from the watershed.
- There are high concentrations of TSS, of which virtually all are VSS.
- There are high concentrations of nitrogen, virtually all of which is organic nitrogen associated with the algal cells.
- Algal growth, as represented by chlorophyll-*a*, is abundant.
- Based on the samples, which were collected between 10 AM and 3 PM, the lake exhibits all the characteristics of a hypereutrophic water body:
  - pH readings above 9,
  - DO saturation above 100% most of the time,
  - a high concentration of organic nitrogen,
  - a high concentration of organic suspended solids,
  - very high concentrations of chlorophyll-*a*,
  - very low transparency, and
  - significant seasonal variation in the concentration of alkalinity present.

### **3.4 SEDIMENT QUALITY**

There are nine stations where sediment samples were collected for analysis. The locations of the stations are shown on Figure 1. The sediment samples were collected once, during a dry weather sampling event. The field data sheets and laboratory reports are presented in Appendices A and



B, respectively. The sediment quality data are tabulated in Tables D-1 through D-4 of Appendix D and summarized below.

### **3.4.1 Conventional Parameters**

The sediment samples were analyzed for nitrogen, phosphorus, conductivity, pH, solids, and total organic carbon at all nine stations. Results of these analyses are presented in Table D-1 in Appendix D. Table 6, following, is a statistical summary of the analyses of the conventional parameters. A general description of the analytical results for the parameters follows.

Conductivity –The conductivity varies significantly throughout the lake. Conductivity is highest at Station 1 near the upper boundary of the lake.

Nitrogen – Nitrogen was measured as TKN and NH<sub>3</sub>-N. TKN concentrations range from 410 to 1820 mg/kg. NH<sub>3</sub>-N concentrations vary from 28 to 118 mg/kg. Therefore, the nitrogen in the sediment at Mitchell Lake is virtually entirely composed of organic nitrogen. The highest concentration of organic nitrogen was measured in the sample from Station 9 near the dam.

pH – The pH measurements range from 7.7 to 9.4 standard units (s.u.).

Phosphorus - The total phosphorus concentrations range from approximately 3,610 to 27,800 mg/kg. The highest concentration was measured in the sample from Station 3 on the eastern edge of Mitchell Lake, which is close to the Mission Del Lago golf course.

Percent total solids and volatile solids – The percent total solids ranges from 12.9 to 79.6%. The percent volatile solids ranges from 2.5 to 20.8%.

**Table 6**  
**Summary of Sediment Quality Data**  
**Nitrogen, Phosphorus, Conductivity, pH, Solids,**  
**and Total Organic Carbon**

Parameter	Average	Min	Max
Conductivity ( $\mu\text{S}/\text{cm}$ )	462	193	717
Ammonia-nitrogen (mg/kg)	81	28	118
TKN (mg/kg)	1,166	410	1,820
pH (s.u.)	8.4	7.7	9.4
Phosphorus (mg/kg)	10,950	3,610	27,800
Solids, Volatile (%)	11.2	2.5	20.8
Solids, Total (%)	45.1	12.9	79.6
Temp at pH Measure ( $^{\circ}\text{C}$ )	22.2	21.0	23.0
Total Organic Carbon (mg/kg)	17,500	12,500	23,100
% Solids (% by Wt.)	43.1	13.1	74.8

### **3.4.2 Calcium, Magnesium, and Sodium**

The sediment samples were analyzed for calcium and magnesium at all nine stations. Sodium was only analyzed in samples from Stations 4 and 8. Results of these analyses are presented in Table D-2 in Appendix D. Table 7, following, is a statistical summary of the analyses of calcium, magnesium, and sodium.

**Table 7**  
**Summary of Sediment Quality Data**  
**Calcium, Magnesium, and Sodium**

Parameter	Average	Min	Max
Calcium	81,733	37,900	145,000
Magnesium	3,438	1,770	6,800
Sodium	1,724	707	2,740

### **3.4.3 Metals**

Two sediment samples were analyzed for metals. The sediment samples were taken on the western shore at Station 4 and the eastern shore at Station 8. The sediment sample concentrations for arsenic, boron, iron, manganese, and nickel were higher at the western shore (Station 4). The concentrations for cadmium, chromium, copper, lead, mercury, and zinc were higher at the eastern shore (Station 8). Selenium was below the reporting limit (RL) at both stations. Results of these analyses are presented in Table D-3 in Appendix D. Table 8, following, is a statistical summary of the analyses of the metals.

The sediment samples at Station 8 have concentrations of chromium and mercury that exceed the consensus-based probable effect concentration (PEC) proposed by the United States Environmental Protection Agency (USEPA) (Ingersoll *et al.*, 2000). Elevated concentrations of chromium and mercury were not found in the water column. The sediment sample at Station 4 has metals concentrations that are consistently below the PEC.

**Table 8**  
**Summary of Sediment Quality Data**  
**Metals (mg/kg)**

<b>Parameter</b>	<b>Station 4</b>	<b>Station 8</b>	<b>Average</b>	<b>Min</b>	<b>Max</b>	<b>Consensus Based PEC</b>
Arsenic	6.0	3.3	4.7	3.3	6.0	33.0
Boron	38.6	24.5	31.6	24.5	38.6	N/A
Cadmium	<0.5	1.5	0.9	<0.5	1.5	4.98
Chromium	9.8	140	74.9	9.75	140	111
Copper	4.7	54.4	29.5	4.7	54.4	149
Iron	38,500	9,920	24,210	9,920	38,500	N/A
Lead	37.8	83.0	60.4	37.8	83.0	128
Manganese	782	150	466	150	782	N/A
Mercury	0.613	2.22	1.42	0.613	2.22	1.06
Nickel	18.9	14.2	16.6	14.2	18.9	48.6
Selenium	<1.00	<1.00	<1.00	<1.00	<1.00	N/A
Zinc	65.6	231	148.3	65.6	231	459

#### **3.4.4 Pollutants of Potential Concern**

Two of the sediment samples (Station 4 and Station 8) were analyzed for herbicides and pentachlorophenol. Results of these analyses are presented in Table D-4 in Appendix D. None of the analyzed POPC are present at a concentration that is above the reporting limit (RL).

Table 9, following, also presents the sediment quality data for POPC.

**Table 9**  
**Summary of Sediment Quality Data**  
**Pollutants of Potential Concern (µg/kg)**

Parameter	Station 4		Station 8	
	5/31/2018		5/31/2018	
		1:03 PM		11:58 AM
2,4,5-T	<	106	<	83.8
2,4,5-TP (Silvex)	<	407	<	62.9
2,4-D	<	8.39	<	838
2,4-DB	<	1,820	<	838
Dalapon	<	109	<	2,100
Dicamba	<	4.37	<	83.8
Dichloroprop	<	43.7	<	838
Dinoseb	<	21.8	<	419
MCPA	<	4,370	<	83,800
MCPP	<	4,370	<	83,800
Pentachlorophenol	<	4.37	<	83.8

### **3.4.5 Summary of Sediment Quality Data**

The following conclusions are based on the sediment quality data collected during the 2018 water and sediment quality study of Mitchell Lake:

- Phosphorus concentrations in the lake sediment are generally higher in the north and northeastern sections of the lake. This is possibly due to runoff from the Mission Del Lago Golf Course to the northeast of Mitchell Lake.
- pH concentrations in the sediment are alkaline, which is expected based on the geologic characteristics of the area.
- Metal concentrations at Station 8 are above the consensus-based PEC for chromium and mercury even though the analyses of the water column for these metals showed non-detects. Metal concentrations at Station 4 are consistently below the PEC.
- There were no concentrations above the RL for measured POPC within the lake sediment.

## 4 Mitchell Lake Historical Data

---

Periodically over the past 30 years, data have been collected on water and sediment quality in Mitchell Lake by various investigators. The historical data that have been collected since 1987 (when discharges of untreated wastewater, partially treated wastewater, and wastewater treatment residuals to Mitchell Lake ceased) are summarized below. In Section 5 of this report the historical data are compared to the data collected by the current study to determine if there are historical trends.

### 4.1 AUGUST 1989 – CITY OF SAN ANTONIO, WATER QUALITY SAMPLING PROGRAM

Water quality samples were collected at 48 stations within Mitchell Lake in August 1989 by the City of San Antonio<sup>1</sup>. The times and depths at which the samples were collected is unknown. The samples were analyzed for the following conventional parameters: DO, pH, TSS, VSS, and Biochemical Oxygen Demand (BOD). Metals and organic analyses were also performed.

Zinc was above the detection limit at all sampling stations. Additionally, barium, cadmium, copper, PCB 1242, PCB 1232, PCB 1248, PCB 1016, endrin, and lindane were measured at concentrations above the detection limit at one or more sampling stations. However, additional samples were collected on November 27, 1989, and analyzed for the organic parameters that were found to be above the detection limit in the August samples. Concentrations of these organic parameters were not above the detection limit in any of the November samples.

The overall average, minimum, and maximum values at the 48 stations have been calculated for each of the conventional parameters. The results of these calculations are presented in Table 10.

**Table 10**  
**Summary of Historical Data**  
**August 1989 – City of San Antonio, Water Quality Data**

<b>Parameter</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>
DO (mg/L)	9.3	3	20
pH (s.u.)	9.1	7.5	9.8
TSS (mg/L)	72	42	115
VSS (mg/L)	65	42	98
BOD (mg/L)	25	2	60

---

<sup>1</sup> City of San Antonio (1989) Private communication.

#### **4.2 JULY 1991 – CH2M HILL, MITCHELL LAKE REHABILITATION PROJECT WATER QUALITY MODELING**

The purpose of this study was to collect data on Mitchell Lake water quality that would be used to develop a trophic state model of the lake<sup>2</sup>. There were two sampling events (September 25, 1990, and October 15, 1990) at five sampling locations.

In the July 1991 report on study results, the data from the two sampling events and five sample locations were combined to calculate an overall average of the surface measurements and an overall average of the bottom measurements for each parameter that was analyzed. For this current study, the average surface and bottom values have been averaged. The results of these calculations are presented in Table 11 for the following parameters: Secchi depth, DO, conductivity, pH, TKN, nitrate, total nitrogen, ortho-phosphate, and chlorophyll-a.

**Table 11  
Summary of Historical Data  
July 1991- CH2MHill, Mitchell Lake Rehabilitation Project  
Water Quality Modeling**

<b>Parameter</b>	<b>Average of Surface and Bottom Samples</b>
Conductivity ( $\mu\text{S/cm}$ )	2,290
Chlorophyll-a ( $\mu\text{g/L}$ )	260
DO (mg/L)	6.8
Nitrate (mg/L as N)	0.7
Ortho-phosphate (mg/L as P)	0.5
pH (s.u.)	8.7
TKN (mg/L)	3.1
Total Nitrogen (mg/L)	3.9
Secchi depth (m)	0.31

#### **4.3 JULY 1994 – CERTIFICATE OF ADJUDICATION APPLICATION FOR AMENDMENT**

The purpose of the July 1994 study was to collect water quality samples to be analyzed and reported as a part of the Certificate of Adjudication amendment application<sup>3</sup>. A total of four samples were collected on July 26, 1994, between 8:00 A.M. and 10:00 A.M. in the lower half of Mitchell Lake. Sample depth is not specified, but these are assumed to be surface samples.

<sup>2</sup> CH2M Hill (1991). Mitchell Lake, Rehabilitation Project Water Quality Modeling. San Antonio, Texas.

<sup>3</sup> San Antonio Water System (1995) Certificate of Adjudication #19-2153A Application for Amendment, San Antonio, Texas.

Conventional parameters that were measured included BOD, hardness, pH, conductivity, and TDS. For the purpose of this current study, the average, minimum, and maximum values were calculated for each of these parameters. This summary of the data is presented in Table 12.

**Table 12**  
**Summary of Historical Data**  
**July 1994 - Certificate of Adjudication Amendment Application**

Parameter	Average	Minimum	Maximum
BOD (mg/L)	2	1	4
Hardness (mg/L)	346	344	350
pH (s.u.)	9.0	8.95	9.06
Conductivity (µS/cm)	2,428	2,420	2,430
TDS (mg/L)	1,380	1,332	1,430

Priority pollutants and the following metals were also measured: cadmium, copper, lead, nickel, mercury, silver, and zinc. None of the priority pollutants or metals were found to be present in concentrations that exceeded the detection limits.

#### **4.4 OCTOBER 1994 – SAN ANTONIO WATER SYSTEM SAMPLING PROGRAM**

The purpose of the October 1994 study was to determine the effects of pumping water from Mitchell Lake into the polders<sup>4</sup>. Grab samples were collected at approximately noon at locations identified as “wetlands influent”, “west polder”, and “east polder”, on October 12, 1994, and October 19, 1994. The samples were analyzed for conventional parameters and metals. For the purpose of this current study, only the results for wetlands influent samples are reported, as they are representative of Mitchell Lake water quality.

For this current report, the overall average, minimum, and maximum values were calculated for wetlands influent for the two sampling events for the following parameters: ammonia-nitrogen, nitrate, ortho-phosphate, TKN, TSS, Total Residue, and chlorophyll-a. TDS was calculated as Total Residue minus TSS. The laboratory reports do not specify whether nitrate is reported as N or as NO<sub>3</sub> and do not specify whether ortho-phosphate is reported as P or as PO<sub>4</sub>. A summary of the results of these calculations is presented in Table 13.

---

<sup>4</sup> Westfall LD (1994) Memorandum for reporting data during the initial sampling at Mitchell Lake, San Antonio, Texas: San Antonio Water System.

**Table 13**  
**Summary of Historical Data**  
**October 1994 - San Antonio Water System, Wetlands Influent**

Parameter	Average	Minimum	Maximum
Ammonia-nitrogen (mg/L)	0.3	<0.1	0.5
Nitrate (mg/L)	7.98*	-	-
Ortho-phosphate (mg/L)	0.15*	-	-
TKN (mg/L)	6.9	5.3	8.5
TDS (mg/L)	1162	1097	1227
TSS (mg/L)	98	83	113
Total Residue (mg/L)	1260	1180	1340
Chlorophyll-a (mg/L)	667	664	670

\* One sample only

Samples were also analyzed for the following metals: cadmium, chromium, copper, nickel, silver, and zinc. Both wetlands influent samples were reported to contain a concentration of silver at the detection limit of 2 µg/L; cadmium was reported as being present at 1 µg/L and 2 µg/L (which are near the detection limit); and copper was reported as being present in one sample at the detection limit of 20 µg/L.

#### **4.5 1995 – SAN ANTONIO WATER SYSTEM, MITCHELL LAKE SAMPLING**

The purpose of the SAWS 1995 study was to monitor changes in the lake as treated effluent from LCWRC was introduced to the lake and to evaluate the quality of water that would be sent to the Mission Del Lago golf course<sup>5</sup>. The lake was periodically monitored by grab sample (assumed to be surface samples) at three sampling stations between March 1995 and December 1995: near the dam, mid-lake, and near the intake for the Mission Del Lago golf course (east side of lake). Available data are as follows:

- Dam: temperature, time, pH, DO, conductivity, salinity, turbidity, ammonia, BOD<sub>5</sub>, COD, ortho-phosphate, TSS, total solids, and fecal coliform between July 1995 and December 1995
- Mid-lake: temperature, time, pH, DO, conductivity, salinity, turbidity, ammonia, BOD<sub>5</sub>, COD, ortho-phosphate, TSS, total solids, and fecal coliform between July 1995 and December 1995

<sup>5</sup> San Antonio Water System (1995) Mitchell Lake Sampling Plan, San Antonio, Texas.



- Near Mission Del Lago intake: temperature, pH, DO, conductivity, salinity, and turbidity between March 1995 and September 1995

For the purpose of the current study, the average, minimum, and maximum values for this data set were calculated for DO, pH, BOD<sub>5</sub>, ammonia, ortho-phosphate, and TSS. The resulting values are presented in Table 14.

#### **4.6 MAY 1995 – SAN ANTONIO RIVER AUTHORITY, MITCHELL LAKE SAMPLING**

The purpose of the San Antonio River Authority (SARA) May 1995 study was to assess the aquatic ecosystem in Mitchell Lake in order to establish a biological baseline before treated effluent from LCWRC was introduced to the lake<sup>6</sup>. Sampling was conducted on May 8-9. Grab samples were collected for water quality analyses in the lower half of the lake between the LCWRC discharge point and the Mission Del Lago diversion point. Three stations were established for water quality sampling: near western shore, mid-lake, and near eastern shore. In addition, diurnal and depth profiles of DO and temperature were collected at the three stations.

For the purpose of this current study, a diurnal profile of the DO concentrations at the water surface at each of the three stations, as reported by SARA, has been plotted. The profiles are presented in Figure 15.

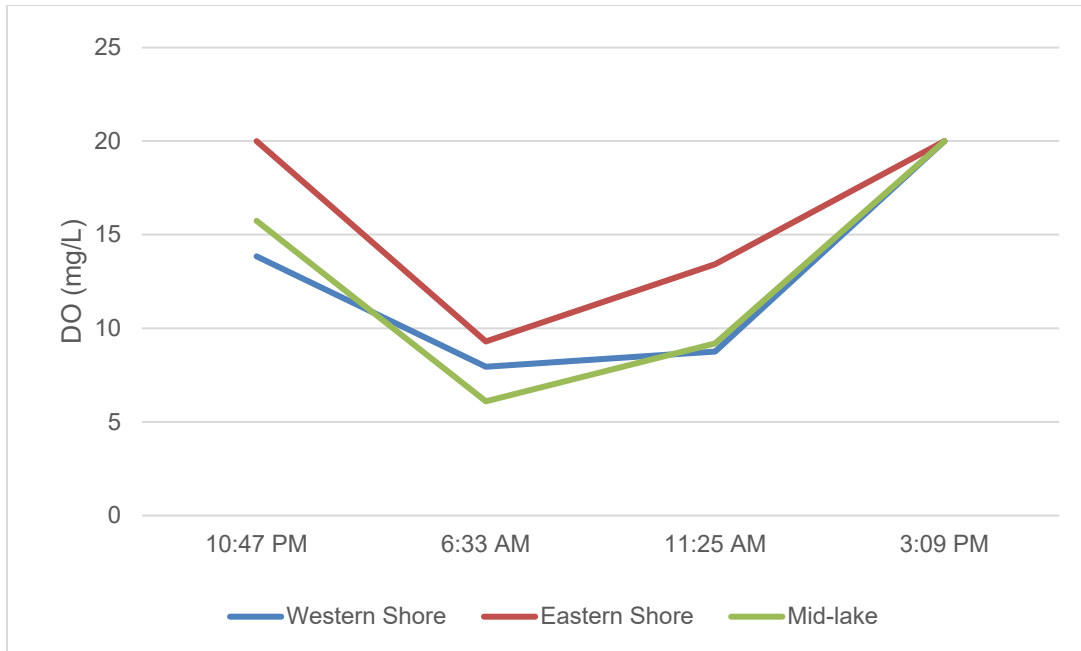
The average concentrations at the three sampling stations for each of the following parameters have been calculated: BOD, conductivity, nitrite-nitrogen, nitrate-nitrogen, ammonia-nitrogen, TKN, TDS, TSS, total phosphorus, ortho-phosphate, pH, Secchi depth, and chlorophyll-a. These data are presented in Table 15.

---

<sup>6</sup> San Antonio River Authority (1995) Report of Findings for Mitchell Lake Water Quality Sampling and Biological Collections, San Antonio, Texas.

**Table 14**  
**Summary of Historical Data**  
**1995 – San Antonio Water System, Water Quality Data**

Parameter	Dam			Mid-Lake			Mission Del Lago Intake		
	Average	Minimum	Maximum	Average	Minimum	Maximum	Average	Minimum	Maximum
DO (mg/L)	7.1	2.8	14.1	7.2	3.4	12.1	7.7	1.9	12.1
DO%	90	38	150	94	46	133	96	23	152
pH (s.u.)	8.7	8.5	8.9	8.9	8.5	9.2	9.0	8.4	9.5
BOD <sub>5</sub> (mg/L)	24	10	57	19	10	32	--	--	--
Ammonia-nitrogen(mg/L)	0.8	<0.1	1.2	0.7	<0.1	2.3	--	--	--
Ortho-phosphate (mg/L as P)	0.7	0.2	1.1	0.7	0.1	1.2	--	--	--
TSS (mg/L)	81	7	288	59	6	87	--	--	--



**Figure 15**  
**Summary of Historical Data**  
**May 1995 – San Antonio River Authority, Surface DO Concentrations on Mitchell Lake**

**Table 15**  
**Summary of Historical Data**  
**May 1995 – San Antonio River Authority, Water Quality Data**

Parameter	Average
BOD (mg/L)	28
Conductivity ( $\mu$ S/cm)	2,230
Chlorophyll-a	525
Nitrite-nitrogen (mg/L)	0.7
Nitrate-nitrogen (mg/L)	2.0
Ammonia-nitrogen (mg/L)	0.2
TKN (mg/L)	0.7
TDS (mg/L)	1,340
TSS (mg/L)	127
Total Phosphorus (mg/L)	0.4
Ortho-phosphate (mg/L)	0.1
pH (s.u.)	9.1
Secchi depth (m)	0.08

#### **4.7 MAY 1996 – SIMPSON GROUP, WATER QUALITY DATA COLLECTION FOR MITCHELL LAKE INTAKE STRUCTURE AND BOOSTER STATION PROJECT**

The purpose of the May 1996 study was to collect additional water quality data to support the design of an intake system and pumping station for a reuse water supply<sup>7</sup>. Samples were collected during a 24-hour period on April 17-18, 1996. There were three sampling stations, and time-composited samples were collected at three depths: surface, 2.5 feet and 5 feet. In addition, diurnal depth profiles of DO, pH and temperature were measured using probes.

The stations were in the following locations:

- Station 1 – Near the center of the dam;
- Station 2 – Near the eastern shore in the vicinity of the proposed intake to provide water to Mission Del Lago golf course;
- Station 3 – In the upper end of the lake near the lake centerline.

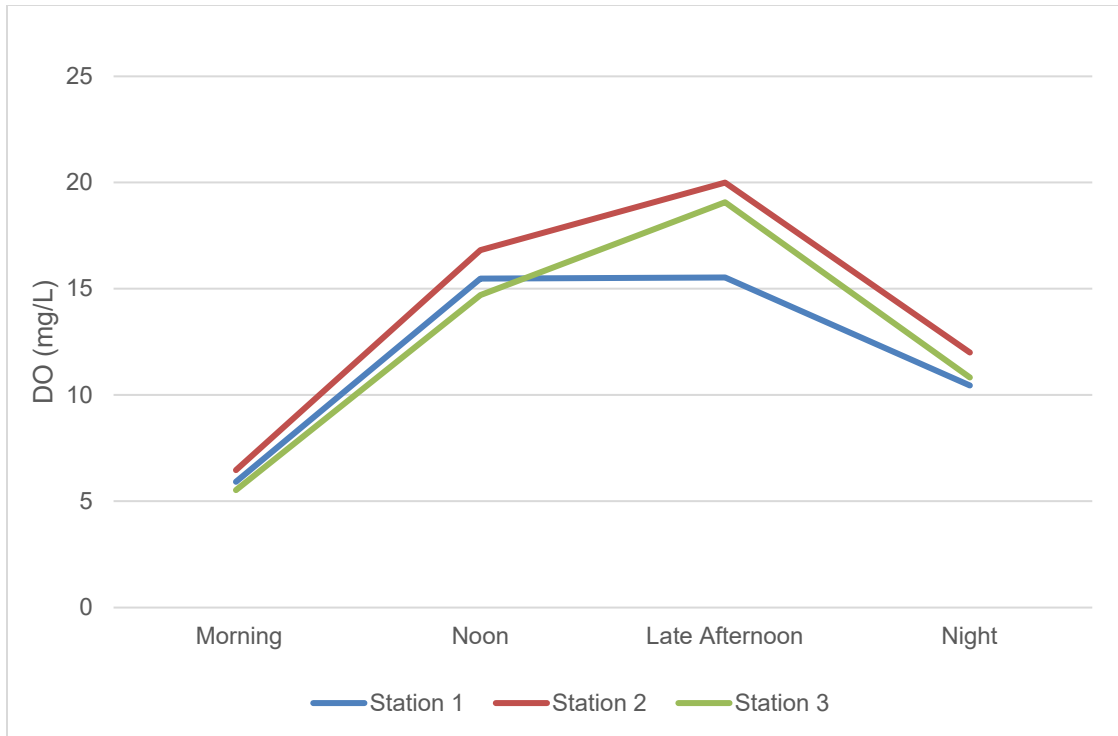
All three stations were located so as to sample waters in the deepest areas of the lake.

For the purpose of this current study, diurnal profiles of DO concentrations at the water surface were plotted. The profiles are presented in Figure 16.

Also, the average concentration over the depths at each station was calculated for BOD<sub>5</sub>, TSS, VSS, ammonia-nitrogen, TKN, chlorophyll-a, ortho-phosphate, nitrate, pH and conductivity. These values are presented in Table 16.

---

<sup>7</sup> Simpson Group (1996) Technical Report No. 2, Water Quality Data Collection for Mitchell Lake Intake Structure and Booster Station Project, San Antonio, Texas: Simpson Group.



**Figure 16**  
**Summary of Historical Data**  
**May 1996 – Simpson Group, Surface DO Concentrations on Mitchell Lake**

**Table 16**  
**Summary of Historical Data**  
**May 1996 - Simpson Group, Water Quality Data**

Parameter	Average Concentration		
	Station 1	Station 2	Station 3
BOD <sub>5</sub> (mg/L)	32	40	47
TSS (mg/L)	126	150	138
VSS (mg/L)	106	111	106
Ammonia-nitrogen (mg/L)	<0.1	<0.1	<0.1
TKN (mg/L)	14.9	15.9	15.4
Chlorophyll-a	830	1,060	1,150
Ortho-phosphate (mg/L as P)	0.1	0.3	0.1
Nitrate-nitrogen (mg/L)	0.05	0.04	0.05
pH* (s.u.)	9.4	9.4	9.6
Conductivity* (µS/cm)	2,280	2,290	2,290

\*Sample was filtered

#### **4.8 MAY 2006 – UNIVERSITY OF TEXAS AT SAN ANTONIO, EFFECTS OF SEWAGE SLUDGE DISPOSAL ON METAL CONTENT IN THE SEDIMENT AND WATER OF MITCHELL LAKE**

In May 2003 the University of Texas at San Antonio (UTSA) collected sediment and water samples from Mitchell Lake and analyzed them for metals concentrations. An article presenting the results of the study was published May 2006<sup>8</sup>. The purpose of the UTSA study was to assess the concentration and spatial distribution of metals within the sediment and surface water in Mitchell Lake.

Sediment samples were collected from twelve locations distributed throughout the lake, including near-shore locations and locations in the central area of the lake. Samples were collected from the top 10 centimeters (cm) of substrate, acid digested, and analyzed for total concentration for nine metals. Surface water samples were collected directly over the twelve sediment sample locations and also analyzed for nine metals.

For the purpose of this current study, the average, minimum, and maximum concentrations of metals in the sediments reported by UTSA were calculated. In addition, the individual measurements at each sample location were compared to the Consensus-based Probable Effect Concentration (PEC) for metals in sediment as developed by the USGS<sup>9</sup>. The number of stations reporting metals concentrations greater than their respective PECs was determined. The results of these evaluations are presented in Table 17.

One of the stations in the UTSA study was near the center of the dam. This station exhibited concentrations of cadmium, chromium, nickel, and lead that exceeded their respective PECs.

The average, minimum, and maximum concentrations of the nine metals in the water samples reported by UTSA were calculated. Non-detect (N/D) values were averaged as zero. In addition, the individual concentration at each station location was compared to a screening value based on the Texas Surface Water Quality Standards for the Medina River Segment 1903 to protect aquatic life (chronic toxicity standards). To develop the screening value, each water quality standard

---

<sup>8</sup> Simpson N, Sharkar D, Datta R, Sharma S (2006) Effects of sewage sludge disposal on metal content in the sediment and water of Mitchell Lake, San Antonio, Texas, USA. *Bulletin of Environmental Contamination and Toxicology*, 77(1):104–111.

<sup>9</sup> Ingersoll GC, MacDonald DD, Wang N, Crane JL, Haverland PS, Kemble NE, Lindskoog RA, Severn C, Smorong DE (2000) Prediction of sediment toxicity using consensus based freshwater sediment quality guidelines, USEPA 905/R-00/007.

criterion, which applies to the dissolved fraction of the metal in water, was adjusted to identify the equivalent total concentration of each metal because the reported values are total metal.

**Table 17**  
**Summary of Historical Data**  
**May 2006 – University of Texas at San Antonio, Metals in Sediment (mg/kg)**

<b>Parameter</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Consensus-Based PEC</b>	<b>Number of Stations &gt; PEC</b>
Cadmium	76	5	109	5	11
Chromium	345	163	731	111	12
Cobalt	18	13	26	N/A	N/A
Copper	34	8	151	149	1
Iron	1762	79	5014	N/A	N/A
Lead	301	53	893	128	10
Manganese	254	95	425	N/A	N/A
Nickel	32	4	98	49	4
Zinc	125	40	216	459	0

The results of these evaluations are presented in Table 18. The average copper concentrations exceeded the water quality standard screening value at all stations. The cadmium concentration exceeded the screening value at one station, but the average concentration of cadmium at all of the lake stations was well below the screening value.

The water quality data for the station at the dam was specifically reviewed. It exhibited a concentration of copper in the water column that exceeded the chronic screening value for the protection of aquatic life.

**Table 18**  
**Summary of Historical Data**  
**May 2006 – University of Texas at San Antonio, Metals in Surface Water (µg/L)**

<b>Parameter</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Chronic Aquatic Life Screening Value</b>	<b>Number of Stations &gt; Aquatic Life Screening Value</b>
Cadmium	N/D	N/D	20	1.9	1
Chromium <sup>1</sup>	27	N/D	240	721	0
Cobalt	N/D	N/D	N/D	N/A	N/A
Copper	91	60	110	53	12
Iron	6	N/D	40	N/A	N/A
Lead	N/D	N/D	N/D	32	0
Nickel	151	110	220	224	0
Manganese	N/D	N/D	N/D	N/A	N/A
Zinc	48	20	100	783	0

<sup>1</sup> The chromium values from the UTSA study is for total chromium. The chronic aquatic life screening value is for trivalent chromium.

#### **4.9 2013-2016 – LEON CREEK WATER RECYCLING CENTER EFFLUENT QUALITY DATA**

LCWRC collects effluent quality data for ammonia-nitrogen, CBOD<sub>5</sub>, TDS, TSS, alkalinity (reported as CaCO<sub>3</sub>), nitrate-nitrogen, nitrite-nitrogen, TKN, and total phosphorus. Yearly average, minimum, and maximum concentrations have been calculated for each of these parameters for 2013 through 2016 based on the values reported as monthly averages. The results of these calculations are presented in Table 19.

#### **4.10 2013-2018 – MITCHELL LAKE EFFLUENT QUALITY DATA**

Effluent quality data at Mitchell Lake were collected in accordance with TPDES permit requirements. Effluent quality data are only collected when there is a discharge from the lake as a result of high-water levels associated with rainfall events.

Yearly average, minimum, and maximum concentrations have been determined for 2013 through 2018 for the following parameters: BOD<sub>5</sub>, TSS, DO, and pH. It should be noted that, since the data are only collected during discharge events, these statistics are not necessarily representative of overall quality in the lake. The data summary is presented in Table 20.



**Table 19**  
**Summary of Historical Data**  
**2013- 2016 - Leon Creek Water Recycling Center Effluent Quality Data (mg/L)**

Parameter	Average				Maximum				Minimum			
	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016
Ammonia-nitrogen	0.4	0.3	0.4	0.6	0.47	0.41	0.65	1.02	0.27	0.25	0.29	0.35
CBOD <sub>5</sub>	2	2	2	2	2	2	2	2	2	2	2	2
TDS	715	724	701	720	749	753	745	743	661	685	671	697
TSS	1	1	1	1	2	1	1	1	1	1	1	1
Alkalinity, as CaCO <sub>3</sub>	178	170	185	193	185	178	203	215	165	159	170	183
Nitrate-nitrogen	18.9	20.8	17.3	18.4	22.1	24.5	20.9	20.4	17.0	18.2	14.1	15.5
Nitrite-nitrogen	0.1	0.1	0.1	0.1	0.12	0.1	0.11	0.15	0.1	0.1	0.1	0.1
TKN	1.7	1.6	1.5	1.9	1.9	2.06	2.22	2.73	1.44	1.09	0.76	1.41
Total Phosphorus	2.8	3.4	2.6	2.5	3.65	3.77	3.22	3	2.16	2.96	1.69	1.67

**Table 20**  
**Summary of Historical Data**  
**2013-2018 - Mitchell Lake Discharge Self Reporting Data**

Parameter	Average						Minimum						Maximum					
	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018
BOD <sub>5</sub> (mg/L)	27	30	25	22	22	31	16	13	6	2	6	19	41	56	46	49	35	42
TSS (mg/L)	104	162	105	51	75	116	56	52	48	12	38	116	162	630	370	156	242	116
DO (mg/L)	4.4	8.2	7.6	11.9	14.3	7.3	0.3	1.0	0.4	2.9	6.5	7.3	12.0	20.5	15.8	20.9	20.9	7.3
pH (s.u.)	7.8	8.8	8.7	9.0	9.3	8.6	3.0	7.5	5.7	6.4	6.8	8.1	9.1	9.9	10.0	13.8	10.0	9.1

## 5 Conclusions

---

The primary objectives of this study were to advance the concept of using a constructed wetland downstream of the Mitchell Lake dam to improve the water quality of discharges from the lake, assist in the design of the wetland, and identify water quality criteria for permitting Mitchell Lake under an MS4 permit. The data collected by this study is considered the baseline for water and sediment quality that currently exists in Mitchell Lake.

### 5.1 EXISTING WATER QUALITY

The water quality data compiled by the current study reflects the following:

- The lake is highly eutrophic, which results in the following conditions:
  - Significant diurnal variability in DO concentrations; DO concentrations frequently reflect a supersaturated condition.
  - High pH.
  - Abundant growth of algae, as represented by chlorophyll-*a*.
  - High concentrations of TSS, of which virtually all are VSS.
  - High concentrations of nitrogen, virtually all of which is organic nitrogen associated with the algal cells.
  - Moderately high concentrations of phosphorus.
  - Very low transparency.
  - Seasonal variation in the concentration of alkalinity.
- TDS concentrations are high; and, if evaporative losses are not replaced by rainfall runoff or discharges from LCWRC, the concentration of TDS increases substantially as lake levels decrease.
- None of the metals or POPC that were measured were found to exceed screening values for chronic water quality standards for the protection of aquatic life. In fact, only zinc was found to be present at a concentration that exceeded the detection limit, and that occurred in only two of the four samples analyzed.

The sediment quality data compiled by the study reflects the following:

- Metals were measured in sediment samples from two locations. None of the metals were found to be present at a concentration above the PEC at one of the stations. Chromium and mercury were above the PEC at the other station.
- None of the other POPC that were measured were found to be present above the analytical reporting limit at either station.

## 5.2 TRENDS

To establish a broader perspective and evaluate whether there are trends with respect to water or sediment quality in the lake, current data have been compared to historical data. The discharge to Mitchell Lake of untreated wastewater, partially treated wastewater, and/or wastewater residuals ceased in 1987. Therefore, the review of historical data covers data collected for the lake between 1989 and 2003 (the most recent collection of data on the quality of water and sediment in the lake prior to the current study).

### 5.2.1 Concentration of Conventional Parameters in Water

Table 21 compares the range of values observed in the current study and the range of values observed in the historic data for selected water quality parameters. Only the data in historical studies for samples collected near the surface are used in the comparison.

**Table 21  
Current and Historic Water Quality Comparison  
Conventional Parameters in Water**

Parameter	Current Range	Historic Range
DO (mg/L)	5.0 - 18.5	3 - >20
pH (s.u.)	8.6 - 9.7	7.5 - 10.2
TDS (mg/L)	1,620 - 6,160	1,100 - 1,450
TSS (mg/L)	76 - 178	6 - 288
TKN (mg/L)	7.8 - 17.9	0.7 - 15.7
Ammonia-nitrogen (mg/L)	<1.0 - 0.4	<0.1 - 2.3
Chlorophyll-a (µg/L)	4,570 - 11,300	260 - 1,030

The lake has consistently been hypereutrophic, as evidenced by the wide range of reported values for DO and pH, as well as the high concentrations of chlorophyll-a. The apparent increase

in chlorophyll-a concentration over time is probably a reflection of improvements in the analytical method for chlorophyll that have been implemented in recent years. These improvements typically result in the reporting of higher concentrations.

The other notable difference is the range of concentrations reported for TDS. During the twelve-month period covered by the current study, very little runoff occurred until the end of the study; and there were no discharges to the lake from LCWRC. The high TDS concentrations were observed in the third sample set, which was collected when the lake level dropped to a maximum depth of 2.2 feet due to evaporation. Lake levels at the beginning and end of the study were similar, and the TDS concentrations during those sample events were very similar (1,780 mg/L and 1,710 mg/L, respectively).

Depths are not reported in many of the historical studies. However, for those historical studies where depth was reported, the lake was typically about 5 feet deep during the sampling period, which is similar to the depths at the beginning and end of the current study. TDS concentrations in these historical studies are similar to the TDS concentration at the beginning and end of the current study.

### **5.2.2 Concentration of Metals in the Water Column**

Metals in water were measured in 1989, 1994 (two studies), 2003, and the current study (2018). Table 22 identifies the metals found to be above analytical reporting limits in those studies and which metals were above the water quality standards screening values.

Results are highly variable. In general, none, or very few, of the metals analyzed were found to be present at a detectable quantity in most of the samples analyzed. None was consistently present at all stations and in all samples and none were found to be present at a concentration above its water quality screening value in the present study. This suggests that metals in the water column have not been a concern historically and are not a concern now.

**Table 22**  
**Current and Historic Water Quality Comparison**  
**Metals in Water**

Study Year	Metal Concentrations above Reporting Limit	Metal Concentrations above Screening Value
1989	Cadmium, Copper, Zinc	Cadmium
1994 (Study 1)	None	None
1994 (Study 2)	Cadmium, Chromium, Copper, Mercury	Cadmium, Mercury
2003	Cadmium, Chromium, Copper, Nickel, Zinc	Cadmium, Copper
2018 (Current Study)	Zinc	None

### **5.2.3 Concentration of Metals in Sediment**

The only historic data set of measurements of metals in sediment is the data set collected by UTSA in 2003. This study found cadmium, chromium and lead to be above the PEC at most or all stations. One station exceeded the PEC for copper, and four stations exceeded the PEC for nickel. The current study analyzed sediment samples at two locations and found that none of the metals exceeded the PEC at one station, and chromium and mercury exceeded the PEC at one station. However, as noted above, to the extent that there are metals in the sediment of Mitchell Lake, they appear to be tightly bound and not affecting the quality of the water in the lake.

## 6 REFERENCES

---

- CH2M Hill (1991). Mitchell Lake, Rehabilitation Project Water Quality Modeling. San Antonio, Texas.
- City of San Antonio (1989) Private communication.
- Ingersoll GC, MacDonald DD, Wang N, Crane JL, Haverland PS, Kemble NE, Lindskoog RA, Severn C, Smorong DE (2000) Prediction of sediment toxicity using consensus based freshwater sediment quality guidelines, USEPA 905/R-00/007.
- San Antonio River Authority (1995) Report of Findings for Mitchell Lake Water Quality Sampling and Biological Collections, San Antonio, Texas.
- San Antonio Water System (1995) Certificate of Adjudication #19-2153A Application for Amendment, San Antonio, Texas.
- San Antonio Water System (1995) Mitchell Lake Sampling Plan, San Antonio, Texas.
- Simpson Group (1996) Technical Report No. 2, Water Quality Data Collection for Mitchell Lake Intake Structure and Booster Station Project, San Antonio, Texas: Simpson Group.
- Simpson N, Sharkar D, Datta R, Sharma S (2006) Effects of sewage sludge disposal on metal content in the sediment and water of Mitchell Lake, San Antonio, Texas, USA. Bulletin of Environmental Contamination and Toxicology, 77(1):104–111.
- Westfall LD (1994) Memorandum for reporting data the initial sampling at Mitchell Lake, San Antonio, Texas: San Antonio Water System.

## **APPENDIX A**

### **FIELD DATA SHEETS AND CHAIN OF CUSTODY FORMS**

- A-1 Dry Weather Event 1
- A-2 Dry Weather Event 2
- A-3 Dry Weather Event 3
- A-4 Wet Weather Event



# Mitchell Lake Water Quality Sampling

## Weather/Site Characteristics

Date: 1-25-18

Time: 10:40

Event Type: Wet  Dry

Photo #'s: \_\_\_\_\_

Air Temperature: 52°

Wind Dir: NE

Wind speed (Avg): 3.8 mph

Cloud Cover: 90%

Lake Elevation: Several feet below water line  
Lower than Normal water lvl?

USGS #08181500: 101 CFS

Lake Discharge Occurring: Y  N

Last Day of Prior rain event: 1-19-18 .07"  
1-20-18 .01"

Water Clarity: Stained

Water Color: Green

Presence/Absence of Odor: No odor,

### Notes:

~~80~~ - lots of Algae / Green Scum on water surface.

- Lake level seems low. Very shallow in most of the lake. Maximum of 4.5 ft found near center of lake pt #6

## Mitchell Lake Water Quality Sampling

### Field Observations

Date: 1-25-18 Time: 11:15 Pics: 6-9  
 Station Name and #: 9 - lower lake GPS Coords: #001, 549579 3238273

Water Depth: 1.1 ft Secchi Depth: 6 inches

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature		10.38	
pH		9.42	
Dissolved Oxygen		17.18	
DO %		155%	
Conductivity		3313.8	
Odor		None	

#### Grab Samples

Conventional parameter samples collected: Surface  Mid  Bottom   
 Total # of Jars: 7

POPC sample collected (Surface station 6 only):  N/A Total # of Jars: \_\_\_\_\_

#### Sediment Sample

Sediment Color: \_\_\_\_\_ Sediment Texture: \_\_\_\_\_  
 Photo# \_\_\_\_\_ N/A Total # of Jars; \_\_\_\_\_

Description:  
 Note: During first event, assess practicality of sediment sampling with Eckman Dredge in deep water and grab sample near shore. Collect sediment samples at Station 1, 6, 7, and 9 and describe color, odor, texture, depth of sediment layer, and consistency of sediment layer. Take photos of sediment samples after spreading on a tray or pan. During first event no sediment samples will be sent to lab.

Notes: lots of stumps. very shallow. depending on how much water in fluctuates site may need to move.

# Mitchell Lake Water Quality Sampling

## Field Observations

Date: 1-25-18

Time: ~~11:10~~ 13:10

Station Name and #: #6 mid lake

GPS Coords: #16, 549466 3238917

Water Depth: 3.8 ft Deep

Secchi Depth: 5.5 inches

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	11.27		11.26
pH	9.31		9.29
Dissolved Oxygen	15.18		15.13
DO %	139%		139%
Conductivity	3310.3 u/cm		3310.3 u/cm
Odor	None		None

### Grab Samples

Conventional parameter samples collected: Surface  Mid  Bottom   
 Total # of Jars: 14 (7x2)  
 Duplicate Nitrate for EIS lab @ Bottom 13:10

POPC sample collected (Surface station 6 only):  Total # of Jars: 6  
 Plus a Field blank w/ Peasant Water 6

### Sediment Sample

Sediment Color: \_\_\_\_\_

Sediment Texture: \_\_\_\_\_

Photo# \_\_\_\_\_

Total # of Jars; \_\_\_\_\_

Description:

N/A

Notes: Nitrate Duplicate @ <sup>#6 mid lake</sup> BOTTOM For EIS

~~###~~

Field blank for POPC w/ Peasant water,

- Deepest water depth found 4-4.5 ft.

# Mitchell Lake Water Quality Sampling

## Field Observations

Date: 1-25-18

Time: ~~12:15~~ 12:20

Station Name and #: 1 near Polaris

GPS Coords: #017 549183 3240205

Water Depth: 1.8 ft

Secchi Depth: 5 inches

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature		10.72	
pH		9.37	
Dissolved Oxygen		13.98	
DO %		145%	
Conductivity		3327.9 us/cm	
Odor		None	

### Grab Samples

Conventional parameter samples collected: Surface  Mid  Bottom   
 Total # of Jars: 7  
 \* + Duplicate Sample ~~to~~ none 1B <sup>New Polaris</sup> 7 Jars @ 12:30  
 POPC sample collected (Surface station 6 only):  N/A Total # of Jars: \_\_\_\_\_

### Sediment Sample

Sediment Color: \_\_\_\_\_ Sediment Texture: \_\_\_\_\_  
 Photo# \_\_\_\_\_ Total # of Jars; \_\_\_\_\_  
 Description: N/A

Notes: Duplicate <sup>(copy)</sup> Sample taken # 1B @ 12:30

# Mitchell Lake Water Quality Sampling

## Field Observations

Date: 1-25-18

Time: 14:40

Station Name and #: # 7 South West

GPS Coords: #7 549115, 3238598

Water Depth: \_\_\_\_\_

Secchi Depth: \_\_\_\_\_

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature			
pH			
Dissolved Oxygen			
DO %			
Conductivity			
Odor	N/A		

### Grab Samples

Conventional parameter samples collected:      Surface     Mid     Bottom   
Total # of Jars: \_\_\_\_\_

POPC sample collected (Surface station 6 only):          Total # of Jars: \_\_\_\_\_

### Sediment Sample

Sediment Color: Gray/Brown

Sediment Texture: Detritus/Sand/Silt

Photo# EO-2B

Total # of Jars; \_\_\_\_\_

Description: Silt samples are doable, ~~hard~~ lots of detritus on top w/ sand below. Silt layer on top also.

Notes: Samples should be OK to collect with the Ponar. Silt layer on top 6-12" in some places. See Photos.



1610 S. Laredo Street, San Antonio, Texas 78207  
 (210) 229-9920 • Fax (210) 229-9921  
 www.santestinglab.com

**CHAIN-OF-CUSTODY RECORD**

REPORT TO:

INVOICE TO:

P.O. #

REPORT NUMBER

1801312

PROJECT NAME/LOCATION/SITE  
 Mitchell Lake

PROJECT NO.

COMPANY Alex Quorum Assoc. Inc	COMPANY 11	ADDRESS 6300 La Cerna Drive #100	CITY Austin, TX	STATE TX	ZIP 78752	PHONE # 817-233-3748	ATTN: Tim Noack	E-MAIL tnoack@araven.com
ADDRESS 6300 La Cerna Drive #100	ADDRESS 11	CITY Austin, TX	STATE TX	ZIP 78752	PHONE # 817-233-3748	ATTN: Tim Noack	E-MAIL tnoack@araven.com	
REQUESTED TURNAROUND TIME IN BUSINESS DAYS & SURCHARGE	REG	<input type="checkbox"/> 5 Days +55%	<input type="checkbox"/> 4 Days +50%	<input type="checkbox"/> 3 Days +75%	<input type="checkbox"/> 2 Days +100%	<input type="checkbox"/> Next Day +150%	<input type="checkbox"/> SAME DAY WHEN POSSIBLE +300%	
TRAP 13	<input type="checkbox"/> YES <input type="checkbox"/> NO	LPST PCLS	<input type="checkbox"/> YES <input type="checkbox"/> NO	COMMENTS/SPECIAL REQUESTS:				
HARDCOPY	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	FOR STATE COMPLIANCE	<input type="checkbox"/> YES <input type="checkbox"/> NO					
TEMP. I.R. GUN #	6	SAMPLE TEMPERATURE WITHIN COMPLIANCE (> 0°C ≤ 6°C)	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	INITIAL TO AUTHORIZE BULK ANALYSIS				
TEMP. ON RECEPT.	2.12	PROPER CONTAINERS	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	IF NO, INITIAL HERE TO AUTHORIZE ANALYSIS				

SAMPLED BY  
 B.0-wjg (54)

MATRIX

SAMPLING METHOD

COND. OF SAMPLE

ANALYSIS REQUESTED

ANALYSIS REQUESTED

PRESERVED WITH

SAMPLE DATE TIME

DRINKING WATER  
 RAINFALL  
 SLOUGH  
 OUTLET  
 CLIFF  
 DERIVATIVE

NO. OF CONTAINERS  
 NO. OF ANALYZES

REMARKS

REMARKS

SAMPLE NO.	DATE	TIME	DRINKING WATER	RAINFALL	SLOUGH	OUTLET	CLIFF	DERIVATIVE	NO. OF CONTAINERS	NO. OF ANALYZES	REMARKS
1	1-25-18	13:30							6	300ml	#1 Near Polders
2	1-25-18	13:30							12	600ml	#6 M.D. Lake Surface
3	1-25-18	13:30							6	360ml	#6 M.D. Lake Bottom
4	1-25-18	13:30							6	360ml	#1B Near Polders
5	1-25-18	13:40							6	360ml	#9 Lower Lake
6	1-25-18	13:40							6	360ml	Field Blank

RECEIVED  
 JAN 25 2018  
 1004

RELINQUISHED BY (SIGNATURE) Jeremy Hill	DATE / TIME 1/25/18	RECEIVED BY (SIGNATURE) [Signature]	RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)
RELINQUISHED BY (PRINT NAME) Jeremy Hill		RECEIVED BY (PRINT NAME) [Name]	RELINQUISHED BY (PRINT NAME)		RECEIVED BY (PRINT NAME)
RELINQUISHED BY (SIGNATURE)		RECEIVED BY (SIGNATURE)	METHOD OF SHIPMENT Hand	SAMPLED IN 5035 CONTAINERS <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A	SUBCONTRACTED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
RELINQUISHED BY (PRINT NAME)		RECEIVED BY (PRINT NAME)	SAMPLED IN 5035 CONTAINERS	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A	CUSTODY SEAL IN PLACE & INTACT <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO





**SAN ANTONIO WATER SYSTEM  
ENVIRONMENTAL LABORATORY SERVICES  
CHAIN OF CUSTODY RECORD**

3610 Valley Road • San Antonio, Texas 78221 • (210) 233-3200

LOGBATCH ID:

CLIENT INFORMATION		PROJECT/PROGRAM INFORMATION		PARAMETER/METHOD																
Client:	Alan Plummer Asso, Inc.	Program:	<input checked="" type="checkbox"/> None <input type="checkbox"/> TPDES <input type="checkbox"/> Other:	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Temp
Facility/Company:	Mitchell Lake	Project:	Mitchell Lake	Total Kjeldahl Nitrogen: SM 4500-NH3 BC																
Send Report to:	Chris Pasch: cpasch@apateenv.com Samm Mills: Samm.Mills@saws.org	Project Manager:	Tim Noack	B	Ammonia Distillation: SM 4500-NH3 BC															
City · State · Zip	San Antonio, TX 782	Send Report to Address:	6300 La Calma Strive, Suite 400	C	Ammonia Gas Diffusion: EPA 350.1															
Telephone	210-233-3742	City · State · Zip	Austin TX 78752	D	Chlorophyll A: SM 10200 H															
Fax		Telephone	512-452-5905	E	NO2, NO3, NO2+NO3: EPA 300.0															
e-mail Address	Sam.Mills@saws.org	Fax		F																
Special Instructions:		e-mail Address	tnoack@apateenv.com	G																
				H																
				I																
				J																
				K																
				pH Checks: A,B,C= D,E=																

No	Sample Description/Location	Date	Time	Sampler	Matrix	Preservative	No. of Bottles	Field CL2	A	B	C	D	E	F	G	H	I	J	K	SAWS Login Number	Temp Raw/Corr
1	#1 Near Polders	1-25-18	12:28		NPW	SA,NN	21	NA	X	X	X	X	X								
2	#2 Near Polders		12:30		NPW	SA,NN	21	NA	X	X	X	X	X								
3	#3 Mid lake Surface		12:30		NPW	SA,NN	21	NA	X	X	X	X	X								
4	#4 Mid lake Bottom		13:10		NPW	SA,NN	21	NA	X	X	X	X	X								
5	#5 Lower lake		11:20		NPW	SA,NN	2	NA	X	X	X	X	X								
6	#6 Lower lake (1)								X	X	X	X	X								
7									X	X	X	X	X								
8																					
9																					
10																					
11																					
12																					
13	Analysis not needed 8/25/18																				

Required Turn Around Time (TAT):  STD 10 Business Days  5 Business Days  2 Business Days  24 Hour  Other \_\_\_\_\_

NOTE: **MUST** have Mgmt. approval for TAT of 5 days or less.

Redquisitioned by:	Date:	Time:	Received by:	Date:	Time:	Laboratory Receiving Notes:
Samm Mills	1-25-18	15:06				8.4/8.4°C on ice
Accessioned by (Laboratory):	Date:	Time:	Checked by (Laboratory):	Date:	Time:	
				1/25/18	1506	

Matrix Type: Potable Water (PW), Waste Water (WW), Non-Potable Water (NPW), Sludge (SL), or Solid (S)  
 Preservation: HCl pH <2, (HA), H2SO4 pH <2 (SA), HNO3 pH <2 (NA), NaOH pH >12 (SH), Na2S2O5 (ST), CaH2O6 (MA), Cool < 4.0°C (C) or None (NN)  
 Revision December 19, 2017

Date: 1-24-2018 Time: 12:55 Employee name: J Hull  
 Battery Voltage: Sonde Type and Serial No.: Compact DS5 093016C

**Calibration**

Function	Temp. of Standard	Value of Standard	Initial Reading	Calibrated to	Comments
Specific conductance—Air (For Series 4,4a, & 5)	20.72	0	0	0	
Specific conductance	19.40	1413	1400	1413	
pH calibrated (~7)	19.58	7.02	7.01	7.02	
pH slope (~4/10)	19.80	10.06	10.08	10.06	
Dissolved oxygen (% sat)	19.75	100%	97.4	100.5	
Dissolved oxygen (mg/L) optional					

Barometric Pressure Options	Barometric Pressure Formulas
Altitude (A)= 440 feet above msl	Barometric pressure 30.45 inches 773.43 mm
Barometer	Barometric pressure (inches) 30.46 × 25.4 = BP 773.43mm
From local source correction (GBP)	BP 762.43 mm = CBP 773.43mm - 2.5 (altitude 440/100)
Estimated from altitude only	BP mm= 760 mm - 2.5 (altitude /100)

**Post-Calibration Check**

Date: 1-26-18 Time: 9:00 Employee Name: JH  
 Battery Voltage: Sonde Type and Serial No.: DS5093016C

Function	Temp. of Standard	Value of Standard	Initial Reading	Pass Post-Cal?	Comments
Specific conductance	17.42	1413	1402	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
pH calibrated (~7)	18.86	7.03	7.01	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
pH slope (~4/10)	18.54	10.07	10.04	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Dissolved oxygen (% sat)	17.23	100%	100.2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Location of Deployment, Run, or Special Study: Mitchell Lake Date/Time Deployed: 1-25-18 Date/Time Retrieved:  
 Use (circle one): 24-hr Continuous **Grab**

**MAINTENANCE**

(Refer to Chapter 8 for maintenance requirements)

Sensor	Date	Initials	Maintenance Completed
pH	1-24-18	JH	pH Reference Solution Replace
DO			
Specific Cond.			

Perform temperature check along with regular maintenance. The laboratory thermometer must be checked against NIST traceable thermometer annually.

Annual NIST traceable check	Date:	NIST Temp:	Lab Thermometer Temp:	Correction Factor:
Maintenance temperature check	Date:	Sonde Temp:	Lab Thermometer Temp:	

Factory maintenance/repair notes:  
 \_\_\_\_\_  
 \_\_\_\_\_



# Mitchell Lake Water Quality Sampling

## Weather/Site Characteristics

Date: 5-30-18

Time: 10:05

Event Type: Wet  Dry

Photo #'s: 1-15

Air Temperature: 85°

Wind Dir: 10

Wind speed (Avg): SSE

Cloud Cover: 30% (PARTY)

Lake Elevation: Higher than last sample  
still 5' low approx

USGS #08181500: 88.3 (mean)

Lake Discharge Occurring: Y  N

Last Day of Prior rain event: > 5-20-18 (1.76")

Water Clarity: low

Water Color: Green

Presence/Absence of Odor: No Odor

Notes: Lake is a little higher than the Jan  
Sampling event but still several feet below  
full.

Lake is a bright green, DO. + DO% is very  
high due to the algae.

All GPS points in UTM Na083

# Mitchell Lake Water Quality Sampling

## Field Observations

Date: 5-30-18

Time: 10:05

Station Name and #: 1. near Polders

UTM 14R  
GPS Coords: 0549183 3240205

Water Depth: ~~2.0~~ 2.0

Secchi Depth: 3" snow

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	27.61		
pH	8.97		
Dissolved Oxygen	6.17		
DO %	80.4		
Conductivity	4101.8		
Odor	10 odor		
Turbid	197 NTU		

### Grab Samples

Conventional parameter samples collected:      Surface     Mid     Bottom   
Total # of Jars: 6

POPC sample collected (Surface station 6 only):     N/A    Total # of Jars: \_\_\_\_\_

### Sediment Sample

Sediment Color: Brown/Gray      Sediment Texture: Clay like/Silt

Photo# N/A (none)      Total # of Jars; 2

Description: light brown/gray clay/silt texture.

Notes:

## Mitchell Lake Water Quality Sampling

### Field Observations

Date: 5-31-18

Time: 12:48

Station Name and #: 2 Sed

GPS Coords: UTM 14  
548972 3239918

Water Depth: 4.5 inches  
~~3 inches~~

Secchi Depth: 2.5 inches

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	31.90		
pH	10.07		
Dissolved Oxygen	19.46		
DO %	273.0%		
Conductivity	4120.2		
Odor	None		
Turb	237.9		

#### Grab Samples

Conventional parameter samples collected:      Surface     Mid     Bottom   
N/A      Total # of Jars: \_\_\_\_\_

POPC sample collected (Surface station 6 only):          Total # of Jars: \_\_\_\_\_

#### Sediment Sample

Sediment Color: Grey/Brown

Sediment Texture: Silt/Sand

Photo# 1 Pic #10

Total # of Jars; 2

Description:

12:48

Notes:

## Mitchell Lake Water Quality Sampling

### Field Observations

Date: 5-31-18

Time: 12:33

Station Name and #: #3 Sed

GPS Coords: 549 746<sup>UTM</sup>, 32399935

Water Depth: 4 inches

Secchi Depth: 3 inches

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	<u>31.09</u>		
pH	<u>10.19</u>		
Dissolved Oxygen	<u>21.29</u>		
DO %	<u>294.1%</u>		
Conductivity	<u>4125.7</u>		
Odor	<u>None</u>		
Turbidity	<u>195.9</u>		

#### Grab Samples

Conventional parameter samples collected:      Surface     Mid     Bottom

N/A      Total # of Jars: \_\_\_\_\_

POPC sample collected (Surface station 6 only):          Total # of Jars: \_\_\_\_\_

#### Sediment Sample

Sediment Color: Black/Gray

Sediment Texture: Silt/ Sand

Photo# #101A2

Total # of Jars; 2

Description: 12:33

Notes:

## Mitchell Lake Water Quality Sampling

### Field Observations

Date: 5-31-18

Time: 13:03

UTM 14R

Station Name and #: 4 scd

GPS Coords: 549251 3239337

Water Depth: 1.0' out

Secchi Depth: 2.5' inches

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	30.54		
pH	10.00		
Dissolved Oxygen	18.40		
DO %	252.7%		
Conductivity	4088.9		
Odor	None		
Turb	203.6		

#### Grab Samples

Conventional parameter samples collected:      Surface     Mid     Bottom

Total # of Jars: \_\_\_\_\_

N/A

POPC sample collected (Surface station 6 only):          Total # of Jars: \_\_\_\_\_

#### Sediment Sample

Sediment Color: Black / Gray

Sediment Texture: Sand / silt

Photo# 1 Pic #12

Total # of Jars; 4

Description: Some detritus.

POPC + CO<sub>2</sub>

Notes:

## Mitchell Lake Water Quality Sampling

### Field Observations

Date: 5-31-18

Time: 12:15

Station Name and #: #5 Sed

GPS Coords: 549741, 3239268

Water Depth: 7 inches

Secchi Depth: 3.5 inches

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	30.19		
pH	8.57		
Dissolved Oxygen	12.74		
DO %	173.3 %		
Conductivity	4089.0		
Odor	None		
	<u>Turb</u>	<u>227.0</u>	

#### Grab Samples

Conventional parameter samples collected: Surface  Mid  Bottom   
 Total # of Jars: \_\_\_\_\_

N/A

POPC sample collected (Surface station 6 only):  Total # of Jars: \_\_\_\_\_

#### Sediment Sample

Sediment Color: Grey/Black

Sediment Texture: Sand/Silt

Photo# 1 PK #9

Total # of Jars; 2

Description:

Notes:

# Mitchell Lake Water Quality Sampling

## Field Observations

Date: 5-31-18

Time: 10:45

Station Name and #: 6 Midlake

GPS Coords: R14 UTM  
549462 3238916

Water Depth: 3.5 <sup>ft</sup>

Secchi Depth: 4 inches

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	28.57		28.52
pH	8.96		8.96
Dissolved Oxygen	5.27		5.00
DO %	69.6%		66.2%
Conductivity	4030.0		4030.6
Odor	none		none
Turbidity (NTU)		185.9	186.0

### Grab Samples

Conventional parameter samples collected: Surface  Mid  Bottom   
 Total # of Jars: 12  
 Time: 10:55

POPC sample collected (Surface station 6 only):  Total # of Jars: 6  
 Time: 10:58

### Sediment Sample

Sediment Color: Brown <sup>light</sup> Sediment Texture: Silt

Photo# 300 #6 Total # of Jars: 2

Description: 11:10

Notes:

# Mitchell Lake Water Quality Sampling

## Field Observations

Date: 5-31-18

Time: 13:20

Station Name and #: Sed 7

GPS Coords: 549115 3238598

Water Depth: 1.3 Feet

Secchi Depth: 3" Ings

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	30.73		
pH	9.78		
Dissolved Oxygen	15.80		
DO %	217.4%		
Conductivity	4091.0		
Odor	None		
Turb	182.6		

### Grab Samples

Conventional parameter samples collected: Surface  Mid  Bottom   
 Total # of Jars: \_\_\_\_\_

POPC sample collected (Surface station 6 only):  N/A Total # of Jars: \_\_\_\_\_

### Sediment Sample

Sediment Color: Light Brown

Sediment Texture: Silt/Sand

Photo# PRC #13

Total # of Jars; 2

Description:

Notes:



## Mitchell Lake Water Quality Sampling

### Field Observations

Date: 5-31-18

Time: 11:58

Station Name and #: #8 Sed

GPS Coords: 549716 3238622

Water Depth: 2.2'

Secchi Depth: 2.5 Inches

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	29.61		
pH	9.35		
Dissolved Oxygen	9.38		
DO %	<del>9.28</del> 127.2%		
Conductivity	<del>127.2</del> 104.067		
Odor	None		

Turb 195.8

#### Grab Samples

Conventional parameter samples collected:      Surface     Mid     Bottom   
N/A      Total # of Jars: \_\_\_\_\_

POPC sample collected (Surface station 6 only):          Total # of Jars: \_\_\_\_\_

#### Sediment Sample

Sediment Color: light brown      Sediment Texture: Silt

Photo# #8      Total # of Jars; 4

Description:  
POPC + CONV  
529<sup>th</sup> elevation

Notes:

# Mitchell Lake Water Quality Sampling

## Field Observations

Date: 5-31-18

Time: 11:30

Station Name and #: # 9 Bottom Lake

UTM 14  
GPS Coords: 549 584, 323 8274

Water Depth: 1.6"

Secchi Depth: 3 1/8 inches

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	<u>29.51</u>		
pH	<u>9.56</u>		
Dissolved Oxygen	<u>13.47</u>		
DO %	<u>181.7%</u>		
Conductivity	<u>4103.1</u>		
Odor	<u>None</u>		
Turbidity	<u>193.2</u>		

### Grab Samples

Conventional parameter samples collected: Surface  Mid  Bottom   
 Total # of Jars: 6  
 Time: 11:30

# 9 B Duplicate @ 11:35 # 6  
 POPC sample collected (Surface station 6 only):  Total # of Jars: 6  
 N/A

### Sediment Sample

Sediment Color: Light Brown/Green Sediment Texture: Silt

Photo# #7 1 Pic Total # of Jars; 2

Description: 11:45  
MUCH Finer than #6 +, 1, Some Gravel

Notes: Duplicate sample #9B Surface Grey

Date: <u>5-30-18</u> Time: <u>8:30</u>		Employee name: <u>JH</u>			
Battery Voltage:		Sonde Type and Serial No.: <u>6w #3</u>			
Calibration					
Function	Temp. of Standard	Value of Standard	Initial Reading	Calibrated to	Comments
Specific conductance—Air (For Series 4,4a, & 5)		0			
Specific conductance	<u>86.6</u>	<u>1413</u>	<u>1469</u>	<u>1413</u>	
pH calibrated (~7)	<u>30.78</u>	<u>6.99</u>	<u>6.90</u>	<u>6.99</u>	
pH slope (~4/10)	<u>30.15</u>	<u>9.96</u>	<u>10.06</u>	<u>9.96</u>	
Dissolved oxygen (% sat)	<u>29.95</u>	100%	<u>104.3</u>	<u>100.1</u>	
Dissolved oxygen (mg/L) optional					
Barometric Pressure Options		Barometric Pressure Formulas			
Altitude (A) = <u>203</u> feet above msl		Barometric pressure <u>29.7</u> inches _____ mm			
Barometer		Barometric pressure (inches) <u>29.7</u> × 25.4 = BP <del>75.438</del> mm			
From local source correction (GBP)		BP <u>79.31</u> mm = CBP <u>75438</u> mm - 2.5 (altitude <u>203</u> /100)			
Estimated from altitude only		BP _____ mm = 760 mm - 2.5 (altitude _____ /100)			
Post-Calibration Check					
Date: <u>6-1-18</u> Time: <u>13:50</u>		Employee Name: <u>JH</u>			
Battery Voltage:		Sonde Type and Serial No.: <u>BJ #3</u>			
Function	Temp. of Standard	Value of Standard	Initial Reading	Pass Post-Cal?	Comments
Specific conductance	<u>24.09</u>	<u>1413</u>	<u>1398</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
pH calibrated (~7)	<u>23.84</u>	<u>7.00</u>	<u>7.02</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
pH slope (~4/10)	<u>24.03</u>	<u>10.01</u>	<u>9.94</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Dissolved oxygen (% sat)	<u>24.09</u>	100%	<u>98.9</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Location of Deployment, Run, or Special Study: <u>Mitchell Lake</u>		Date/Time Deployed: <u>5-31-18</u>		Date/Time Retrieved:	
Use (circle one): <u>24-hr</u>		Continuous		<u>Grab</u>	
MAINTENANCE (Refer to Chapter 8 for maintenance requirements)					
Sensor	Date	Initials	Maintenance Completed		
pH	<u>5-30</u>	<u>JH</u>	<u>Replaced pH reference solution.</u>		
DO					
Specific Cond.					
Perform temperature check along with regular maintenance. The laboratory thermometer must be checked against NIST traceable thermometer annually.					
Annual NIST traceable check	Date:	NIST Temp:	Lab Thermometer Temp:	Correction Factor:	
Maintenance temperature check	Date:	Sonde Temp:	Lab Thermometer Temp:		
Factory maintenance/repair notes:					



# SAN ANTONIO TESTING LABORATORY, LLC

1610 S. Laredo Street, San Antonio, Texas 78207  
(210) 229-9920 • Fax (210) 229-9921  
www.satestinglab.com

PROJECT NAME/LOCATION/SITE  
*Mitcham Lake*

## CHAIN-OF-CUSTODY RECORD

REPORT TO:

INVOICE TO:

P.O. #

COMPANY: *Alma Plummer Assoc, Inc*  
ADDRESS: *6300 Lactonia Dr #4200*  
CITY: *Austin* STATE: *TX* ZIP: *78752*

COMPANY ADDRESS: *6300 Lactonia Dr #4200*  
CITY: *Austin* STATE: *TX* ZIP: *78752*

REPORT NUMBER: *1805505*

ATTN: *Jim Rowe* PHONE # *210-333-5114*

REQUESTED TURNAROUND TIME: *7-10 Days*

REG: *+25%*

4 Days *+50%*

3 DAYS *+75%*

2 DAYS *+100%*

Next Day *+150%*

HARD COPY  YES  NO / FOR STATE COMPLIANCE  YES  NO SPECIAL REQ.:  
TEMP I.R. GUN # *1102* SAMPLE TEMPERATURE WITHIN COMPLIANCE (> 0°C ≤ 6°C)  YES  NO  
PROPER CONTAINERS.....  YES  NO IF NO, INITIAL HERE TO AUTHORIZE ANALYSIS

TEMP ON REPT. *11.0c* COND. OF SAMPLE *11.0c* TRRP 13  YES  NO LPST PCLS

### ANALYSIS REQUESTED

- BTEX/MTBE 8260 / TPH TX1005/TX1006
  - Metals 8 / 11 / 12 / 13 / TCLP / SPLP / Total
  - PAH / SVOC / 8270 / 625 / TCLP / SPLP / Total
  - VOC / 8260 / 624 / TCLP / SPLP / Total
  - Water Quality - Drinking / Livestock / Irrigation
  - Coli / TC / FC / RPC / EColi / Enterococci / Q-Tray
  - Br / Cl / F / NO3 / NO2/O-P / SO4
  - PCB / 608 / 8082A
  - OC Pest / 608 / 8081A / TCLP / SPLP / Total
- Conventional Parameters*  
*POP's & Metals only*

### SAMPLE IDENTIFICATION

DATE	TIME	PLANTING WITH DIS	SLOTTED HOLES	COMPOST PROHIBITED	NO. OF SAMPLES	SAMPLE SIZE	REMARKS
5-31	10:55	X	X	X	6	3g each	#1 Near Polders
5-31	10:58	X	X	X	12	6.850	#6 Surface Mid Lake
5-31	10:58	X	X	X	6	3.625	#6 Bottom Mid Lake
5-31	11:30	X	X	X	6	3.625	#9 Lower Lake
5-31	11:35	X	X	X	6	3.625	#9B Lower Lake
5-31	12:00	X	X	X	6	1.51w	Field Blank

RELINQUISHED BY (SIGNATURE) *[Signature]* DATE / TIME *5-31 3:04* RECEIVED BY (SIGNATURE) *[Signature]* DATE / TIME **MAY 31 2018**

RELINQUISHED BY (PRINT NAME) *[Name]* DATE / TIME *5-31 3:04* RECEIVED BY (PRINT NAME) *[Name]* DATE / TIME *[Date]*

RELINQUISHED BY (SIGNATURE) *[Signature]* DATE / TIME *[Date]* RECEIVED BY (SIGNATURE) *[Signature]* DATE / TIME *[Date]*

FORM: COC REV 02/2018 WHITE - LAB CANARY - CLIENT





**SAN ANTONIO**  
TESTING LABORATORY, LLC

1610 S. Laredo Street, San Antonio, Texas 78207  
(210) 229-9920 • Fax (210) 229-9921  
www.satesinlab.com

**CHAIN-OF-CUSTODY RECORD**

<b>REPORT TO:</b>	<b>INVOICE TO:</b>	<b>P.O. #</b>
Company: <i>Alen Plumber Assoc, Inc</i>	Company: _____	Report Number: <i>1805506</i>
Address: <i>6300 Lockway Dr #400</i>	Address: _____	
City: <i>Austin</i>	City: _____	
State: <i>TX</i>	State: _____	
Zip: <i>78752</i>	Zip: _____	
Phone #: <i>210-233-3344</i>	Phone #: _____	
ATTN: <i>Jim Voss</i>	ATTN: _____	
Requested Turnaround Time: <i>7-10 Days</i>	Requested Turnaround Time: _____	
In Business Days & Surcharge: <i>REG +25%</i>	In Business Days & Surcharge: _____	
<i>7-10 Days</i>	<i>5 Days</i>	<i>4 Days</i>
<i>3 Days</i>	<i>2 Days</i>	<i>Next Day</i>
<i>+100%</i>	<i>+150%</i>	<i>+300%</i>

THE TURNAROUND TIME FOR SAMPLES RECEIVED AFTER 3:00 PM SHALL BEGIN AT 8:00 AM THE FOLLOWING BUSINESS DAY

HARDCOPY  YES  NO / FOR STATE COMPLIANCE  YES  NO SPECIAL REQ.: \_\_\_\_\_

TEMP. I.R. GUN # \_\_\_\_\_ SAMPLE TEMPERATURE WITHIN COMPLIANCE (> 0°C < 6°C)  YES  NO INITIAL TO AUTHORIZE BULK ANALYSIS

TEMP. ON RECP. *1.18* COND. OF SAMPLE *Good* IF NO. INITIAL HERE TO AUTHORIZE ANALYSIS

**ANALYSIS REQUESTED**

TRRP 13  YES  NO LPST PCIS

BTEX/MTBE 8260 / TPH TX1005/TX1006  
 Metals 8 / 11 / 12 / 13 / TCLP / SPLP / Total  
 PAH / SVOC / 8270 / 625 / TCLP / SPLP / Total  
 VOC / 8260 / 624 / TCLP / SPLP / Total  
 Water Quality - Drinking / Livestock / Irrigation  
 Coli / TC / FC / RPC / EColi / Enterococci / Q-Tray  
 Br / Cl / F / NO3 / NO2/O-P / SO4  
 PCB / 608 / 8082A  
 OC Pest / 608 / 8081A / TCLP / SPLP / Total

SAMPLE IDENTIFICATION	NO. OF UNITS		SAMPLING POINTS		ANALYSIS REQUESTED	PRESERVED WITH	REMARKS
	BEFORE	AFTER	IN THE FIELD	IN THE LAB			
<i>5-31-18 12:08</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>CONV</i>	<i>POPS</i>	
<i>&lt;31-18 12:48</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>CONV</i>	<i>POPS</i>	
<i>12:33</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>CONV</i>	<i>POPS</i>	
<i>13:03</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>CONV</i>	<i>POPS</i>	
<i>12:15</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>CONV</i>	<i>POPS</i>	
<i>11:10</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>CONV</i>	<i>POPS</i>	
<i>13:20</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>CONV</i>	<i>POPS</i>	
<i>11:58</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>CONV</i>	<i>POPS</i>	
<i>11:45</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>CONV</i>	<i>POPS</i>	

RELINQUISHED BY (SIGNATURE) _____	DATE / TIME <i>5-31-2018</i>	RECEIVED BY (SIGNATURE) _____	DATE / TIME <i>MAY 31 2018</i>
RELINQUISHED BY (PRINT NAME) _____	DATE / TIME _____	RECEIVED BY (PRINT NAME) _____	DATE / TIME _____
RELINQUISHED BY (SIGNATURE) _____	DATE / TIME _____	RECEIVED BY (SIGNATURE) _____	DATE / TIME _____
RELINQUISHED BY (PRINT NAME) _____	DATE / TIME _____	RECEIVED BY (PRINT NAME) _____	DATE / TIME _____

# Mitchell Lake Water Quality Sampling

## Weather/Site Characteristics

Date: 8-16-18

Time: 9:00 am

Event Type: Wet  Dry

Photo #'s: 1, 3

Air Temperature: 85

Wind Dir: S

Wind speed (Avg): 13

Cloud Cover: 50%

Lake Elevation: Low

USGS #08181500: 178 cfs

Lake Discharge Occurring: Y  N

Last Day of Prior rain event: 8-12-18

Water Clarity: low

Water Color: Green

Presence/Absence of Odor: None

### Notes:

Still very green.

# Mitchell Lake Water Quality Sampling

## Field Observations

Date: 8-15-2018 Time: 10:24

Station Name and #: 1 New Polders GPS Coords: \_\_\_\_\_

Water Depth: .9 ft Secchi Depth: ~~4~~ 4"

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	27.21		
pH	9.31		
Dissolved Oxygen	11.07 <small>mg/L</small>		
DO %	144.7 %		
Conductivity	6934.2 <small>uS/cm</small>		
Odor	none		

### Grab Samples

Conventional parameter samples collected: Surface  Mid  Bottom   
 Total # of Jars: ~~8~~ 7

POPC sample collected (Surface station 6 only):  N/A Total # of Jars: \_\_\_\_\_

### Sediment Sample

Sediment Color: \_\_\_\_\_ Sediment Texture: \_\_\_\_\_

Photo# \_\_\_\_\_ Total # of Jars; \_\_\_\_\_

Description: N/A

Notes: Very Green. Low lake lvl.

# Mitchell Lake Water Quality Sampling

## Field Observations

Date: 8-15-18

Time: 11:00

Station Name and #: 6 Mid lake

GPS Coords: \_\_\_\_\_

Water Depth: ~~9.2~~ 9.2

Secchi Depth: 3.4

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	28.52		28.52
pH	9.12		9.12
Dissolved Oxygen	7.09		7.40
DO %	94.9%		95.90
Conductivity	7010.6		7010.6
Odor			

### Grab Samples

Conventional parameter samples collected:      Surface       Mid       Bottom  @ 11:10  
 Total # of Jars: ~~14~~ 14

POPC sample collected (Surface station 6 only):            Total # of Jars: 6

### Sediment Sample

Sediment Color: \_\_\_\_\_

Sediment Texture: \_\_\_\_\_

Photo# \_\_\_\_\_

Total # of Jars; \_\_\_\_\_

Description:

N/A

Notes:



# Mitchell Lake Water Quality Sampling

## Field Observations

Date: 8-15-18 Time: 12:00

Station Name and #: H9 + 9B (duplicate) GPS Coords: \_\_\_\_\_

Water Depth: .85 ft Secchi Depth: 3"

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	30.16		
pH	9.69		
Dissolved Oxygen	18.50		
DO %	255.8		
Conductivity	6948.2		
Odor	None		

### Grab Samples

Conventional parameter samples collected: Surface  Mid  Bottom   
 Total # of Jars: 7

Time 9B # 9B duplicate  
12:05 surface 7

POPC sample collected (Surface station 6 only):  Total # of Jars: \_\_\_\_\_  
N/A

### Sediment Sample

Sediment Color: \_\_\_\_\_ Sediment Texture: \_\_\_\_\_

Photo# \_\_\_\_\_ Total # of Jars; \_\_\_\_\_

Description: N/A

Notes:  
 Field Blank for metals w/ lab water  
 @ 12:15 2 Jars

**CHAIN-OF-CUSTODY RECORD**

**REPORT TO:** COMPANY: *Alco Plummer Associates Inc* P.O. #  
 ADDRESS: *6300 Lancelina Dr #400*  
 CITY: *Austin* STATE: *TX* ZIP: *78732* PHONE #  
 ATTN: *Tim Noack* PHONE # *210-233-3742* E-MAIL: *tnoack@spainev.com*  
 REQUESTED TURNAROUND TIME IN BUSINESS DAYS & SURCHARGE:  7-10 Days REG  5 Days +25%  4 Days +50%  3 Days +75%  2 Days +100%  Next Day +150%  SAME DAY WHEN POSSIBLE +300%

THE TURNAROUND TIME FOR SAMPLES RECEIVED AFTER 3:00 PM SHALL BEGIN AT 8:00 AM THE FOLLOWING BUSINESS DAY

HARD COPY  YES  NO / FOR STATE COMPLIANCE  YES  NO SPECIAL REQ.:  
 TEMP. I.R. GUN # *680c* SAMPLE TEMPERATURE WITHIN COMPLIANCE (> 0°C ± 6°C)  YES  NO INITIAL TO AUTHORIZE BULK ANALYSIS  
 TEMP. ON REPT. *280c* COND. OF SAMPLE *1800* TRRP 13  YES  NO LPST PCLS

PROJECT NAME/LOCATION/SITE: *Mitchell Lake*

SAMPLE NUMBER	DATE	TIME	COLLECTED BY	MATRIX	SAMPLING METHOD	CONTAINERS		ANALYSIS REQUESTED		REMARKS
						NO. OF CONTAINERS	AMOUNT	CONVERSION	RESIDUAL	
1	8-15	10:24	H1	near Bolders	X	6	3625 ML			
2	8-15	11:00	H6	surface		12	6250			
3	8-15	11:10	H6	Bottom		6	3625			
4	8-15	12:00	H9	surface		6	3625			
5	8-15	12:05	H9B			6	3625			
6	8-15	12:15		Field Blank		2	125			

**RECEIVED**  
 AUG 15 2018  
 By *4437*

RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME
<i>Jeremy Hu</i>	8-15 2:31	<i>Tim Noack</i>	
<i>Jeremy Hu</i>		<i>Tim Noack</i>	





**SAN ANTONIO WATER SYSTEM**  
**ENVIRONMENTAL LABORATORY SERVICES**  
**CHAIN OF CUSTODY RECORD**  
 3610 Valley Road ~ San Antonio, TX 78221 ~ (210) 233-3200

COC  
 LS 02-022  
 Revision 2.0  
 Effective Date: 3/13/17

For Laboratory Use Only:

Client/Project Information			Other Information		Parameter/Method														
Client:	Operations Technical Service	Project:	Work Order No.	Fire Hydrant	A	Total Coliform - E. Coli - SM 9223	B	Specific Conductance - SM 2510 B	C	Ammonia by Gas Diffusion - EPA 350.1	D	E	F	G	H	I	J	K	L
Facility:		Project Manager:	Telephone Number																
Send Report To:	TIM NOACK	Email Address:	TA@SAWS.COM	Valve															
Inst. Serial No.:	PAISCH	Expiration Date:	PAISCH@SAWS.COM	Pipe															
DPD Pillows Lot #:		Expiration Date:	RESULTS@SAWS.COM	AC															
Gel Standards Lot #:		Expiration Date:	RESULTS@SAWS.COM	Seepage															
Special Instructions:		Std 1:	RESULTS@SAWS.COM	Main Break															
		Std 2:	RESULTS@SAWS.COM	Other															
		Std 3:	RESULTS@SAWS.COM																

No.	Sample Type	Chlorine Results	Sample Description/Location	No. of Bottles	Collected		Sampler Name	Matrix	Preservative	Colilert Bottle Lot #											LAB USE ONLY				
					Date	Time				A	B	C	D	E	F	G	H	I	J	K		L			
1	G	Mandatory if "A" is requested	#1 Surface	1	8/15/18	10:24	3H	NPW	0		X													Login Number	
2	G		#6 Surface	1	8/15/18	11:00	3H	NPW	0		X														
3	G		#6 Bottom	1	8/15/18	11:20	3H	NPW	0		X														
4	G		#9 Surface	1	8/15/18	12:00	3H	NPW	0		X														
5	G		#9B	1	8/15/18	12:05	3H	NPW	0		X														
6																									
7																									

Required Turn Around Time (TAT):  STD 10 Bus days  5 Bus Days  2 Bus Days  Next Day  
 Note: Must have Management approval for TAT less than 5 days

Relinquished by:	Date:	Time:	Date:	Time:
Jehanna Hull	8/15/18	13:21	8/15/18	13:21
Relinquished by:	Date:	Time:	Date:	Time:
Relinquished by:	Date:	Time:	Date:	Time:

Laboratory Receiving Notes:

Date: 8-15-17 Time: 9:00 Employee name: JH  
 Battery Voltage: \_\_\_\_\_ Sonde Type and Serial No.: CDSS BW#4

**Calibration**

Function	Temp. of Standard	Value of Standard	Initial Reading	Calibrated to	Comments
Specific conductance—Air (For Series 4,4a, & 5)	<u>26.33</u>	<u>0</u>	<u>—</u>	<u>—</u>	
Specific conductance	<u>26.33</u>	<u>1413.3%</u>	<u>1404</u>	<u>1413</u>	
pH calibrated (~7)	<u>26.69</u>	<u>7.00</u>	<u>7.01</u>	<u>7.00</u>	
pH slope (~4/10)	<u>26.37</u>	<u>9.99</u>	<u>9.99</u>	<u>9.99</u>	
Dissolved oxygen (% sat)	<u>26.04</u>	<u>100%</u>	<u>100.3</u>	<u>100.1</u>	
Dissolved oxygen (mg/L) optional	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	

Barometric Pressure Options	Barometric Pressure Formulas
Altitude (A)= _____ feet above msl	Barometric pressure _____ inches _____ mm
Barometer <u>747</u>	Barometric pressure (inches) _____ × 25.4 = BP _____ mm
From local source correction (GBP)	BP _____ mm = GBP _____ mm - 2.5 (altitude /100)
Estimated from altitude only	BP _____ mm = 760 mm - 2.5 (altitude /100)

**Post-Calibration Check**

Date: 8-20-17 Time: 13:15 Employee Name: JH011  
 Battery Voltage: \_\_\_\_\_ Sonde Type and Serial No.: CDSS BW#4

Function	Temp. of Standard	Value of Standard	Initial Reading	Pass Post-Cal?	Comments
Specific conductance	<u>24.34</u>	<u>1413</u>	<u>1413.5</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
pH calibrated (~7)	<u>24.30</u>	<u>7.00</u>	<u>6.99</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
pH slope (~4/10)	<u>24.84</u>	<u>10.01</u>	<u>9.99</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Dissolved oxygen (% sat)	<u>24.86</u>	<u>100%</u>	<u>99.2</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Location of Deployment, Run, or Special Study: N/A Date/Time Deployed: \_\_\_\_\_ Date/Time Retrieved: \_\_\_\_\_  
 Use (circle one): 24-hr Continuous Grab

**MAINTENANCE**

(Refer to Chapter 8 for maintenance requirements)

Sensor	Date	Initials	Maintenance Completed
pH			
DO			
Specific Cond.			

Perform temperature check along with regular maintenance. The laboratory thermometer must be checked against NIST traceable thermometer annually.

Annual NIST traceable check	Date:	NIST Temp:	Lab Thermometer Temp:	Correction Factor:
Maintenance temperature check	Date:	Sonde Temp:	Lab Thermometer Temp:	

Factory maintenance/repair notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# Mitchell Lake Water Quality Sampling

## Weather/Site Characteristics

Date: 11-1-18

Time: 10:30

Event Type:  Wet  Dry

Photo #'s: 1-9

Air Temperature: 61

Wind Dir: NNW

Wind speed (Avg): 13

Cloud Cover: 0%

Lake Elevation: Higher than Prev. yr

USGS #08181500: 325

Lake Discharge Occurring: Y  N

Last Day of Prior rain event: 10-31-18

Water Clarity: low

Water Color: Green

Presence/Absence of Odor: Strong odor of sulfur + sewage/rotten smell all around lake

### Notes:

Lake looks to be full ~~and~~ <sup>and</sup> very close to discharge in the south end.

Several  $\approx$  20 dead Lemniscia + Saffin molly were we launched the boat.

## Mitchell Lake Water Quality Sampling

### Field Observations

Date: 11-1-18

Time: 11:10

Station Name and #: 1 Surf  
*Near Polders*

GPS Coords: 6PS WQ #1

Water Depth: 3.4"

Secchi Depth: 4.8"

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	20.68 c		20.70 c
pH	9.48		9.48
Dissolved Oxygen	9.94 mg/L		9.67 mg/L
DO %	115.3%		112.3%
Conductivity	2834.3 uS/cm		2833.3 uS/cm
Odor	Sulfur/rotten		. .

#### Grab Samples

Conventional parameter samples collected:      Surface  Mid  Bottom   
 Total # of Jars: 6  
*Duplicate 1B collected*      Total # of Jars: 6      *to fill 6 jars @ 11:13*  
 POPC sample collected (Surface station 6 only):       N/A      Total # of Jars: \_\_\_\_\_

#### Sediment Sample

Sediment Color: \_\_\_\_\_      Sediment Texture: \_\_\_\_\_  
 Photo# \_\_\_\_\_      Total # of Jars: \_\_\_\_\_  
 Description: N/A

Notes:

*W*

## Mitchell Lake Water Quality Sampling

### Field Observations

Date: 11-1-18

Time: 11:35

Station Name and #: 6  
Mid Lake

GPS Coords: GPS waisel #6

Water Depth: 4.8''

Secchi Depth: 4.2''

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature	21.11 °C	/	21.02 °C
pH	9.37		8.59
Dissolved Oxygen	9.68 mg/L		7.60 mg/L
DO %	113.4%		88.8%
Conductivity	2807.5 us/cm		2810.2 us/cm
Odor	Sulfur		

#### Grab Samples

Conventional parameter samples collected: Surface  Mid  Bottom  11:38  
 Total # of Jars: 12

POPC sample collected (Surface station 6 only):  11:35 Total # of Jars: 6

#### Sediment Sample

Sediment Color: \_\_\_\_\_ Sediment Texture: \_\_\_\_\_

Photo# \_\_\_\_\_ Total # of Jars; \_\_\_\_\_

Description: M/A

Notes:  
Field Blank @ 11:45

# Mitchell Lake Water Quality Sampling

## Field Observations

Date: 11-1-12

Time: 12:10

Station Name and #: ~~310~~ #9  
South end

GPS Coords: WQ #9 GPS

Water Depth: 3.0

Secchi Depth: 4.8"

Standard Parameters	Surface	Mid Depth	Near Bottom
Temperature		20.49 °C	
pH		9.40	
Dissolved Oxygen		10.80 mg/L	
DO %		125.0%	
Conductivity		2800 us/cm	
Odor		Sulfur	

### Grab Samples

Conventional parameter samples collected:      Surface  Mid  Bottom   
 Total # of Jars: 6

POPC sample collected (Surface station 6 only):       N/A      Total # of Jars: \_\_\_\_\_

### Sediment Sample

Sediment Color: \_\_\_\_\_      Sediment Texture: \_\_\_\_\_

Photo# \_\_\_\_\_      Total # of Jars; \_\_\_\_\_

Description: N/A

Notes:





1610 S. Laredo Street, San Antonio, Texas 78207  
 (210) 229-9920 • Fax (210) 229-9921  
 www.satestinglab.com

# CHAIN-OF-CUSTODY RECORD

REPORT TO:

INVOICE TO:

P.O. #

COMPANY: Arco ADDRESS: 6205 Leche Rd. 012400 CITY: San Antonio STATE: TX ZIP: 78112 PHONE # 210-229-9921 ATTN: John Adams

COMPANY: Arco ADDRESS: 6205 Leche Rd. 012400 CITY: San Antonio STATE: TX ZIP: 78112 PHONE # 210-229-9921 ATTN: John Adams

REQUESTED TURNAROUND TIME:  7-10 Days REG  5 Days +25%  4 Days +50%  3 Days +75%  2 Days +100%  Next Day +150%  SAME DAY WHEN POSSIBLE +300%

THE TURNAROUND TIME FOR SAMPLES RECEIVED AFTER 3:00 PM SHALL BEGIN AT 8:00 AM THE FOLLOWING BUSINESS DAY

HARDCOPY  YES  NO / FOR STATE COMPLIANCE  YES  NO SPECIAL REQ.  YES  NO

TEMP. I.R. GUN # 6 SAMPLE TEMPERATURE WITHIN COMPLIANCE (> 0°C ≤ 6°C)  YES  NO INITIAL TO AUTHORIZE BULK ANALYSIS

TEMP. ON RECP. 2.92 COND. OF SAMPLE Good TRAP 13  YES  NO LPST POLS

PROPER CONTAINERS: 4 IF NO, INITIAL HERE TO AUTHORIZE ANALYSIS

ANALYSIS REQUESTED

BTEX/MTBE 8260 / TPH TX1005/TX1006  
 Metals 8 / 11 / 12 / 13 / TCLP / SPLP / Total  
 PAH / SVOC / 8270 / 625 / TCLP / SPLP / Total  
 VOC / 8260 / 624 / TCLP / SPLP / Total  
 Water Quality - Drinking / Irrigation  
 Coli / TC / FC / HPC / EColi / Enterococci / Q-Tray  
 Br / Cl / F / NO3 / NO2/O-P / SO4  
 PCB / 608 / 8082A  
 OC Pest / 608 / 8081A / TCLP / SPLP / Total

RESERVE WITH

PRESERVED IN THE LAB  
 FILTERED IN THE LAB  
 COMPOSITED IN THE LAB  
 FILTERED IN THE LAB  
 FILTERED IN THE FIELD

SAMPLE IDENTIFICATION	NO. OF CONTAINERS	SAMPLES FOR ANALYSIS	ANALYSIS REQUESTED	REMARKS
1 11-18 11:10 X 1 Surface	6	6	X	
2 11-18 11:10 1 B Surface	6	6	X	
3 11-18 11:35 6 Surface	12	12	X	
4 11-18 11:38 6 Bottom	6	6	X	
5 11-18 12:10 9 Surface	6	6	X	
6 11-18 11:12 Field Blank	2	2	X	

**RECEIVED**  
 NOV 01 2018  
 BY 1254

RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME	RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME
<u>[Signature]</u>	11-18 13:53	<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>	
<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>	
<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>	





**SAN ANTONIO WATER SYSTEM**  
**ENVIRONMENTAL LABORATORY SERVICES**  
**CHAIN OF CUSTODY RECORD**

COC  
 LS 02-022  
 Revision 2.0  
 Effective Date: 3/13/17

Client/Project Information				Other Information				Parameter/Method												
Client:	Dw (Aloa Purner)			Project:	Mt. Castle Lake			Work Order No.												
Facility:				Project Manager:	SERRAL HALL			Fire Hydrant												
	Name			Email Address	THOMAS.E@SASWATER.COM			Pipe												
	Send Report To:				CRESCH E			AC												
	Inst. Serial No.				SASWATER.COM			Seepage												
	DPD Pillows Lot #:			Expiration Date:	SID 1: 011-031			Main Break												
	Gel Standards Lot #:			Expiration Date:	SID 3: 142-170			Other												
Special Instructions:																				

No.	Sample Type	Chlorine Results	Sample Description/Location	No. of Bottles	Collected Date	Time	Sampler Name	Matrix	Preservative	Parameter/Method												Collet	LAB USE ONLY	
										A	B	C	D	E	F	G	H	I	J	K	L			
1	↳		1 Surface	11	11-1-18	11:10	SH	NPW																
2	↓		10 Surface			11:13																		
3	↓		6 Surface			11:35																		
4	↓		6 Bottom			11:38																		
5	↙		9 Surface			12:10																		
6																								
7																								

Required Turn Around Time (TAT):  STD 10 Bus days  5 Bus Days  2 Bus Days  Next Day

Requisitioned by: MM Date: 11-1-18 Time: 12:05

Received by: [Signature] Date: 11/1/18 Time: 13:05

Requisitioned by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Note: Must have Management approval for TAT less than 5 days

Laboratory Receiving Notes: 13.6/13.6°C

## **APPENDIX B**

### **LABORATORY REPORTS**

- B-1 Dry Weather Event 1
- B-2 Dry Weather Event 2
- B-3 Dry Weather Event 3
- B-4 Wet Weather Event

February 07, 2018

**Tim Noack**

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin, TX 78752

**SATL Report No.: 1801312**

**RE: Mitchell Lake**

Dear Tim Noack

SATL received 6 Sample(s) on 01/25/2018 for analyses identified on the chain of custody. The analyses were performed using methods indicated on the laboratory report. Any deviations observed at sample receiving are notated on the Sample Receipt Checklist and/or Chain of Custody documents attached as part of this analytical report.

There were no problems in the sample analyses unless otherwise noted. Sample data and associated QC are presented in the attached laboratory report. QC sample data were within laboratory acceptance limits except where noted on the report.

Sincerely,

For San Antonio Testing Laboratory, Inc.



Richard Hawk,  
General Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

NELAC Cert. No.: T104704360-17-17

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

**SAMPLE SUMMARY**

Total Samples received in this work order: 6

The following samples were requested for analysis as per the CoC. Any re-runs or re-analyses requested are identified as such.

<u>Sample ID</u>	<u>Laboratory ID</u>	<u>Matrix</u>	<u>Sampling Method</u>	<u>Date Sampled</u>	<u>Date Received</u>
#1 Near Polders	1801312-01	Liquid	Grab	01/25/18 12:25	01/25/18 16:04
#6 Mid Lake Surface	1801312-02	Liquid	Grab	01/25/18 13:30	01/25/18 16:04
#6 Mid Lake Bottom	1801312-03	Liquid	Grab	01/25/18 13:10	01/25/18 16:04
#1B Near Polders	1801312-04	Liquid	Grab	01/25/18 12:30	01/25/18 16:04
#9 Lower Lake	1801312-05	Liquid	Grab	01/25/18 11:20	01/25/18 16:04
Field Blank	1801312-06	Liquid	Grab	01/25/18 13:40	01/25/18 16:04

**Notes**

All quality control samples and checks are within acceptance limits unless otherwise indicated.  
Test results pertain only to those items tested.  
All samples were in good condition when received by the laboratory unless otherwise noted.

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

**Sample ID #: #1 Near Polders**

**Sampling Method: Grab**

**Lab Sample ID #: 1801312-01**

**Sample Matrix: Liquid**

**Date/Time Collected: 01/25/18 12:25**

Analyte	Result	Units	PQL	RMCCCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	101	mg/L	0.010		SM2540E	B806012	01/26/18 16:30	SM2540E	JL	
Total Alkalinity *	104	mg/L as CaCO <sub>3</sub>	20.0		SM2320B	B805116	02/02/18 16:30	SM2320B	JL	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B805009	01/29/18 15:11	4500NH3CB	JL	
CBOD *	12.7	mg/L	2.00		SM5210B	B805060	01/31/18 11:00	SM5210B	JL	
Total Suspended Solids *	101	mg/L	25.0		SM2540D	B805002	01/26/18 15:10	SM2540D	JL	
Total Kjeldahl Nitrogen *	7.80	mg/L	1.00		EPA 351.3	B805117	02/02/18 17:36	EPA 351.3	JL	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	01/26/18 18:03	EPA 300.0	JL	
Total Dissolved Solids *	1970	mg/L	50.0		SM2540D	B805078	01/31/18 16:00	SM2540C	JL	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B805019	01/26/18 18:03	EPA 300.0	JL	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B805019	01/26/18 18:03	EPA 300.0	JL	
<b>Total Metals</b>										
Phosphorus *	0.492	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:03	EPA 200.7	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

Sample ID #: #6 Mid Lake Surface

Sampling Method: Grab

Lab Sample ID #: 1801312-02

Sample Matrix: Liquid

Date/Time Collected: 01/25/18 13:30

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	104	mg/L	0.010		SM2540E	B806012	01/26/18 16:30	SM2540E	JL	
Total Alkalinity *	104	mg/L as CaCO3	20.0		SM2320B	B805116	02/02/18 16:30	SM2320B	JL	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B805009	01/29/18 15:11	4500NH3CB	JL	
CBOD *	11.3	mg/L	2.00		SM5210B	B805060	01/31/18 11:00	SM5210B	JL	
Cyanide, Total *	<0.020	mg/L	0.020		SM4500-CN C	B805089	02/01/18 16:20	4500CN_C&E	JL	
Total Suspended Solids *	104	mg/L	35.7		SM2540D	B805002	01/26/18 15:10	SM2540D	JL	
Total Kjeldahl Nitrogen *	10.0	mg/L	1.00		EPA 351.3	B805117	02/02/18 17:36	EPA 351.3	JL	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	01/26/18 18:55	EPA 300.0	JL	
Hexavalent Chromium *	<0.005	mg/L	0.005			B805003	01/26/18 11:00	I-1230-85	JL	
Total Dissolved Solids *	1800	mg/L	50.0		SM2540D	B805078	01/31/18 16:00	SM2540C	JL	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B805019	01/26/18 18:55	EPA 300.0	JL	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B805019	01/26/18 18:55	EPA 300.0	JL	
<b>Total Metals</b>										
Antimony *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:09	EPA 200.7	XE	
Arsenic *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:09	EPA 200.7	XE	
Beryllium *	<0.004	mg/L	0.004		EPA 200.7	B805001	01/29/18 14:09	EPA 200.7	XE	
Cadmium *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:09	EPA 200.7	XE	
Chromium *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:09	EPA 200.7	XE	
Copper *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:09	EPA 200.7	XE	
Mercury *	<0.0002	mg/L	0.0002		EPA 245.1	B804100	01/26/18 15:18	EPA 245.1	ME	
Lead *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:09	EPA 200.7	XE	
Nickel *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:09	EPA 200.7	XE	
Phosphorus *	0.332	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:09	EPA 200.7	XE	
Selenium *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:09	EPA 200.7	XE	
Silver *	<0.005	mg/L	0.005		EPA 200.7	B805001	01/29/18 14:09	EPA 200.7	XE	
Thallium *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:09	EPA 200.7	XE	
Zinc *	0.015	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:09	EPA 200.7	XE	



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

Reported:  
02/07/18 14:21  
Received:  
01/25/18 16:04

Additional Notes:

Report No. 1801312

Sample ID #: #6 Mid Lake Surface

Sampling Method: Grab

Lab Sample ID #: 1801312-02

Sample Matrix: Liquid

Date/Time Collected: 01/25/18 13:30

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>Trivalent Chromium (Calculated)</b>										
Trivalent Chromium	<0.00500	mg/L	0.00500		[CALC]	[CALC]	01/29/18 14:09	CALC	JL	
<b>Polychlorinated Biphenyls [PCB]</b>										
PCB 1016 *	<0.0002	mg/L	0.0002		EPA 3510C	B805114	02/05/18 15:00	EPA 608	REB	
PCB 1221 *	<0.0002	mg/L	0.0002		EPA 3510C	B805114	02/05/18 15:00	EPA 608	REB	
PCB 1232 *	<0.0002	mg/L	0.0002		EPA 3510C	B805114	02/05/18 15:00	EPA 608	REB	
PCB 1242 *	<0.0002	mg/L	0.0002		EPA 3510C	B805114	02/05/18 15:00	EPA 608	REB	
PCB 1248 *	<0.0002	mg/L	0.0002		EPA 3510C	B805114	02/05/18 15:00	EPA 608	REB	
PCB 1254 *	<0.0002	mg/L	0.0002		EPA 3510C	B805114	02/05/18 15:00	EPA 608	REB	
PCB 1260 *	<0.0002	mg/L	0.0002		EPA 3510C	B805114	02/05/18 15:00	EPA 608	REB	
Surrogate: Decachlorobiphenyl	32 %	36-150	SurrL		EPA 3510C	B805114	02/05/18 15:00	EPA 608	REB	
Surrogate: Tetrachloro-meta-xylene	32 %	28-131			EPA 3510C	B805114	02/05/18 15:00	EPA 608	REB	
<b>Chlorinated Pesticides by GC/ECD</b>										
alpha-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
gamma-BHC (Lindane) *	<0.0001	mg/L	0.0001	8	EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
beta-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
delta-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
Heptachlor *	<0.0001	mg/L	0.0001	0.16	EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
Aldrin *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
Heptachlor Epoxide *	<0.0001	mg/L	0.0001	0.16	EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
gamma-Chlordane *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
alpha-Chlordane *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
Endosulfan I *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
4,4'-DDE *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
Dieldrin *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
Endrin *	<0.0001	mg/L	0.0001	0.4	EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
4,4'-DDD *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
Endosulfan II *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
4,4'-DDT *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
Endrin Aldehyde *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
Endosulfan Sulfate *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
Methoxychlor *	<0.0001	mg/L	0.0001	200	EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
Endrin Ketone *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
Toxaphene *	<0.01	mg/L	0.01	10	EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	
Surrogate: Decachlorobiphenyl	32 %	36-150	SurrL		EPA 3510C	B805115	02/05/18 15:00	EPA 608	REB	





NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

Sample ID #: #6 Mid Lake Bottom

Sampling Method: Grab

Lab Sample ID #: 1801312-03

Sample Matrix: Liquid

Date/Time Collected: 01/25/18 13:10

Analyte	Result	Units	PQL	RMCCCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	110	mg/L	0.010		SM2540E	B806012	01/26/18 16:30	SM2540E	JL	
Total Alkalinity *	100	mg/L as CaCO3	20.0		SM2320B	B805116	02/02/18 16:30	SM2320B	JL	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B805009	01/29/18 15:11	4500NH3CB	JL	
CBOD *	14.1	mg/L	2.00		SM5210B	B805060	01/31/18 11:00	SM5210B	JL	
Total Suspended Solids *	110	mg/L	41.7		SM2540D	B805002	01/26/18 15:10	SM2540D	JL	
Total Kjeldahl Nitrogen *	10.6	mg/L	1.00		EPA 351.3	B805117	02/02/18 17:36	EPA 351.3	JL	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	01/26/18 19:12	EPA 300.0	JL	
Total Dissolved Solids *	1770	mg/L	50.0		SM2540D	B805078	01/31/18 16:00	SM2540C	JL	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B805019	01/26/18 19:12	EPA 300.0	JL	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B805019	01/26/18 19:12	EPA 300.0	JL	
<b>Total Metals</b>										
Phosphorus *	0.329	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:15	EPA 200.7	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

Sample ID #: #1B Near Polders

Sampling Method: Grab

Lab Sample ID #: 1801312-04

Sample Matrix: Liquid

Date/Time Collected: 01/25/18 12:30

Analyte	Result	Units	PQL	RMCCCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	100	mg/L	0.010		SM2540E	B806012	01/26/18 16:30	SM2540E	JL	
Total Alkalinity *	96.0	mg/L as CaCO3	20.0		SM2320B	B805116	02/02/18 16:30	SM2320B	JL	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B805009	01/29/18 15:11	4500NH3CB	JL	
CBOD *	11.8	mg/L	2.00		SM5210B	B805060	01/31/18 11:00	SM5210B	JL	
Total Suspended Solids *	100	mg/L	50.0		SM2540D	B805002	01/26/18 15:10	SM2540D	JL	
Total Kjeldahl Nitrogen *	11.8	mg/L	1.00		EPA 351.3	B805117	02/02/18 17:36	EPA 351.3	JL	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	01/26/18 19:30	EPA 300.0	JL	
Total Dissolved Solids *	1840	mg/L	50.0		SM2540D	B805078	01/31/18 16:00	SM2540C	JL	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B805019	01/26/18 19:30	EPA 300.0	JL	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B805019	01/26/18 19:30	EPA 300.0	JL	
<b>Total Metals</b>										
Phosphorus *	0.224	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:21	EPA 200.7	XE	



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

Sample ID #: #9 Lower Lake

Sampling Method: Grab

Lab Sample ID #: 1801312-05

Sample Matrix: Liquid

Date/Time Collected: 01/25/18 11:20

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	76.0	mg/L	0.010		SM2540E	B806012	01/26/18 16:30	SM2540E	JL	
Total Alkalinity *	100	mg/L as CaCO3	20.0		SM2320B	B805116	02/02/18 16:30	SM2320B	JL	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B805009	01/29/18 15:11	4500NH3CB	JL	
CBOD *	13.1	mg/L	2.00		SM5210B	B805060	01/31/18 11:00	SM5210B	JL	
Total Suspended Solids *	76.0	mg/L	50.0		SM2540D	B805002	01/26/18 15:10	SM2540D	JL	
Total Kjeldahl Nitrogen *	9.50	mg/L	1.00		EPA 351.3	B805117	02/02/18 17:36	EPA 351.3	JL	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	01/26/18 19:47	EPA 300.0	JL	
Total Dissolved Solids *	1620	mg/L	50.0		SM2540D	B805078	01/31/18 16:00	SM2540C	JL	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B805019	01/26/18 19:47	EPA 300.0	JL	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B805019	01/26/18 19:47	EPA 300.0	JL	
<b>Total Metals</b>										
Phosphorus *	0.161	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:27	EPA 200.7	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

Reported:  
02/07/18 14:21  
Received:  
01/25/18 16:04

Additional Notes:

Report No. 1801312

Sample ID #: Field Blank

Sampling Method: Grab

Lab Sample ID #: 1801312-06

Sample Matrix: Liquid

Date/Time Collected: 01/25/18 13:40

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Cyanide, Total *	<0.020	mg/L	0.020		SM4500-CN C	B805089	02/01/18 16:20	4500CN_C&E	JL	
Hexavalent Chromium *	<0.005	mg/L	0.005			B805003	01/26/18 11:00	I-1230-85	JL	
<b>Total Metals</b>										
Antimony *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:33	EPA 200.7	XE	
Arsenic *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:33	EPA 200.7	XE	
Beryllium *	<0.004	mg/L	0.004		EPA 200.7	B805001	01/29/18 14:33	EPA 200.7	XE	
Cadmium *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:33	EPA 200.7	XE	
Chromium *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:33	EPA 200.7	XE	
Copper *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:33	EPA 200.7	XE	
Mercury *	<0.0002	mg/L	0.0002		EPA 245.1	B804100	01/26/18 15:21	EPA 245.1	ME	
Lead *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:33	EPA 200.7	XE	
Nickel *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:33	EPA 200.7	XE	
Selenium *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:33	EPA 200.7	XE	
Silver *	<0.005	mg/L	0.005		EPA 200.7	B805001	01/29/18 14:33	EPA 200.7	XE	
Thallium *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:33	EPA 200.7	XE	
Zinc *	<0.010	mg/L	0.010		EPA 200.7	B805001	01/29/18 14:33	EPA 200.7	XE	
<b>Trivalent Chromium (Calculated)</b>										
Trivalent Chromium	<0.00500	mg/L	0.00500		[CALC]	[CALC]	01/29/18 14:33	CALC	JL	
<b>Polychlorinated Biphenyls [PCB]</b>										
PCB 1016 *	<0.0002	mg/L	0.0002		EPA 3510C	B805114	02/05/18 19:25	EPA 608	REB	
PCB 1221 *	<0.0002	mg/L	0.0002		EPA 3510C	B805114	02/05/18 19:25	EPA 608	REB	
PCB 1232 *	<0.0002	mg/L	0.0002		EPA 3510C	B805114	02/05/18 19:25	EPA 608	REB	
PCB 1242 *	<0.0002	mg/L	0.0002		EPA 3510C	B805114	02/05/18 19:25	EPA 608	REB	
PCB 1248 *	<0.0002	mg/L	0.0002		EPA 3510C	B805114	02/05/18 19:25	EPA 608	REB	
PCB 1254 *	<0.0002	mg/L	0.0002		EPA 3510C	B805114	02/05/18 19:25	EPA 608	REB	
PCB 1260 *	<0.0002	mg/L	0.0002		EPA 3510C	B805114	02/05/18 19:25	EPA 608	REB	
Surrogate: Decachlorobiphenyl	68 %	36-150			EPA 3510C	B805114	02/05/18 19:25	EPA 608	REB	
Surrogate: Tetrachloro-meta-xylene	44 %	28-131			EPA 3510C	B805114	02/05/18 19:25	EPA 608	REB	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

Sample ID #: Field Blank

Sampling Method: Grab

Lab Sample ID #: 1801312-06

Sample Matrix: Liquid

Date/Time Collected: 01/25/18 13:40

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>Chlorinated Pesticides by GC/ECD</b>										
alpha-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
gamma-BHC (Lindane) *	<0.0001	mg/L	0.0001	8	EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
beta-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
delta-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
Heptachlor *	<0.0001	mg/L	0.0001	0.16	EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
Aldrin *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
Heptachlor Epoxide *	<0.0001	mg/L	0.0001	0.16	EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
gamma-Chlordane *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
alpha-Chlordane *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
Endosulfan I *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
4,4'-DDE *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
Dieldrin *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
Endrin *	<0.0001	mg/L	0.0001	0.4	EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
4,4'-DDD *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
Endosulfan II *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
4,4'-DDT *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
Endrin Aldehyde *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
Endosulfan Sulfate *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
Methoxychlor *	<0.0001	mg/L	0.0001	200	EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
Endrin Ketone *	<0.0001	mg/L	0.0001		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
Toxaphene *	<0.01	mg/L	0.01	10	EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	
Surrogate: Decachlorobiphenyl	75 %		36-150		EPA 3510C	B805115	02/05/18 19:25	EPA 608	REB	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
<b>Batch B805002 - SM2540D</b>									
<b>Blank (B805002-BLK1)</b>				Prepared: 01/26/18 14:00 Analyzed: 01/26/18 15:10					
Total Suspended Solids	<2.50	2.50	mg/L						
<b>LCS (B805002-BS1)</b>				Prepared: 01/26/18 14:00 Analyzed: 01/26/18 15:10					
Total Suspended Solids	100	25.0	mg/L	100		100	80-120		
<b>LCS Dup (B805002-BSD1)</b>				Prepared: 01/26/18 14:00 Analyzed: 01/26/18 15:10					
Total Suspended Solids	93.0	25.0	mg/L	100		93	80-120	7	20
<b>Duplicate (B805002-DUP1)</b>				<b>Source: 1801304-06</b>		Prepared: 01/26/18 14:00 Analyzed: 01/26/18 15:10			
Total Suspended Solids	90.0	25.0	mg/L		89.0			1	20
<b>Batch B805003 - NO PREP</b>									
<b>Blank (B805003-BLK1)</b>				Prepared: 01/26/18 10:33 Analyzed: 01/26/18 11:00					
Hexavalent Chromium	<0.005	0.005	mg/L						
<b>LCS (B805003-BS1)</b>				Prepared: 01/26/18 10:33 Analyzed: 01/26/18 11:00					
Hexavalent Chromium	0.413	0.005	mg/L	0.400		103	80-120		
<b>LCS Dup (B805003-BSD1)</b>				Prepared: 01/26/18 10:33 Analyzed: 01/26/18 11:00					
Hexavalent Chromium	0.404	0.005	mg/L	0.400		101	80-120	2	20
<b>Duplicate (B805003-DUP1)</b>				<b>Source: 1801283-01</b>		Prepared: 01/26/18 10:33 Analyzed: 01/26/18 11:00			
Hexavalent Chromium	<0.005	0.005	mg/L	<0.005					20
<b>Matrix Spike (B805003-MS1)</b>				<b>Source: 1801283-01</b> Prepared: 01/26/18 10:33 Analyzed: 01/26/18 11:00					
Hexavalent Chromium	0.376	0.005	mg/L	0.400	<0.005	94	80-120		
<b>Batch B805009 - SM4500NH3B</b>									
<b>Blank (B805009-BLK1)</b>				Prepared: 01/29/18 09:30 Analyzed: 01/29/18 14:04					
Ammonia-Nitrogen	<1.00	1.00	mg/L						
<b>LCS (B805009-BS1)</b>				Prepared: 01/29/18 09:30 Analyzed: 01/29/18 14:04					
Ammonia-Nitrogen	19.6	1.00	mg/L	20.0		98	80-120		
<b>LCS Dup (B805009-BSD1)</b>				Prepared: 01/29/18 09:30 Analyzed: 01/29/18 14:04					
Ammonia-Nitrogen	19.0	1.00	mg/L	20.0		95	80-120	3	20
<b>Duplicate (B805009-DUP1)</b>				<b>Source: 1801282-01</b>		Prepared: 01/29/18 09:30 Analyzed: 01/29/18 14:04			
Ammonia-Nitrogen	10.0	1.00	mg/L		9.00			11	20

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	---------	-----------

**Batch B805060 - SM5210B**

<b>Blank (B805060-BLK1)</b>				Prepared: 01/26/18 11:45 Analyzed: 01/31/18 11:00					
CBOD	<2.00	2.00	mg/L						
<b>LCS (B805060-BS1)</b>				Prepared: 01/26/18 11:45 Analyzed: 01/31/18 11:00					
CBOD	172	2.00	mg/L	200		86	80-120		
<b>LCS Dup (B805060-BSD1)</b>				Prepared: 01/26/18 11:45 Analyzed: 01/31/18 11:00					
CBOD	178	2.00	mg/L	200		89	80-120	3 20	

**Batch B805078 - SM2540D**

<b>Blank (B805078-BLK1)</b>				Prepared: 01/31/18 12:00 Analyzed: 01/31/18 16:00					
Total Dissolved Solids	<10.0	10.0	mg/L						
<b>LCS (B805078-BS1)</b>				Prepared: 01/31/18 12:00 Analyzed: 01/31/18 16:00					
Total Dissolved Solids	93.0	10.0	mg/L	100		93	80-120		
<b>LCS Dup (B805078-BSD1)</b>				Prepared: 01/31/18 12:00 Analyzed: 01/31/18 16:00					
Total Dissolved Solids	92.0	10.0	mg/L	100		92	80-120	1 20	
<b>Duplicate (B805078-DUP1)</b>				<b>Source: 1801370-02</b> Prepared: 01/31/18 12:00 Analyzed: 01/31/18 16:00					
Total Dissolved Solids	4940	200	mg/L	5720				15 20	

**Batch B805089 - SM4500-CN C**

<b>Blank (B805089-BLK1)</b>				Prepared: 02/01/18 12:00 Analyzed: 02/01/18 16:20					
Cyanide, Total	<0.020	0.020	mg/L						
<b>LCS (B805089-BS1)</b>				Prepared: 02/01/18 12:00 Analyzed: 02/01/18 16:20					
Cyanide, Total	0.103	0.020	mg/L	0.100		103	80-120		
<b>LCS Dup (B805089-BSD1)</b>				Prepared: 02/01/18 12:00 Analyzed: 02/01/18 16:20					
Cyanide, Total	0.0950	0.020	mg/L	0.100		95	80-120	8 20	
<b>Duplicate (B805089-DUP1)</b>				<b>Source: 1801312-02</b> Prepared: 02/01/18 12:00 Analyzed: 02/01/18 16:20					
Cyanide, Total	<0.020	0.020	mg/L	<0.020				20	
<b>Matrix Spike (B805089-MS1)</b>				<b>Source: 1801312-02</b> Prepared: 02/01/18 12:00 Analyzed: 02/01/18 16:20					
Cyanide, Total	0.101	0.020	mg/L	0.100	<0.020	101	80-120		

**Batch B805116 - SM2320B**

<b>Blank (B805116-BLK1)</b>				Prepared: 02/02/18 14:00 Analyzed: 02/02/18 16:30					
-----------------------------	--	--	--	---	--	--	--	--	--

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B805116 - SM2320B**

Total Alkalinity <20.0 20.0 mg/L as CaCO3

**LCS (B805116-BS1)**

Prepared: 02/02/18 14:00 Analyzed: 02/02/18 16:30

Total Alkalinity 100 20.0 mg/L as CaCO3 106 94 80-120

**LCS Dup (B805116-BSD1)**

Prepared: 02/02/18 14:00 Analyzed: 02/02/18 16:30

Total Alkalinity 104 20.0 mg/L as CaCO3 106 98 80-120 4 20

**Duplicate (B805116-DUP1)**

Source: 1801312-01

Prepared: 02/02/18 14:00 Analyzed: 02/02/18 16:30

Total Alkalinity 92.0 20.0 mg/L as CaCO3 104 12 20

**Batch B805117 - EPA 351.3**

**Blank (B805117-BLK1)**

Prepared: 02/01/18 10:00 Analyzed: 02/02/18 17:36

Total Kjeldahl Nitrogen <1.00 1.00 mg/L

**LCS (B805117-BS1)**

Prepared: 02/01/18 10:00 Analyzed: 02/02/18 17:36

Total Kjeldahl Nitrogen 20.7 1.00 mg/L 20.0 104 80-120

**LCS Dup (B805117-BSD1)**

Prepared: 02/01/18 10:00 Analyzed: 02/02/18 17:36

Total Kjeldahl Nitrogen 19.6 1.00 mg/L 20.0 98 80-120 5 20

**Duplicate (B805117-DUP1)**

Source: 1801312-01

Prepared: 02/01/18 10:00 Analyzed: 02/02/18 17:36

Total Kjeldahl Nitrogen 10.0 1.00 mg/L 7.80 25 20 S

**Matrix Spike (B805117-MS1)**

Source: 1801312-01

Prepared: 02/01/18 10:00 Analyzed: 02/02/18 17:36

Total Kjeldahl Nitrogen 26.3 1.00 mg/L 20.0 7.80 92 80-120

**Batch B806012 - SM2540E**

**Blank (B806012-BLK1)**

Prepared: 01/26/18 15:00 Analyzed: 01/26/18 16:30

Volatile Suspended Solids <0.010 0.010 mg/L

**Anions by Ion Chromatography - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B805019 - EPA 300.0**

**Blank (B805019-BLK1)**

Prepared: 01/26/18 17:00 Analyzed: 01/26/18 17:11

Nitrite as N <0.10 0.10 mg/L



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

**Anions by Ion Chromatography - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	
<b>Batch B805019 - EPA 300.0</b>									
<b>Blank (B805019-BLK1)</b>					Prepared: 01/26/18 17:00 Analyzed: 01/26/18 17:11				
Nitrate as N	<0.10	0.10	mg/L						
<b>LCS (B805019-BS1)</b>					Prepared: 01/26/18 17:00 Analyzed: 01/26/18 17:28				
Nitrite as N	5.22	0.10	mg/L	5.00		104	90-110		
Nitrate as N	5.33	0.10	mg/L	5.00		107	90-110		
<b>LCS Dup (B805019-BSD1)</b>					Prepared: 01/26/18 17:00 Analyzed: 01/26/18 17:46				
Nitrite as N	5.21	0.10	mg/L	5.00		104	90-110	0.3	
Nitrate as N	5.33	0.10	mg/L	5.00		107	90-110	0.1	
<b>Duplicate (B805019-DUP1)</b>					<b>Source: 1801312-01</b> Prepared: 01/26/18 17:00 Analyzed: 01/26/18 18:20				
Nitrite as N	<0.10	0.10	mg/L	<0.10				20	
Nitrate as N	<0.10	0.10	mg/L	<0.10				20	
<b>Matrix Spike (B805019-MS1)</b>					<b>Source: 1801312-01</b> Prepared: 01/26/18 17:00 Analyzed: 01/26/18 18:38				
Nitrite as N	4.48	0.10	mg/L	5.00	<0.10	90	90-110	M	
Nitrate as N	5.27	0.10	mg/L	5.00	<0.10	105	90-110		

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	
<b>Batch B804100 - EPA 245.1</b>									
<b>Blank (B804100-BLK1)</b>					Prepared: 01/26/18 09:30 Analyzed: 01/26/18 14:47				
Mercury	<0.0002	0.0002	mg/L						
<b>LCS (B804100-BS1)</b>					Prepared: 01/26/18 09:30 Analyzed: 01/26/18 14:49				
Mercury	0.00954	0.0002	mg/L	0.0100		95	85-115		
<b>LCS Dup (B804100-BSD1)</b>					Prepared: 01/26/18 09:30 Analyzed: 01/26/18 14:51				
Mercury	0.00937	0.0002	mg/L	0.0100		94	85-115	2	
<b>Duplicate (B804100-DUP1)</b>					<b>Source: 1801304-06</b> Prepared: 01/26/18 09:30 Analyzed: 01/26/18 15:01				
Mercury	<0.0002	0.0002	mg/L	<0.0002				25	
<b>Matrix Spike (B804100-MS1)</b>					<b>Source: 1801304-06</b> Prepared: 01/26/18 09:30 Analyzed: 01/26/18 15:04				
Mercury	0.00877	0.0002	mg/L	0.0100	<0.0002	88	75-125		

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B805001 - EPA 200.7**

**Blank (B805001-BLK1)**

Prepared: 01/29/18 09:00 Analyzed: 01/29/18 13:06

Antimony	<0.010	0.010	mg/L						
Arsenic	<0.010	0.010	mg/L						
Beryllium	<0.004	0.004	mg/L						
Cadmium	<0.010	0.010	mg/L						
Chromium	<0.010	0.010	mg/L						
Copper	<0.010	0.010	mg/L						
Lead	<0.010	0.010	mg/L						
Nickel	<0.010	0.010	mg/L						
Phosphorus	<0.010	0.010	mg/L						
Selenium	<0.010	0.010	mg/L						
Silver	<0.005	0.005	mg/L						
Thallium	<0.010	0.010	mg/L						
Zinc	<0.010	0.010	mg/L						

**LCS (B805001-BS1)**

Prepared: 01/29/18 09:00 Analyzed: 01/29/18 13:12

Antimony	1.88	0.010	mg/L	2.00	94	85-115			
Arsenic	1.89	0.010	mg/L	2.00	94	85-115			
Beryllium	1.92	0.004	mg/L	2.00	96	85-115			
Cadmium	1.88	0.010	mg/L	2.00	94	85-115			
Chromium	1.90	0.010	mg/L	2.00	95	85-115			
Copper	1.87	0.010	mg/L	2.00	94	85-115			
Lead	1.91	0.010	mg/L	2.00	95	85-115			
Nickel	1.90	0.010	mg/L	2.00	95	85-115			
Phosphorus	1.90	0.010	mg/L	2.00	95	85-115			
Selenium	1.89	0.010	mg/L	2.00	94	85-115			
Silver	0.963	0.005	mg/L	1.00	96	85-115			
Thallium	1.91	0.010	mg/L	2.00	95	85-115			
Zinc	1.88	0.010	mg/L	2.00	94	85-115			

**LCS Dup (B805001-BSD1)**

Prepared: 01/29/18 09:00 Analyzed: 01/29/18 13:17

Antimony	1.86	0.010	mg/L	2.00	93	85-115	1	20
Arsenic	1.87	0.010	mg/L	2.00	93	85-115	1	20
Beryllium	1.90	0.004	mg/L	2.00	95	85-115	1	20
Cadmium	1.86	0.010	mg/L	2.00	93	85-115	1	20
Chromium	1.87	0.010	mg/L	2.00	94	85-115	1	20
Copper	1.85	0.010	mg/L	2.00	92	85-115	1	20
Lead	1.88	0.010	mg/L	2.00	94	85-115	1	20
Nickel	1.88	0.010	mg/L	2.00	94	85-115	1	20

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B805001 - EPA 200.7**

**LCS Dup (B805001-bsd1)**

Prepared: 01/29/18 09:00 Analyzed: 01/29/18 13:17

Phosphorus	1.87	0.010	mg/L	2.00		94	85-115	2	20
Selenium	1.87	0.010	mg/L	2.00		93	85-115	1	20
Silver	0.957	0.005	mg/L	1.00		96	85-115	0.6	20
Thallium	1.89	0.010	mg/L	2.00		94	85-115	0.9	20
Zinc	1.86	0.010	mg/L	2.00		93	85-115	1	20

**Duplicate (B805001-DUP1)**

Source: 1801304-06

Prepared: 01/29/18 09:00 Analyzed: 01/29/18 13:29

Antimony	<0.010	0.010	mg/L	<0.010					20
Arsenic	<0.010	0.010	mg/L	0.00110					20
Beryllium	<0.004	0.004	mg/L	<0.004					20
Cadmium	<0.010	0.010	mg/L	<0.010					20
Chromium	0.00190	0.010	mg/L	0.00200				5	20
Copper	0.0721	0.010	mg/L	0.0671				7	20
Lead	0.00490	0.010	mg/L	0.00490				0	20
Nickel	0.00240	0.010	mg/L	0.00210				13	20
Phosphorus	8.32	0.010	mg/L	7.60				9	20
Selenium	<0.010	0.010	mg/L	0.00390					20
Silver	<0.005	0.005	mg/L	0.000700					20
Thallium	<0.010	0.010	mg/L	<0.010					20
Zinc	0.114	0.010	mg/L	0.106				8	20

**Duplicate (B805001-DUP2)**

Source: 1801324-02

Prepared: 01/29/18 09:00 Analyzed: 01/29/18 15:19

Antimony	<0.010	0.010	mg/L	0.00230					20
Arsenic	<0.010	0.010	mg/L	<0.010					20
Beryllium	<0.004	0.004	mg/L	<0.004					20
Cadmium	0.00100	0.010	mg/L	0.000900				11	20
Chromium	0.000900	0.010	mg/L	0.00100				11	20
Copper	0.00230	0.010	mg/L	0.00220				4	20
Lead	0.000700	0.010	mg/L	0.000800				13	20
Nickel	0.000700	0.010	mg/L	<0.010					20
Phosphorus	0.127	0.010	mg/L	0.124				2	20
Selenium	<0.010	0.010	mg/L	<0.010					20
Silver	<0.005	0.005	mg/L	<0.005					20
Thallium	<0.010	0.010	mg/L	<0.010					20
Zinc	0.0480	0.010	mg/L	0.0451				6	20

**Matrix Spike (B805001-MS1)**

Source: 1801304-06

Prepared: 01/29/18 09:00 Analyzed: 01/29/18 13:51

Antimony	1.93	0.010	mg/L	2.00	<0.010	96	75-125		
----------	------	-------	------	------	--------	----	--------	--	--

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B805001 - EPA 200.7**

**Matrix Spike (B805001-MS1)**

Source: 1801304-06

Prepared: 01/29/18 09:00 Analyzed: 01/29/18 13:51

Arsenic	2.05	0.010	mg/L	2.00	0.00110	102	75-125		
Beryllium	2.02	0.004	mg/L	2.00	<0.004	101	75-125		
Cadmium	1.94	0.010	mg/L	2.00	<0.010	97	75-125		
Chromium	1.92	0.010	mg/L	2.00	0.00200	96	75-125		
Copper	1.92	0.010	mg/L	2.00	0.0671	93	75-125		
Lead	1.97	0.010	mg/L	2.00	0.00490	98	75-125		
Nickel	2.00	0.010	mg/L	2.00	0.00210	100	75-125		
Phosphorus	10.1	0.010	mg/L	2.00	7.60	125	75-125		M
Selenium	2.01	0.010	mg/L	2.00	0.00390	100	75-125		
Silver	1.05	0.005	mg/L	1.00	0.000700	105	75-125		
Thallium	1.85	0.010	mg/L	2.00	<0.010	92	75-125		
Zinc	2.09	0.010	mg/L	2.00	0.106	99	75-125		

**Matrix Spike (B805001-MS2)**

Source: 1801324-02

Prepared: 01/29/18 09:00 Analyzed: 01/29/18 15:25

Antimony	1.97	0.010	mg/L	2.00	0.00230	98	75-125		
Arsenic	2.01	0.010	mg/L	2.00	<0.010	100	75-125		
Beryllium	1.98	0.004	mg/L	2.00	<0.004	99	75-125		
Cadmium	1.92	0.010	mg/L	2.00	0.000900	96	75-125		
Chromium	1.92	0.010	mg/L	2.00	0.00100	96	75-125		
Copper	1.87	0.010	mg/L	2.00	0.00220	94	75-125		
Lead	1.92	0.010	mg/L	2.00	0.000800	96	75-125		
Nickel	1.92	0.010	mg/L	2.00	<0.010	96	75-125		
Phosphorus	2.14	0.010	mg/L	2.00	0.124	101	75-125		
Selenium	1.97	0.010	mg/L	2.00	<0.010	99	75-125		
Silver	1.00	0.005	mg/L	1.00	<0.005	100	75-125		
Thallium	1.91	0.010	mg/L	2.00	<0.010	95	75-125		
Zinc	2.00	0.010	mg/L	2.00	0.0451	98	75-125		

**Polychlorinated Biphenyls [PCB] - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B805114 - EPA 3510C**

**Blank (B805114-BLK1)**

Prepared: 02/01/18 08:00 Analyzed: 02/05/18 14:22

PCB 1016	<0.0001	0.0001	mg/L						
----------	---------	--------	------	--	--	--	--	--	--

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

**Polychlorinated Biphenyls [PCB] - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B805114 - EPA 3510C**

**Blank (B805114-BLK1)**

Prepared: 02/01/18 08:00 Analyzed: 02/05/18 14:22

PCB 1221	<0.0001	0.0001	mg/L						
PCB 1232	<0.0001	0.0001	mg/L						
PCB 1242	<0.0001	0.0001	mg/L						
PCB 1248	<0.0001	0.0001	mg/L						
PCB 1254	<0.0001	0.0001	mg/L						
PCB 1260	<0.0001	0.0001	mg/L						

**LCS (B805114-BS1)**

Prepared: 02/01/18 08:00 Analyzed: 02/05/18 14:35

PCB 1016	0.00825	0.0001	mg/L	0.0100		82	50-114		
PCB 1260	0.00839	0.0001	mg/L	0.0100		84	8-127		

**LCS Dup (B805114-BSD1)**

Prepared: 02/01/18 08:00 Analyzed: 02/05/18 14:47

PCB 1016	0.00825	0.0001	mg/L	0.0100		83	50-114	0.06	38
PCB 1260	0.00884	0.0001	mg/L	0.0100		88	8-127	5	34

**Matrix Spike (B805114-MS1)**

Source: 1801312-06

Prepared: 02/01/18 08:00 Analyzed: 02/05/18 15:13

PCB 1016	0.00632	0.0001	mg/L	0.0100	<0.0001	63	35-146		
PCB 1260	0.00624	0.0001	mg/L	0.0100	<0.0001	62	40-140		

**Chlorinated Pesticides by GC/ECD - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B805115 - EPA 3510C**

**Blank (B805115-BLK1)**

Prepared: 02/01/18 08:00 Analyzed: 02/05/18 14:22

alpha-BHC	<0.0001	0.0001	mg/L						
gamma-BHC (Lindane)	<0.0001	0.0001	mg/L						
beta-BHC	<0.0001	0.0001	mg/L						
delta-BHC	<0.0001	0.0001	mg/L						
Heptachlor	<0.0001	0.0001	mg/L						
Aldrin	<0.0001	0.0001	mg/L						
Heptachlor Epoxide	<0.0001	0.0001	mg/L						
gamma-Chlordane	<0.0001	0.0001	mg/L						
alpha-Chlordane	<0.0001	0.0001	mg/L						
Endosulfan I	<0.0001	0.0001	mg/L						
4,4'-DDE	<0.0001	0.0001	mg/L						

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

**Chlorinated Pesticides by GC/ECD - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B805115 - EPA 3510C**

**Blank (B805115-BLK1)**

Prepared: 02/01/18 08:00 Analyzed: 02/05/18 14:22

Dieldrin	<0.0001	0.0001	mg/L						
Endrin	<0.0001	0.0001	mg/L						
4,4'-DDD	<0.0001	0.0001	mg/L						
Endosulfan II	<0.0001	0.0001	mg/L						
4,4'-DDT	<0.0001	0.0001	mg/L						
Endrin Aldehyde	<0.0001	0.0001	mg/L						
Endosulfan Sulfate	<0.0001	0.0001	mg/L						
Methoxychlor	<0.0001	0.0001	mg/L						
Endrin Ketone	<0.0001	0.0001	mg/L						
Toxaphene	<0.01	0.01	mg/L						

Surrogate: Decachlorobiphenyl

0.000557

mg/L

0.00100

56

36-150

**LCS (B805115-BS1)**

Prepared: 02/01/18 08:00 Analyzed: 02/05/18 18:55

alpha-BHC	0.000776	0.0001	mg/L	0.00100		78	37-134		
gamma-BHC (Lindane)	0.000770	0.0001	mg/L	0.00100		77	32-127		
beta-BHC	0.000769	0.0001	mg/L	0.00100		77	17-147		
delta-BHC	0.000752	0.0001	mg/L	0.00100		75	19-140		
Heptachlor	0.000794	0.0001	mg/L	0.00100		79	34-111		
Aldrin	0.000747	0.0001	mg/L	0.00100		75	42-122		
Heptachlor Epoxide	0.000755	0.0001	mg/L	0.00100		76	37-142		
gamma-Chlordane	0.000791	0.0001	mg/L	0.00100		79	45-119		
alpha-Chlordane	0.000797	0.0001	mg/L	0.00100		80	45-119		
Endosulfan I	0.000802	0.0001	mg/L	0.00100		80	45-153		
4,4'-DDE	0.000784	0.0001	mg/L	0.00100		78	30-145		
Dieldrin	0.000736	0.0001	mg/L	0.00100		74	36-146		
Endrin	0.000822	0.0001	mg/L	0.00100		82	30-147		
4,4'-DDD	0.000884	0.0001	mg/L	0.00100		88	31-141		
Endosulfan II	0.000861	0.0001	mg/L	0.00100		86	5-202		
4,4'-DDT	0.000857	0.0001	mg/L	0.00100		86	25-160		
Endrin Aldehyde	0.000894	0.0001	mg/L	0.00100		89	31-144		
Endosulfan Sulfate	0.000913	0.0001	mg/L	0.00100		91	26-144		
Methoxychlor	0.000947	0.0001	mg/L	0.00100		95	46-177		
Endrin Ketone	0.000771	0.0001	mg/L	0.00100		77	39-149		

Surrogate: Decachlorobiphenyl

0.00101

mg/L

0.00100

101

36-150

**LCS Dup (B805115-BSD1)**

Prepared: 02/01/18 08:00 Analyzed: 02/05/18 19:10

alpha-BHC	0.000748	0.0001	mg/L	0.00100		75	37-134	4	22
-----------	----------	--------	------	---------	--	----	--------	---	----

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

**Chlorinated Pesticides by GC/ECD - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B805115 - EPA 3510C**

**LCS Dup (B805115-BSD1)**

Prepared: 02/01/18 08:00 Analyzed: 02/05/18 19:10

gamma-BHC (Lindane)	0.000750	0.0001	mg/L	0.00100		75	32-127	3	25
beta-BHC	0.000753	0.0001	mg/L	0.00100		75	17-147	2	20
delta-BHC	0.000730	0.0001	mg/L	0.00100		73	19-140	3	22
Heptachlor	0.000767	0.0001	mg/L	0.00100		77	34-111	4	22
Aldrin	0.000731	0.0001	mg/L	0.00100		73	42-122	2	22
Heptachlor Epoxide	0.000741	0.0001	mg/L	0.00100		74	37-142	2	25
gamma-Chlordane	0.000779	0.0001	mg/L	0.00100		78	45-119	1	20
alpha-Chlordane	0.000783	0.0001	mg/L	0.00100		78	45-119	2	20
Endosulfan I	0.000790	0.0001	mg/L	0.00100		79	45-153	1	23
4,4'-DDE	0.000780	0.0001	mg/L	0.00100		78	30-145	0.6	22
Dieldrin	0.000727	0.0001	mg/L	0.00100		73	36-146	1	21
Endrin	0.000814	0.0001	mg/L	0.00100		81	30-147	1	21
4,4'-DDD	0.000897	0.0001	mg/L	0.00100		90	31-141	2	21
Endosulfan II	0.000862	0.0001	mg/L	0.00100		86	5-202	0.09	22
4,4'-DDT	0.000866	0.0001	mg/L	0.00100		87	25-160	1	29
Endrin Aldehyde	0.000899	0.0001	mg/L	0.00100		90	31-144	0.6	30
Endosulfan Sulfate	0.000923	0.0001	mg/L	0.00100		92	26-144	1	23
Methoxychlor	0.000961	0.0001	mg/L	0.00100		96	46-177	1	22
Endrin Ketone	0.000780	0.0001	mg/L	0.00100		78	39-149	1	19
Surrogate: Decachlorobiphenyl	0.00102		mg/L	0.00100		102	36-150		

**Duplicate (B805115-DUP1)**

Source: 1801312-06

Prepared: 02/01/18 08:00 Analyzed: 02/05/18 19:40

alpha-BHC	<0.0001	0.0001	mg/L		<0.0001				20
gamma-BHC (Lindane)	<0.0001	0.0001	mg/L		<0.0001				20
beta-BHC	<0.0001	0.0001	mg/L		<0.0001				20
delta-BHC	<0.0001	0.0001	mg/L		<0.0001				20
Heptachlor	<0.0001	0.0001	mg/L		<0.0001				20
Aldrin	<0.0001	0.0001	mg/L		<0.0001				20
Heptachlor Epoxide	<0.0001	0.0001	mg/L		<0.0001				20
gamma-Chlordane	<0.0001	0.0001	mg/L		<0.0001				20
alpha-Chlordane	<0.0001	0.0001	mg/L		<0.0001				20
Endosulfan I	<0.0001	0.0001	mg/L		<0.0001				20
4,4'-DDE	<0.0001	0.0001	mg/L		<0.0001				20
Dieldrin	<0.0001	0.0001	mg/L		<0.0001				20
Endrin	<0.0001	0.0001	mg/L		<0.0001				20
4,4'-DDD	<0.0001	0.0001	mg/L		<0.0001				20
Endosulfan II	<0.0001	0.0001	mg/L		<0.0001				20

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

**Chlorinated Pesticides by GC/ECD - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B805115 - EPA 3510C**

**Duplicate (B805115-DUP1)**

Source: 1801312-06

Prepared: 02/01/18 08:00 Analyzed: 02/05/18 19:40

4,4'-DDT	<0.0001	0.0001	mg/L		<0.0001				20
Endrin Aldehyde	<0.0001	0.0001	mg/L		<0.0001				20
Endosulfan Sulfate	<0.0001	0.0001	mg/L		<0.0001				20
Methoxychlor	<0.0001	0.0001	mg/L		<0.0001				20
Endrin Ketone	<0.0001	0.0001	mg/L		<0.0001				20
Toxaphene	<0.01	0.01	mg/L		<0.01				20

Surrogate: Decachlorobiphenyl 0.000782 mg/L 0.00100 78 36-150

**Matrix Spike (B805115-MS1)**

Source: 1801312-06

Prepared: 02/01/18 08:00 Analyzed: 02/05/18 19:54

alpha-BHC	0.000630	0.0001	mg/L	0.00100	<0.0001	63	30-135		
gamma-BHC (Lindane)	0.000650	0.0001	mg/L	0.00100	<0.0001	65	34-138		
beta-BHC	0.000688	0.0001	mg/L	0.00100	<0.0001	69	34-128		
delta-BHC	0.000659	0.0001	mg/L	0.00100	<0.0001	66	32-148		
Heptachlor	0.000657	0.0001	mg/L	0.00100	<0.0001	66	33-145		
Aldrin	0.000656	0.0001	mg/L	0.00100	<0.0001	66	18-127		
Heptachlor Epoxide	0.000664	0.0001	mg/L	0.00100	<0.0001	66	28-132		
gamma-Chlordane	0.000697	0.0001	mg/L	0.00100	<0.0001	70	29-128		
alpha-Chlordane	0.000703	0.0001	mg/L	0.00100	<0.0001	70	27-121		
Endosulfan I	0.000727	0.0001	mg/L	0.00100	<0.0001	73	26-130		
4,4'-DDE	0.000713	0.0001	mg/L	0.00100	<0.0001	71	20-136		
Dieldrin	0.000683	0.0001	mg/L	0.00100	<0.0001	68	25-132		
Endrin	0.000719	0.0001	mg/L	0.00100	<0.0001	72	34-169		
4,4'-DDD	0.000780	0.0001	mg/L	0.00100	<0.0001	78	28-137		
Endosulfan II	0.000754	0.0001	mg/L	0.00100	<0.0001	75	27-136		
4,4'-DDT	0.000746	0.0001	mg/L	0.00100	<0.0001	75	12-138		
Endrin Aldehyde	0.000793	0.0001	mg/L	0.00100	<0.0001	79	22-135		
Endosulfan Sulfate	0.000784	0.0001	mg/L	0.00100	<0.0001	78	36-162		
Methoxychlor	0.000824	0.0001	mg/L	0.00100	<0.0001	82	54-147		
Endrin Ketone	0.000690	0.0001	mg/L	0.00100	<0.0001	69	37-132		

Surrogate: Decachlorobiphenyl 0.000847 mg/L 0.00100 85 36-150





NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

**SAMPLE QUALIFIERS**

Z Sample had heavy emulsion during extraction process and crystal formation during sample concentration.

**DEFINITIONS**

- \* TNI / NELAC accredited analyte
- PQL Practical Quantitation Limit
- MCL Maximum Contaminant Level
- mg/Kg Milligrams per Kilogram (Parts per Million)
- mg/L Milligrams per Liter (Parts per Million)
- PPM Parts per Million
- L LCS recovery is outside QC acceptance limits, the results may have a slight bias.
- M MS recovery is outside QC limits, the results may have a slight bias due to possible matrix interferences.
- RMCCCL Recommended Maximum Concentration of Contaminants Level
- Surr L Surrogate recovery is outside QC limits due to matrix interferences.
- Surr H Surrogate recovery is high due to contribution from hydrocarbon interferences.
- µR/hr MicroRoentgens per hour (Measure of Radioactivity Level)
- HT Sample received past holdtime
- IC Improper Container
- IT Improper Temperature
- V Insufficient Volume
- B Sample collected in Bulk
- S RPD is outside QC limits. This may be due to possible matrix interferences in Matrix spike samples.

Test Methods followed by the laboratory are referenced in the following approved methodology, unless otherwise specified.

- Standard Methods for the Examination of Water and Wastewater, 21st Edition 2005
- Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Rev. March 1983
- EPA SW Test Methods for the Examination of Solid Waste, SW-846, 1996

**Subcontracted Analyses**

Subcontractor Lab	Lab Number	Analysis
ALS Environmental	1801312-02	Total_Phenols
ALS Environmental	1801312-06	Total_Phenols



Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

NELAC Cert. No.: T104704360-17-17

**Reported:**  
02/07/18 14:21  
**Received:**  
01/25/18 16:04

Additional Notes:

**Report No. 1801312**

Aimee Landon For Marcela Gracia Hawk, President For

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Richard Hawk, General Manager

# CHAIN-OF-CUSTODY RECORD

REPORT TO: COMPANY (1) INVOICE TO: P.O. #  
 ADDRESS: 6300 La Cerna Drive #400  
 CITY: Austin TX STATE: ZIP: 78752  
 ATTN: Tim Noack PHONE # 210-233-3742  
 E-MAIL: tim@stl.com

REPORT NUMBER: 100312  
 FAX #:  
 FAX #:  
 E-MAIL: tim@stl.com

COMMENTS/SPECIAL REQUESTS:  
 +300% SAME DAY WHEN POSSIBLE

TRIP 13  YES  NO LPST POLS   
 HARD COPY  YES  NO / FOR STATE COMPLIANCE  YES  NO  
 TEMP. I.R. GUN # 6 SAMPLE TEMPERATURE WITHIN COMPLIANCE (> 0°C ≤ 6°C)  YES  NO INITIAL TO AUTHORIZE BULK ANALYSIS  
 TEMP. ON REPT 2-12 COND. OF SAMPLE Fed

ANALYSIS REQUESTED

DATE: TIME: 1-25-18 12:30  
 RECEIVED BY (SIGNATURE): Jimmy Hill  
 RECEIVED BY (PRINT NAME): Jimmy Hill

DATE: TIME: 1-25-18 13:10  
 RECEIVED BY (SIGNATURE):  
 RECEIVED BY (PRINT NAME):

DATE: TIME: 1-25-18 13:40  
 RECEIVED BY (SIGNATURE):  
 RECEIVED BY (PRINT NAME):

DATE: TIME: 1-25-18 11:20  
 RECEIVED BY (SIGNATURE):  
 RECEIVED BY (PRINT NAME):

PROJECT NAME/LOCATION/SITE: Mitchell Lake

MATRIX: (IH)

SAMPLING METHOD:

DATE: TIME: 1-25-18 12:30

DATE: TIME: 1-25-18 13:10

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

PROJECT NO.:

SAMPLE IDENTIFICATION

DATE: TIME: 1-25-18 12:30

DATE: TIME: 1-25-18 13:10

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 12:30

DATE: TIME: 1-25-18 13:10

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 12:30

DATE: TIME: 1-25-18 13:10

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 12:30

DATE: TIME: 1-25-18 13:10

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 12:30

DATE: TIME: 1-25-18 13:10

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 12:30

DATE: TIME: 1-25-18 13:10

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 12:30

DATE: TIME: 1-25-18 13:10

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 11:20

DATE: TIME: 1-25-18 13:40

DATE: TIME: 1-25-18 13:40

1610 S. Laredo Street, San Antonio, Texas 78207  
 (210) 229-9920 • Fax (210) 229-9921  
 www.satestinglab.com

FORM: COC REV 01/16

Table 2

**Mitchell Lake Quality Treatment Initiatives  
Water and Sediment Quality Study Plan  
Water Sample Analytical Methods, Preservation, and Holding Times**

Category	Parameter	Analytical* Method	Minimum Analytical Level (mg/L)	Detection Limit (mg/L)	Preservation	Holding Time
Conventional Parameters	CBOD <sub>5</sub>	SM 5210 B	2	2	Cool, ≤6 °C	48 hours
	Total Kjeldahl nitrogen	351.3 <sup>(1)</sup>	1	1	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Ammonia	SM 4500-NH <sub>3</sub> B/C <sup>(1)</sup>	1	1	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Nitrate+nitrite	300	0.1	0.01	Cool, ≤6 °C	48 hours
	Total phosphorus	200.7	0.01	0.0013	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Total suspended solids	SM 2540-D	2.5	2.5	Cool, ≤6 °C	7 days
	Volatile suspended solids	SM 2540-E	0.1	0.1	Cool, ≤6 °C	7 days
	Total dissolved solids	SM 2540-C	2	2	Cool, ≤6 °C	7 days
	Alkalinity	SM 2320-B	20	20	Cool, ≤6 °C	14 days
Chlorophyll a	SM 10200 H Modified	(2)	(2)	Cool, ≤6 °C, amber bottle	24 hours	
Pollutants of Potential Concern Parameters	Metals digestion	200.7	N/A		HNO <sub>3</sub> to pH <2	6 months
	Antimony	200.7	0.01	0.0016		
	Arsenic	200.7	0.01	0.0009		
	Beryllium	200.7	0.01	0.0003		
	Cadmium	200.7	0.01	0.0003		
	Chromium, Total	200.7	0.01	0.0031		
	Chromium (III)	Cacl.	0.01	0.0006		
	Copper	200.7	0.01	0.0006		
	Lead	200.7	0.01	0.0006		
	Nickel	200.7	0.01	0.0003		
	Selenium	200.7	0.01	0.0019		
	Silver	200.7	0.005	0.0006		
	Thallium	200.7	0.01	0.0019		
	Zinc	200.7	0.01	0.0003		
	Mercury	245.1	0.002	0.000031	HNO <sub>3</sub> to pH <2, Cool, <6 °C	28 days
	Chromium (VI)	USGS 1-1230-85	0.005	0.0031	Cool, ≤6 °C, NaOH to pH 9.3 - 9.7 or Cool, ≤6 °C, (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	48 hrs
	Cyanide, Total	SM 4500 CN C/E	0.02	0.0041	Cool, ≤6 °C, NaOH to pH>12	14 days
	Phenols, total	420.1	0.05	0.005	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days until extraction
	<b>Organochlorine pesticides</b>	608	<b>ug/L</b>	<b>ug/L</b>	Cool, ≤6 °C	7 days until extraction, 40 days after extraction.
	Aldrin		0.1	0.02		
	Chlordane		0.1	0.02		
	4,4-DDD		0.1	0.02		
	4,4-DDE		0.1	0.01		
	4,4-DDT		0.1	0.03		
	Dieldrin		0.1	0.02		
	Endosulphan, alpha		0.1	0.02		
	Endosulphan, beta		0.1	0.02		
	Endosulphan, sulfate		0.1	0.03		
	Endrin		0.1	0.03		
	Endrin aldehyde		0.1	0.03		
	Heptachlor		0.1	0.04		
	Heptachlor epoxide		0.1	0.02		
alpha Hexachlorocyclohexane	0.1		0.01			
beta Hexachlorocyclohexane	0.1		0.03			
delta Hexachlorocyclohexane	0.1		0.02			
Lindane	0.1		0.02			
PCB 1242	0.2		0.04			
PCB 1254	0.2		0.04			
PCB 1221	0.2	0.04				
PCB 1232	0.2	0.04				
PCB 1248	0.2	0.04				
PCB 1260	0.2	0.02				
PCB 1016	0.2	0.04				
Toxaphene	1	0.5				

(1)Sensitivity and method are for SATL. SAWS method is SM 4500-NH<sub>3</sub>-C and Reporting Limit (RL) is 1.2 mg/L for TKN and 0.25 mg/L for ammonia.

(2)RL is 5 ug/L based on 1,000 ml of sample; due to nature of sample, staff expects to use 5 ml of sample with RL of 1,000 ug/L.



# SAN ANTONIO TESTING LABORATORY, INC.

## Sample Receipt Checklist

Client: Alan Plummer's Assoc Report Number: 1801312  
 Project Name: \_\_\_\_\_ Date Received: 1/25/18  
 Shipped via:  FedEx  UPS  Lonestar  Hand Delivered  DHL  SATL  Other Date Due: 2/5/18  
 Rush:  Specify:  3-5  2  1

### Items to be checked upon Receipt: [Yes, No, N/A]

Item	Yes	No	NA	If NA-reason:
1. Custody Seals present?				
2. Custody Seals intact?				
3. Air Bill included in folder, if received?				
4. Is COC included with samples?				
5. Is COC signed and dated by client?				
6. Sample temperature: Thermal preservation between >0° - 6° C? (Samples that are delivered to the laboratory on the same day that they are collected may not meet this criterion, but are acceptable if they arrive on ice.)				Temp: <u>2-1°C</u>
7. Samples received with ice <input checked="" type="checkbox"/> ice packs <input type="checkbox"/> other cooling <input type="checkbox"/>				
8. Is the COC filled out correctly, and completely?				
9. Information on the COC matches the samples?				
10. Samples received within holding time?				
11. Samples properly labeled?				
12. Samples submitted with chemical preservation? (e.g. pH adjusted, or sodium thiosulfate added for microbiological tests)				
13. Proper sample containers used?				
14. All samples received intact, containers not damaged or leaking?				
15. VOA vials (requesting BTEX/VOC analysis) received with no air bubbles? Bubbles acceptable on VOA vials for TPH.				now vials
16. Sample volume sufficient for requested analysis?				
17. Sample amount sufficient for TCLP analysis?				note
18. Subcontracted Samples: [if Yes, complete the next section]				

Analyses Subcontracted Out: \_\_\_\_\_ No. of Samples \_\_\_\_\_  
 Samples sent to: \_\_\_\_\_ Sent By: \_\_\_\_\_  
 Date samples sent: \_\_\_\_\_ Samples shipped via: \_\_\_\_\_  
 TAT Requested: \_\_\_\_\_  
 Tracking number [if any]: \_\_\_\_\_

Comments:

\_\_\_\_\_  
\_\_\_\_\_

Received By: [Signature] Date: 1/25/18  
 Labeled By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Logged into LIMS By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Logged into RF By: [Signature] Date: \_\_\_\_\_



---

10450 Stancliff Rd. Suite 210  
Houston, TX 77099  
T: +1 281 530 5656  
F: +1 281 530 5887

February 05, 2018

Sairum Abburu  
San Antonio Testing Laboratory, Inc.  
1610 S. Laredo St.

San Antonio, TX 78207

Work Order: **HS18011291**

Laboratory Results for: **1801312**

Dear Sairum,

ALS Environmental received 2 sample(s) on Jan 26, 2018 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: Jumoke.Lawal  
Nicole Brown  
Senior Project Manager

**Client:** San Antonio Testing Laboratory, Inc.  
**Project:** 1801312  
**Work Order:** HS18011291

**SAMPLE SUMMARY**

---

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS18011291-01	1801312-02(#6 Midlake Surface)	Liquid		25-Jan-2018 13:30	26-Jan-2018 09:35	<input type="checkbox"/>
HS18011291-02	1801312-06 (Field Blank)	Water		25-Jan-2018 13:40	26-Jan-2018 09:35	<input type="checkbox"/>

---

**Client:** San Antonio Testing Laboratory, Inc.  
**Project:** 1801312  
**Work Order:** HS18011291

---

**CASE NARRATIVE**

---

**WetChemistry by Method E420.1**

**Batch ID: 124969**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-



Client: San Antonio Testing Laboratory, Inc.  
 Project: 1801312  
 Sample ID: 1801312-02(#6 Midlake Surface)  
 Collection Date: 25-Jan-2018 13:30

**ANALYTICAL REPORT**

WorkOrder:HS18011291  
 Lab ID:HS18011291-01  
 Matrix:Liquid

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>PHENOLICS BY E420.1</b>		<b>Method:E420.1</b>		Prep:E420.1/E420.4 / 05-Feb-2018		Analyst: MZD
Phenolics, Total Recoverable	ND		0.0500	mg/L	1	05-Feb-2018 15:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: San Antonio Testing Laboratory, Inc.  
 Project: 1801312  
 Sample ID: 1801312-06 (Field Blank)  
 Collection Date: 25-Jan-2018 13:40

**ANALYTICAL REPORT**

WorkOrder:HS18011291  
 Lab ID:HS18011291-02  
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>PHENOLICS BY E420.1</b>		<b>Method:E420.1</b>		Prep:E420.1/E420.4 / 05-Feb-2018		Analyst: MZD
Phenolics, Total Recoverable	ND		0.0500	mg/L	1	05-Feb-2018 15:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**WEIGHT LOG**

**Client:** San Antonio Testing Laboratory, Inc.  
**Project:** 1801312  
**WorkOrder:** HS18011291

**Batch ID:** 124969      **Method:** PHENOLICS BY E420.1      **Prep:** PHENOLICS\_W\_PR420.1

SamplID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18011291-01	1	50	50 (mL)	1
HS18011291-02	1	50	50 (mL)	1

**Client:** San Antonio Testing Laboratory, Inc.  
**Project:** 1801312  
**WorkOrder:** HS18011291

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
<b>Batch ID</b> 124969		<b>Test Name :</b> PHENOLICS BY E420.1		<b>Matrix:</b> Water		
HS18011291-02	1801312-06 (Field Blank)	25 Jan 2018 13:40		05 Feb 2018 10:57	05 Feb 2018 15:01	1
<b>Batch ID</b> 124969		<b>Test Name :</b> PHENOLICS BY E420.1		<b>Matrix:</b> Liquid		
HS18011291-01	1801312-02(#6 Midlake Surface)	25 Jan 2018 13:30		05 Feb 2018 10:57	05 Feb 2018 15:01	1

**Client:** San Antonio Testing Laboratory, Inc.  
**Project:** 1801312  
**WorkOrder:** HS18011291

**QC BATCH REPORT**

<b>Batch ID:</b> 124969	<b>Instrument:</b> UV-2450	<b>Method:</b> E420.1
-------------------------	----------------------------	-----------------------

<b>MBLK</b>	Sample ID: <b>MBLK-124969</b>	Units: <b>mg/L</b>	Analysis Date: <b>05-Feb-2018 15:01</b>							
Client ID:	Run ID: <b>UV-2450_310189</b>	SeqNo: <b>4420149</b>	PrepDate: <b>05-Feb-2018</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Phenolics, Total Recoverable ND 0.0500

<b>LCS</b>	Sample ID: <b>LCS-124969</b>	Units: <b>mg/L</b>	Analysis Date: <b>05-Feb-2018 15:01</b>							
Client ID:	Run ID: <b>UV-2450_310189</b>	SeqNo: <b>4420148</b>	PrepDate: <b>05-Feb-2018</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Phenolics, Total Recoverable 0.436 0.0500 0.5 0 87.2 80 - 120

<b>MS</b>	Sample ID: <b>HS18011297-01MS</b>	Units: <b>mg/L</b>	Analysis Date: <b>05-Feb-2018 15:01</b>							
Client ID:	Run ID: <b>UV-2450_310189</b>	SeqNo: <b>4420146</b>	PrepDate: <b>05-Feb-2018</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Phenolics, Total Recoverable 0.451 0.0500 0.5 0.013 87.6 80 - 120

<b>MSD</b>	Sample ID: <b>HS18011297-01MSD</b>	Units: <b>mg/L</b>	Analysis Date: <b>05-Feb-2018 15:01</b>							
Client ID:	Run ID: <b>UV-2450_310189</b>	SeqNo: <b>4420147</b>	PrepDate: <b>05-Feb-2018</b> DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Phenolics, Total Recoverable 0.458 0.0500 0.5 0.013 89.0 80 - 120 0.451 1.54 20

The following samples were analyzed in this batch: HS18011291-01 HS18011291-02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Client:** San Antonio Testing Laboratory, Inc.  
**Project:** 1801312  
**WorkOrder:** HS18011291

**QUALIFIERS,  
ACRONYMS, UNITS**

<b>Qualifier</b>	<b>Description</b>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

<b>Acronym</b>	<b>Description</b>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<b>Unit Reported</b>	<b>Description</b>
mg/L	Milligrams per Liter

**CERTIFICATIONS,ACCREDITATIONS & LICENSES**

<b>Agency</b>	<b>Number</b>	<b>Expire Date</b>
Arkansas	17-027-0	27-Mar-2018
California	2919 2016-2018	31-Jul-2018
Illinois	004112	09-May-2018
Kentucky	123043	30-Apr-2018
Louisiana	03087 2017-2017	30-Jun-2018
North Dakota	R193 2017-2017	30-Apr-2018
Oklahoma	2017-088	31-Aug-2018
Texas	T104704231-17-19	30-Apr-2018
North Carolina	624-2018	31-Dec-2018

Sample Receipt Checklist

Client Name: San Antonio Testing  
 Work Order: HS18011291

Date/Time Received: **26-Jan-2018 09:35**  
 Received by: **JRM**

Checklist completed by: Nilesh D. Ranchod 30-Jan-2018 Reviewed by: Nicole Brown 1-Feb-2018  
 eSignature Date eSignature Date

Matrices: **Water** Carrier name: **UPS**

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No
- Sample containers intact? Yes  No
- TX1005 solids received in hermetically sealed vials? Yes  No  N/A
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time? Yes  No
- Container/Temp Blank temperature in compliance? Yes  No

Temperature(s)/Thermometer(s): 1.7C / 2.1C UC/C IR#30

Cooler(s)/Kit(s): BOX-FOAM

Date/Time sample(s) sent to storage: 01/26/2018 18:00

Water - VOA vials have zero headspace? Yes  No  No VOA vials submitted

Water - pH acceptable upon receipt? Yes  No  N/A

pH adjusted? Yes  No  N/A

pH adjusted by:

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:



# CHAIN-OF-CUSTODY RECORD

REPORT TO:		INVOICE TO:		P.O. #
COMPANY <i>SATL</i>		COMPANY <i>SATL</i>		REPORT NUMBER
ADDRESS		ADDRESS		
CITY	STATE	ZIP	CITY	STATE
ATTN: <i>James Landon</i> PHONE # <i>210-229-9920</i>		ATTN: <i>Sandra</i> PHONE # <i>sa.testing@satestinglab.com</i>		FAX #
REQUESTED TURNAROUND TIME IN BUSINESS DAYS & SURCHARGE				
<input type="checkbox"/> 7-10 Days REG <input type="checkbox"/> 5 Days +25% <input type="checkbox"/> 4 Days +50% <input type="checkbox"/> 3 Days +75% <input type="checkbox"/> 2 Days +100% <input type="checkbox"/> Next Day +150% <input type="checkbox"/> SAME DAY WHEN POSSIBLE +300%				
TRRP 13 <input type="checkbox"/> YES <input type="checkbox"/> NO    LPST PCLS <input type="checkbox"/>			COMMENTS/SPECIAL REQUESTS: <i>RG. TAT</i>	
HARDCOPY <input type="checkbox"/> YES <input type="checkbox"/> NO    /    FOR STATE COMPLIANCE <input type="checkbox"/> YES <input type="checkbox"/> NO				

PROJECT NAME/LOCATION/SITE	TEMP. I.R. GUN # _____	SAMPLE TEMPERATURE WITHIN COMPLIANCE (> 0°C ≤ 6°C) <input type="checkbox"/> YES <input type="checkbox"/> NO	INITIAL TO AUTHORIZE BULK ANALYSIS
PROJECT NO.	PROPER CONTAINERS		IF NO, INITIAL HERE TO AUTHORIZE ANALYSIS

SAMPLE NUMBER	COLLECTED		MATRIX	SAMPLING METHOD	SAMPLE IDENTIFICATION	CONTAINER NUMBER	CONTAINER SAMPLER	ANALYSIS REQUESTED	PRESERVED WITH
	DATE	TIME							
1	1/25/18	1330	<i>N</i>	<i>7</i>	<i>1801312-02 (#6 Middle Lake Surface)</i>	<i>1</i>	<i>250ml</i>	<i>Phenols-10, 15, 1400</i>	
2	1/25/18	1340	<i>N</i>	<i>4</i>	<i>1801312-06 (Field Blank)</i>	<i>1</i>	<i>100ml</i>		

San Antonio Testing Laboratory, Inc.  
1801312

**HS18011291**

RELINQUISHED BY (SIGNATURE) <i>[Signature]</i>	DATE/TIME <i>1/25/18</i>	RECEIVED BY (SIGNATURE)	DATE/TIME	RELINQUISHED BY (SIGNATURE)	DATE/TIME
RELINQUISHED BY (PRINT NAME) <i>James Landon</i>		RECEIVED BY (PRINT NAME) <i>Jim</i>	<i>1/26/18 09:35</i>	RELINQUISHED BY (PRINT NAME)	RECEIVED BY (PRINT NAME)
RELINQUISHED BY (SIGNATURE)		RECEIVED BY (SIGNATURE)		METHOD OF SHIPMENT	SUBCONTRACTED <input type="checkbox"/> YES <input type="checkbox"/> NO
RELINQUISHED BY (PRINT NAME)		RECEIVED BY (PRINT NAME)		SAMPLED IN 5035 CONTAINERS <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	CUSTODY SEAL IN PLACE & INTACT <input type="checkbox"/> YES <input type="checkbox"/> NO

UPS Internet Shipping: View/Print Label

1. Ensure there are no other shipping or tracking labels attached to your package. Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. Fold the printed label at the solid line below. Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. GETTING YOUR SHIPMENT TO UPS

Customers with a Daily Pickup  
Your driver will pickup your shipment(s) as usual.

Customers without a Daily Pickup  
Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the 'Find Locations' Quick link at ups.com.  
Schedule a same day or future day Pickup to have a UPS driver pickup all of your Internet Shipping packages. Hand the package to any UPS driver in your area.

UPS Access Point™  
THE UPS STORE  
1819 N MAIN AVE  
SAN ANTONIO, TX 78212

UPS Access Point™  
THE UPS STORE  
203 NORTON ST  
SAN ANTONIO, TX 78226

UPS Access Point™  
THE UPS STORE  
4102 S NEW BRAUNFELS AVE  
SAN ANTONIO, TX 78223

FOLD HERE

1 OF 1

9 LBS

MARCELA HAWK  
210-229-9920  
210 W. LAMAR  
1610 S. LAREDO STREET  
SAN ANTONIO, TX 78207

SHIP TO:  
NICOLE BROWN  
713-266-1599  
ALS ENVIRONMENTAL  
10450 STANGLIFF ROAD, SUITE 210  
HOUSTON TX 77099

TX 774 9-08

UPS GROUND  
TRACKING #: 1Z 785 26E 03 9407 4250

BILLING: P/P

UPS 26.0.27. WNTW559 97.0A.01.2018

JAN 26 2018

Box - Forum



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-11

Report Date: 2/14/2018

**REPORT TO:** Leon Creek WRC  
Leon Creek Water Recycling Center  
1104 Mauerman Road  
San Antonio, Texas 78224

**Login Batch ID:** 18010365

**Log Number:**

**Sample ID:** AD58710      CID\_19877      MITCHELL LAKE SPECIAL (#1 NEAR POLDERS)

**Collected:** 01/25/2018 12:28      **Sampled By:** JEREMY HULL      **License Number:**

**Submitted:** 01/25/2018 15:06      **Workorder Number:**      **Field Comments:**

**Matrix:** SURFACE\_WATER      **Non-Conformance:**

Analyte	Results	RL	Units	Qual	Analyzed	Method
Chlorophyll-a	4660	1000	ug/L		1/26/18 13:31	SM 10200 H*

**Sample Comments:**



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-11

Report Date: 2/14/2018

**REPORT TO:** Leon Creek WRC  
Leon Creek Water Recycling Center  
1104 Mauerman Road  
San Antonio, Texas 78224

**Login Batch ID:** 18010365

**Log Number:**

**Sample ID:** AD58711      CID\_19877      MITCHELL LAKE SPECIAL (#1 B NEAR POLDERS)

**Collected:** 01/25/2018 12:30      **Sampled By:** JEREMY HULL      **License Number:**

**Submitted:** 01/25/2018 15:06      **Workorder Number:**      **Field Comments:**

**Matrix:** SURFACE\_WATER      **Non-Conformance:** Y - See chain of custody.

Analyte	Results	RL	Units	Qual	Analyzed	Method
Chlorophyll-a	4640	1000	ug/L		1/26/18 13:31	SM 10200 H*

**Sample Comments:**



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-11

Report Date: 2/14/2018

**REPORT TO:** Leon Creek WRC  
Leon Creek Water Recycling Center  
1104 Mauerman Road  
San Antonio, Texas 78224

**Login Batch ID:** 18010365

**Log Number:**

**Sample ID:** AD58712      CID\_19877      MITCHELL LAKE SPECIAL (#6 MID LAKE SURFACE)

**Collected:** 01/25/2018 13:30      **Sampled By:** JEREMY HULL      **License Number:**

**Submitted:** 01/25/2018 15:06      **Workorder Number:**      **Field Comments:**

**Matrix:** SURFACE\_WATER      **Non-Conformance:**

Analyte	Results	RL	Units	Qual	Analyzed	Method
Chlorophyll-a	5570	1000	ug/L		1/26/18 13:31	SM 10200 H*

**Sample Comments:**



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-11

Report Date: 2/14/2018

**REPORT TO:** Leon Creek WRC  
Leon Creek Water Recycling Center  
1104 Mauerman Road  
San Antonio, Texas 78224

**Login Batch ID:** 18010365

**Log Number:**

**Sample ID:** AD58713      CID\_19877      MITCHELL LAKE SPECIAL (#6 MID LAKE BOTTOM)

**Collected:** 01/25/2018 13:10

**Sampled By:** JEREMY HULL

**License Number:**

**Submitted:** 01/25/2018 15:06

**Workorder Number:**

**Field Comments:**

**Matrix:** SURFACE\_WATER

**Non-Conformance:**

Analyte	Results	RL	Units	Qual	Analyzed	Method
Chlorophyll-a	5120	1000	ug/L		1/26/18 13:31	SM 10200 H*

**Sample Comments:**



# Analytical Results



Environmental Laboratory Services  
 3610 Valley Road  
 San Antonio, TX 78221

Certificate # T104704324-18-11

Report Date: 2/14/2018

**REPORT TO:** Leon Creek WRC  
 Leon Creek Water Recycling Center  
 1104 Mauerman Road  
 San Antonio, Texas 78224

**Login Batch ID:** 18010365

**Log Number:**

**Sample ID:** AD58714      CID\_19877      MITCHELL LAKE SPECIAL (#9 LOWER LAKE)

**Collected:** 01/25/2018 11:20      **Sampled By:** JEREMY HULL      **License Number:**

**Submitted:** 01/25/2018 15:06      **Workorder Number:**      **Field Comments:**

**Matrix:** SURFACE\_WATER      **Non-Conformance:**

Analyte	Results	RL	Units	Qual	Analyzed	Method
Prep, TKN	Completed				1/31/18 17:04	SM 4500-Norg B
Ammonia Nitrogen, Distillation	0.355	0.25	mg/L		1/26/18 14:30	SM 4500-NH3 BC**
Ammonia Nitrogen, Gas Diffusion	<0.1	0.1	mg/L		1/26/18 12:20	EPA 350.1*
Kjeldahl Nitrogen, Total	9.07	1.2	mg/L		2/1/18 09:53	SM 4500-NH3 BC**
Chlorophyll-a	4570	1000	ug/L		1/26/18 13:31	SM 10200 H*
Nitrate + Nitrite**	<0.6	0.6	mg/L	T	1/28/18 23:06	EPA 300.0
Nitrate-N	<0.5	0.5	mg/L	T	1/28/18 23:06	EPA 300.0
Nitrite-N	<0.1	0.1	mg/L	T	1/28/18 23:06	EPA 300.0

**Sample Comments:**



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-11

Report Date: 2/14/2018

**REPORT TO:** Leon Creek WRC  
Leon Creek Water Recycling Center  
1104 Mauerman Road  
San Antonio, Texas 78224

**Login Batch ID:** 18010365

**Log Number:**

**Definitions:**

RL = Reporting Limit  
--- = Not Applicable  
NC = Not Calculated

**Qualifiers:**

H = Result is above Upper Specification  
L = Result is below Lower Specification  
J = Positive result below the Reporting Limit  
Q = Unacceptable Results due to QC Check failure  
X = The result is extrapolated  
T = Sample exceeded Hold Time

E = Estimated Result  
B = Analyte detected in Blank  
S = Spike Recovery outside Recovery Limits  
D = Outside Duplicate Precision Limits  
M = Matrix or Chemical Interference  
LE = Laboratory Error

An asterisk (\*) appended to the method reference or analyte denotes that the laboratory is not accredited for the method or analyte.  
A double asterisk (\*\*) appended to the method reference or analyte denotes that the analytical results meets accreditation requirements for non-potable matrix only.

**References:**

EPA, Office of Water, Methods and Guidance for the Analysis of Water, Version 2  
Standard Methods for the Examination of Water and Wastewater, Online Edition, American Public Health Association  
EPA, Office of Solid Waste, Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846

Anna B. Polanco-Ramos or approved signatory  
Laboratory Manager  
SAWS Environmental Laboratory

This report provides results relating only to the referenced sample ID numbers and may not be reproduced except in its entirety without written approval of SAWS Laboratory. All samples were received in acceptable condition unless otherwise stated. For questions concerning this report, please contact Anna Ramos, SAWS Environmental Laboratory Manager, (210) 233-3210





# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-11

Report Date: 2/14/2018

REPORT TO: Leon Creek WRC  
Leon Creek Water Recycling Center  
1104 Mauerman Road  
San Antonio, Texas 78224

Login Batch ID: 18010365

Log Number:



SAN ANTONIO WATER SYSTEM  
ENVIRONMENTAL LABORATORY SERVICES  
CHAIN OF CUSTODY RECORD  
3610 Valley Road - San Antonio, Texas 78221 - (210) 233-3300

LOG BATCH ID:  
18010365 of 125118

CLIENT INFORMATION		PROJECT/PROGRAM INFORMATION		PARAMETER/METHOD	
Client:	Aian Plummer Assn, Inc.	Program:	<input checked="" type="checkbox"/> None <input checked="" type="checkbox"/> TDPES <input type="checkbox"/> Other:	A	Total Kjeldahl Nitrogen: SM 4500-NH3 BC
Facility/Company:	Mitchell Lake	Project:	Mitchell Lake	B	Ammonia Distillation: SM 4500-NH3 BC
Send Report to:	Chris Pasch cpasch@apaten.com Sam Mills Sam.Mills@saws.org	Project Manager:	Tim Noack	C	Ammonia Gas Diffusion: EPA 350.1
City, State, Zip	San Antonio, TX 782	Send Report to Address:	6300 La Calma Drive, Suite 400	D	Chlorophyll A: SM 10200 H
Telephone	210-233-3742	City, State, Zip	Austin TX 78752	E	NO2, NO3, NO2+NO3: EPA 300.0
Fax		Telephone	512-452-5905	F	
e-mail Address:	Sam.Mills@saws.org	e-mail Address:	timnoack@apaten.com	G	
Special Instructions:				H	
				I	
				J	
				K	

pH Checks: A,B,C = 6.2 D,E = ~7

No	Sample Description/Location	Date	Time	Sampler	Matrix	Preservative	No. of bottles	Field CL2	A	B	C	D	E	F	G	H	I	J	K	SMS Lab Number	Temp Rec'd
1	Neer Bldgs	1-25-18	12:28		NPW	SA,NN	2/1	NA	X	X	X	X	X	X	X	X	X	X	14058210		
2	Neer Bldgs	1-25-18	12:30		NPW	SA,NN	2/1	NA	X	X	X	X	X	X	X	X	X	X	58211		
3	Mid Lake Surface	1-25-18	13:30		NPW	SA,NN	2/1	NA	X	X	X	X	X	X	X	X	X	X	58212		
4	Mid Lake Bottom	1-25-18	13:10		NPW	SA,NN	2/1	NA	X	X	X	X	X	X	X	X	X	X	58213		
5	Lower Lake	1-25-18	11:20		NPW	SA,NN	2/1	NA	X	X	X	X	X	X	X	X	X	X	58214		
6	Lower Lake	1-25-18			NPW	SA,NN	2/1	NA	X	X	X	X	X	X	X	X	X	X			
7																					
8																					
9																					
10																					
11		1-25-18																			
12																					
13																					

Required Turn Around Time (TAT):

STD 10 Business Days  5 Business Days  2 Business Days  24 Hour  Other

Requested by: Tereny Hill Date: 1-25-18 Time: 15:06

Requested by (Laboratory): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Checked by (Laboratory): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Approved by (Laboratory): \_\_\_\_\_ Date: 1/25/18 Time: 1506

Matrix Type:  Potable Water (PW)  Wastewater (WW)  Non-Potable Water (NPW)  Sludge (SL)  Solid (SS)

Preservation:  HCl pH < 2, (NA), H2SO4 pH < 2, (NA), NaOH pH > 12, (SH), NaSSO3 (ST), Citric Acid, (AA), Cool < 40°C (C) or None (N)

NOTE: MUST have Mgmt. approval for TAT of 5 days or less.

Laboratory Receiving Notes: 8.4/8.4°C

Revision December 19, 2017

August 07, 2018

**Tim Noack**

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin, TX 78752

**SATL Report No.: 1805505**

**RE: Mitchell Lake**

Dear Tim Noack

SATL received 6 Sample(s) on 05/31/2018 for analyses identified on the chain of custody. The analyses were performed using methods indicated on the laboratory report. Any deviations observed at sample receiving are notated on the Sample Receipt Checklist and/or Chain of Custody documents attached as part of this analytical report.

There were no problems in the sample analyses unless otherwise noted. Sample data and associated QC are presented in the attached laboratory report. QC sample data were within laboratory acceptance limits except where noted on the report.

Sincerely,

For San Antonio Testing Laboratory, Inc.



Richard Hawk,  
General Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

**SAMPLE SUMMARY**

Total Samples received in this work order: 6

The following samples were requested for analysis as per the CoC. Any re-runs or re-analyses requested are identified as such.

<u>Sample ID</u>	<u>Laboratory ID</u>	<u>Matrix</u>	<u>Sampling Method</u>	<u>Date Sampled</u>	<u>Date Received</u>
#1 Near Polders	1805505-01	Liquid	Grab	05/31/18 10:15	05/31/18 15:04
#6 Surface Mid Lake	1805505-02	Liquid	Grab	05/31/18 10:50	05/31/18 15:04
#6 Bottom Midlake	1805505-03	Liquid	Grab	05/31/18 10:55	05/31/18 15:04
#9 Lower Lake	1805505-04	Liquid	Grab	05/31/18 11:30	05/31/18 15:04
#9B Lower Lake	1805505-05	Liquid	Grab	05/31/18 11:35	05/31/18 15:04
Field Blank	1805505-06	Liquid	Grab	05/31/18 12:00	05/31/18 15:04

**Notes**

All quality control samples and checks are within acceptance limits unless otherwise indicated.  
Test results pertain only to those items tested.  
All samples were in good condition when received by the laboratory unless otherwise noted.

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

Sample ID #: #1 Near Polders

Sampling Method: Grab

Lab Sample ID #: 1805505-01

Sample Matrix: Liquid

Date/Time Collected: 05/31/18 10:15

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	126	mg/L	0.010			B823092	06/07/18 10:00	SM2540E	JL	
Total Alkalinity *	44.0	mg/L as CaCO3	20.0			B823091	06/07/18 14:11	SM2320B	JL	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B823014	06/04/18 13:48	4500NH3CB	JL	
CBOD *	24.5	mg/L	2.00		SM5210B	B823059	06/06/18 10:00	SM5210B	HC	
Total Suspended Solids *	138	mg/L	50.0		SM2540D	B822103	06/01/18 15:58	SM2540D	HC	
Total Kjeldahl Nitrogen *	11.2	mg/L	1.00		EPA 351.3	B823061	06/06/18 13:22	EPA 351.3	JL	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	06/01/18 19:15	EPA 300.0	JL	
Total Dissolved Solids *	2400	mg/L	50.0		EPA 160.2	B823064	06/05/18 16:00	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B823073	06/01/18 19:15	EPA 300.0	JL	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B823073	06/01/18 19:15	EPA 300.0	JL	
<b>Total Metals</b>										
Phosphorus *	0.270	mg/L	0.010		EPA 200.7	B823053	06/06/18 14:55	EPA 200.7	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

Reported:  
08/07/18 15:25  
Received:  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

Report No. 1805505

Sample ID #: #6 Surface Mid Lake

Sampling Method: Grab

Lab Sample ID #: 1805505-02

Sample Matrix: Liquid

Date/Time Collected: 05/31/18 10:50

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	116	mg/L	0.010			B823092	06/07/18 10:00	SM2540E	JL	
Total Alkalinity *	48.0	mg/L as CaCO3	20.0			B823091	06/07/18 14:11	SM2320B	JL	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B823014	06/04/18 13:48	4500NH3CB	JL	
CBOD *	22.4	mg/L	2.00		SM5210B	B823059	06/06/18 10:00	SM5210B	HC	
Cyanide, Total *	<0.020	mg/L	0.020		SM4500CIG	B823012	06/04/18 13:35	4500CN_C&E	JL	
Total Suspended Solids *	130	mg/L	50.0		SM2540D	B822103	06/01/18 15:58	SM2540D	HC	
Total Kjeldahl Nitrogen *	12.9	mg/L	1.00		EPA 351.3	B823061	06/06/18 13:22	EPA 351.3	JL	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	06/01/18 20:26	EPA 300.0	JL	
Hexavalent Chromium *	<0.005	mg/L	0.005		I-1230-85	B822092	05/31/18 17:20	I-1230-85	HC	
Total Dissolved Solids *	2310	mg/L	50.0		EPA 160.2	B823064	06/05/18 16:00	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B823073	06/01/18 20:26	EPA 300.0	JL	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B823073	06/01/18 20:26	EPA 300.0	JL	
<b>Total Metals</b>										
Antimony *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:13	EPA 200.7	XE	
Arsenic *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:13	EPA 200.7	XE	
Beryllium *	<0.004	mg/L	0.004		EPA 200.7	B823053	06/06/18 15:13	EPA 200.7	XE	
Cadmium *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:13	EPA 200.7	XE	
Chromium *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:13	EPA 200.7	XE	
Copper *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:13	EPA 200.7	XE	
Mercury *	<0.0002	mg/L	0.0002		EPA 245.1	B823054	06/06/18 13:59	EPA 245.1	ME	
Lead *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:13	EPA 200.7	XE	
Nickel *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:13	EPA 200.7	XE	
Phosphorus *	0.185	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:13	EPA 200.7	XE	
Selenium *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:13	EPA 200.7	XE	
Silver *	<0.005	mg/L	0.005		EPA 200.7	B823053	06/06/18 15:13	EPA 200.7	XE	
Thallium *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:13	EPA 200.7	XE	
Zinc *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:13	EPA 200.7	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

Sample ID #: #6 Surface Mid Lake

Sampling Method: Grab

Lab Sample ID #: 1805505-02

Sample Matrix: Liquid

Date/Time Collected: 05/31/18 10:50

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>Trivalent Chromium (Calculated)</b>										
Trivalent Chromium	<0.0100	mg/L	0.0100		[CALC]	[CALC]	06/06/18 15:13	CALC	HC	
<b>Polychlorinated Biphenyls [PCB]</b>										
PCB 1016 *	<0.0001	mg/L	0.0001		EPA 3510C	B822094	06/01/18 13:39	EPA 608	REB	
PCB 1221 *	<0.0001	mg/L	0.0001		EPA 3510C	B822094	06/01/18 13:39	EPA 608	REB	
PCB 1232 *	<0.0001	mg/L	0.0001		EPA 3510C	B822094	06/01/18 13:39	EPA 608	REB	
PCB 1242 *	<0.0001	mg/L	0.0001		EPA 3510C	B822094	06/01/18 13:39	EPA 608	REB	
PCB 1248 *	<0.0001	mg/L	0.0001		EPA 3510C	B822094	06/01/18 13:39	EPA 608	REB	
PCB 1254 *	<0.0001	mg/L	0.0001		EPA 3510C	B822094	06/01/18 13:39	EPA 608	REB	
PCB 1260 *	<0.0001	mg/L	0.0001		EPA 3510C	B822094	06/01/18 13:39	EPA 608	REB	
Surrogate: Decachlorobiphenyl	87 %	36-150			EPA 3510C	B822094	06/01/18 13:39	EPA 608	REB	
Surrogate: Tetrachloro-meta-xylene	27 %	28-131	SurrL		EPA 3510C	B822094	06/01/18 13:39	EPA 608	REB	
<b>Chlorinated Pesticides by GC/ECD</b>										
alpha-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
gamma-BHC (Lindane) *	<0.0001	mg/L	0.0001	8	EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
beta-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
delta-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
Heptachlor *	<0.0001	mg/L	0.0001	0.16	EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
Aldrin *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
Heptachlor Epoxide *	<0.0001	mg/L	0.0001	0.16	EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
gamma-Chlordane *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
alpha-Chlordane *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
Endosulfan I *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
4,4'-DDE *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
Dieldrin *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
Endrin *	<0.0001	mg/L	0.0001	0.4	EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
4,4'-DDD *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
Endosulfan II *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
4,4'-DDT *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
Endrin Aldehyde *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
Endosulfan Sulfate *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
Methoxychlor *	<0.0001	mg/L	0.0001	200	EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
Endrin Ketone *	<0.0001	mg/L	0.0001		EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
Toxaphene *	<0.01	mg/L	0.01	10	EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	
Surrogate: Decachlorobiphenyl	87 %	36-150			EPA 3510C	B822093	06/01/18 13:39	EPA 608	REB	



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

Sample ID #: #6 Bottom Midlake

Sampling Method: Grab

Lab Sample ID #: 1805505-03

Sample Matrix: Liquid

Date/Time Collected: 05/31/18 10:55

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	130	mg/L	0.010			B823092	06/07/18 10:00	SM2540E	JL	
Total Alkalinity *	48.0	mg/L as CaCO3	20.0			B823091	06/07/18 14:11	SM2320B	JL	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B823014	06/04/18 13:48	4500NH3CB	JL	
CBOD *	23.6	mg/L	2.00		SM5210B	B823059	06/06/18 10:00	SM5210B	HC	
Total Suspended Solids *	146	mg/L	50.0		SM2540D	B822103	06/01/18 15:58	SM2540D	HC	
Total Kjeldahl Nitrogen *	11.2	mg/L	1.00		EPA 351.3	B823061	06/06/18 13:22	EPA 351.3	JL	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	06/01/18 20:44	EPA 300.0	JL	
Total Dissolved Solids *	2360	mg/L	50.0		EPA 160.2	B823064	06/05/18 16:00	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B823073	06/01/18 20:44	EPA 300.0	JL	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B823073	06/01/18 20:44	EPA 300.0	JL	
<b>Total Metals</b>										
Phosphorus *	0.202	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:19	EPA 200.7	XE	



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

Sample ID #: #9 Lower Lake

Sampling Method: Grab

Lab Sample ID #: 1805505-04

Sample Matrix: Liquid

Date/Time Collected: 05/31/18 11:30

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	114	mg/L	0.010			B823092	06/07/18 10:00	SM2540E	JL	
Total Alkalinity *	48.0	mg/L as CaCO3	20.0			B823091	06/07/18 14:11	SM2320B	JL	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B823014	06/04/18 13:48	4500NH3CB	JL	
CBOD *	25.2	mg/L	2.00		SM5210B	B823059	06/06/18 10:00	SM5210B	HC	
Total Suspended Solids *	112	mg/L	50.0		SM2540D	B822103	06/01/18 15:58	SM2540D	HC	
Total Kjeldahl Nitrogen *	12.3	mg/L	1.00		EPA 351.3	B823061	06/06/18 13:22	EPA 351.3	JL	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	06/01/18 21:02	EPA 300.0	JL	
Total Dissolved Solids *	2350	mg/L	50.0		EPA 160.2	B823064	06/05/18 16:00	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B823073	06/01/18 21:02	EPA 300.0	JL	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B823073	06/01/18 21:02	EPA 300.0	JL	
<b>Total Metals</b>										
Phosphorus *	0.184	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:25	EPA 200.7	XE	





NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

Sample ID #: #9B Lower Lake

Sampling Method: Grab

Lab Sample ID #: 1805505-05

Sample Matrix: Liquid

Date/Time Collected: 05/31/18 11:35

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	112	mg/L	0.010			B823092	06/07/18 10:00	SM2540E	JL	
Total Alkalinity *	52.0	mg/L as CaCO3	20.0			B823091	06/07/18 14:11	SM2320B	JL	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B823014	06/04/18 13:48	4500NH3CB	JL	
CBOD *	24.6	mg/L	2.00		SM5210B	B823059	06/06/18 10:00	SM5210B	HC	
Total Suspended Solids *	122	mg/L	50.0		SM2540D	B822103	06/01/18 15:58	SM2540D	HC	
Total Kjeldahl Nitrogen *	12.3	mg/L	1.00		EPA 351.3	B823061	06/06/18 13:22	EPA 351.3	JL	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	06/01/18 21:20	EPA 300.0	JL	
Total Dissolved Solids *	2260	mg/L	50.0		EPA 160.2	B823064	06/05/18 16:00	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B823073	06/01/18 21:20	EPA 300.0	JL	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B823073	06/01/18 21:20	EPA 300.0	JL	
<b>Total Metals</b>										
Phosphorus *	0.202	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:31	EPA 200.7	XE	



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

Sample ID #: Field Blank

Sampling Method: Grab

Lab Sample ID #: 1805505-06

Sample Matrix: Liquid

Date/Time Collected: 05/31/18 12:00

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>Total Metals</b>										
Antimony *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:37	EPA 200.7	XE	
Arsenic *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:37	EPA 200.7	XE	
Beryllium *	<0.004	mg/L	0.004		EPA 200.7	B823053	06/06/18 15:37	EPA 200.7	XE	
Cadmium *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:37	EPA 200.7	XE	
Chromium *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:37	EPA 200.7	XE	
Copper *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:37	EPA 200.7	XE	
Mercury *	<0.0002	mg/L	0.0002		EPA 245.1	B823054	06/06/18 14:05	EPA 245.1	ME	
Lead *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:37	EPA 200.7	XE	
Nickel *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:37	EPA 200.7	XE	
Selenium *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:37	EPA 200.7	XE	
Silver *	<0.005	mg/L	0.005		EPA 200.7	B823053	06/06/18 15:37	EPA 200.7	XE	
Thallium *	<0.010	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:37	EPA 200.7	XE	
Zinc *	0.012	mg/L	0.010		EPA 200.7	B823053	06/06/18 15:37	EPA 200.7	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	---------	-----------

**Batch B822092 - I-1230-85**

<b>Blank (B822092-BLK1)</b>				Prepared: 05/31/18 09:50 Analyzed: 05/31/18 12:55					
Hexavalent Chromium	<0.005	0.005	mg/L						
<b>LCS (B822092-BS1)</b>				Prepared: 05/31/18 09:50 Analyzed: 05/31/18 12:55					
Hexavalent Chromium	0.406	0.005	mg/L	0.400		102	90-110		
<b>LCS Dup (B822092-BSD1)</b>				Prepared: 05/31/18 09:50 Analyzed: 05/31/18 12:55					
Hexavalent Chromium	0.417	0.005	mg/L	0.400		104	90-110	3	20
<b>Duplicate (B822092-DUP1)</b>				Source: 1805503-01		Prepared: 05/31/18 15:09 Analyzed: 05/31/18 16:00			
Hexavalent Chromium	<0.005	0.005	mg/L	<0.005					20
<b>Matrix Spike (B822092-MS1)</b>				Source: 1805503-01		Prepared: 05/31/18 15:09 Analyzed: 05/31/18 16:00			
Hexavalent Chromium	0.391	0.005	mg/L	0.400	<0.005	98	80-120		

**Batch B822103 - SM2540D**

<b>Blank (B822103-BLK1)</b>				Prepared: 06/01/18 13:01 Analyzed: 06/01/18 15:58					
Total Suspended Solids	<2.50	2.50	mg/L						
<b>LCS (B822103-BS1)</b>				Prepared: 06/01/18 13:01 Analyzed: 06/01/18 15:58					
Total Suspended Solids	91.0	25.0	mg/L	100		91	80-120		
<b>LCS Dup (B822103-BSD1)</b>				Prepared: 06/01/18 13:01 Analyzed: 06/01/18 15:58					
Total Suspended Solids	101	25.0	mg/L	100		101	80-120	10	20
<b>Duplicate (B822103-DUP1)</b>				Source: 1805505-01		Prepared: 06/01/18 13:01 Analyzed: 06/01/18 15:58			
Total Suspended Solids	152	50.0	mg/L	138				10	20

**Batch B823012 - SM4500CIG**

<b>Blank (B823012-BLK1)</b>				Prepared: 06/04/18 09:20 Analyzed: 06/04/18 13:35					
Cyanide, Total	<0.020	0.020	mg/L						
<b>LCS (B823012-BS1)</b>				Prepared: 06/04/18 09:20 Analyzed: 06/04/18 13:35					
Cyanide, Total	0.102	0.020	mg/L	0.100		102	80-120		
<b>LCS Dup (B823012-BSD1)</b>				Prepared: 06/04/18 09:20 Analyzed: 06/04/18 13:35					
Cyanide, Total	0.106	0.020	mg/L	0.100		106	80-120	4	20
<b>Duplicate (B823012-DUP1)</b>				Source: 1805485-01		Prepared: 06/04/18 09:20 Analyzed: 06/04/18 13:35			

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B823012 - SM4500CIG**

<b>Duplicate (B823012-DUP1)</b>		<b>Source: 1805485-01</b>		Prepared: 06/04/18 09:20		Analyzed: 06/04/18 13:35			
Cyanide, Total	0.00700	0.020	mg/L		0.00600			15	20
<b>Matrix Spike (B823012-MS1)</b>		<b>Source: 1805485-01</b>		Prepared: 06/04/18 09:20		Analyzed: 06/04/18 13:35			
Cyanide, Total	0.113	0.020	mg/L	0.100	0.00600	107	80-120		

**Batch B823014 - SM4500NH3B**

<b>Blank (B823014-BLK1)</b>				Prepared: 06/04/18 11:30		Analyzed: 06/04/18 13:48			
Ammonia-Nitrogen	<1.00	1.00	mg/L						
<b>LCS (B823014-BS1)</b>				Prepared: 06/04/18 11:30		Analyzed: 06/04/18 13:48			
Ammonia-Nitrogen	19.1	1.00	mg/L	20.0		96	80-120		
<b>LCS Dup (B823014-BSD1)</b>				Prepared: 06/04/18 11:30		Analyzed: 06/04/18 13:48			
Ammonia-Nitrogen	19.6	1.00	mg/L	20.0		98	80-120	3	20
<b>Duplicate (B823014-DUP1)</b>		<b>Source: 1805485-01</b>		Prepared: 06/04/18 11:30		Analyzed: 06/04/18 13:48			
Ammonia-Nitrogen	5.00	1.00	mg/L		5.60			11	20
<b>Matrix Spike (B823014-MS1)</b>		<b>Source: 1805485-01</b>		Prepared: 06/04/18 11:30		Analyzed: 06/04/18 13:48			
Ammonia-Nitrogen	24.0	1.00	mg/L	20.0	5.60	92	80-120		

**Batch B823059 - SM5210B**

<b>Blank (B823059-BLK1)</b>				Prepared: 06/01/18 11:09		Analyzed: 06/06/18 10:00			
CBOD	<2.00	2.00	mg/L						
<b>LCS (B823059-BS1)</b>				Prepared: 06/01/18 11:09		Analyzed: 06/06/18 10:00			
CBOD	172	2.00	mg/L	200		86	80-120		
<b>LCS Dup (B823059-BSD1)</b>				Prepared: 06/01/18 11:09		Analyzed: 06/06/18 10:00			
CBOD	180	2.00	mg/L	200		90	80-120	4	20

**Batch B823061 - EPA 351.3**

<b>Blank (B823061-BLK1)</b>				Prepared: 06/06/18 08:30		Analyzed: 06/06/18 13:22			
Total Kjeldahl Nitrogen	<1.00	1.00	mg/L						
<b>LCS (B823061-BS1)</b>				Prepared: 06/06/18 08:30		Analyzed: 06/06/18 13:22			
Total Kjeldahl Nitrogen	19.6	1.00	mg/L	20.0		98	80-120		

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B823061 - EPA 351.3**

<b>LCS Dup (B823061-BSD1)</b>				Prepared: 06/06/18 08:30 Analyzed: 06/06/18 13:22					
Total Kjeldahl Nitrogen	19.1	1.00	mg/L	20.0		96	80-120	3	20

<b>Duplicate (B823061-DUP1)</b>				Source: 1805505-01 Prepared: 06/06/18 08:30 Analyzed: 06/06/18 13:22					
Total Kjeldahl Nitrogen	11.2	1.00	mg/L	11.2				0	20

<b>Matrix Spike (B823061-MS1)</b>				Source: 1805505-01 Prepared: 06/06/18 08:30 Analyzed: 06/06/18 13:22					
Total Kjeldahl Nitrogen	29.1	1.00	mg/L	20.0	11.2	90	80-120		

**Batch B823064 - EPA 160.2**

<b>Blank (B823064-BLK1)</b>				Prepared: 06/05/18 10:25 Analyzed: 06/05/18 16:00					
Total Dissolved Solids	<10.0	10.0	mg/L						

<b>LCS (B823064-BS1)</b>				Prepared: 06/05/18 10:25 Analyzed: 06/05/18 16:00					
Total Dissolved Solids	98.0	10.0	mg/L	100		98	80-120		

<b>LCS Dup (B823064-BSD1)</b>				Prepared: 06/05/18 10:25 Analyzed: 06/05/18 16:00					
Total Dissolved Solids	98.0	10.0	mg/L	100		98	80-120	0	20

<b>Duplicate (B823064-DUP1)</b>				Source: 1805505-01 Prepared: 06/05/18 10:25 Analyzed: 06/05/18 16:00					
Total Dissolved Solids	2420	50.0	mg/L	2400				1	20

**Batch B823091 - NO PREP**

<b>Blank (B823091-BLK1)</b>				Prepared: 06/07/18 10:44 Analyzed: 06/07/18 14:11					
Total Alkalinity	<20.0	20.0	mg/L as CaCO3						

<b>LCS (B823091-BS1)</b>				Prepared: 06/07/18 10:44 Analyzed: 06/07/18 14:11					
Total Alkalinity	96.0	20.0	mg/L as CaCO3	106		91	80-120		

<b>LCS Dup (B823091-BSD1)</b>				Prepared: 06/07/18 10:44 Analyzed: 06/07/18 14:11					
Total Alkalinity	100	20.0	mg/L as CaCO3	106		94	80-120	4	20

<b>Duplicate (B823091-DUP1)</b>				Source: 1805503-01 Prepared: 06/07/18 10:44 Analyzed: 06/07/18 14:11					
Total Alkalinity	224	20.0	mg/L as CaCO3	216				4	20

**Batch B823092 - NO PREP**

<b>Blank (B823092-BLK1)</b>				Prepared: 06/07/18 09:00 Analyzed: 06/07/18 10:00					
Volatile Suspended Solids	<0.010	0.010	mg/L						

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B823092 - NO PREP**

<b>Duplicate (B823092-DUP1)</b>		<b>Source: 1805505-01</b>		Prepared: 06/07/18 09:00		Analyzed: 06/07/18 10:00			
Volatile Suspended Solids	120	0.010	mg/L		126			5	30

**Anions by Ion Chromatography - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B823073 - EPA 300.0**

<b>Blank (B823073-BLK1)</b>				Prepared: 06/01/18 16:00		Analyzed: 06/01/18 16:34			
Nitrite as N	<0.10	0.10	mg/L						
Nitrate as N	<0.10	0.10	mg/L						

<b>LCS (B823073-BS1)</b>				Prepared: 06/01/18 16:00		Analyzed: 06/01/18 16:52			
Nitrite as N	4.74	0.10	mg/L	5.00		95	90-110		
Nitrate as N	4.68	0.10	mg/L	5.00		94	90-110		

<b>LCS Dup (B823073-BSD1)</b>				Prepared: 06/01/18 16:00		Analyzed: 06/01/18 17:10			
Nitrite as N	4.76	0.10	mg/L	5.00		95	90-110	0.4	20
Nitrate as N	4.70	0.10	mg/L	5.00		94	90-110	0.3	20

<b>Duplicate (B823073-DUP1)</b>		<b>Source: 1805505-01</b>		Prepared: 06/01/18 16:00		Analyzed: 06/01/18 19:51			
Nitrite as N	<0.10	0.10	mg/L		<0.10				20
Nitrate as N	<0.10	0.10	mg/L		<0.10				20

<b>Matrix Spike (B823073-MS1)</b>		<b>Source: 1805505-01</b>		Prepared: 06/01/18 16:00		Analyzed: 06/01/18 20:08			
Nitrite as N	3.97	0.10	mg/L	5.00	<0.10	79	90-110		M
Nitrate as N	3.90	0.10	mg/L	5.00	<0.10	78	90-110		M

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B823053 - EPA 200.7**

<b>Blank (B823053-BLK1)</b>				Prepared: 06/06/18 09:30		Analyzed: 06/06/18 14:21			
-----------------------------	--	--	--	--------------------------	--	--------------------------	--	--	--

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B823053 - EPA 200.7**

**Blank (B823053-BLK1)**

Prepared: 06/06/18 09:30 Analyzed: 06/06/18 14:21

Antimony	<0.010	0.010	mg/L						
Arsenic	<0.010	0.010	mg/L						
Beryllium	<0.004	0.004	mg/L						
Cadmium	<0.010	0.010	mg/L						
Chromium	<0.010	0.010	mg/L						
Copper	<0.010	0.010	mg/L						
Lead	<0.010	0.010	mg/L						
Nickel	<0.010	0.010	mg/L						
Phosphorus	<0.010	0.010	mg/L						
Selenium	<0.010	0.010	mg/L						
Silver	<0.005	0.005	mg/L						
Thallium	<0.010	0.010	mg/L						
Zinc	<0.010	0.010	mg/L						

**LCS (B823053-BS1)**

Prepared: 06/06/18 09:30 Analyzed: 06/06/18 14:27

Antimony	2.07	0.010	mg/L	2.00	104	85-115		
Arsenic	2.02	0.010	mg/L	2.00	101	85-115		
Beryllium	1.98	0.004	mg/L	2.00	99	85-115		
Cadmium	2.03	0.010	mg/L	2.00	102	85-115		
Chromium	1.97	0.010	mg/L	2.00	99	85-115		
Copper	2.02	0.010	mg/L	2.00	101	85-115		
Lead	1.98	0.010	mg/L	2.00	99	85-115		
Nickel	1.98	0.010	mg/L	2.00	99	85-115		
Phosphorus	2.04	0.010	mg/L	2.00	102	85-115		
Selenium	2.06	0.010	mg/L	2.00	103	85-115		
Silver	1.00	0.005	mg/L	1.00	100	85-115		
Thallium	2.06	0.010	mg/L	2.00	103	85-115		
Zinc	2.01	0.010	mg/L	2.00	101	85-115		

**LCS Dup (B823053-BSD1)**

Prepared: 06/06/18 09:30 Analyzed: 06/06/18 14:49

Antimony	2.04	0.010	mg/L	2.00	102	85-115	1	20
Arsenic	1.98	0.010	mg/L	2.00	99	85-115	2	20
Beryllium	1.94	0.004	mg/L	2.00	97	85-115	2	20
Cadmium	2.00	0.010	mg/L	2.00	100	85-115	2	20
Chromium	1.91	0.010	mg/L	2.00	96	85-115	3	20
Copper	1.97	0.010	mg/L	2.00	98	85-115	3	20

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B823053 - EPA 200.7**

**LCS Dup (B823053-BSD1)**

Prepared: 06/06/18 09:30 Analyzed: 06/06/18 14:49

Lead	1.92	0.010	mg/L	2.00		96	85-115	3	20
Nickel	1.93	0.010	mg/L	2.00		97	85-115	3	20
Phosphorus	2.00	0.010	mg/L	2.00		100	85-115	2	20
Selenium	2.02	0.010	mg/L	2.00		101	85-115	2	20
Silver	0.985	0.005	mg/L	1.00		99	85-115	2	20
Thallium	2.01	0.010	mg/L	2.00		101	85-115	2	20
Zinc	1.97	0.010	mg/L	2.00		99	85-115	2	20

**Duplicate (B823053-DUP1)**

Source: 1805505-01

Prepared: 06/06/18 09:30 Analyzed: 06/06/18 15:01

Antimony	<0.010	0.010	mg/L	<0.010					20
Arsenic	<0.010	0.010	mg/L	<0.010					20
Beryllium	<0.004	0.004	mg/L	<0.004					20
Cadmium	0.000800	0.010	mg/L	0.000800				0	20
Chromium	0.00450	0.010	mg/L	0.00470				4	20
Copper	0.00330	0.010	mg/L	0.00350				6	20
Lead	0.00530	0.010	mg/L	0.00520				2	20
Nickel	0.00270	0.010	mg/L	0.00280				4	20
Phosphorus	0.280	0.010	mg/L	0.270				3	20
Selenium	<0.010	0.010	mg/L	<0.010					20
Silver	<0.005	0.005	mg/L	<0.005					20
Thallium	<0.010	0.010	mg/L	<0.010					20
Zinc	0.0172	0.010	mg/L	0.0175				2	20

**Matrix Spike (B823053-MS1)**

Source: 1805505-01

Prepared: 06/06/18 09:30 Analyzed: 06/06/18 15:07

Antimony	2.15	0.010	mg/L	2.00	<0.010	108	75-125		
Arsenic	2.16	0.010	mg/L	2.00	<0.010	108	75-125		
Beryllium	2.04	0.004	mg/L	2.00	<0.004	102	75-125		
Cadmium	2.09	0.010	mg/L	2.00	0.000800	105	75-125		
Chromium	1.95	0.010	mg/L	2.00	0.00470	97	75-125		
Copper	2.05	0.010	mg/L	2.00	0.00350	102	75-125		
Lead	1.99	0.010	mg/L	2.00	0.00520	99	75-125		
Nickel	2.06	0.010	mg/L	2.00	0.00280	103	75-125		
Phosphorus	2.88	0.010	mg/L	2.00	0.270	130	75-125		
Selenium	2.18	0.010	mg/L	2.00	<0.010	109	75-125		
Silver	1.07	0.005	mg/L	1.00	<0.005	107	75-125		
Thallium	1.94	0.010	mg/L	2.00	<0.010	97	75-125		

M



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B823053 - EPA 200.7**

**Matrix Spike (B823053-MS1)**

Source: 1805505-01

Prepared: 06/06/18 09:30 Analyzed: 06/06/18 15:07

Zinc	2.12	0.010	mg/L	2.00	0.0175	105	75-125		
------	------	-------	------	------	--------	-----	--------	--	--

**Batch B823054 - EPA 245.1**

**Blank (B823054-BLK1)**

Prepared: 06/06/18 11:30 Analyzed: 06/06/18 13:34

Mercury	<0.0002	0.0002	mg/L						
---------	---------	--------	------	--	--	--	--	--	--

**LCS (B823054-BS1)**

Prepared: 06/06/18 11:30 Analyzed: 06/06/18 13:36

Mercury	0.00913	0.0002	mg/L	0.0100		91	85-115		
---------	---------	--------	------	--------	--	----	--------	--	--

**LCS Dup (B823054-BSD1)**

Prepared: 06/06/18 11:30 Analyzed: 06/06/18 13:38

Mercury	0.00927	0.0002	mg/L	0.0100		93	85-115	1	25
---------	---------	--------	------	--------	--	----	--------	---	----

**Duplicate (B823054-DUP1)**

Source: 1805505-02

Prepared: 06/06/18 11:30 Analyzed: 06/06/18 14:01

Mercury	<0.0002	0.0002	mg/L		<0.0002				25
---------	---------	--------	------	--	---------	--	--	--	----

**Matrix Spike (B823054-MS1)**

Source: 1805505-02

Prepared: 06/06/18 11:30 Analyzed: 06/06/18 14:03

Mercury	0.00972	0.0002	mg/L	0.0100	<0.0002	97	75-125		
---------	---------	--------	------	--------	---------	----	--------	--	--

**Polychlorinated Biphenyls [PCB] - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B822094 - EPA 3510C**

**Blank (B822094-BLK1)**

Prepared: 06/01/18 06:00 Analyzed: 06/01/18 12:38

PCB 1016	<0.0001	0.0001	mg/L						
----------	---------	--------	------	--	--	--	--	--	--

PCB 1221	<0.0001	0.0001	mg/L						
----------	---------	--------	------	--	--	--	--	--	--

PCB 1232	<0.0001	0.0001	mg/L						
----------	---------	--------	------	--	--	--	--	--	--

PCB 1242	<0.0001	0.0001	mg/L						
----------	---------	--------	------	--	--	--	--	--	--

PCB 1248	<0.0001	0.0001	mg/L						
----------	---------	--------	------	--	--	--	--	--	--

PCB 1254	<0.0001	0.0001	mg/L						
----------	---------	--------	------	--	--	--	--	--	--

PCB 1260	<0.0001	0.0001	mg/L						
----------	---------	--------	------	--	--	--	--	--	--

**LCS (B822094-BS1)**

Prepared: 06/01/18 06:00 Analyzed: 06/01/18 12:50

PCB 1016	0.00898	0.0001	mg/L	0.0100		90	50-114		
----------	---------	--------	------	--------	--	----	--------	--	--

PCB 1260	0.00668	0.0001	mg/L	0.0100		67	8-127		
----------	---------	--------	------	--------	--	----	-------	--	--

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

**Polychlorinated Biphenyls [PCB] - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B822094 - EPA 3510C**

**LCS Dup (B822094-BSD1)**

Prepared: 06/01/18 06:00 Analyzed: 06/01/18 13:02

PCB 1016	0.00750	0.0001	mg/L	0.0100		75	50-114	18	38
PCB 1260	0.00645	0.0001	mg/L	0.0100		65	8-127	3	34

**Duplicate (B822094-DUP1)**

Source: 1805505-02

Prepared: 06/01/18 06:00 Analyzed: 06/01/18 13:51

PCB 1016	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1221	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1232	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1242	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1248	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1254	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1260	<0.0001	0.0001	mg/L	<0.0001					200

**Chlorinated Pesticides by GC/ECD - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B822093 - EPA 3510C**

**LCS (B822093-BS1)**

Prepared: 06/01/18 06:00 Analyzed: 06/01/18 12:56

alpha-BHC	0.000729	0.0001	mg/L	0.00100		73	37-134		
gamma-BHC (Lindane)	0.000845	0.0001	mg/L	0.00100		84	32-127		
beta-BHC	0.000847	0.0001	mg/L	0.00100		85	17-147		
delta-BHC	0.000758	0.0001	mg/L	0.00100		76	19-140		
Heptachlor	0.000619	0.0001	mg/L	0.00100		62	34-111		
Aldrin	0.000753	0.0001	mg/L	0.00100		75	42-122		
Heptachlor Epoxide	0.000785	0.0001	mg/L	0.00100		78	37-142		
gamma-Chlordane	0.000766	0.0001	mg/L	0.00100		77	45-119		
alpha-Chlordane	0.000791	0.0001	mg/L	0.00100		79	45-119		
Endosulfan I	0.000803	0.0001	mg/L	0.00100		80	45-153		
4,4'-DDE	0.000784	0.0001	mg/L	0.00100		78	30-145		
Dieldrin	0.000772	0.0001	mg/L	0.00100		77	36-146		
Endrin	0.000886	0.0001	mg/L	0.00100		89	30-147		
4,4'-DDD	0.000913	0.0001	mg/L	0.00100		91	31-141		
Endosulfan II	0.000796	0.0001	mg/L	0.00100		80	5-202		
4,4'-DDT	0.000838	0.0001	mg/L	0.00100		84	25-160		

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

Reported:  
08/07/18 15:25  
Received:  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

Report No. 1805505

**Chlorinated Pesticides by GC/ECD - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B822093 - EPA 3510C**

**LCS (B822093-BS1)**

Prepared: 06/01/18 06:00 Analyzed: 06/01/18 12:56

Endrin Aldehyde	0.000802	0.0001	mg/L	0.00100		80	31-144		
Endosulfan Sulfate	0.000856	0.0001	mg/L	0.00100		86	26-144		
Methoxychlor	0.00111	0.0001	mg/L	0.00100		111	46-177		
Endrin Ketone	0.000720	0.0001	mg/L	0.00100		72	39-149		

Surrogate: Decachlorobiphenyl

0.000724

mg/L

0.00100

72

36-150

**LCS Dup (B822093-BSD1)**

Prepared: 06/01/18 06:00 Analyzed: 06/01/18 13:11

alpha-BHC	0.000813	0.0001	mg/L	0.00100		81	37-134	11	22
gamma-BHC (Lindane)	0.000916	0.0001	mg/L	0.00100		92	32-127	8	25
beta-BHC	0.000867	0.0001	mg/L	0.00100		87	17-147	2	20
delta-BHC	0.000785	0.0001	mg/L	0.00100		79	19-140	4	22
Heptachlor	0.000687	0.0001	mg/L	0.00100		69	34-111	10	22
Aldrin	0.000821	0.0001	mg/L	0.00100		82	42-122	9	22
Heptachlor Epoxide	0.000908	0.0001	mg/L	0.00100		91	37-142	15	25
gamma-Chlordane	0.000896	0.0001	mg/L	0.00100		90	45-119	16	20
alpha-Chlordane	0.000866	0.0001	mg/L	0.00100		87	45-119	9	20
Endosulfan I	0.000891	0.0001	mg/L	0.00100		89	45-153	10	23
4,4'-DDE	0.000843	0.0001	mg/L	0.00100		84	30-145	7	22
Dieldrin	0.000840	0.0001	mg/L	0.00100		84	36-146	8	21
Endrin	0.000922	0.0001	mg/L	0.00100		92	30-147	4	21
4,4'-DDD	0.000953	0.0001	mg/L	0.00100		95	31-141	4	21
Endosulfan II	0.000837	0.0001	mg/L	0.00100		84	5-202	5	22
4,4'-DDT	0.000860	0.0001	mg/L	0.00100		86	25-160	3	29
Endrin Aldehyde	0.000799	0.0001	mg/L	0.00100		80	31-144	0.4	30
Endosulfan Sulfate	0.000837	0.0001	mg/L	0.00100		84	26-144	2	23
Methoxychlor	0.000951	0.0001	mg/L	0.00100		95	46-177	15	22
Endrin Ketone	0.000755	0.0001	mg/L	0.00100		75	39-149	5	19

Surrogate: Decachlorobiphenyl

0.000521

mg/L

0.00100

52

36-150

**Matrix Spike (B822093-MS1)**

Source: 1805505-02

Prepared: 06/01/18 06:00 Analyzed: 06/01/18 13:26

alpha-BHC	0.000500	0.0001	mg/L	0.00100	<0.0001	50	30-135		
gamma-BHC (Lindane)	0.000534	0.0001	mg/L	0.00100	<0.0001	53	34-138		
beta-BHC	0.000451	0.0001	mg/L	0.00100	<0.0001	45	34-128		
delta-BHC	0.000452	0.0001	mg/L	0.00100	<0.0001	45	32-148		
Heptachlor	0.000347	0.0001	mg/L	0.00100	<0.0001	35	33-145		
Aldrin	0.000394	0.0001	mg/L	0.00100	<0.0001	39	18-127		



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

**Chlorinated Pesticides by GC/ECD - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B822093 - EPA 3510C**

**Matrix Spike (B822093-MS1)**

Source: 1805505-02

Prepared: 06/01/18 06:00 Analyzed: 06/01/18 13:26

Heptachlor Epoxide	0.000601	0.0001	mg/L	0.00100	<0.0001	60	28-132		
gamma-Chlordane	<0.0001	0.0001	mg/L	0.00100	<0.0001		29-128		
alpha-Chlordane	0.000368	0.0001	mg/L	0.00100	<0.0001	37	27-121		
Endosulfan I	0.000324	0.0001	mg/L	0.00100	<0.0001	32	26-130		
4,4'-DDE	0.000418	0.0001	mg/L	0.00100	<0.0001	42	20-136		
Dieldrin	0.000429	0.0001	mg/L	0.00100	<0.0001	43	25-132		
Endrin	0.000500	0.0001	mg/L	0.00100	<0.0001	50	34-169		
4,4'-DDD	0.000450	0.0001	mg/L	0.00100	<0.0001	45	28-137		
Endosulfan II	0.000401	0.0001	mg/L	0.00100	<0.0001	40	27-136		
4,4'-DDT	0.000352	0.0001	mg/L	0.00100	<0.0001	35	12-138		
Endrin Aldehyde	0.000311	0.0001	mg/L	0.00100	<0.0001	31	22-135		
Endosulfan Sulfate	0.000453	0.0001	mg/L	0.00100	<0.0001	45	36-162		
Methoxychlor	0.000430	0.0001	mg/L	0.00100	<0.0001	43	54-147		M
Endrin Ketone	0.000447	0.0001	mg/L	0.00100	<0.0001	45	37-132		
Surrogate: Decachlorobiphenyl	0.000708		mg/L	0.00100		71	36-150		

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/07/18 15:25  
**Received:**  
05/31/18 15:04

Additional Notes:

Report revised to correct the VSS results. 08/07/2018

**Report No. 1805505**

**DEFINITIONS**

- \* TNI / NELAC accredited analyte
- PQL Practical Quantitation Limit
- MCL Maximum Contaminant Level
- mg/Kg Milligrams per Kilogram (Parts per Million)
- mg/L Milligrams per Liter (Parts per Million)
- PPM Parts per Million
- L LCS recovery is outside QC acceptance limits, the results may have a slight bias.
- M MS recovery is outside QC limits, the results may have a slight bias due to possible matrix interferences.
- RMCCCL Recommended Maximum Concentration of Contaminants Level
- Surr L Surrogate recovery is outside QC limits due to matrix interferences.
- Surr H Surrogate recovery is high due to contribution from hydrocarbon interferences.
- µR/hr MicroRoentgens per hour (Measure of Radioactivity Level)
- HT Sample received past holdtime
- IC Improper Container
- IT Improper Temperature
- V Insufficient Volume
- B Sample collected in Bulk
- S RPD is outside QC limits. This may be due to possible matrix interferences in Matrix spike samples.

Test Methods followed by the laboratory are referenced in the following approved methodology, unless otherwise specified.

- Standard Methods for the Examination of Water and Wastewater, 21st Edition 2005
- Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Rev. March 1983
- EPA SW Test Methods for the Examination of Solid Waste, SW-846, 1996

**Subcontracted Analyses**

Subcontractor Lab	Lab Number	Analysis
Analysis Inc.	1805505-02	Total_Phenols

Aimee Landon For Marcela Gracia Hawk, President For

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Richard Hawk, General Manager

1610 S. Laredo Street, San Antonio, Texas-78207  
 (210) 229-9920 • Fax (210) 229-9921  
 www.satestinglab.com

<b>REPORT TO:</b>		<b>INVOICE TO:</b>			<b>P.O. #</b>
COMPANY <i>Alan Plummer Assoc, Inc</i>	ADDRESS <i>6300 La Calma Dr #400</i>	CITY <i>Austin</i>	STATE <i>TX</i>	ZIP <i>78752</i>	<b>REPORT NUMBER</b> <i>1805505</i>
ATTN <i>Tim Noyes</i>	PHONE # <i>210-233-3742</i>	REQUESTED TURNAROUND TIME IN BUSINESS DAYS & SURCHARGE			FAX #
REG <input checked="" type="checkbox"/> 7-10 Days +25%		<input type="checkbox"/> 5 Days +50%		<input type="checkbox"/> 4 Days +75%	<input type="checkbox"/> 3 Days +100%
<input type="checkbox"/> 2 Days +150%		<input type="checkbox"/> Next Day +300%		<input type="checkbox"/> SAME DAY WHEN POSSIBLE	

PROJECT NAME/LOCATION/SITE: *Mitchell Lake*

THE TURNAROUND TIME FOR SAMPLES RECEIVED AFTER 3:00 PM SHALL BEGIN AT 8:00 AM THE FOLLOWING BUSINESS DAY

HARDCOPY  YES  NO / FOR STATE COMPLIANCE  YES  NO SPECIAL REQ.:

PROJECT NO.: TEMP. I.R. GUN # *0* SAMPLE TEMPERATURE WITHIN COMPLIANCE (> 0°C ≤ 6°C)  YES  NO INITIAL TO AUTHORIZE BULK ANALYSIS

PROPER CONTAINERS  YES  NO IF NO, INITIAL HERE TO AUTHORIZE ANALYSIS

SAMPLED BY: *Brewster (SH)* MATRIX: COND. OF SAMPLE: *Ice* TRRP 13  YES  NO LPST PCLS

SAMPLE NUMBER	DATE	TIME	MATRIX	SAMPLING METHOD	SAMPLE IDENTIFICATION	CONTAINER NUMBER	CONTAINER SIZE	ANALYSIS REQUESTED													REMARKS	
								BTEX/MTBE/8260/TPH TX1005/TX1006	Metals 8 / 11 / 12 / 13 / TCLP / SPLP / Total	PAH / SVOC / 8270 / 623 / TCLP / Total	VOC / 8260 / 824 / TCLP / SPLP / Total	Water Quality - Drinking / Lineslock / Irrigation	Coli / TC / FC / HPC / Ecoli / Enterococci / Q-Tray	P3 / 608 / NO3 / NO2 / O-P / SD4	OC Pest / 808 / 8082A	Conventional Metals	POP's	POP's Metals Only	FOR	HOSE		40902E
1	5-31	10:05	X	X	#1 Near Polders	6	3625ml	X											X	X	H	
2	5-31	10:50	Y	Y	#6 Surface Mid Lake	12	6.250	X	X										X	X	F	
3	5-31	10:58	Y	Y	#6 Bottom Mid Lake	6	3625	X	X										X	X	F	
4	5-31	11:30	Y	Y	#9 Lower Lake	6	3625	X	X										X	X	F	
5	5-31	11:35	Y	Y	#9B Lower Lake	6	3625	X	X										X	X	F	
6	5-31	12:00	X	R	Field Blank	1	0.5ml												X			

RELINQUISHED BY (SIGNATURE) <i>[Signature]</i>	DATE / TIME <i>5/31 3:01</i>	RECEIVED BY (SIGNATURE) <i>[Signature]</i>	DATE / TIME <i>MAY 31 2018 1:58 PM</i>	RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME
RELINQUISHED BY (PRINT NAME) <i>Jeremy Hall</i>	DATE / TIME <i>5/31 3:01</i>	RECEIVED BY (PRINT NAME) <i>Tim Noyes</i>	DATE / TIME	RELINQUISHED BY (PRINT NAME)	DATE / TIME	RECEIVED BY (PRINT NAME)	DATE / TIME
RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME	METHOD OF SHIPMENT <i>Hand</i>		SUBCONTRACTED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<i>Prepals</i>
RELINQUISHED BY (PRINT NAME)	DATE / TIME	RECEIVED BY (PRINT NAME)	DATE / TIME	SAMPLED IN 5035 CONTAINERS <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A		CUSTODY SEAL IN PLACE & INTACT <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

Table 2

Mitchell Lake Quality Treatment Initiatives  
Water and Sediment Quality Study Plan  
Water Sample Analytical Methods, Preservation, and Holding Times

Category	Parameter	Analytical* Method	Minimum Analytical Level (mg/L)	Detection Limit (mg/L)	Preservation	Holding Time
Conventional Parameters	CBOD <sub>5</sub>	SM 5210 B	2	2	Cool, ≤6 °C	48 hours
	Total Kjeldahl nitrogen	351.3 <sup>(1)</sup>	1	1	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Ammonia	SM 4500-NH3B/C <sup>(1)</sup>	1	1	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Nitrate+nitrite	300	0.1	0.01	Cool, ≤6 °C	48 hours
	Total phosphorus	200.7	0.01	0.0013	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Total suspended solids	SM 2540-D	2.5	2.5	Cool, ≤6 °C	7 days
	Volatile suspended solids	SM 2540-E	0.1	0.1	Cool, ≤6 °C	7 days
	Total dissolved solids	SM 2540-C	2	2	Cool, ≤6 °C	7 days
	Alkalinity	SM 2320-B	20	20	Cool, ≤6 °C	14 days
Chlorophyll a	SM 10200 H Modified	(2)	(2)	Cool, ≤6 °C, amber bottle	24 hours	
Pollutants of Potential Concern Parameters	Metals digestion	200.7	N/A		HNO <sub>3</sub> to pH <2	6 months
	Antimony	200.7	0.01	0.0016		
	Arsenic	200.7	0.01	0.0009		
	Beryllium	200.7	0.01	0.0003		
	Cadmium	200.7	0.01	0.0003		
	Chromium, Total	200.7	0.01	0.0031		
	Chromium (III)	Cacl.	0.01	0.0006		
	Copper	200.7	0.01	0.0006		
	Lead	200.7	0.01	0.0006		
	Nickel	200.7	0.01	0.0003		
	Selenium	200.7	0.01	0.0019		
	Silver	200.7	0.005	0.0006		
	Thallium	200.7	0.01	0.0019		
	Zinc	200.7	0.01	0.0003		
	Mercury	245.1	0.002	0.000031	HNO <sub>3</sub> to pH <2, Cool, <6 °C	28 days
	Chromium (VI)	USGS 1-1230-85	0.005	0.0031	Cool, ≤6 °C, NaOH to pH 9.3 - 9.7 or Cool, ≤6 °C, (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	48 hrs
	Cyanide, Total	SM 4500 CN C/E	0.02	0.0041	Cool, ≤6 °C, NaOH to pH>12	14 days
	Phenols, total	420.1	0.05	0.005	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days until extraction
	<b>Organochlorine pesticides</b>	608	<b>ug/L</b>	<b>ug/L</b>	Cool, ≤6 °C	7 days until extraction, 40 days after extraction.
	Aldrin		0.1	0.02		
	Chlordane		0.1	0.02		
	4,4-DDD		0.1	0.02		
	4,4-DDE		0.1	0.01		
	4,4-DDT		0.1	0.03		
	Dieldrin		0.1	0.02		
	Endosulphan, alpha		0.1	0.02		
	Endosulphan, beta		0.1	0.02		
Endosulphan, sulfate	0.1		0.03			
Endrin	0.1		0.03			
Endrin aldehyde	0.1		0.03			
Heptachlor	0.1		0.04			
Heptachlor epoxide	0.1		0.02			
alpha Hexachlorocyclohexane	0.1		0.01			
beta Hexachlorocyclohexane	0.1		0.03			
delta Hexachlorocyclohexane	0.1		0.02			
Lindane	0.1		0.02			
PCB 1242	0.2		0.04			
PCB 1254	0.2		0.04			
PCB 1221	0.2		0.04			
PCB 1232	0.2		0.04			
PCB 1248	0.2		0.04			
PCB 1260	0.2	0.02				
PCB 1016	0.2	0.04				
Toxaphene	1	0.5				

(1)Sensitivity and method are for SATL. SAWS method is SM 4500-NH<sub>3</sub>-C and Reporting Limit (RL) is 1.2 mg/L for TKN and 0.25 mg/L for ammonia.

(2)RL is 5 ug/L based on 1,000 ml of sample; due to nature of sample, staff expects to use 5 ml of sample with RL of 1,000 ug/L.

**Sample Receipt Checklist**

Client: Alan Plummer Report Number: 1805505  
 Project Name: \_\_\_\_\_ Date Received: 5/31/18  
 Shipped via:  FedEx  UPS  Lonestar  Hand Delivered  DHL  SATL  Other Date Due: 6/11/18  
 Rush:  Specify:  3-5  2  1

**Items to be checked upon Receipt: [Yes, No, N/A]**

Item	Yes	No	NA	If NA-reason:
1. Custody Seals present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Custody Seals intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Air Bill included in folder, if received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Is COC included with samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Is COC signed and dated by client?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Sample temperature: Thermal preservation between >0° - 6° C? (Samples that are delivered to the laboratory on the same day that they are collected may not meet this criterion, but are acceptable if they arrive on ice.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Temp: <u>1.1</u> °C <u>76#6</u>
7. Samples received with ice <input checked="" type="checkbox"/> ice packs <input type="checkbox"/> other cooling <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Is the COC filled out correctly, and completely?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Information on the COC matches the samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Samples received within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. Samples properly labeled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. Samples submitted with chemical preservation? (e.g. pH adjusted, or sodium thiosulfate added for microbiological tests)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13. Proper sample containers used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14. All samples received intact, containers not damaged or leaking?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15. VOA vials (requesting BTEX/VOC analysis) received with no air bubbles? Bubbles acceptable on VOA vials for TPH.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>now vials</u>
16. Sample volume sufficient for requested analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17. Sample amount sufficient for TCLP analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>not clp</u>
18. Subcontracted Samples: [if Yes, complete the next section]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Analyses Subcontracted Out: Phenols No. of Samples: 1  
 Samples sent to: Analysis Inc Sent By: SF  
 Date samples sent: 5/31/18 Samples shipped via: ups next  
 TAT Requested: Reg. TAT  
 Tracking number [if any]: \_\_\_\_\_

Comments:

\_\_\_\_\_  
 \_\_\_\_\_

Received By: [Signature] Date: 5/31/18  
 Labeled By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Logged into LIMS By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Logged into RF By: \_\_\_\_\_ Date: \_\_\_\_\_



**Client:** San Antonio Testing Laboratory  
**Attn:** Sandra  
**Address:** 1610 S Larado St.  
 San Antonio TX 78207  
**Phone:** 210-229-9920 **FAX:**



T104704268-18-15

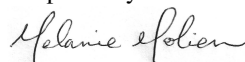
**Report#/Lab ID#:** 582997 **Report Date:** 06/05/18  
**Project ID:**  
**Sample Name:** 1805505-02 #6 Surface Mid Lake  
**Sample Matrix:** water  
**Date Received:** 06/01/2018 **Time:** 15:00  
**Date Sampled:** 05/31/2018 **Time:** 10:50

**REPORT OF ANALYSIS**

**QUALITY ASSURANCE DATA <sup>1</sup>**

Parameter	Result	Units	RQL <sup>5</sup>	Blank	Date/Time Analyzed	Method <sup>6</sup>	Data Qual. <sup>7</sup>	Prec. <sup>2</sup>	Recov. <sup>3</sup>	CCV <sup>4</sup>	LCS <sup>4</sup>
Total Phenols	<0.005	mg/L	0.005	<0.005	06/05/18 13:13	9066&420.4	J,	1.9	83	90.9	103.9

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results reflect only the sample identified above. The results have been carefully reviewed and to the best of my knowledge, unless otherwise indicated, meet NELAP requirements as described by AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2003, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted, Respectfully Submitted,  
  
 Quality Manager Assistant Quality Manager

Numbers in RED are above our MDLs and may or may not indicate a permit exceedance.  
 1. Quality assurance data for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent difference between duplicate results. 3. Recovery (Recov.) is the percent of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent recovery of analyte. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than (" $<$ ") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte detected between the RQL and the MDL. B =Analyte detected in associated method blank(s). C=poor CCV recovery. L=poor LCS recovery. S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference. N=not NELAP certified. N1=subcontract result enquire concerning NELAP certification. Solid sample results for all metals, except Mercury, reported on a dry weight basis (DWB)s. All other results for solid samples reported on an as received basis unless specifically identified as DWB.

**Exceptions Report (FINAL SECTION / END-OF-REPORT):**

**Report #/Lab ID#:** 582997 **Matrix:** water  
**Client:** San Antonio Testing Laboratory **Attn:** Sandra  
**Project ID:**  
**Sample Name:** 1805505-02 #6 Surface Mid Lake

Unless otherwise identified by data qualifier "N" or by an exception report, all reported results represent parameters and tests for which AnalySys maintains NELAP certification; or results provided by a subcontractor with NELAP certification for the test



**T104704268-18-15**

**Sample Temperature/Condition:** ≤6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is ≤ 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

**Standard sample acceptability conditions met? : YES**

Sample received in appropriate container(s), at appropriate temperature and pH.

**J flag Discussion:**

A J-flag data qualifier indicates that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

**Comments pertaining to Data Qualifiers and QC data (where applicable):**

Parameter	Qualif.	Comments
Total Phenols	J	See J-flag discussion above.

# CHAIN-OF-CUSTODY RECORD



1610 S. Laredo Street, San Antonio, Texas 78207  
 (210) 229-9920 • Fax (210) 229-9921  
 www.satestinglab.com

REPORT TO:			INVOICE TO:			P.O. #		
COMPANY <b>SATL</b>			COMPANY <b>SATL</b>			REPORT NUMBER		
ADDRESS			ADDRESS					
CITY		STATE	ZIP	CITY		STATE	ZIP	FAX #
ATTN: <b>Dimee</b>		PHONE #		ATTN: <b>Sandra</b>		PHONE #		E-MAIL
REQUESTED TURNAROUND TIME IN BUSINESS DAYS & SURCHARGE } <input type="checkbox"/> 7-10 Days REG <input type="checkbox"/> 5 Days +25% <input type="checkbox"/> 4 Days +50% <input type="checkbox"/> 3 DAYS +75% <input type="checkbox"/> 2 DAYS +100% <input type="checkbox"/> Next Day +150% <input type="checkbox"/> SAME DAY WHEN POSSIBLE +300%								

PROJECT NAME/LOCATION/SITE: THE TURNAROUND TIME FOR SAMPLES RECEIVED AFTER 3:00 PM SHALL BEGIN AT 8:00 AM THE FOLLOWING BUSINESS DAY

HARDCOPY  YES  NO / FOR STATE COMPLIANCE  YES  NO    SPECIAL REQ.: **need by 6/11/18**

PROJECT NO.    TEMP. I.R. GUN #    SAMPLE TEMPERATURE WITHIN COMPLIANCE (> 0°C ≤ 6°C)  YES  NO    INITIAL TO AUTHORIZE BULK ANALYSIS  YES  NO  
 IF NO, INITIAL HERE TO AUTHORIZE ANALYSIS

SAMPLED BY	MATRIX	SAMPLING METHOD	TEMP. ON RECPT.	COND. OF SAMPLE	TRRP 13 <input type="checkbox"/> YES <input type="checkbox"/> NO	LPST PCLS <input type="checkbox"/>
------------	--------	-----------------	-----------------	-----------------	--	------------------------------------

SAMPLE NUMBER	DATE	TIME	MATRIX							SAMPLING METHOD	SAMPLE IDENTIFICATION	CONTAINER NUMBER	CONTAINER SAMPLER	ANALYSIS REQUESTED																	REMARKS				
			DRINKING WATER	LIQUID	PAINTS	OIL	SOLID	SLUDGE	OTHER					COMPOSITE	GRAB	OTHER	BTEX/MTBE 8260 / TPH TX1005/TX1006	Metals 8 / 11 / 12 / 13 / TCLP / SPLP / Total	PAH / SVOC / 8270 / 625 / TCLP / SPLP / Total	VOC / 8280 / 624 / TCLP / SPLP / Total	Water Quality - Drinking / Irrigation	Coli / TC / FC / HPC / EColi / Enterococci	Br / Cl / F / M03 / M02/O-P / S04	PCB / 808 / 8082A	OC Pest / 808 / 8081A / TCLP / SPLP / Total	TOTAL Phenol Method 420.1	PRESERVED WITH								
																											LOC	HOZE	HOBE	SOBANE		SUBS	PRESERVED IN THE LAB	COMPOSITE IN THE LAB	FILTERED IN THE LAB
5/31/18	1050		X						X	1805505-#6 surface Mid Lake	1		582997	X																					

RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME	RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME
RELINQUISHED BY (PRINT NAME)	DATE / TIME	RECEIVED BY (PRINT NAME)	DATE / TIME	RELINQUISHED BY (PRINT NAME)	DATE / TIME	RECEIVED BY (PRINT NAME)	DATE / TIME
RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME	METHOD OF SHIPMENT	SUBCONTRACTED <input type="checkbox"/> YES <input type="checkbox"/> NO		
RELINQUISHED BY (PRINT NAME)	DATE / TIME	RECEIVED BY (PRINT NAME)	DATE / TIME	SAMPLED IN 5035 CONTAINERS <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	CUSTODY SEAL IN PLACE & INTACT		

**SAMPLE CHECK-IN**

Date: 6/4/18

Sample IDs: 582997

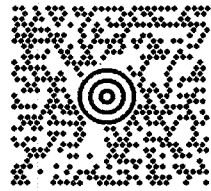
Samples Checked by: PS

COC Entry Line	1	2	3	4	5	6	7	8	9	10
a 4 oz soil jar										
b 8 oz soil jar										
c 16 oz soil jar										
d 32 oz soil jar										
e Soil VOA vials w/Stir Bar										
f Soil VOA vials (unpres)										
<b>VOA Vials</b>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>
g 40 mL VOA vials (unpres)										
h 40 mL VOA vials (HCl)										
<b>Unpreserved Bottles</b>										
i 500 mL amber (unpres)										
j 950 mL amber (unpres)										
k 8 oz HDPE (unpres)										
l 16 oz HDPE (unpres)										
m 32 oz HDPE (unpres)										
<b>Preserved Bottles</b>										
<small>Acid pH paper CL#</small> <u>119831</u>	<small>pH</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>
n 120 mL amber (H2SO4)										
o 250 mL amber (H2SO4)	<u>1</u>	<u>&lt;2</u>								
p 500 mL amber (H2SO4)										
q 8 oz Nalgene (HNO3)										
r 16 oz Nalgene (HNO3)										
s 32 oz Nalgene (HNO3)										
<small>Base pH paper CL#</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>	<small>pH</small>
t 8 oz HDPE (NaOH)										
u 8 oz HDPE (ZnAc/NaOH)										
v 16 oz HDPE (Ascorbic acid)										
<b>Air</b>										
w Tedlar bag										
x SUMA canister										
<b>Miscellaneous</b>										
y Sterile Bottle										
z Other										
Bottles in Austin	<u>0</u>									
Bottles in Corpus Christi										
Bottles to Subcontract Lab(s)										

<https://www.ups.com/uis/create?ActionOriginPair=default> PrintWindowPage&key=lab... 5/31/2018

MARCELA HAWK 24 LBS 1 OF 1  
2102299920  
SAN ANTONIO TESTING LABORATORY  
1610 S. LAREDO STREET  
SAN ANTONIO TX 78207

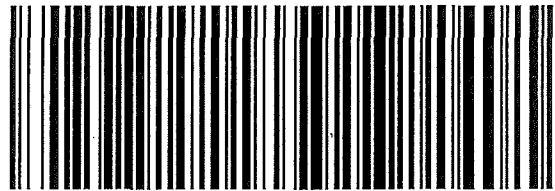
**SHIP TO:**  
ANALYSIS INC.  
5123855886  
3512 MONTOPOLIS DR  
**AUSTIN TX 78744-1418**



**TX 787 9-03**



**UPS NEXT DAY AIR SAVER 1P**  
TRACKING # 1Z 785 26E 13 9900 1292



BILLING: P/P

UJS 20.0.42. WNTINV50 99.0A 04/2018



ASI Sample Evaluation

F-0029 V7-052715  
Effective Date: 6/1/15  
1 of 1

Date: 6/4/18

Sample IDs: 582997

# of C-O-Cs: 1

Samples Delievery by: Client  Bus  LSO  UPS  Fed-Ex  ASI/PU  Courier  Carrier Bill # \_\_\_\_\_

Sample Receiving		Intitals <i>PS</i>		Cooler Comment
Item	Cooler	Y	N	
1	Cooler temperature appropriate	✓		
2	Samples on ice/from fridge	✓		
3	Custody Seal Present (if shipped)	✓		
3a	custody seal was intact	✓		
3b	custody seal was signed/dated	✓		

Item	COC	Y	N	COC Comment
4	COC received	✓		
5	COC Complete			
5a	Sample identification	✓		
5b	Date Collected	✓		
5c	Time Collected	✓		
5d	Number of containers	✓		
5e	Preservation type		✓	
5f	Matrix		✓	
5g	Parameters	✓		
5h	Relinquished by Client	✓		
6	COC info match sample labels	✓		
7	Assist with completion of COC		<input type="checkbox"/>	
8	Additional information supplied by client		<input type="checkbox"/>	

Item	Sample Containers	Y	N	Sample Container Comments If no for item 9-10 comment req.
9	Bottles Intact/Integrity OK	✓		
10	Samples properly labelled/identifiable	✓		
11	VOA vials headspace OK (if required)			
12	Samples Properly pH Preserved (if required)			
12a	Dissolved Metals field filtered and preserved			
12b	Acid Preserved (pH OK)	✓		
12c	Base Preserved (pH OK)			

Project Management		Intitals <i>EP</i>	
Item	Hold Time	Y	N
13	Samples received within hold-time	✓	
14	Samples received with time to complete analysis within hold-time	✓	
List of affected parameters:			

Item	Water VOC-VOAs	Y	N
15	Special compounds required		
If required indicate if received in proper container			
15a	Acrolein (unpreserved-3d)		
15b	Acrolein/Acrylonitrile (pH 4-5)		
15c	Vinyl chloride/Styrene/2-chloroethyl vinyl ether (unpreserved)		

Item	Bulk Soil Sampling (TPH/VOC/BTEX)	Y	N
16	Bulk soil samples received		
16a	Petroleum Storage Tank Rule		
16b	Client indicated no hydrocarbons in C6-C12 for TPH or high level VOC		
16c	Client indicated VOA not used due to sampling difficulty		
16d	ASI assesed VOA not used due to sample physical characteristics		

Item	Sample Containers	Y	N
17	Samples in proper containers excluding items 15 and 16	✓	

Item	COC	Y	N
7	Assist with completion of COC		<input type="checkbox"/>
8	Additional information supplied by client		<input type="checkbox"/>
18	Hold requested		<input type="checkbox"/>
19	Sub-contract analysis required		<input type="checkbox"/>

Request		Intitals <i>EP</i>
Special report formats		
TRRP <input type="checkbox"/>	Landfill <input type="checkbox"/>	NPDES (2) <input type="checkbox"/> SW-846 (3) <input type="checkbox"/>
Dry-Weight(9) <input type="checkbox"/>	TRRP (no QC) <input type="checkbox"/>	Other <u>0</u>
QC Pages <input type="checkbox"/>	Unit Conversion <input type="checkbox"/>	
EDD Required		
General <input type="checkbox"/>	TRRP <input type="checkbox"/>	Client Specific <input type="checkbox"/>
TAT Request		
5-day <input type="checkbox"/>	Standard <input checked="" type="checkbox"/>	Rush <input type="checkbox"/>
Requested Due Date _____		

Client Requested Changes	
TAT Change Request to	
Standard <input type="checkbox"/>	Rush <input type="checkbox"/>
Requested Due Date _____	
Date of change	Intitals
Method of notification: phone <input type="checkbox"/> email <input type="checkbox"/>	
Parameter Change Request	
Add	_____
Remove	_____
Date of change	Intitals
Method of notification: phone <input type="checkbox"/> email <input type="checkbox"/>	
COC Correction Notes	
Date of change	Intitals
Method of notification: phone <input type="checkbox"/> email <input type="checkbox"/>	

Client notification required due to sample integrity issue identified on the COC or ASI Sample Evaluation Form (F-0029)

Method of notification to client: Phone  E-Mail

Client response: Proceed with analysis  Resample and re-submit

Method of response: Phone  E-Mail

June 13, 2018

**Tim Noack**

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin, TX 78752

**SATL Report No.: 1805506**

**RE: Mitchell Lake**

Dear Tim Noack

SATL received 9 Sample(s) on 05/31/2018 for analyses identified on the chain of custody. The analyses were performed using methods indicated on the laboratory report. Any deviations observed at sample receiving are notated on the Sample Receipt Checklist and/or Chain of Custody documents attached as part of this analytical report.

There were no problems in the sample analyses unless otherwise noted. Sample data and associated QC are presented in the attached laboratory report. QC sample data were within laboratory acceptance limits except where noted on the report.

Sincerely,

For San Antonio Testing Laboratory, Inc.



Richard Hawk,  
General Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

NELAC Cert. No.: T104704360-17-17

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

**SAMPLE SUMMARY**

Total Samples received in this work order: 9

The following samples were requested for analysis as per the CoC. Any re-runs or re-analyses requested are identified as such.

<u>Sample ID</u>	<u>Laboratory ID</u>	<u>Matrix</u>	<u>Sampling Method</u>	<u>Date Sampled</u>	<u>Date Received</u>
Sed #1	1805506-01	Solid	Composite	05/31/18 10:05	05/31/18 15:06
Sed #2	1805506-02	Solid	Composite	05/31/18 12:45	05/31/18 15:06
Sed #3	1805506-03	Solid	Composite	05/31/18 12:33	05/31/18 15:06
Sed #4	1805506-04	Solid	Composite	05/31/18 13:03	05/31/18 15:06
Sed #5	1805506-05	Solid	Composite	05/31/18 12:15	05/31/18 15:06
Sed #6	1805506-06	Solid	Composite	05/31/18 11:10	05/31/18 15:06
Sed #7	1805506-07	Solid	Composite	05/31/18 13:20	05/31/18 15:06
Sed #8	1805506-08	Solid	Composite	05/31/18 11:58	05/31/18 15:06
Sed #9	1805506-09	Solid	Composite	05/31/18 11:45	05/31/18 15:06

**Notes**

All quality control samples and checks are within acceptance limits unless otherwise indicated.

Test results pertain only to those items tested.

All samples were in good condition when received by the laboratory unless otherwise noted.





NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

Sample ID #: Sed #1

Sampling Method: Composite

Lab Sample ID #: 1805506-01

Sample Matrix: Solid

Date/Time Collected: 05/31/18 10:05

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>									
Total Solids	17.2	%	0.0001		B823120	06/08/18 10:25	SM2540G	JL	
% Solids	16.3	% by Wt.	1.00	% Calc	B823031	06/05/18 11:50	CALC	ME	
Volatile Solids	13.6	%	0.0001		B823120	06/08/18 12:27	SM2540G	JL	
Ammonia-Nitrogen *	118	mg/kg	10.0	SM4500NH3B	B823102	06/07/18 16:23	EPA 350.2	JL	
pH *	7.74	pH Units	1.00	SM4500HB	B823027	06/04/18 17:03	EPA 9045D	HC	H
pH measured @Temperature >>	21	°C	1.0	SM4500HB	B823027	06/04/18 17:03	EPA 170.1	HC	H
Specific Conductance	717	umhos/cm	1.00	SM2510B	B823028	06/04/18 17:03	SM2510B	HC	
Total Kjeldahl Nitrogen	1110	mg/kg	1.00	EPA 351.3	B823096	06/07/18 10:30	EPA 351.3	JL	
<b>Total Metals</b>									
Calcium *	123000	mg/kg dry	100	EPA 3050B	B823024	06/05/18 15:45	EPA 6010B	XE	
Magnesium *	6800	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 15:45	EPA 6010B	XE	
Phosphorus *	4760	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 15:45	EPA 6010B	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

Sample ID #: Sed #2

Sampling Method: Composite

Lab Sample ID #: 1805506-02

Sample Matrix: Solid

Date/Time Collected: 05/31/18 12:45

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>									
Total Solids	56.6	%	0.0001		B823120	06/08/18 10:25	SM2540G	JL	
% Solids	57.3	% by Wt.	1.00	% Calc	B823031	06/05/18 11:50	CALC	ME	
Volatile Solids	3.13	%	0.0001		B823120	06/08/18 12:27	SM2540G	JL	
Ammonia-Nitrogen *	72.8	mg/kg	10.0	SM4500NH3B	B823102	06/07/18 16:23	EPA 350.2	JL	
pH *	8.39	pH Units	1.00	SM4500HB	B823027	06/04/18 17:03	EPA 9045D	HC	H
pH measured @Temperature >>	21	°C	1.0	SM4500HB	B823027	06/04/18 17:03	EPA 170.1	HC	H
Specific Conductance	409	umhos/cm	1.00	SM2510B	B823028	06/04/18 17:03	SM2510B	HC	
Total Kjeldahl Nitrogen	1050	mg/kg	1.00	EPA 351.3	B823096	06/07/18 10:30	EPA 351.3	JL	
<b>Total Metals</b>									
Calcium *	37900	mg/kg dry	100	EPA 3050B	B823024	06/05/18 15:51	EPA 6010B	XE	
Magnesium *	2030	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 15:51	EPA 6010B	XE	
Phosphorus *	9660	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 15:51	EPA 6010B	XE	



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

Sample ID #: Sed #3

Sampling Method: Composite

Lab Sample ID #: 1805506-03

Sample Matrix: Solid

Date/Time Collected: 05/31/18 12:33

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>									
Total Solids	58.5	%	0.0001		B823120	06/08/18 10:25	SM2540G	JL	
% Solids	56.4	% by Wt.	1.00	% Calc	B823031	06/05/18 11:50	CALC	ME	
Volatile Solids	8.44	%	0.0001		B823120	06/08/18 12:27	SM2540G	JL	
Ammonia-Nitrogen *	67.0	mg/kg	10.0	SM4500NH3B	B823102	06/07/18 16:23	EPA 350.2	JL	
pH *	8.74	pH Units	1.00	SM4500HB	B823027	06/04/18 17:03	EPA 9045D	HC	H
pH measured @Temperature >>	21	°C	1.0	SM4500HB	B823027	06/04/18 17:03	EPA 170.1	HC	H
Specific Conductance	310	umhos/cm	1.00	SM2510B	B823028	06/04/18 17:03	SM2510B	HC	
Total Kjeldahl Nitrogen	1470	mg/kg	1.00	EPA 351.3	B823096	06/07/18 10:30	EPA 351.3	JL	
<b>Total Metals</b>									
Calcium *	75600	mg/kg dry	100	EPA 3050B	B823024	06/05/18 16:15	EPA 6010B	XE	
Magnesium *	3330	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 16:15	EPA 6010B	XE	
Phosphorus *	27800	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 16:15	EPA 6010B	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

Sample ID #: Sed #4

Sampling Method: Composite

Lab Sample ID #: 1805506-04

Sample Matrix: Solid

Date/Time Collected: 05/31/18 13:03

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>									
Total Solids	79.6	%	0.0001		B823120	06/08/18 10:25	SM2540G	JL	
% Solids	74.8	% by Wt.	1.00	% Calc	B823031	06/05/18 11:50	CALC	ME	
Volatile Solids	2.08	%	0.0001		B823120	06/08/18 12:27	SM2540G	JL	
Ammonia-Nitrogen *	28.0	mg/kg	10.0	SM4500NH3B	B823102	06/07/18 16:23	EPA 350.2	JL	
pH *	9.39	pH Units	1.00	SM4500HB	B823027	06/04/18 17:03	EPA 9045D	HC	H
pH measured @Temperature >>	22	°C	1.0	SM4500HB	B823027	06/04/18 17:03	EPA 170.1	HC	H
Specific Conductance	193	umhos/cm	1.00	SM2510B	B823028	06/04/18 17:03	SM2510B	HC	
Total Kjeldahl Nitrogen	410	mg/kg	1.00	EPA 351.3	B823096	06/07/18 10:30	EPA 351.3	JL	
<b>Total Metals</b>									
Arsenic *	6.00	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:36	EPA 6010B	XE	
Boron *	38.6	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:36	EPA 6010B	XE	
Cadmium *	<0.500	mg/kg dry	0.500	EPA 3050B	B823024	06/06/18 16:36	EPA 6010B	XE	
Calcium *	145000	mg/kg dry	100	EPA 3050B	B823024	06/05/18 16:21	EPA 6010B	XE	
Chromium *	9.75	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:36	EPA 6010B	XE	
Copper *	4.66	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:36	EPA 6010B	XE	
Mercury *	0.613	mg/kg dry	0.040	EPA 7471B	B823025	06/05/18 14:05	EPA 7471A	ME	
Iron *	38500	mg/kg dry	100	EPA 3050B	B823024	06/05/18 16:21	EPA 6010B	XE	
Lead *	37.8	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:36	EPA 6010B	XE	
Magnesium *	2460	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 16:21	EPA 6010B	XE	
Manganese *	782	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 16:21	EPA 6010B	XE	
Nickel *	18.9	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:36	EPA 6010B	XE	
Phosphorus *	7670	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 16:21	EPA 6010B	XE	
Selenium *	<1.00	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:36	EPA 6010B	XE	
Sodium	707	mg/kg dry	100	EPA 3050B	B823024	06/05/18 16:21	EPA 6010B	XE	
Zinc *	65.6	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:36	EPA 6010B	XE	



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

Sample ID #: Sed #5

Sampling Method: Composite

Lab Sample ID #: 1805506-05

Sample Matrix: Solid

Date/Time Collected: 05/31/18 12:15

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>									
Total Solids	62.4	%	0.0001		B823120	06/08/18 10:25	SM2540G	JL	
% Solids	57.7	% by Wt.	1.00	% Calc	B823031	06/05/18 11:50	CALC	ME	
Volatile Solids	2.52	%	0.0001		B823120	06/08/18 12:27	SM2540G	JL	
Ammonia-Nitrogen *	50.0	mg/kg	10.0	SM4500NH3B	B823102	06/07/18 16:23	EPA 350.2	JL	
pH *	8.70	pH Units	1.00	SM4500HB	B823027	06/04/18 17:03	EPA 9045D	HC	H
pH measured @Temperature >>	23	°C	1.0	SM4500HB	B823027	06/04/18 17:03	EPA 170.1	HC	H
Specific Conductance	370	umhos/cm	1.00	SM2510B	B823028	06/04/18 17:03	SM2510B	HC	
Total Kjeldahl Nitrogen	801	mg/kg	1.00	EPA 351.3	B823096	06/07/18 10:30	EPA 351.3	JL	
<b>Total Metals</b>									
Calcium *	44700	mg/kg dry	100	EPA 3050B	B823024	06/05/18 16:26	EPA 6010B	XE	
Magnesium *	1770	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 16:26	EPA 6010B	XE	
Phosphorus *	13500	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 16:26	EPA 6010B	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

Sample ID #: Sed #6

Sampling Method: Composite

Lab Sample ID #: 1805506-06

Sample Matrix: Solid

Date/Time Collected: 05/31/18 11:10

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>									
Total Solids	12.9	%	0.0001		B823120	06/08/18 10:25	SM2540G	JL	
% Solids	13.1	% by Wt.	1.00	% Calc	B823031	06/05/18 11:50	CALC	ME	
Volatile Solids	16.5	%	0.0001		B823120	06/08/18 12:27	SM2540G	JL	
Ammonia-Nitrogen *	112	mg/kg	10.0	SM4500NH3B	B823102	06/07/18 16:23	EPA 350.2	JL	
pH *	7.68	pH Units	1.00	SM4500HB	B823027	06/04/18 17:03	EPA 9045D	HC	H
pH measured @Temperature >>	23	°C	1.0	SM4500HB	B823027	06/04/18 17:03	EPA 170.1	HC	H
Specific Conductance	681	umhos/cm	1.00	SM2510B	B823028	06/04/18 17:03	SM2510B	HC	
Total Kjeldahl Nitrogen	1000	mg/kg	1.00	EPA 351.3	B823096	06/07/18 10:30	EPA 351.3	JL	
<b>Total Metals</b>									
Calcium *	89500	mg/kg dry	100	EPA 3050B	B823024	06/05/18 16:32	EPA 6010B	XE	
Magnesium *	5310	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 16:32	EPA 6010B	XE	
Phosphorus *	5490	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 16:32	EPA 6010B	XE	



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

Sample ID #: Sed #7

Sampling Method: Composite

Lab Sample ID #: 1805506-07

Sample Matrix: Solid

Date/Time Collected: 05/31/18 13:20

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>									
Total Solids	50.4	%	0.0001		B823120	06/08/18 10:25	SM2540G	JL	
% Solids	42.1	% by Wt.	1.00	% Calc	B823031	06/05/18 11:50	CALC	ME	
Volatile Solids	7.67	%	0.0001		B823120	06/08/18 12:27	SM2540G	JL	
Ammonia-Nitrogen *	62.0	mg/kg	10.0	SM4500NH3B	B823102	06/07/18 16:23	EPA 350.2	JL	
pH *	8.50	pH Units	1.00	SM4500HB	B823027	06/04/18 17:03	EPA 9045D	HC	H
pH measured @Temperature >>	23	°C	1.0	SM4500HB	B823027	06/04/18 17:03	EPA 170.1	HC	H
Specific Conductance	416	umhos/cm	1.00	SM2510B	B823028	06/04/18 17:03	SM2510B	HC	
Total Kjeldahl Nitrogen	1660	mg/kg	1.00	EPA 351.3	B823096	06/07/18 10:30	EPA 351.3	JL	
<b>Total Metals</b>									
Calcium *	98200	mg/kg dry	100	EPA 3050B	B823024	06/05/18 16:37	EPA 6010B	XE	
Magnesium *	2880	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 16:37	EPA 6010B	XE	
Phosphorus *	21900	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 16:37	EPA 6010B	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

Sample ID #: Sed #8

Sampling Method: Composite

Lab Sample ID #: 1805506-08

Sample Matrix: Solid

Date/Time Collected: 05/31/18 11:58

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>									
Total Solids	17.3	%	0.0001		B823120	06/08/18 10:25	SM2540G	JL	
% Solids	17.8	% by Wt.	1.00	% Calc	B823031	06/05/18 11:50	CALC	ME	
Volatile Solids	14.2	%	0.0001		B823120	06/08/18 12:27	SM2540G	JL	
Ammonia-Nitrogen *	112	mg/kg	10.0	SM4500NH3B	B823102	06/07/18 16:23	EPA 350.2	JL	
pH *	7.67	pH Units	1.00	SM4500HB	B823027	06/04/18 17:03	EPA 9045D	HC	H
pH measured @Temperature >>	23	°C	1.0	SM4500HB	B823027	06/04/18 17:03	EPA 170.1	HC	H
Specific Conductance	658	umhos/cm	1.00	SM2510B	B823028	06/04/18 17:03	SM2510B	HC	
Total Kjeldahl Nitrogen	1170	mg/kg	1.00	EPA 351.3	B823096	06/07/18 10:30	EPA 351.3	JL	
<b>Total Metals</b>									
Arsenic *	3.34	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:41	EPA 6010B	XE	
Boron *	24.5	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:41	EPA 6010B	XE	
Cadmium *	1.53	mg/kg dry	0.500	EPA 3050B	B823024	06/06/18 16:41	EPA 6010B	XE	
Calcium *	68100	mg/kg dry	100	EPA 3050B	B823024	06/05/18 16:43	EPA 6010B	XE	
Chromium *	140	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:41	EPA 6010B	XE	
Copper *	54.4	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:41	EPA 6010B	XE	
Mercury *	2.22	mg/kg dry	0.040	EPA 7471B	B823025	06/05/18 14:07	EPA 7471A	ME	
Iron *	9920	mg/kg dry	100	EPA 3050B	B823024	06/05/18 16:43	EPA 6010B	XE	
Lead *	83.0	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:41	EPA 6010B	XE	
Magnesium *	3800	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 16:43	EPA 6010B	XE	
Manganese *	150	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:41	EPA 6010B	XE	
Nickel *	14.2	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:41	EPA 6010B	XE	
Phosphorus *	4200	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 16:43	EPA 6010B	XE	
Selenium *	<1.00	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:41	EPA 6010B	XE	
Sodium	2740	mg/kg dry	100	EPA 3050B	B823024	06/05/18 16:43	EPA 6010B	XE	
Zinc *	231	mg/kg dry	1.00	EPA 3050B	B823024	06/06/18 16:41	EPA 6010B	XE	





NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

Sample ID #: Sed #9

Sampling Method: Composite

Lab Sample ID #: 1805506-09

Sample Matrix: Solid

Date/Time Collected: 05/31/18 11:45

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>									
Total Solids	51.1	%	0.0001		B823120	06/08/18 10:25	SM2540G	JL	
% Solids	52.2	% by Wt.	1.00	% Calc	B823031	06/05/18 11:50	CALC	ME	
Volatile Solids	14.3	%	0.0001		B823120	06/08/18 12:27	SM2540G	JL	
Ammonia-Nitrogen *	106	mg/kg	10.0	SM4500NH3B	B823102	06/07/18 16:23	EPA 350.2	JL	
pH *	8.39	pH Units	1.00	SM4500HB	B823027	06/04/18 17:03	EPA 9045D	HC	H
pH measured @Temperature >>	23	°C	1.0	SM4500HB	B823027	06/04/18 17:03	EPA 170.1	HC	H
Specific Conductance	407	umhos/cm	1.00	SM2510B	B823028	06/04/18 17:03	SM2510B	HC	
Total Kjeldahl Nitrogen	1820	mg/kg	1.00	EPA 351.3	B823096	06/07/18 10:30	EPA 351.3	JL	
<b>Total Metals</b>									
Calcium *	53600	mg/kg dry	100	EPA 3050B	B823024	06/05/18 17:01	EPA 6010B	XE	
Magnesium *	2560	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 17:01	EPA 6010B	XE	
Phosphorus *	3610	mg/kg dry	20.0	EPA 3050B	B823024	06/05/18 17:01	EPA 6010B	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	---------	-----------

**Batch B823027 - SM4500HB**

LCS (B823027-BS1) Prepared: 06/04/18 16:16 Analyzed: 06/04/18 16:40									
pH	4.00	1.00	pH Units	4.00		100	80-120		
Duplicate (B823027-DUP1) Source: 1805506-09 Prepared: 06/04/18 16:16 Analyzed: 06/04/18 17:03									
pH	8.37	1.00	pH Units	8.39				0.2	20
pH measured @Temperature >>	22.9	1.0	°C	22.8				0.4	30

**Batch B823028 - SM2510B**

LCS (B823028-BS1) Prepared: 06/04/18 16:16 Analyzed: 06/04/18 17:03									
Specific Conductance	1010	1.00	umhos/cm	1000		101	80-120		
Duplicate (B823028-DUP1) Source: 1805506-09 Prepared: 06/04/18 16:16 Analyzed: 06/04/18 17:03									
Specific Conductance	428	1.00	umhos/cm	407				5	20

**Batch B823096 - EPA 351.3**

Blank (B823096-BLK1) Prepared: 06/06/18 09:00 Analyzed: 06/07/18 10:30									
Total Kjeldahl Nitrogen	<1.00	1.00	mg/kg						
LCS (B823096-BS1) Prepared: 06/06/18 09:00 Analyzed: 06/07/18 10:30									
Total Kjeldahl Nitrogen	190	1.00	mg/kg	200		95	80-120		
LCS Dup (B823096-BSD1) Prepared: 06/06/18 09:00 Analyzed: 06/07/18 10:30									
Total Kjeldahl Nitrogen	201	1.00	mg/kg	200		100	80-120	6	20
Duplicate (B823096-DUP1) Source: 1805506-01 Prepared: 06/06/18 09:00 Analyzed: 06/07/18 10:30									
Total Kjeldahl Nitrogen	1260	1.00	mg/kg	1110				12	20
Matrix Spike (B823096-MS1) Source: 1805506-01 Prepared: 06/06/18 09:00 Analyzed: 06/07/18 10:30									
Total Kjeldahl Nitrogen	1340	1.00	mg/kg	200	1110	117	80-120		

**Batch B823102 - SM4500NH3B**

Blank (B823102-BLK1) Prepared: 06/07/18 14:00 Analyzed: 06/07/18 16:23									
Ammonia-Nitrogen	<10.0	10.0	mg/kg						
LCS (B823102-BS1) Prepared: 06/07/18 14:00 Analyzed: 06/07/18 16:23									
Ammonia-Nitrogen	201	10.0	mg/kg	200		100	80-120		
LCS Dup (B823102-BSD1) Prepared: 06/07/18 14:00 Analyzed: 06/07/18 16:23									
Ammonia-Nitrogen	190	10.0	mg/kg	200		95	80-120	6	20

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B823102 - SM4500NH3B**

<b>Duplicate (B823102-DUP1)</b>		<b>Source: 1805506-01</b>			Prepared: 06/07/18 14:00 Analyzed: 06/07/18 16:23				
Ammonia-Nitrogen	118	10.0	mg/kg	118				0	20
<b>Matrix Spike (B823102-MS1)</b>		<b>Source: 1805506-01</b>			Prepared: 06/07/18 14:00 Analyzed: 06/07/18 16:23				
Ammonia-Nitrogen	297	10.0	mg/kg	200	118	90	80-120		

**Batch B823120 - NO PREP**

<b>Duplicate (B823120-DUP1)</b>		<b>Source: 1805506-08</b>			Prepared: 06/07/18 16:00 Analyzed: 06/08/18 10:25				
Total Solids	17.8	0.0001	%	17.3				3	30
Volatile Solids	14.0	0.0001	%	14.2				2	20

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B823024 - EPA 3050B**

<b>Blank (B823024-BLK1)</b>		Prepared: 06/05/18 09:00 Analyzed: 06/05/18 14:53							
Arsenic	<1.00	1.00	mg/kg wet						
Boron	<1.00	1.00	mg/kg wet						
Cadmium	<0.500	0.500	mg/kg wet						
Calcium	<5.00	5.00	mg/kg wet						
Chromium	<1.00	1.00	mg/kg wet						
Copper	<1.00	1.00	mg/kg wet						
Iron	<5.00	5.00	mg/kg wet						
Lead	<1.00	1.00	mg/kg wet						
Magnesium	<1.00	1.00	mg/kg wet						
Manganese	<1.00	1.00	mg/kg wet						
Nickel	<1.00	1.00	mg/kg wet						
Phosphorus	<1.00	1.00	mg/kg wet						
Selenium	<1.00	1.00	mg/kg wet						
Sodium	5.42	5.00	mg/kg wet						
Zinc	<1.00	1.00	mg/kg wet						

**LCS (B823024-BS1)**

<b>LCS (B823024-BS1)</b>		Prepared: 06/05/18 09:00 Analyzed: 06/05/18 14:59							
Arsenic	97.3	1.00	mg/kg wet	100		97	80-120		
Boron	95.9	1.00	mg/kg wet	100		96	80-120		

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B823024 - EPA 3050B**

**LCS (B823024-BS1)**

Prepared: 06/05/18 09:00 Analyzed: 06/05/18 14:59

Cadmium	96.2	0.500	mg/kg wet	100		96	80-120		
Calcium	94.2	5.00	mg/kg wet	100		94	80-120		
Chromium	94.2	1.00	mg/kg wet	100		94	80-120		
Copper	95.8	1.00	mg/kg wet	100		96	80-120		
Iron	94.4	5.00	mg/kg wet	100		94	80-120		
Lead	94.4	1.00	mg/kg wet	100		94	80-120		
Magnesium	92.2	1.00	mg/kg wet	100		92	80-120		
Manganese	94.7	1.00	mg/kg wet	100		95	80-120		
Nickel	94.9	1.00	mg/kg wet	100		95	80-120		
Phosphorus	95.9	1.00	mg/kg wet	100		96	80-120		
Selenium	96.6	1.00	mg/kg wet	100		97	80-120		
Sodium	94.0	5.00	mg/kg wet	100		94	80-120		
Zinc	95.6	1.00	mg/kg wet	100		96	80-120		

**LCS Dup (B823024-BSD1)**

Prepared: 06/05/18 09:00 Analyzed: 06/05/18 15:04

Arsenic	100	1.00	mg/kg wet	100		100	80-120	3	30
Boron	100	1.00	mg/kg wet	100		100	80-120	4	30
Cadmium	99.5	0.500	mg/kg wet	100		100	80-120	3	30
Calcium	99.4	5.00	mg/kg wet	100		99	80-120	5	30
Chromium	99.2	1.00	mg/kg wet	100		99	80-120	5	30
Copper	101	1.00	mg/kg wet	100		101	80-120	5	30
Iron	99.8	5.00	mg/kg wet	100		100	80-120	6	30
Lead	97.7	1.00	mg/kg wet	100		98	80-120	3	30
Magnesium	96.9	1.00	mg/kg wet	100		97	80-120	5	30
Manganese	99.2	1.00	mg/kg wet	100		99	80-120	5	30
Nickel	98.0	1.00	mg/kg wet	100		98	80-120	3	30
Phosphorus	99.2	1.00	mg/kg wet	100		99	80-120	3	20
Selenium	99.7	1.00	mg/kg wet	100		100	80-120	3	30
Sodium	100	5.00	mg/kg wet	100		100	80-120	6	30
Zinc	98.8	1.00	mg/kg wet	100		99	80-120	3	30

**Matrix Spike (B823024-MS1)**

Source: 1805475-01

Prepared: 06/05/18 09:00 Analyzed: 06/05/18 15:16

Arsenic	77.3	1.00	mg/kg dry	114	3.59	64	75-125		M
Boron	84.1	1.00	mg/kg dry	114	9.15	65	75-125		M
Cadmium	71.7	0.500	mg/kg dry	114	0.212	62	75-125		M
Calcium	37800	5.00	mg/kg dry	114	30800	NR	75-125		M
Chromium	80.8	1.00	mg/kg dry	114	8.31	63	75-125		M
Copper	79.5	1.00	mg/kg dry	114	5.05	65	75-125		M

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

Reported:  
06/13/18 17:34  
Received:  
05/31/18 15:06

Additional Notes:

Report No. 1805506

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B823024 - EPA 3050B**

Matrix Spike (B823024-MS1)		Source: 1805475-01			Prepared: 06/05/18 09:00		Analyzed: 06/05/18 15:16		
Iron	6870	5.00	mg/kg dry	114	4680	NR	75-125		M
Lead	177	1.00	mg/kg dry	114	51.7	109	75-125		
Magnesium	3040	1.00	mg/kg dry	114	1900	999	75-125		M
Manganese	285	1.00	mg/kg dry	114	177	94	75-125		
Nickel	123	1.00	mg/kg dry	114	9.45	100	75-125		
Phosphorus	249	1.00	mg/kg dry	114	125	108	75-125		
Selenium	68.4	1.00	mg/kg dry	114	<1.00	60	75-125		M
Sodium	498	5.00	mg/kg dry	114	400	86	75-125		
Zinc	136	1.00	mg/kg dry	114	47.5	77	75-125		

Matrix Spike Dup (B823024-MSD1)		Source: 1805475-01			Prepared: 06/05/18 09:00		Analyzed: 06/05/18 15:22			
Arsenic	52.5	1.00	mg/kg dry	115	3.59	42	75-125	38	30	M S
Boron	59.2	1.00	mg/kg dry	115	9.15	43	75-125	35	30	M S
Cadmium	49.0	0.500	mg/kg dry	115	0.212	42	75-125	38	30	M S
Calcium	28100	5.00	mg/kg dry	115	30800	NR	75-125	29	30	M
Chromium	55.6	1.00	mg/kg dry	115	8.31	41	75-125	37	30	M S
Copper	54.1	1.00	mg/kg dry	115	5.05	42	75-125	38	30	M S
Iron	5310	5.00	mg/kg dry	115	4680	542	75-125	26	30	M
Lead	106	1.00	mg/kg dry	115	51.7	47	75-125	50	30	M S
Magnesium	2160	1.00	mg/kg dry	115	1900	223	75-125	34	30	M S
Manganese	189	1.00	mg/kg dry	115	177	11	75-125	40	30	M S
Nickel	71.9	1.00	mg/kg dry	115	9.45	54	75-125	53	30	M S
Phosphorus	142	1.00	mg/kg dry	115	125	15	75-125	54	20	M S
Selenium	47.4	1.00	mg/kg dry	115	<1.00	41	75-125	36	30	M S
Sodium	445	5.00	mg/kg dry	115	400	39	75-125	11	30	M
Zinc	107	1.00	mg/kg dry	115	47.5	52	75-125	24	30	M

**Batch B823025 - EPA 7471B**

Blank (B823025-BLK1)					Prepared: 06/05/18 10:45		Analyzed: 06/05/18 13:52		
Mercury	<0.040	0.040	mg/kg wet						
LCS (B823025-BS1)					Prepared: 06/05/18 10:45		Analyzed: 06/05/18 13:54		
Mercury	0.823	0.040	mg/kg wet	0.833		99	85-115		
LCS Dup (B823025-BSD1)					Prepared: 06/05/18 10:45		Analyzed: 06/05/18 13:56		
Mercury	0.831	0.040	mg/kg wet	0.833		100	85-115	0.9	25
Matrix Spike (B823025-MS1)		Source: 1805475-01			Prepared: 06/05/18 10:45		Analyzed: 06/05/18 14:00		

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B823025 - EPA 7471B**

Matrix Spike (B823025-MS1)	Source: 1805475-01	Prepared: 06/05/18 10:45	Analyzed: 06/05/18 14:00
Mercury	1.07	0.040 mg/kg dry	0.924 0.0497 110 75-125
Matrix Spike Dup (B823025-MSD1)	Source: 1805475-01	Prepared: 06/05/18 10:45	Analyzed: 06/05/18 14:02
Mercury	1.03	0.040 mg/kg dry	0.915 0.0497 107 75-125 4 25

**SAMPLE QUALIFIERS**

H This parameter should be analyzed within 15 minutes of sample collection. Due to transportation, hold time has been exceeded.

**DEFINITIONS**

- \* TNI / NELAC accredited analyte
- PQL Practical Quantitation Limit
- MCL Maximum Contaminant Level
- mg/Kg Milligrams per Kilogram (Parts per Million)
- mg/L Milligrams per Liter (Parts per Million)
- PPM Parts per Million
- L LCS recovery is outside QC acceptance limits, the results may have a slight bias.
- M MS recovery is outside QC limits, the results may have a slight bias due to possible matrix interferences.
- RMCCCL Recommended Maximum Concentration of Contaminants Level
- Surr L Surrogate recovery is outside QC limits due to matrix interferences.
- Surr H Surrogate recovery is high due to contribution from hydrocarbon interferences.
- µR/hr MicroRoentgens per hour (Measure of Radioactivity Level)
- HT Sample received past holdtime
- IC Improper Container
- IT Improper Temperature
- V Insufficient Volume
- B Sample collected in Bulk
- S RPD is outside QC limits. This may be due to possible matrix interferences in Matrix spike samples.

Test Methods followed by the laboratory are referenced in the following approved methodology, unless otherwise specified.

Standard Methods for the Examination of Water and Wastewater, 21st Edition 2005  
Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Rev. March 1983  
EPA SW Test Methods for the Examination of Solid Waste, SW-846, 1996



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
06/13/18 17:34  
**Received:**  
05/31/18 15:06

Additional Notes:

**Report No. 1805506**

**Subcontracted Analyses**

Subcontractor Lab	Lab Number	Analysis
Analysis Inc.	1805506-01	TOC_SUB
Analysis Inc.	1805506-02	TOC_SUB
Analysis Inc.	1805506-03	TOC_SUB
Analysis Inc.	1805506-04	TOC_SUB
Analysis Inc.	1805506-05	TOC_SUB
Analysis Inc.	1805506-06	TOC_SUB
Analysis Inc.	1805506-07	TOC_SUB
Analysis Inc.	1805506-08	TOC_SUB
Analysis Inc.	1805506-09	TOC_SUB
Subcontractor Lab	Lab Number	Analysis
Microbac Laboratories, Inc.	1805506-04	Herbicides
Microbac Laboratories, Inc.	1805506-08	Herbicides

Aimee Landon For Marcela Gracia Hawk, President For

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Richard Hawk, General Manager





**Table 3**  
**Mitchell Lake Quality Treatment Initiatives**  
**Water and Sediment Quality Study Plan**  
**Sediment Sample Analytical Methods, Preservation, and Holding Times**

Category	Parameter	Analytical Method*	Minimum Analytical Level	Detection Limit	Preservation	Holding Time	
Conventional Parameters	% Solids	SM 2540G	0.0002%	0.0002%	Cool, ≤6 °C		
	% Volatile solids	SM 2540G	0.0002%	0.0002%		7 days	
	pH	EPA 9045	N/A	N/A		Within 15 min of collection or ASAP	
	Total Kjeldahl nitrogen	EPA 351.3	1 mg/kg	1 mg/kg		28 days	
	Ammonia	SM 4500-NH3B/C	10 mg/kg	10 mg/kg		28 days	
	Calcium	EPA 6020	1 mg/kg	0.5 mg/kg		6 months	
	Magnesium	EPA 6020	1 mg/kg	0.5 mg/kg		6 months	
	Total organic carbon	EPA 9060	1 mg/kg	0.5 mg/kg		28 days	
	Total phosphorus	EPA 200.7	1 mg/kg	0.069 mg/kg		6 months	
	Conductivity	SM 2510-B	1 µmho/cm	N/A		Immediately or filter w/in 24 hrs	
Pollutants of Potential Concern Parameters	Metals digestion	EPA 3010	N/A		Cool, ≤6 °C	6 months	
	Arsenic	EPA 6010	—	0.05 mg/kg			
	Boron	EPA 6010	0.5 mg/kg	0.03 mg/kg			
	Cadmium	EPA 6010	0.5 mg/kg	0.011 mg/kg			
	Chromium, total	EPA 6010	0.5 mg/kg	0.063 mg/kg			
	Copper	EPA 6010	0.5 mg/kg	0.027 mg/kg			
	Iron	EPA 6010	0.5 mg/kg	0.024 mg/kg			
	Lead	EPA 6010	0.5 mg/kg	0.027 mg/kg			
	Manganese	EPA 6010	0.5 mg/kg	0.018 mg/kg			
	Mercury	EPA 7471	0.04 ug/kg	0.0028 ug/kg			
	Nickel	EPA 6010	0.5 mg/kg	0.02 mg/kg			
	Selenium	EPA 6010	0.5 mg/kg	0.096 mg/kg			
	Sodium	EPA 6010	1.0 mg/kg	0.497 mg/kg			
	Zinc	EPA 6010	0.5 mg/kg	0.079 mg/kg			
	<b>Chlorinated Herbicides</b>		EPA 8151				14 days until extraction and 40 days after extraction (soil)
	2,4,5-T			3.3 ug/kg		1.4 ug/kg	
	2,4,5-TP (Silvex)			3.3 ug/kg		1.7 ug/kg	
	2,4-D			6.6 ug/kg		07 ug/kg	
	2,4-DB			6.6 ug/kg		0.9 ug/kg	
	Dalapon			3.3 ug/kg		1.2 ug/kg	
Dicamba		3.3 ug/kg		1.3 ug/kg			
Dichloroprop		6.6 ug/kg		1.6 ug/kg			
Dinoseb		3.3 ug/kg		1.4 ug/kg			
MCPA		660 ug/kg		100 ug/kg			
MCPP		660 ug/kg	100 ug/kg				

\*Methods are SW-846, unless indicated otherwise.

*Test code*

% Solids      Total Solids (TS)

% Volatile Solids      Volatile Solids (VS)



# SAN ANTONIO TESTING LABORATORY, INC.

## Sample Receipt Checklist

Client: Alan Plummer

Report Number: 1805506

Project Name: \_\_\_\_\_

Date Received: 5/31/18

Shipped via:  FedEx  UPS  Lonestar  Hand Delivered  DHL  SATL  Other

Date Due: 6/11/18

Rush:  Specify:  3-5  2  1

### Items to be checked upon Receipt: [Yes, No, N/A]

Item	Yes	No	NA	If NA-reason:
1. Custody Seals present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	
2. Custody Seals intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	
3. Air Bill included in folder, if received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	
4. Is COC included with samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	
5. Is COC signed and dated by client?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	
6. Sample temperature: Thermal preservation between >0°- 6° C? (Samples that are delivered to the laboratory on the same day that they are collected may not meet this criterion, but are acceptable if they arrive on ice.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	Temp: <u>1.1</u> °C <u>78#6</u>
7. Samples received with ice <input checked="" type="checkbox"/> ice packs <input type="checkbox"/> other cooling <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	
8. Is the COC filled out correctly, and completely?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	
9. Information on the COC matches the samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	
10. Samples received within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	
11. Samples properly labeled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	
12. Samples submitted with chemical preservation? (e.g. pH adjusted, or sodium thiosulfate added for microbiological tests)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	<u>solid</u>
13. Proper sample containers used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	
14. All samples received intact, containers not damaged or leaking?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	
15. VOA vials (requesting BTEX/VOC analysis) received with no air bubbles? Bubbles acceptable on VOA vials for TPH.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	<u>now vials</u>
16. Sample volume sufficient for requested analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	
17. Sample amount sufficient for TCLP analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	<u>notelp</u>
18. Subcontracted Samples: [if Yes, complete the next section]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NA	

Analyses Subcontracted Out: TOL, Herbs No. of Samples: 9

Samples sent to: Analysis Inc, microbial Sent By: SF Mei

Date samples sent: 5/31/18 Samples shipped via: ups next

TAT Requested: Reg TAT

Tracking number [if any]: \_\_\_\_\_

Comments:

Received By: [Signature]

Date: 5/31/18

Labeled By: \_\_\_\_\_

Date: \_\_\_\_\_

Logged into LIMS By: \_\_\_\_\_

Date: \_\_\_\_\_

Logged into RF By: \_\_\_\_\_

Date: \_\_\_\_\_

**Client:** San Antonio Testing Laboratory  
**Attn:** Sandra  
**Address:** 1610 S Larado St.  
 San Antonio TX 78207  
**Phone:** 210-229-9920 **FAX:**



T104704268-18-15

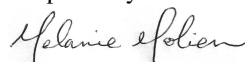
**Report#/Lab ID#:** 582988 **Report Date:** 06/05/18  
**Project ID:**  
**Sample Name:** 1805506-01 Sed #1  
**Sample Matrix:** soil  
**Date Received:** 06/01/2018 **Time:** 15:00  
**Date Sampled:** 05/31/2018 **Time:** 10:05

**REPORT OF ANALYSIS**

**QUALITY ASSURANCE DATA <sup>1</sup>**

Parameter	Result	Units	RQL <sup>5</sup>	Blank	Date/Time Analyzed	Method <sup>6</sup>	Data Qual. <sup>7</sup>	Prec. <sup>2</sup>	Recov. <sup>3</sup>	CCV <sup>4</sup>	LCS <sup>4</sup>
Total organic carbon	<b>18900</b>	mg/Kg	1214.1816	<1214.1816	06/05/18 12:36	9060&SM5220D	S1,M,	1.1	Mt.Intf.	102.95	108.78


This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results reflect only the sample identified above. The results have been carefully reviewed and to the best of my knowledge, unless otherwise indicated, meet NELAP requirements as described by AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2003, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted, Respectfully Submitted,  
  
 Quality Manager Assistant Quality Manager

Numbers in RED are above our MDLs and may or may not indicate a permit exceedance.  
 1. Quality assurance data for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent difference between duplicate results. 3. Recovery (Recov.) is the percent of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent recovery of analyte. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte detected between the RQL and the MDL. B =Analyte detected in associated method blank(s). C=poor CCV recovery. L=poor LCS recovery. S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference. N=not NELAP certified. N1=subcontract result enquire concerning NELAP certification. Solid sample results for all metals, except Mercury, reported on a dry weight basis (DWB)s. All other results for solid samples reported on an as received basis unless specifically identified as DWB.

**Exceptions Report (FINAL SECTION / END-OF-REPORT):**

<b>Report #/Lab ID#:</b> 582988	<b>Matrix:</b> soil
<b>Client:</b> San Antonio Testing Laboratory	<b>Attn:</b> Sandra
<b>Project ID:</b>	
<b>Sample Name:</b> 1805506-01 Sed #1	

Unless otherwise identified by data qualifier "N" or by an exception report, all reported results represent parameters and tests for which AnalySys maintains NELAP certification; or results provided by a subcontractor with NELAP certification for the test	 <b>T104704268-18-15</b>
---	--

**Sample Temperature/Condition:** ≤6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is ≤ 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

**Standard sample acceptability conditions met? : YES**

Sample received in appropriate container(s), at appropriate temperature and pH.

**J flag Discussion:**

A J-flag data qualifier indicates that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

**Comments pertaining to Data Qualifiers and QC data (where applicable):**

Parameter	Qualif.	Comments
Total organic carbon	S2	Spike (MS,MSD) recovery issue. MS & MSD recovery outside acceptance range. LCS recovery OK. Probable matrix interference.

**Client:** San Antonio Testing Laboratory  
**Attn:** Sandra  
**Address:** 1610 S Larado St.  
 San Antonio TX 78207  
**Phone:** 210-229-9920 **FAX:**



T104704268-18-15

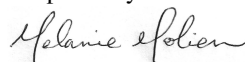
**Report#/Lab ID#:** 582989 **Report Date:** 06/05/18  
**Project ID:**  
**Sample Name:** 1805506-02 Sed #2  
**Sample Matrix:** soil  
**Date Received:** 06/01/2018 **Time:** 15:00  
**Date Sampled:** 05/31/2018 **Time:** 12:45

**REPORT OF ANALYSIS**

**QUALITY ASSURANCE DATA <sup>1</sup>**

Parameter	Result	Units	RQL <sup>5</sup>	Blank	Date/Time Analyzed	Method <sup>6</sup>	Data Qual. <sup>7</sup>	Prec. <sup>2</sup>	Recov. <sup>3</sup>	CCV <sup>4</sup>	LCS <sup>4</sup>
Total organic carbon	<b>17300</b>	mg/Kg	1129.6882	<1129.6882	06/05/18 12:42	9060&SM5220D	S1,M,	1.1	Mt.Intf.	102.95	108.78


This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results reflect only the sample identified above. The results have been carefully reviewed and to the best of my knowledge, unless otherwise indicated, meet NELAP requirements as described by AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2003, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted, Respectfully Submitted,  
  
 Quality Manager Assistant Quality Manager

Numbers in RED are above our MDLs and may or may not indicate a permit exceedance.  
 1. Quality assurance data for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent difference between duplicate results. 3. Recovery (Recov.) is the percent of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent recovery of analyte. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte detected between the RQL and the MDL. B =Analyte detected in associated method blank(s). C=poor CCV recovery. L=poor LCS recovery. S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference. N=not NELAP certified. N1=subcontract result enquire concerning NELAP certification. Solid sample results for all metals, except Mercury, reported on a dry weight basis (DWB)s. All other results for solid samples reported on an as received basis unless specifically identified as DWB.

**Exceptions Report (FINAL SECTION / END-OF-REPORT):**

<b>Report #/Lab ID#:</b> 582989	<b>Matrix:</b> soil
<b>Client:</b> San Antonio Testing Laboratory	<b>Attn:</b> Sandra
<b>Project ID:</b>	
<b>Sample Name:</b> 1805506-02 Sed #2	

Unless otherwise identified by data qualifier "N" or by an exception report, all reported results represent parameters and tests for which AnalySys maintains NELAP certification; or results provided by a subcontractor with NELAP certification for the test	 <b>T104704268-18-15</b>
---	--

**Sample Temperature/Condition:** ≤6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is ≤ 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

**Standard sample acceptability conditions met? : YES**

Sample received in appropriate container(s), at appropriate temperature and pH.

**J flag Discussion:**

A J-flag data qualifier indicates that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

**Comments pertaining to Data Qualifiers and QC data (where applicable):**

Parameter	Qualif.	Comments
Total organic carbon	S2	Spike (MS,MSD) recovery issue. MS & MSD recovery outside acceptance range. LCS recovery OK. Probable matrix interference.

**Client:** San Antonio Testing Laboratory  
**Attn:** Sandra  
**Address:** 1610 S Larado St.  
 San Antonio TX 78207  
**Phone:** 210-229-9920 **FAX:**



T104704268-18-15

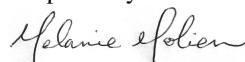

**Report#/Lab ID#:** 582990 **Report Date:** 06/05/18  
**Project ID:**  
**Sample Name:** 1805506-03 Sed #3  
**Sample Matrix:** soil  
**Date Received:** 06/01/2018 **Time:** 15:00  
**Date Sampled:** 05/31/2018 **Time:** 12:33

**REPORT OF ANALYSIS**

**QUALITY ASSURANCE DATA <sup>1</sup>**

Parameter	Result	Units	RQL <sup>5</sup>	Blank	Date/Time Analyzed	Method <sup>6</sup>	Data Qual. <sup>7</sup>	Prec. <sup>2</sup>	Recov. <sup>3</sup>	CCV <sup>4</sup>	LCS <sup>4</sup>
Total organic carbon	<b>12700</b>	mg/Kg	1184.2729	<1184.2729	06/05/18 12:44	9060&SM5220D	S1,M,	1.1	Mt.Intf.	102.95	108.78


This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results reflect only the sample identified above. The results have been carefully reviewed and to the best of my knowledge, unless otherwise indicated, meet NELAP requirements as described by AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2003, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted, Respectfully Submitted,  
  
 Quality Manager  
  
 Assistant Quality Manager

Numbers in RED are above our MDLs and may or may not indicate a permit exceedance.  
 1. Quality assurance data for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent difference between duplicate results. 3. Recovery (Recov.) is the percent of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent recovery of analyte. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte detected between the RQL and the MDL. B =Analyte detected in associated method blank(s). C=poor CCV recovery. L=poor LCS recovery. S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference. N=not NELAP certified. N1=subcontract result enquire concerning NELAP certification. Solid sample results for all metals, except Mercury, reported on a dry weight basis (DWB)s. All other results for solid samples reported on an as received basis unless specifically identified as DWB.

**Exceptions Report (FINAL SECTION / END-OF-REPORT):**

<b>Report #/Lab ID#:</b> 582990	<b>Matrix:</b> soil
<b>Client:</b> San Antonio Testing Laboratory	<b>Attn:</b> Sandra
<b>Project ID:</b>	
<b>Sample Name:</b> 1805506-03 Sed #3	

Unless otherwise identified by data qualifier "N" or by an exception report, all reported results represent parameters and tests for which AnalySys maintains NELAP certification; or results provided by a subcontractor with NELAP certification for the test	 <b>T104704268-18-15</b>
---	--

**Sample Temperature/Condition:** ≤6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is ≤ 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

**Standard sample acceptability conditions met? : YES**

Sample received in appropriate container(s), at appropriate temperature and pH.

**J flag Discussion:**

A J-flag data qualifier indicates that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

**Comments pertaining to Data Qualifiers and QC data (where applicable):**

Parameter	Qualif.	Comments
Total organic carbon	S2	Spike (MS,MSD) recovery issue. MS & MSD recovery outside acceptance range. LCS recovery OK. Probable matrix interference.



**Client:** San Antonio Testing Laboratory  
**Attn:** Sandra  
**Address:** 1610 S Larado St.  
 San Antonio TX 78207  
**Phone:** 210-229-9920 **FAX:**



T104704268-18-15

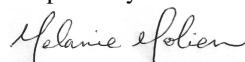
**Report#/Lab ID#:** 582991 **Report Date:** 06/05/18  
**Project ID:**  
**Sample Name:** 1805506-04 Sed #4  
**Sample Matrix:** soil  
**Date Received:** 06/01/2018 **Time:** 15:00  
**Date Sampled:** 05/31/2018 **Time:** 13:03

**REPORT OF ANALYSIS**

**QUALITY ASSURANCE DATA <sup>1</sup>**

Parameter	Result	Units	RQL <sup>5</sup>	Blank	Date/Time Analyzed	Method <sup>6</sup>	Data Qual. <sup>7</sup>	Prec. <sup>2</sup>	Recov. <sup>3</sup>	CCV <sup>4</sup>	LCS <sup>4</sup>
Total organic carbon	<b>14700</b>	mg/Kg	1170.9602	<1170.9602	06/05/18 12:46	9060&SM5220D	S1,M,	1.1	Mt.Intf.	102.95	108.78


This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results reflect only the sample identified above. The results have been carefully reviewed and to the best of my knowledge, unless otherwise indicated, meet NELAP requirements as described by AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2003, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted, Respectfully Submitted,  
  
 Quality Manager Assistant Quality Manager

Numbers in RED are above our MDLs and may or may not indicate a permit exceedance.  
 1. Quality assurance data for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent difference between duplicate results. 3. Recovery (Recov.) is the percent of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent recovery of analyte. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte detected between the RQL and the MDL. B =Analyte detected in associated method blank(s). C=poor CCV recovery. L=poor LCS recovery. S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference. N=not NELAP certified. N1=subcontract result enquire concerning NELAP certification. Solid sample results for all metals, except Mercury, reported on a dry weight basis (DWB)s. All other results for solid samples reported on an as received basis unless specifically identified as DWB.

**Exceptions Report (FINAL SECTION / END-OF-REPORT):**

<b>Report #/Lab ID#:</b> 582991	<b>Matrix:</b> soil
<b>Client:</b> San Antonio Testing Laboratory	<b>Attn:</b> Sandra
<b>Project ID:</b>	
<b>Sample Name:</b> 1805506-04 Sed #4	

Unless otherwise identified by data qualifier "N" or by an exception report, all reported results represent parameters and tests for which AnalySys maintains NELAP certification; or results provided by a subcontractor with NELAP certification for the test	 <b>T104704268-18-15</b>
---	--

**Sample Temperature/Condition:** ≤6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is ≤ 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

**Standard sample acceptability conditions met? : YES**

Sample received in appropriate container(s), at appropriate temperature and pH.

**J flag Discussion:**

A J-flag data qualifier indicates that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

**Comments pertaining to Data Qualifiers and QC data (where applicable):**

Parameter	Qualif.	Comments
Total organic carbon	S2	Spike (MS,MSD) recovery issue. MS & MSD recovery outside acceptance range. LCS recovery OK. Probable matrix interference.

**Client:** San Antonio Testing Laboratory  
**Attn:** Sandra  
**Address:** 1610 S Larado St.  
 San Antonio TX 78207  
**Phone:** 210-229-9920 **FAX:**



T104704268-18-15

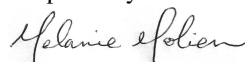
**Report#/Lab ID#:** 582992 **Report Date:** 06/05/18  
**Project ID:**  
**Sample Name:** 1805506-05 Sed #5  
**Sample Matrix:** soil  
**Date Received:** 06/01/2018 **Time:** 15:00  
**Date Sampled:** 05/31/2018 **Time:** 12:15

**REPORT OF ANALYSIS**

**QUALITY ASSURANCE DATA <sup>1</sup>**

Parameter	Result	Units	RQL <sup>5</sup>	Blank	Date/Time Analyzed	Method <sup>6</sup>	Data Qual. <sup>7</sup>	Prec. <sup>2</sup>	Recov. <sup>3</sup>	CCV <sup>4</sup>	LCS <sup>4</sup>
Total organic carbon	<b>12500</b>	mg/Kg	1119.5701	<1119.5701	06/05/18 12:48	9060&SM5220D	S1,M,	1.1	Mt.Intf.	102.95	108.78


This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results reflect only the sample identified above. The results have been carefully reviewed and to the best of my knowledge, unless otherwise indicated, meet NELAP requirements as described by AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2003, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted, Respectfully Submitted,  
  
 Quality Manager Assistant Quality Manager

Numbers in RED are above our MDLs and may or may not indicate a permit exceedance.  
 1. Quality assurance data for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent difference between duplicate results. 3. Recovery (Recov.) is the percent of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent recovery of analyte. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte detected between the RQL and the MDL. B =Analyte detected in associated method blank(s). C=poor CCV recovery. L=poor LCS recovery. S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference. N=not NELAP certified. N1=subcontract result enquire concerning NELAP certification. Solid sample results for all metals, except Mercury, reported on a dry weight basis (DWB)s. All other results for solid samples reported on an as received basis unless specifically identified as DWB.

**Exceptions Report (FINAL SECTION / END-OF-REPORT):**

<b>Report #/Lab ID#:</b> 582992	<b>Matrix:</b> soil
<b>Client:</b> San Antonio Testing Laboratory	<b>Attn:</b> Sandra
<b>Project ID:</b>	
<b>Sample Name:</b> 1805506-05 Sed #5	

Unless otherwise identified by data qualifier "N" or by an exception report, all reported results represent parameters and tests for which AnalySys maintains NELAP certification; or results provided by a subcontractor with NELAP certification for the test	 <b>T104704268-18-15</b>
---	--

**Sample Temperature/Condition:** ≤6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is ≤ 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

**Standard sample acceptability conditions met? : YES**

Sample received in appropriate container(s), at appropriate temperature and pH.

**J flag Discussion:**

A J-flag data qualifier indicates that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

**Comments pertaining to Data Qualifiers and QC data (where applicable):**

Parameter	Qualif.	Comments
Total organic carbon	S2	Spike (MS,MSD) recovery issue. MS & MSD recovery outside acceptance range. LCS recovery OK. Probable matrix interference.

**Client:** San Antonio Testing Laboratory  
**Attn:** Sandra  
**Address:** 1610 S Larado St.  
 San Antonio TX 78207  
**Phone:** 210-229-9920 **FAX:**



T104704268-18-15

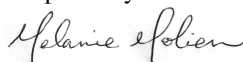
**Report#/Lab ID#:** 582993 **Report Date:** 06/05/18  
**Project ID:**  
**Sample Name:** 1805506-06 Sed #6  
**Sample Matrix:** soil  
**Date Received:** 06/01/2018 **Time:** 15:00  
**Date Sampled:** 05/31/2018 **Time:** 11:10

**REPORT OF ANALYSIS**

**QUALITY ASSURANCE DATA <sup>1</sup>**

Parameter	Result	Units	RQL <sup>5</sup>	Blank	Date/Time Analyzed	Method <sup>6</sup>	Data Qual. <sup>7</sup>	Prec. <sup>2</sup>	Recov. <sup>3</sup>	CCV <sup>4</sup>	LCS <sup>4</sup>
Total organic carbon	<b>21100</b>	mg/Kg	1223.6907	<1223.6907	06/05/18 12:50	9060&SM5220D	S1,M,	1.1	Mt.Intf.	102.95	108.78


This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results reflect only the sample identified above. The results have been carefully reviewed and to the best of my knowledge, unless otherwise indicated, meet NELAP requirements as described by AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2003, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted, Respectfully Submitted,  
  
 Quality Manager Assistant Quality Manager

Numbers in RED are above our MDLs and may or may not indicate a permit exceedance.  
 1. Quality assurance data for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent difference between duplicate results. 3. Recovery (Recov.) is the percent of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent recovery of analyte. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte detected between the RQL and the MDL. B =Analyte detected in associated method blank(s). C=poor CCV recovery. L=poor LCS recovery. S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference. N=not NELAP certified. N1=subcontract result enquire concerning NELAP certification. Solid sample results for all metals, except Mercury, reported on a dry weight basis (DWB)s. All other results for solid samples reported on an as received basis unless specifically identified as DWB.

**Exceptions Report (FINAL SECTION / END-OF-REPORT):**

<b>Report #/Lab ID#:</b> 582993	<b>Matrix:</b> soil
<b>Client:</b> San Antonio Testing Laboratory	<b>Attn:</b> Sandra
<b>Project ID:</b>	
<b>Sample Name:</b> 1805506-06 Sed #6	

Unless otherwise identified by data qualifier "N" or by an exception report, all reported results represent parameters and tests for which AnalySys maintains NELAP certification; or results provided by a subcontractor with NELAP certification for the test	
---	---

**Sample Temperature/Condition:** ≤6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is ≤ 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

**Standard sample acceptability conditions met? : YES**

Sample received in appropriate container(s), at appropriate temperature and pH.

**J flag Discussion:**

A J-flag data qualifier indicates that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

**Comments pertaining to Data Qualifiers and QC data (where applicable):**

Parameter	Qualif.	Comments
Total organic carbon	S2	Spike (MS,MSD) recovery issue. MS & MSD recovery outside acceptance range. LCS recovery OK. Probable matrix interference.

**Client:** San Antonio Testing Laboratory  
**Attn:** Sandra  
**Address:** 1610 S Larado St.  
 San Antonio TX 78207  
**Phone:** 210-229-9920 **FAX:**



T104704268-18-15

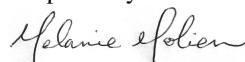
**Report#/Lab ID#:** 582994 **Report Date:** 06/05/18  
**Project ID:**  
**Sample Name:** 1805506-07 Sed #7  
**Sample Matrix:** soil  
**Date Received:** 06/01/2018 **Time:** 15:00  
**Date Sampled:** 05/31/2018 **Time:** 13:20

**REPORT OF ANALYSIS**

**QUALITY ASSURANCE DATA <sup>1</sup>**

Parameter	Result	Units	RQL <sup>5</sup>	Blank	Date/Time Analyzed	Method <sup>6</sup>	Data Qual. <sup>7</sup>	Prec. <sup>2</sup>	Recov. <sup>3</sup>	CCV <sup>4</sup>	LCS <sup>4</sup>
Total organic carbon	<b>16900</b>	mg/Kg	1200.7685	<1200.7685	06/05/18 12:52	9060&SM5220D	S1,M,	1.1	Mt.Intf.	102.95	108.78


This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results reflect only the sample identified above. The results have been carefully reviewed and to the best of my knowledge, unless otherwise indicated, meet NELAP requirements as described by AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2003, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted, Respectfully Submitted,  
  
 Quality Manager Assistant Quality Manager

Numbers in RED are above our MDLs and may or may not indicate a permit exceedance.  
 1. Quality assurance data for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent difference between duplicate results. 3. Recovery (Recov.) is the percent of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent recovery of analyte. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte detected between the RQL and the MDL. B =Analyte detected in associated method blank(s). C=poor CCV recovery. L=poor LCS recovery. S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference. N=not NELAP certified. N1=subcontract result enquire concerning NELAP certification. Solid sample results for all metals, except Mercury, reported on a dry weight basis (DWB)s. All other results for solid samples reported on an as received basis unless specifically identified as DWB.

**Exceptions Report (FINAL SECTION / END-OF-REPORT):**

<b>Report #/Lab ID#:</b> 582994	<b>Matrix:</b> soil
<b>Client:</b> San Antonio Testing Laboratory	<b>Attn:</b> Sandra
<b>Project ID:</b>	
<b>Sample Name:</b> 1805506-07 Sed #7	

Unless otherwise identified by data qualifier "N" or by an exception report, all reported results represent parameters and tests for which AnalySys maintains NELAP certification; or results provided by a subcontractor with NELAP certification for the test	 <b>T104704268-18-15</b>
---	--

**Sample Temperature/Condition:** ≤6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is ≤ 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

**Standard sample acceptability conditions met? : YES**

Sample received in appropriate container(s), at appropriate temperature and pH.

**J flag Discussion:**

A J-flag data qualifier indicates that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

**Comments pertaining to Data Qualifiers and QC data (where applicable):**

Parameter	Qualif.	Comments
Total organic carbon	S2	Spike (MS,MSD) recovery issue. MS & MSD recovery outside acceptance range. LCS recovery OK. Probable matrix interference.



**Client:** San Antonio Testing Laboratory  
**Attn:** Sandra  
**Address:** 1610 S Larado St.  
 San Antonio TX 78207  
**Phone:** 210-229-9920 **FAX:**



T104704268-18-15

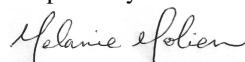
**Report#/Lab ID#:** 582995 **Report Date:** 06/05/18  
**Project ID:**  
**Sample Name:** 1805506-08 Sed #8  
**Sample Matrix:** soil  
**Date Received:** 06/01/2018 **Time:** 15:00  
**Date Sampled:** 05/31/2018 **Time:** 11:58

**REPORT OF ANALYSIS**

**QUALITY ASSURANCE DATA <sup>1</sup>**

Parameter	Result	Units	RQL <sup>5</sup>	Blank	Date/Time Analyzed	Method <sup>6</sup>	Data Qual. <sup>7</sup>	Prec. <sup>2</sup>	Recov. <sup>3</sup>	CCV <sup>4</sup>	LCS <sup>4</sup>
Total organic carbon	<b>20400</b>	mg/Kg	1220.7031	<1220.7031	06/05/18 12:54	9060&SM5220D	S1,M,	1.1	Mt.Intf.	102.95	108.78


This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results reflect only the sample identified above. The results have been carefully reviewed and to the best of my knowledge, unless otherwise indicated, meet NELAP requirements as described by AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2003, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted, Respectfully Submitted,  
  
 Quality Manager Assistant Quality Manager

Numbers in RED are above our MDLs and may or may not indicate a permit exceedance.  
 1. Quality assurance data for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent difference between duplicate results. 3. Recovery (Recov.) is the percent of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent recovery of analyte. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte detected between the RQL and the MDL. B =Analyte detected in associated method blank(s). C=poor CCV recovery. L=poor LCS recovery. S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference. N=not NELAP certified. N1=subcontract result enquire concerning NELAP certification. Solid sample results for all metals, except Mercury, reported on a dry weight basis (DWB)s. All other results for solid samples reported on an as received basis unless specifically identified as DWB.

**Exceptions Report (FINAL SECTION / END-OF-REPORT):**

<b>Report #/Lab ID#:</b> 582995	<b>Matrix:</b> soil
<b>Client:</b> San Antonio Testing Laboratory	<b>Attn:</b> Sandra
<b>Project ID:</b>	
<b>Sample Name:</b> 1805506-08 Sed #8	

Unless otherwise identified by data qualifier "N" or by an exception report, all reported results represent parameters and tests for which AnalySys maintains NELAP certification; or results provided by a subcontractor with NELAP certification for the test	 <b>T104704268-18-15</b>
---	--

**Sample Temperature/Condition:** ≤6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is ≤ 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

**Standard sample acceptability conditions met? : YES**

Sample received in appropriate container(s), at appropriate temperature and pH.

**J flag Discussion:**

A J-flag data qualifier indicates that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

**Comments pertaining to Data Qualifiers and QC data (where applicable):**

Parameter	Qualif.	Comments
Total organic carbon	S2	Spike (MS,MSD) recovery issue. MS & MSD recovery outside acceptance range. LCS recovery OK. Probable matrix interference.

**Client:** San Antonio Testing Laboratory  
**Attn:** Sandra  
**Address:** 1610 S Larado St.  
 San Antonio TX 78207  
**Phone:** 210-229-9920 **FAX:**



T104704268-18-15

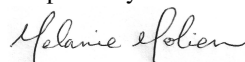

**Report#/Lab ID#:** 582996 **Report Date:** 06/05/18  
**Project ID:**  
**Sample Name:** 1805506-09 Sed #9  
**Sample Matrix:** soil  
**Date Received:** 06/01/2018 **Time:** 15:00  
**Date Sampled:** 05/31/2018 **Time:** 11:45

**REPORT OF ANALYSIS**

**QUALITY ASSURANCE DATA <sup>1</sup>**

Parameter	Result	Units	RQL <sup>5</sup>	Blank	Date/Time Analyzed	Method <sup>6</sup>	Data Qual. <sup>7</sup>	Prec. <sup>2</sup>	Recov. <sup>3</sup>	CCV <sup>4</sup>	LCS <sup>4</sup>
Total organic carbon	<b>23100</b>	mg/Kg	1173.7089	<1173.7089	06/05/18 12:56	9060&SM5220D	S1,M,	1.1	Mt.Intf.	102.95	108.78


This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results reflect only the sample identified above. The results have been carefully reviewed and to the best of my knowledge, unless otherwise indicated, meet NELAP requirements as described by AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2003, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.

Respectfully Submitted, Respectfully Submitted,  
  
 Quality Manager  
  
 Assistant Quality Manager

Numbers in RED are above our MDLs and may or may not indicate a permit exceedance.  
 1. Quality assurance data for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent difference between duplicate results. 3. Recovery (Recov.) is the percent of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent recovery of analyte. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than (" $<$ ") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte detected between the RQL and the MDL. B =Analyte detected in associated method blank(s). C=poor CCV recovery. L=poor LCS recovery. S & S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference. N=not NELAP certified. N1=subcontract result enquire concerning NELAP certification. Solid sample results for all metals, except Mercury, reported on a dry weight basis (DWB)s. All other results for solid samples reported on an as received basis unless specifically identified as DWB.

**Exceptions Report (FINAL SECTION / END-OF-REPORT):**

<b>Report #/Lab ID#:</b> 582996	<b>Matrix:</b> soil
<b>Client:</b> San Antonio Testing Laboratory	<b>Attn:</b> Sandra
<b>Project ID:</b>	
<b>Sample Name:</b> 1805506-09 Sed #9	

Unless otherwise identified by data qualifier "N" or by an exception report, all reported results represent parameters and tests for which AnalySys maintains NELAP certification; or results provided by a subcontractor with NELAP certification for the test	 <b>T104704268-18-15</b>
---	--

**Sample Temperature/Condition:** ≤6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is ≤ 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

**Standard sample acceptability conditions met? : YES**

Sample received in appropriate container(s), at appropriate temperature and pH.

**J flag Discussion:**

A J-flag data qualifier indicates that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

**Comments pertaining to Data Qualifiers and QC data (where applicable):**

Parameter	Qualif.	Comments
Total organic carbon	S2	Spike (MS,MSD) recovery issue. MS & MSD recovery outside acceptance range. LCS recovery OK. Probable matrix interference.

CHAIN-OF-CUSTODY RECORD



1610 S. Laredo Street, San Antonio, Texas 78207  
(210) 229-9920 • Fax (210) 229-9921  
www.satestinglab.com

REPORT TO: COMPANY SAR ADDRESS 1610 S. Laredo St. CITY San Antonio STATE TX ZIP 78207  
INVOICE TO: COMPANY SAR ADDRESS CITY STATE ZIP  
P.O. # REPORT NUMBER  
ATTN: Sandra PHONE # 210 229 9920 E-MAIL satesting@satestinglab.com  
REQUESTED TURNAROUND TIME: 7-10 Days, 5 Days, 4 Days, 3 Days, 2 Days, Next Day, SAME DAY WHEN POSSIBLE

PROJECT NAME/LOCATION/SITE: THE TURNAROUND TIME FOR SAMPLES RECEIVED AFTER 3:00 PM SHALL BEGIN AT 8:00 AM THE FOLLOWING BUSINESS DAY  
HARDCOPY: YES, NO / FOR STATE COMPLIANCE: YES, NO SPECIAL REQ.: need by 6/11/18  
PROJECT NO. TEMP. I.R. GUN # SAMPLE TEMPERATURE WITHIN COMPLIANCE (> 0°C ≤ 6°C) YES, NO INITIAL TO AUTHORIZE BULK ANALYSIS  
IF NO, INITIAL HERE TO AUTHORIZE ANALYSIS

SAMPLED BY MATRIX SAMPLING METHOD TEMP. ON RECPT. COND. OF SAMPLE TRRP 13 YES, NO LPST PCLS

Table with columns: SAMPLE NUMBER, COLLECTED (DATE, TIME), MATRIX (DRINKING WATER, LIQUID, OIL, SOLID, OTHER), SAMPLING METHOD, SAMPLE IDENTIFICATION, CONTAINER NUMBER, CONTAINER SAMPLING AMOUNT, CONTAINER SIZE, ANALYSIS REQUESTED, REMARKS.

Main data table with 9 rows of sample information, including sample numbers 1-9, collection dates/times, identification numbers, and analysis results.

Administrative section with fields: RELINQUISHED BY (SIGNATURE), DATE / TIME, RECEIVED BY (SIGNATURE), DATE / TIME, METHOD OF SHIPMENT, SUBCONTRACTED, CUSTODY SEAL IN PLACE & INTACT.

SAMPLE CHECK-IN

Date: 6/4/18

Sample IDs: 582988-996

Samples Checked by: RS

COC Entry Line	1	2	3	4	5	6	7	8	9	10
a 4 oz soil jar	1	1	1	1	1	1	1	1	1	
b 8 oz soil jar										
c 16 oz soil jar										
d 32 oz soil jar										
e Soil VOA vials w/Stir Bar										
f Soil VOA vials (unpres)										
<b>VOA Vials</b>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>	<small>if Headspace Present (+#s)</small>
g 40 mL VOA vials (unpres)										
h 40 mL VOA vials (HCl)										
<b>Unpreserved Bottles</b>										
i 500 mL amber (unpres)										
j 950 mL amber (unpres)										
k 8 oz HDPE (unpres)										
l 16 oz HDPE (unpres)										
m 32 oz HDPE (unpres)										
<b>Preserved Bottles</b>										
<b>Acid pH paper CL#</b>	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH
n 120 mL amber (H2SO4)										
o 250 mL amber (H2SO4)										
p 500 mL amber (H2SO4)										
q 8 oz Nalgene (HNO3)										
r 16 oz Nalgene (HNO3)										
s 32 oz Nalgene (HNO3)										
<b>Base pH paper CL#</b>	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH
t 8 oz HDPE (NaOH)										
u 8 oz HDPE (ZnAc/NaOH)										
v 16 oz HDPE (Ascorbic acid)										
<b>Air</b>										
w Tedlar bag										
x SUMA canister										
<b>Miscellaneous</b>										
y Sterile Bottle										
z Other										
Bottles in Austin	0	0	0	0	0	0	0	0	0	0
Bottles in Corpus Christi	0	0	0	0	0	0	0	0	0	0
Bottles to Subcontract Lab(s)										

https://www.ups.com/uis/create?ActionOriginPair=default PrintWindowPage&key=lab... 5/31/2018

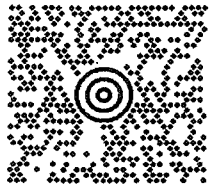
MARCELA HAWK  
2102299920  
SAN ANTONIO TESTING LABORATORY  
1610 S. LAREDO STREET  
SAN ANTONIO TX 78207

24 LBS

1 OF 1

**SHIP TO:**

ANALYSIS INC.  
5123855886  
3512 MONTOPOLIS DR  
AUSTIN TX 78744-1418

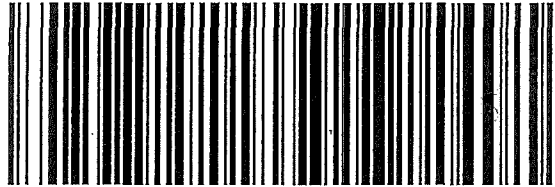


**TX 787 9-03**



**UPS NEXT DAY AIR SAVER 1P**

TRACKING # 1Z 785 26E 13 9900 1292



BILLING: P/P

UIS 20.0.42. WNINVS0 99.0A 04/2018



ASI Sample Evaluation

F-0029 V7-052715  
Effective Date: 6/1/15  
1 of 1

Date: 6/4/18

Sample IDs: 582988-996

# of C-O-Cs: 1

Samples Delievery by: Client  Bus  LSO  UPS  Fed-Ex  ASI/PU  Courier  Carrier Bill # \_\_\_\_\_

Sample Receiving		Intials <i>RS</i>		Cooler Comment
Item	Cooler	Y	N	
1	Cooler temperature appropriate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2	Samples on ice/from fridge	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3	Custody Seal Present (if shipped)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3a	<i>custody seal was intact</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3b	<i>custody seal was signed/dated</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Item	COC	Y	N	COC Comment
4	COC received	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5	COC Complete			
5a	<i>Sample identification</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5b	<i>Date Collected</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5c	<i>Time Collected</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5d	<i>Number of containers</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5e	<i>Preservation type</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5f	<i>Matrix</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5g	<i>Parameters</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5h	<i>Relinquished by Client</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6	COC info match sample labels	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7	Assist with completion of COC	<input type="checkbox"/>	<input type="checkbox"/>	
8	Additional information supplied by client	<input type="checkbox"/>	<input type="checkbox"/>	

Item	Sample Containers	Y	N	Sample Container Comments If no for item 9-10 comment req.
9	Bottles Intact/Integrity OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
10	Samples properly labelled/identifiable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11	VOA vials headspace OK (if required)	<input type="checkbox"/>	<input type="checkbox"/>	
12	Samples Properly pH Preserved (if required)			
12a	<i>Dissolved Metals field filtered and preserved</i>			
12b	<i>Acid Preserved (pH OK)</i>			
12c	<i>Base Preserved (pH OK)</i>			

Project Management		Intials <i>EP</i>	
Item	Hold Time	Y	N
13	Samples received within hold-time	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14	Samples received with time to complete analysis within hold-time	<input checked="" type="checkbox"/>	<input type="checkbox"/>
List of affected parameters:			

Item	Water VOC-VOAs	Y	N
15	Special compounds required	<input type="checkbox"/>	<input type="checkbox"/>
If required indicate if received in proper container			
15a	<i>Acrolein (unpreserved-3d)</i>		
15b	<i>Acrolein/Acrylonitrile (pH 4-5)</i>		
15c	<i>Vinyl chloride/Styrene/2-chloroethyl vinyl ether (unpreserved)</i>		

Item	Bulk Soil Sampling (TPH/VOC/BTEX)	Y	N
16	Bulk soil samples received	<input type="checkbox"/>	<input type="checkbox"/>
16a	<i>Petroleum Storage Tank Rule</i>		
16b	<i>Client indicated no hydrocarbons in C6-C12 for TPH or high level VOC</i>		
16c	<i>Client indicated VOA not used due to sampling difficulty</i>		
16d	<i>ASI assesed VOA not used due to sample physical characteristics</i>		

Item	Sample Containers	Y	N
17	Samples in proper containers excluding items 15 and 16	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Item	COC	Y	N
7	Assist with completion of COC	<input type="checkbox"/>	<input type="checkbox"/>
8	Additional information supplied by client	<input type="checkbox"/>	<input type="checkbox"/>
18	Hold requested	<input type="checkbox"/>	<input type="checkbox"/>
19	Sub-contract analysis required	<input type="checkbox"/>	<input type="checkbox"/>

Client notification required due to sample integrity issue identified on the COC or ASI Sample Evaluation Form (F-0029)   
Method of notification to client: Phone  E-Mail   
Client response: Proceed with analysis  Resample and re-submit  Method of response: Phone  E-Mail

Request		Intials <i>EP</i>	
Special report formats			
TRRP <input type="checkbox"/>	Landfill <input type="checkbox"/>	NPDES (2) <input type="checkbox"/>	SW-846 (3) <input type="checkbox"/>
Dry-Weight(9) <input type="checkbox"/>	TRRP (no QC) <input type="checkbox"/>	QC Pages <input type="checkbox"/>	Unit Conversion <input type="checkbox"/> Other <input checked="" type="checkbox"/>
EDD Required			
General <input type="checkbox"/>	TRRP <input type="checkbox"/>	Client Specific <input type="checkbox"/>	
TAT Request			
5-day <input type="checkbox"/>	Standard <input checked="" type="checkbox"/>	Rush <input type="checkbox"/>	
Requested Due Date _____			

Client Requested Changes	
TAT Change Request to	
Standard <input type="checkbox"/>	Rush <input type="checkbox"/>
Requested Due Date _____	
Date of change	Initials
Method of notification: phone <input type="checkbox"/> email <input type="checkbox"/>	
Parameter Change Request	
Add	_____
Remove	_____
Date of change	Initials
Method of notification: phone <input type="checkbox"/> email <input type="checkbox"/>	
COC Correction Notes	
Date of change	Initials
Method of notification: phone <input type="checkbox"/> email <input type="checkbox"/>	





**Laboratory Report Number:** L18060121 (Revised)

Marcela Hawk  
San Antonio Testing Lab  
1610 S. Laredo Street  
San Antonio, TX 78207

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:  
Michelle Taylor – Client Services Specialist  
(740) 373-4071  
Michelle.Taylor@microbac.com

*I certify that all test results meet all of the requirements of the accrediting authority listed below. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.*

This report was certified on June 13 2018

Leslie Bucina – Managing Director

State of Origin: TX  
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX  
QAPP: Microbac OVD



## Record of Sample Receipt and Inspection

### Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

### Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00115959	I	5.0		1Z78526E1395341486	X

### Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	NA
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

**Samples Received**

Client ID	Laboratory ID	Date Collected	Date Received
1805506-04 SED #4	L18060121-01	05/31/2018 13:03	06/01/2018 14:03
1805506-08 SED #8	L18060121-02	05/31/2018 11:58	06/01/2018 14:03



**Login Number:** L18060121  
**Department:** General Chromatography  
**Analyst:** Eric Lawson

## METHOD

**Analysis** SW-846 8151A

## HOLDING TIMES

**Sample Preparation:** All holding times were met.

**Sample Analysis:** All holding times were met.

## PREPARATION

Sample preparation proceeded normally.

## CALIBRATION

**Initial Calibration:** For all compounds that yielded a %RSD greater than 20%, linear or higher order equations were applied. All acceptance criteria were met.

**Alternate Source Standards:** All acceptance criteria were met.

**Continuing Calibration and Tune:** All acceptance criteria were met.

## BATCH QA/QC

**Method Blank:** All acceptance criteria were met.

**Laboratory Control Sample:** All acceptance criteria were met.

**Matrix Spikes:** There were no MS/MSD results associated with this sample delivery group, due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac recommends site specific MS/MSD samples to avoid possible data qualification.

## SAMPLES

**Samples:** Sample 02 was analyzed at a dilution due to the appearance of the extract (dark green).

**Surrogates:** Recoveries out of range were observed for the following surrogate: 2,4-Dichlorophenylacetic acid failed high in sample 01 due to sample matrix interference; the sample was non-detect. Surrogates were diluted out of sample 02.

Sample #	Analyte	Date	Result	Lower	Upper	Type
L18060121-01	2,4-Dichlorophenylacetic acid	2018-06-11 21:19:00	190	25	110	Recovery

### Manual Integration Reason Codes

**Reason #1: Data System Fails to Select Correct Peak** In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

**Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak** This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low areacounts for the target compound.

**Reason #3: Improperly Integrated Isomers and/or coeluting compounds.** This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

**Reason #4: System Establishes Incorrect Baseline** There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

**Reason #5: Miscellaneous** Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

**Narrative ID:** 137555  
**Approved By:** Mary Schilling



### Certificate of Analysis

<b>Sample #:</b> L18060121-01	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> HP17
<b>Client ID:</b> 1805506-04 SED #4	<b>Prep Method:</b> METHOD	<b>Prep Date:</b> 06/07/2018 09:32
<b>Matrix:</b> Soil	<b>Analytical Method:</b> 8151A	<b>Cal Date:</b> 06/11/2018 19:07
<b>Workgroup #:</b> WG663388	<b>Analyst:</b> ECL	<b>Run Date:</b> 06/11/2018 21:19
<b>Collect Date:</b> 05/31/2018 13:03	<b>Dilution:</b> 1	<b>File ID:</b> 17G26654.R
<b>Sample Tag:</b> 01	<b>Units:</b> ug/kg	

Analyte	CAS #	Result	Qual	RL	MDL
2,4-D	94-75-7		ND	43.7	21.8
2,4-DB	94-82-6		ND	43.7	21.8
2,4,5-T	93-76-5		ND	4.37	2.18
2,4,5-TP (Silvex)	93-72-1		ND	3.28	1.64
Dalapon	75-99-0		ND	109	54.6
Dicamba	1918-00-9		ND	4.37	2.18
Dichloroprop	120-36-5		ND	43.7	21.8
Dinoseb	88-85-7		ND	21.8	10.9
MCPA	94-74-6		ND	4370	2180
MCPP	93-65-2		ND	4370	2180
Pentachlorophenol	87-86-5		ND	4.37	2.18
<b>Surrogate</b>	<b>Recovery</b>	<b>Lower Limit</b>	<b>Upper Limit</b>	<b>Q</b>	
2,4-Dichlorophenylacetic acid	190	25	110	*	
*	Surrogate or spike compound out of range				
ND	Not detected at or above the reporting limit (RL)				

<b>Sample #:</b> L18060121-02	<b>PrePrep Method:</b> N/A	<b>Instrument:</b> HP17
<b>Client ID:</b> 1805506-08 SED #8	<b>Prep Method:</b> METHOD	<b>Prep Date:</b> 06/07/2018 09:32
<b>Matrix:</b> Soil	<b>Analytical Method:</b> 8151A	<b>Cal Date:</b> 06/11/2018 19:07
<b>Workgroup #:</b> WG663388	<b>Analyst:</b> ECL	<b>Run Date:</b> 06/11/2018 21:45
<b>Collect Date:</b> 05/31/2018 11:58	<b>Dilution:</b> 20	<b>File ID:</b> 17G26655.R
<b>Sample Tag:</b> DL01	<b>Units:</b> ug/kg	

Analyte	CAS #	Result	Qual	RL	MDL
2,4-D	94-75-7		ND	838	419
2,4-DB	94-82-6		ND	838	419
2,4,5-T	93-76-5		ND	83.8	41.9
2,4,5-TP (Silvex)	93-72-1		ND	62.9	31.4
Dalapon	75-99-0		ND	2100	1050
Dicamba	1918-00-9		ND	83.8	41.9
Dichloroprop	120-36-5		ND	838	419
Dinoseb	88-85-7		ND	419	210
MCPA	94-74-6		ND	83800	41900

**Certificate of Analysis**

Analyte	CAS #	Result	Qual	RL	MDL
MCPP	93-65-2		ND	83800	41900
Pentachlorophenol	87-86-5		ND	83.8	41.9
Surrogate	Recovery	Lower Limit	Upper Limit	Q	
2,4-Dichlorophenylacetic acid	DL	25	110	*	
DL	Surrogate or spike compound was diluted out				
ND	Not detected at or above the reporting limit (RL)				

Microbac Laboratories Inc.  
Ohio Valley Division Analyst List  
June 13, 2018

---

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
ADW - ALICIA D. WALKER	AEO - ASHLEY E. OLSZEWSKI
ALM - AMANDA L. MUGRAGE	ALS - ADRIANE L. STEED
APH - ANDREW P. HOUT	AT - Asa R. Timmons
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BLG - BRENDA L. GREENWALT
BLR - BRANDON L. RICHARDS	BMP - Brett M. Price
BRG - BRENDA R. GREGORY	CAS - Craig A. Smith
CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD
COR - Corporate IT	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR	DTG - DOMINIC T. GEHRET
ECL - ERIC C. LAWSON	EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER	HRF - HEATHER R. FAIRCHILD
JAH - Jacque A. Hannum	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG	JST - JOSHUA S. TAYLOR
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JYH - JI Y. HU	KAK - KATHY A. KIRBY
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KMC - KAYLA M. CHEVALIER
KMG - KALEN M. GANDOR	KRA - KATHY R. ALBERTSON
KRP - KATHY R. PARSONS	LJH - Lacey J. Hendershot
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
LSJ - LAURA S. JONES	MAP - MARLA A. PORTER
MES - MARY E. SCHILLING	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	RLB - BOB BUCHANAN
RNP - RICK N. PETTY	SAV - SARAH A. VANDENBERG
SCA - SUEELLEN C. ADAMS	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	TB - TODD BOYLE
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT	ZTB - ZACH T. BARNES



June 13, 2018

Qualkey: STD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Result is greater than the associated numerical value.
>,H1	Result is greater than the associated numerical value. Sample analysis performed past holding time.
A	See the report narrative
B	Analyte present in method blank
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated value; the analyte concentration was less than the RL/LOQ.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Tentatively identified compound(TIC)
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported MDL.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits



X Exceeds regulatory limit  
X, S Exceeds regulatory limit; method of standard additions (MSA)  
Z Cannot be resolved from isomer - see below





1610 S. Laredo Street, San Antonio, Texas 78207  
 (210) 229-9920 • Fax (210) 229-9921  
 www.satestinglab.com

### CHAIN-OF-CUSTODY RECORD

REPORT TO:			INVOICE TO:			P.O. #		
COMPANY <i>SATL</i>			COMPANY <i>SATL</i>			REPORT NUMBER		
ADDRESS			ADDRESS			FAX #		
CITY STATE ZIP			CITY STATE ZIP			E-MAIL		
ATTN: <i>Jimco</i> PHONE #			ATTN: <i>Imda</i> PHONE #			E-MAIL		
REQUESTED TURNAROUND TIME IN BUSINESS DAYS & SURCHARGE			<input type="checkbox"/> 7-10 Days REG <input type="checkbox"/> 5 Days +25% <input type="checkbox"/> 4 Days +50% <input type="checkbox"/> 3 DAYS +75% <input type="checkbox"/> 2 DAYS +100% <input type="checkbox"/> Next Day +150% <input type="checkbox"/> SAME DAY WHEN POSSIBLE +300%					

PROJECT NAME/LOCATION/SITE: \_\_\_\_\_  
 THE TURNAROUND TIME FOR SAMPLES RECEIVED AFTER 3:00 PM SHALL BEGIN AT 8:00 AM THE FOLLOWING BUSINESS DAY

HARDCOPY  YES  NO / FOR STATE COMPLIANCE  YES  NO SPECIAL REQ.: *None by 06/11/18*

PROJECT NO. \_\_\_\_\_ TEMP. I.R. GUN # \_\_\_\_\_ SAMPLE TEMPERATURE WITHIN COMPLIANCE (> 0°C ≤ 6°C)  YES  NO INITIAL TO AUTHORIZE BULK ANALYSIS  
 IF NO, INITIAL HERE TO AUTHORIZE ANALYSIS

SAMPLED BY	MATRIX	SAMPLING METHOD	TEMP ON RECP.	COND. OF SAMPLE	TRAP 13 <input type="checkbox"/> YES <input type="checkbox"/> NO	LPST PCLS <input type="checkbox"/>
------------	--------	-----------------	---------------	-----------------	--	------------------------------------

SAMPLE NUMBER	COLLECTED DATE	COLLECTED TIME	MATRIX										SAMPLING METHOD	SAMPLE IDENTIFICATION	CONTAINER NUMBER	CONTAINER AMOUNT	CONTAINER SIZE	ANALYSIS REQUESTED	PRESERVED WITH	REMARKS
			LEAD	COPPER	ZINC	NICKEL	CHROMIUM	IRON	MANGANESE	CADMIUM	SELENIUM	SILICA								
1	5/31/18	1303												1805506-04 Seed #4	1			<i>ANALYSIS REQUESTED</i>		
2	5/31/18	1158												1805506-08 Seed #8	1			<i>ANALYSIS REQUESTED</i>		

RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME	RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME	METHOD	SAMPLED
<i>Imda</i>									
RELINQUISHED BY (PRINT NAME)	DATE / TIME	RECEIVED BY (PRINT NAME)	DATE / TIME	RELINQUISHED BY (PRINT NAME)	DATE / TIME	RECEIVED BY (PRINT NAME)	DATE / TIME		
<i>Jimco</i>									

**Microbac OVD**  
 Received: 06/01/2018 14:03  
 By: Jacque Hannum  
 221000117250

*Jacqueline Hannum*

CT  YES  NO

COOLER TEMP >6° C LOG

Cooler ID 7250

SAMPLE ID	Bottle 1 °C	Bottle 2 °C	Bottle 3 °C	Bottle 4 °C	Bottle 5 °C	Bottle 6 °C
<p><u>Bug</u></p> <p><u>6/11/18</u></p>						
<p><b>PH</b>      <b>Exceptions</b></p>						

pH Lot # N/A

SAMPLE ID	Bottle 1	Bottle 2	Bottle 3	Bottle 4	Bottle 5	Bottle 6
<p><u>Bug</u></p> <p><u>6/11/18</u></p> <p><b>PRESERVATIVE EXCEPTIONS</b></p> <p><input type="checkbox"/> NONE</p> <p><input checked="" type="checkbox"/> AS NOTED</p>						

Document Control # 1957  
Last 10-07-2016

Bug 6/11/18

Issued to: Document Master File

## NELAP Addendum - June 13, 2018

### Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)  
Total Halide by Bomb Combustion (TX)  
Particle Sizing - 200 Mesh (PS200)  
Specific Gravity/Density (SPGRAV)  
Total Residual Chlorine (CL-TRL)  
Total Volatile Solids (all forms) (TVS)  
Total Coliform Bacteria (all methods)  
Fecal Coliform Bacteria (all methods)  
Sulfite (SO<sub>3</sub>)  
Propionaldehyde (HPLC-UV)

#### NONPOTABLE WATER

1,3-Dichloribenzene 8260B  
1,3,5-Trimethylbenzene 8260B

#### SOLID AND HAZARDOUS CHEMICALS

Nitrogen, Ammonia by Method 350.1  
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009  
Phenolics, Total by Method 420.1  
ASTM D3987-06

### NELAP Accreditation by Laboratory SOP

#### NONPOTABLE WATER

##### OVD HPLC02/HPLC-UV

Nitroglycerin  
Acetic acid  
Butyric acid  
Lactic acid  
Propionic acid  
Pyruvic acid

##### OVD MSS01/GC-MS

1,4-Phenylenediamine  
1-Methylnaphthalene  
1,4-Dioxane  
Atrazine  
Benzaldehyde  
Biphenyl  
Caprolactam  
Hexamethylphosphoramide (HMPA)  
Pentachlorobenzene  
Pentachloroethane

## **NELAP Accreditation by Laboratory SOP**

### **NONPOTABLE WATER**

#### OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane  
1,3-Butadiene  
Cyclohexane  
Cyclohexanone  
Dimethyl disulfide  
Dimethylsulfide  
Ethyl-t-butylether (ETBE)  
Isoprene  
Methylacetate  
Methylcyclohexane  
T-amylmethylether (TAME)  
Tetrahydrofuran (THF)

#### OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

#### OVD HPLC12/HPLC/UV

Acetate  
Formate

#### OVD RSK01/GC-FID

Acetylene  
Propane

#### OVD K9305/ISE

Fluoroborate

## **NELAP Accreditation by Laboratory SOP**

### **SOLID AND HAZARDOUS CHEMICALS**

#### OVD MSS01/GC-MS

1-Methylnaphthalene  
Benzaldehyde  
Biphenyl  
Caprolactam  
Pentachloroethane

## NELAP Accreditation by Laboratory SOP

### SOLID AND HAZARDOUS CHEMICALS

#### OVD MSV01/GC-MS

1.3-Butadiene  
Cyclohexane  
Cyclohexanone  
Dimethyl disulfide  
Dimethylsulfide  
Ethyl-t-butylether (ETBE)  
Isoprene  
Methylacetate  
Methylcyclohexane  
n-Hexane  
T-amylmethylether (TAME)

August 27, 2018

**Tim Noack**

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin, TX 78752

**SATL Report No.: 1808246**

**RE: Mitchell Lake**

Dear Tim Noack

SATL received 6 Sample(s) on 08/15/2018 for analyses identified on the chain of custody. The analyses were performed using methods indicated on the laboratory report. Any deviations observed at sample receiving are notated on the Sample Receipt Checklist and/or Chain of Custody documents attached as part of this analytical report.

There were no problems in the sample analyses unless otherwise noted. Sample data and associated QC are presented in the attached laboratory report. QC sample data were within laboratory acceptance limits except where noted on the report.

Sincerely,

For San Antonio Testing Laboratory, Inc.



Richard Hawk,  
General Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

NELAC Cert. No.: T104704360-17-17

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

**SAMPLE SUMMARY**

Total Samples received in this work order: 6

The following samples were requested for analysis as per the CoC. Any re-runs or re-analyses requested are identified as such.

<u>Sample ID</u>	<u>Laboratory ID</u>	<u>Matrix</u>	<u>Sampling Method</u>	<u>Date Sampled</u>	<u>Date Received</u>
#1 Near Polders	1808246-01	Liquid	Grab	08/15/18 10:24	08/15/18 14:37
#6 Surface	1808246-02	Liquid	Grab	08/15/18 11:00	08/15/18 14:37
#6 Bottom	1808246-03	Liquid	Grab	08/15/18 11:10	08/15/18 14:37
#9 Bottom	1808246-04	Liquid	Grab	08/15/18 12:00	08/15/18 14:37
#9B	1808246-05	Liquid	Grab	08/15/18 12:05	08/15/18 14:37
Field Blank	1808246-06	Liquid	Grab	08/15/18 12:15	08/15/18 14:37

**Notes**

All quality control samples and checks are within acceptance limits unless otherwise indicated.  
Test results pertain only to those items tested.  
All samples were in good condition when received by the laboratory unless otherwise noted.

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

**Sample ID #: #1 Near Polders**

**Sampling Method: Grab**

**Lab Sample ID #: 1808246-01**

**Sample Matrix: Liquid**

**Date/Time Collected: 08/15/18 10:24**

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	137	mg/L	0.010			B834092	08/23/18 09:37	SM2540E	HC	
Total Alkalinity *	47.0	mg/L as CaCO3	20.0		SM2320B	B835013	08/27/18 11:10	SM2320B	HC	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B834020	08/20/18 12:30	4500NH3CB	HC	
CBOD *	22.9	mg/L	2.00		EPA 425.1	B834023	08/20/18 14:14	SM5210B	HC	
Total Suspended Solids *	162	mg/L	41.7		SM2540D	B834078	08/22/18 15:41	SM2540D	HC	
Total Kjeldahl Nitrogen *	15.9	mg/L	1.00		EPA 351.3	B834109	08/24/18 08:50	EPA 351.3	HC	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	08/16/18 18:46	EPA 300.0	SA	
Total Dissolved Solids *	4650	mg/L	100		SM2540D	B834077	08/22/18 17:55	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B833114	08/16/18 18:46	EPA 300.0	SA	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B833114	08/16/18 18:46	EPA 300.0	SA	
<b>Total Metals</b>										
Phosphorus *	0.305	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:01	EPA 200.7	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

Sample ID #: #6 Surface

Sampling Method: Grab

Lab Sample ID #: 1808246-02

Sample Matrix: Liquid

Date/Time Collected: 08/15/18 11:00

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	142	mg/L	0.010			B834092	08/23/18 09:37	SM2540E	HC	
Total Alkalinity *	42.0	mg/L as CaCO3	20.0		SM2320B	B835013	08/27/18 11:10	SM2320B	HC	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B834020	08/20/18 12:30	4500NH3CB	HC	
CBOD *	19.0	mg/L	2.00		EPA 425.1	B834023	08/20/18 14:14	SM5210B	HC	
Cyanide, Total *	<0.020	mg/L	0.020		SM4500-CN C	B834025	08/20/18 16:28	4500CN_C&E	SA	
Total Suspended Solids *	160	mg/L	55.6		SM2540D	B834078	08/22/18 15:41	SM2540D	HC	
Total Kjeldahl Nitrogen *	14.5	mg/L	1.00		EPA 351.3	B834109	08/24/18 08:50	EPA 351.3	HC	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	08/16/18 19:39	EPA 300.0	SA	
Hexavalent Chromium *	<0.005	mg/L	0.005		I-1230-85	B834029	08/21/18 09:24	I-1230-85	HC	
Total Dissolved Solids *	6160	mg/L	100		SM2540D	B834077	08/22/18 17:55	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B833114	08/16/18 19:39	EPA 300.0	SA	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B833114	08/16/18 19:39	EPA 300.0	SA	
<b>Total Metals</b>										
Antimony *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:07	EPA 200.7	XE	
Arsenic *	0.012	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:07	EPA 200.7	XE	
Beryllium *	<0.004	mg/L	0.004		EPA 200.7	B834073	08/23/18 13:07	EPA 200.7	XE	
Cadmium *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:07	EPA 200.7	XE	
Chromium *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:07	EPA 200.7	XE	
Copper *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:07	EPA 200.7	XE	
Mercury *	<0.0002	mg/L	0.0002		EPA 245.1	B834012	08/20/18 14:18	EPA 245.1	ME	
Lead *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:07	EPA 200.7	XE	
Nickel *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:07	EPA 200.7	XE	
Phosphorus *	0.363	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:07	EPA 200.7	XE	
Selenium *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:07	EPA 200.7	XE	
Silver *	<0.005	mg/L	0.005		EPA 200.7	B834073	08/23/18 13:07	EPA 200.7	XE	c
Thallium *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:07	EPA 200.7	XE	
Zinc *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:07	EPA 200.7	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

Sample ID #: #6 Surface

Sampling Method: Grab

Lab Sample ID #: 1808246-02

Sample Matrix: Liquid

Date/Time Collected: 08/15/18 11:00

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>Trivalent Chromium (Calculated)</b>										
Trivalent Chromium	<0.0100	mg/L	0.0100		[CALC]	[CALC]	08/23/18 13:07	CALC	HC	
<b>Polychlorinated Biphenyls [PCB]</b>										
<b>Z</b>										
PCB 1016 *	<0.0001	mg/L	0.0001		EPA 3510C	B834040	08/21/18 16:26	EPA 608	REB	
PCB 1221 *	<0.0001	mg/L	0.0001		EPA 3510C	B834040	08/21/18 16:26	EPA 608	REB	
PCB 1232 *	<0.0001	mg/L	0.0001		EPA 3510C	B834040	08/21/18 16:26	EPA 608	REB	
PCB 1242 *	<0.0001	mg/L	0.0001		EPA 3510C	B834040	08/21/18 16:26	EPA 608	REB	
PCB 1248 *	<0.0001	mg/L	0.0001		EPA 3510C	B834040	08/21/18 16:26	EPA 608	REB	
PCB 1254 *	<0.0001	mg/L	0.0001		EPA 3510C	B834040	08/21/18 16:26	EPA 608	REB	
PCB 1260 *	<0.0001	mg/L	0.0001		EPA 3510C	B834040	08/21/18 16:26	EPA 608	REB	
Surrogate: Decachlorobiphenyl	35 %	36-150	SurrL	EPA 3510C	B834040	08/21/18 16:26	EPA 608	REB		
Surrogate: Tetrachloro-meta-xylene	23 %	28-131	SurrL	EPA 3510C	B834040	08/21/18 16:26	EPA 608	REB		
<b>Chlorinated Pesticides by GC/ECD</b>										
<b>Zb</b>										
alpha-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
gamma-BHC (Lindane) *	<0.0001	mg/L	0.0001	8	EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
beta-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
delta-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
Heptachlor *	<0.0001	mg/L	0.0001	0.16	EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
Aldrin *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
Heptachlor Epoxide *	<0.0001	mg/L	0.0001	0.16	EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
gamma-Chlordane *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
alpha-Chlordane *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
Endosulfan I *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
4,4'-DDE *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
Dieldrin *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
Endrin *	<0.0001	mg/L	0.0001	0.4	EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
4,4'-DDD *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
Endosulfan II *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
4,4'-DDT *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
Endrin Aldehyde *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
Endosulfan Sulfate *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
Methoxychlor *	<0.0001	mg/L	0.0001	200	EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
Endrin Ketone *	<0.0001	mg/L	0.0001		EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
Toxaphene *	<0.01	mg/L	0.01	10	EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB	
Surrogate: Decachlorobiphenyl	18 %	36-150	SurrL	EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB		
Surrogate: Tetrachloro-meta-xylene	13 %	30-144	SurrL	EPA 3510C	B834039	08/21/18 16:38	EPA 608	REB		



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

Sample ID #: #6 Bottom

Sampling Method: Grab

Lab Sample ID #: 1808246-03

Sample Matrix: Liquid

Date/Time Collected: 08/15/18 11:10

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	151	mg/L	0.010			B834092	08/23/18 09:37	SM2540E	HC	
Total Alkalinity *	42.0	mg/L as CaCO3	20.0		SM2320B	B835013	08/27/18 11:10	SM2320B	HC	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B834020	08/20/18 12:30	4500NH3CB	HC	
CBOD *	22.8	mg/L	2.00		EPA 425.1	B834023	08/20/18 14:14	SM5210B	HC	
Total Suspended Solids *	178	mg/L	55.6		SM2540D	B834078	08/22/18 15:41	SM2540D	HC	
Total Kjeldahl Nitrogen *	15.2	mg/L	1.00		EPA 351.3	B834109	08/24/18 08:50	EPA 351.3	HC	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	08/16/18 19:57	EPA 300.0	SA	
Total Dissolved Solids *	5470	mg/L	100		SM2540D	B834077	08/22/18 17:55	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B833114	08/16/18 19:57	EPA 300.0	SA	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B833114	08/16/18 19:57	EPA 300.0	SA	
<b>Total Metals</b>										
Phosphorus *	0.271	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:42	EPA 200.7	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

Sample ID #: #9 Bottom

Sampling Method: Grab

Lab Sample ID #: 1808246-04

Sample Matrix: Liquid

Date/Time Collected: 08/15/18 12:00

Analyte	Result	Units	PQL	RMCLL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	151	mg/L	0.010			B834092	08/23/18 09:37	SM2540E	HC	
Total Alkalinity *	61.0	mg/L as CaCO3	20.0		SM2320B	B835013	08/27/18 11:10	SM2320B	HC	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B834020	08/20/18 12:30	4500NH3CB	HC	
CBOD *	31.7	mg/L	2.00		EPA 425.1	B834023	08/20/18 14:14	SM5210B	HC	
Total Suspended Solids *	167	mg/L	55.6		SM2540D	B834078	08/22/18 15:41	SM2540D	HC	
Total Kjeldahl Nitrogen *	17.9	mg/L	1.00		EPA 351.3	B834109	08/24/18 08:50	EPA 351.3	HC	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	08/16/18 20:15	EPA 300.0	SA	
Total Dissolved Solids *	5310	mg/L	100		SM2540D	B834077	08/22/18 17:55	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B833114	08/16/18 20:15	EPA 300.0	SA	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B833114	08/16/18 20:15	EPA 300.0	SA	
<b>Total Metals</b>										
Phosphorus *	0.264	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:48	EPA 200.7	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

Sample ID #: #9B

Sampling Method: Grab

Lab Sample ID #: 1808246-05

Sample Matrix: Liquid

Date/Time Collected: 08/15/18 12:05

Analyte	Result	Units	PQL	RMCLL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	149	mg/L	0.010			B834092	08/23/18 09:37	SM2540E	HC	
Total Alkalinity *	61.0	mg/L as CaCO3	20.0		SM2320B	B835013	08/27/18 11:10	SM2320B	HC	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B834020	08/20/18 12:30	4500NH3CB	HC	
CBOD *	29.6	mg/L	2.00		EPA 425.1	B834023	08/20/18 14:14	SM5210B	HC	
Total Suspended Solids *	158	mg/L	55.6		SM2540D	B834078	08/22/18 15:41	SM2540D	HC	
Total Kjeldahl Nitrogen *	17.2	mg/L	1.00		EPA 351.3	B834109	08/24/18 08:50	EPA 351.3	HC	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	08/16/18 20:33	EPA 300.0	SA	
Total Dissolved Solids *	5950	mg/L	100		SM2540D	B834077	08/22/18 17:55	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B833114	08/16/18 20:33	EPA 300.0	SA	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B833114	08/16/18 20:33	EPA 300.0	SA	
<b>Total Metals</b>										
Phosphorus *	0.248	mg/L	0.010		EPA 200.7	B834073	08/23/18 13:54	EPA 200.7	XE	

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

Sample ID #: Field Blank

Sampling Method: Grab

Lab Sample ID #: 1808246-06

Sample Matrix: Liquid

Date/Time Collected: 08/15/18 12:15

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Hexavalent Chromium *	<0.005	mg/L	0.005		I-1230-85	B834029	08/21/18 09:24	I-1230-85	HC	
<b>Total Metals</b>										
Antimony *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 14:00	EPA 200.7	XE	
Arsenic *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 14:00	EPA 200.7	XE	
Beryllium *	<0.004	mg/L	0.004		EPA 200.7	B834073	08/23/18 14:00	EPA 200.7	XE	
Cadmium *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 14:00	EPA 200.7	XE	
Chromium *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 14:00	EPA 200.7	XE	
Copper *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 14:00	EPA 200.7	XE	
Mercury *	<0.0002	mg/L	0.0002		EPA 245.1	B834012	08/20/18 14:25	EPA 245.1	ME	
Lead *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 14:00	EPA 200.7	XE	
Nickel *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 14:00	EPA 200.7	XE	
Selenium *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 14:00	EPA 200.7	XE	
Silver *	<0.005	mg/L	0.005		EPA 200.7	B834073	08/23/18 14:00	EPA 200.7	XE	c
Thallium *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 14:00	EPA 200.7	XE	
Zinc *	<0.010	mg/L	0.010		EPA 200.7	B834073	08/23/18 14:00	EPA 200.7	XE	
<b>Trivalent Chromium (Calculated)</b>										
Trivalent Chromium	<0.0100	mg/L	0.0100		[CALC]	[CALC]	08/23/18 14:00	CALC	HC	



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B834020 - SM4500NH3B**

<b>Blank (B834020-BLK1)</b>				Prepared: 08/20/18 10:40 Analyzed: 08/20/18 12:30					
Ammonia-Nitrogen	<1.00	1.00	mg/L						
<b>LCS (B834020-BS1)</b>				Prepared: 08/20/18 10:40 Analyzed: 08/20/18 12:30					
Ammonia-Nitrogen	19.8	1.00	mg/L	20.0		99	80-120		
<b>LCS Dup (B834020-BSD1)</b>				Prepared: 08/20/18 10:40 Analyzed: 08/20/18 12:30					
Ammonia-Nitrogen	19.8	1.00	mg/L	20.0		99	80-120	0	20
<b>Duplicate (B834020-DUP1)</b>				Source: 1808247-01 Prepared: 08/20/18 10:40 Analyzed: 08/20/18 12:30					
Ammonia-Nitrogen	4.00	1.00	mg/L	3.30				19	20
<b>Matrix Spike (B834020-MS1)</b>				Source: 1808247-01 Prepared: 08/20/18 10:40 Analyzed: 08/20/18 12:30					
Ammonia-Nitrogen	25.1	1.00	mg/L	20.0	3.30	109	80-120		

**Batch B834023 - EPA 425.1**

<b>Blank (B834023-BLK1)</b>				Prepared: 08/15/18 16:15 Analyzed: 08/20/18 14:14					
CBOD	<2.00	2.00	mg/L						
<b>LCS (B834023-BS1)</b>				Prepared: 08/15/18 16:15 Analyzed: 08/20/18 14:14					
CBOD	192	2.00	mg/L	200		96	80-120		
<b>LCS (B834023-BS2)</b>				Prepared: 08/15/18 16:15 Analyzed: 08/20/18 14:14					
CBOD	207	2.00	mg/L	200		104	80-120		
<b>LCS Dup (B834023-BSD1)</b>				Prepared: 08/15/18 16:15 Analyzed: 08/20/18 14:14					
CBOD	186	2.00	mg/L	200		93	80-120	3	20

**Batch B834025 - SM4500-CN C**

<b>Blank (B834025-BLK1)</b>				Prepared: 08/20/18 11:56 Analyzed: 08/20/18 16:28					
Cyanide, Total	<0.010	0.010	mg/L						
<b>LCS (B834025-BS1)</b>				Prepared: 08/20/18 11:56 Analyzed: 08/20/18 16:28					
Cyanide, Total	0.350	0.010	mg/L	0.300		117	80-120		
<b>Duplicate (B834025-DUP1)</b>				Source: 1808247-01 Prepared: 08/20/18 11:56 Analyzed: 08/20/18 16:28					
Cyanide, Total	<0.010	0.010	mg/L	<0.010					20
<b>Matrix Spike (B834025-MS1)</b>				Source: 1808247-01 Prepared: 08/20/18 11:56 Analyzed: 08/20/18 16:28					

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B834025 - SM4500-CN C**

<b>Matrix Spike (B834025-MS1)</b>		<b>Source: 1808247-01</b>		Prepared: 08/20/18 11:56		Analyzed: 08/20/18 16:28			
Cyanide, Total	0.136	0.010	mg/L	0.100	<0.010	136	80-120		M

**Batch B834029 - I-1230-85**

<b>Blank (B834029-BLK1)</b>				Prepared: 08/20/18 16:20		Analyzed: 08/21/18 09:24			
Hexavalent Chromium	<0.005	0.005	mg/L						

<b>LCS (B834029-BS1)</b>				Prepared: 08/20/18 16:20		Analyzed: 08/21/18 09:24			
Hexavalent Chromium	0.390	0.005	mg/L	0.400		97	90-110		

<b>LCS Dup (B834029-BSD1)</b>				Prepared: 08/20/18 16:20		Analyzed: 08/21/18 09:24			
Hexavalent Chromium	0.390	0.005	mg/L	0.400		97	90-110	0	20

<b>Duplicate (B834029-DUP1)</b>		<b>Source: 1808248-01</b>		Prepared: 08/20/18 16:20		Analyzed: 08/21/18 09:24			
Hexavalent Chromium	<0.005	0.005	mg/L		<0.005				20

<b>Matrix Spike (B834029-MS1)</b>		<b>Source: 1808248-01</b>		Prepared: 08/20/18 16:20		Analyzed: 08/21/18 09:24			
Hexavalent Chromium	0.366	0.005	mg/L	0.400	<0.005	92	80-120		

**Batch B834077 - SM2540D**

<b>Blank (B834077-BLK1)</b>				Prepared: 08/22/18 09:00		Analyzed: 08/22/18 17:55			
Total Dissolved Solids	<10.0	10.0	mg/L						

<b>LCS (B834077-BS1)</b>				Prepared: 08/22/18 09:00		Analyzed: 08/22/18 17:55			
Total Dissolved Solids	101	10.0	mg/L	100		101	80-120		

<b>LCS Dup (B834077-BSD1)</b>				Prepared: 08/22/18 09:00		Analyzed: 08/22/18 17:55			
Total Dissolved Solids	103	10.0	mg/L	100		103	80-120	2	20

<b>Duplicate (B834077-DUP1)</b>		<b>Source: 1808246-01</b>		Prepared: 08/22/18 09:00		Analyzed: 08/22/18 17:55			
Total Dissolved Solids	5340	100	mg/L		4650			14	20

**Batch B834078 - SM2540D**

<b>Blank (B834078-BLK1)</b>				Prepared: 08/22/18 09:00		Analyzed: 08/22/18 15:41			
Total Suspended Solids	<2.50	2.50	mg/L						

<b>LCS (B834078-BS1)</b>				Prepared: 08/22/18 09:00		Analyzed: 08/22/18 15:41			
Total Suspended Solids	91.0	25.0	mg/L	100		91	80-120		

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B834078 - SM2540D**

<b>LCS Dup (B834078-BSD1)</b>				Prepared: 08/22/18 09:00 Analyzed: 08/22/18 15:41					
Total Suspended Solids	94.0	25.0	mg/L	100		94	80-120	3	20
<b>Duplicate (B834078-DUP1)</b>		<b>Source: 1808246-01</b>		Prepared: 08/22/18 09:00 Analyzed: 08/22/18 15:41					
Total Suspended Solids	170	41.7	mg/L	162				5	20

**Batch B834092 - NO PREP**

<b>Blank (B834092-BLK1)</b>				Prepared: 08/22/18 09:00 Analyzed: 08/23/18 09:37					
Volatile Suspended Solids	<0.010	0.010	mg/L						
<b>Duplicate (B834092-DUP1)</b>		<b>Source: 1808246-01</b>		Prepared: 08/22/18 09:00 Analyzed: 08/23/18 09:37					
Volatile Suspended Solids	153	0.010	mg/L	137				11	30

**Batch B834109 - EPA 351.3**

<b>Blank (B834109-BLK1)</b>				Prepared: 08/23/18 09:00 Analyzed: 08/24/18 08:50					
Total Kjeldahl Nitrogen	<1.00	1.00	mg/L						
<b>LCS (B834109-BS1)</b>				Prepared: 08/23/18 09:00 Analyzed: 08/24/18 08:50					
Total Kjeldahl Nitrogen	19.8	1.00	mg/L	20.0		99	80-120		
<b>LCS Dup (B834109-BSD1)</b>				Prepared: 08/23/18 09:00 Analyzed: 08/24/18 08:50					
Total Kjeldahl Nitrogen	20.5	1.00	mg/L	20.0		102	80-120	3	20
<b>Duplicate (B834109-DUP1)</b>		<b>Source: 1808246-01</b>		Prepared: 08/23/18 09:00 Analyzed: 08/24/18 08:50					
Total Kjeldahl Nitrogen	16.5	1.00	mg/L	15.9				4	20
<b>Matrix Spike (B834109-MS1)</b>		<b>Source: 1808246-01</b>		Prepared: 08/23/18 09:00 Analyzed: 08/24/18 08:50					
Total Kjeldahl Nitrogen	37.0	1.00	mg/L	20.0	15.9	106	80-120		

**Batch B835013 - SM2320B**

<b>Blank (B835013-BLK1)</b>				Prepared: 08/27/18 10:54 Analyzed: 08/27/18 11:10					
Total Alkalinity	<20.0	20.0	mg/L as CaCO3						
<b>LCS (B835013-BS1)</b>				Prepared: 08/27/18 10:54 Analyzed: 08/27/18 11:10					
Total Alkalinity	99.0	20.0	mg/L as CaCO3	106		93	80-120		
<b>LCS Dup (B835013-BSD1)</b>				Prepared: 08/27/18 10:54 Analyzed: 08/27/18 11:10					
Total Alkalinity	104	20.0	mg/L as CaCO3	106		98	80-120	5	20

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B835013 - SM2320B**

<b>Duplicate (B835013-DUP1)</b>		<b>Source: 1808246-01</b>		Prepared: 08/27/18 10:54		Analyzed: 08/27/18 11:10			
Total Alkalinity	47.0	20.0	mg/L as CaCO3		47.0			0	20

**Anions by Ion Chromatography - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B833114 - EPA 300.0**

<b>Blank (B833114-BLK1)</b>				Prepared: 08/16/18 15:00		Analyzed: 08/16/18 16:05			
Nitrite as N	<0.10	0.10	mg/L						
Nitrate as N	<0.10	0.10	mg/L						

<b>LCS (B833114-BS1)</b>				Prepared: 08/16/18 15:00		Analyzed: 08/16/18 16:23			
Nitrite as N	5.06	0.10	mg/L	5.00		101	90-110		
Nitrate as N	5.24	0.10	mg/L	5.00		105	90-110		

<b>LCS Dup (B833114-BSD1)</b>				Prepared: 08/16/18 15:00		Analyzed: 08/16/18 16:41			
Nitrite as N	5.09	0.10	mg/L	5.00		102	90-110	0.5	20
Nitrate as N	5.24	0.10	mg/L	5.00		105	90-110	0.1	20

<b>Duplicate (B833114-DUP1)</b>		<b>Source: 1808267-03</b>		Prepared: 08/16/18 15:00		Analyzed: 08/16/18 21:09			
Nitrite as N	<0.10	0.10	mg/L		<0.10				20
Nitrate as N	0.800	0.10	mg/L		0.797			0.4	20

<b>Matrix Spike (B833114-MS1)</b>		<b>Source: 1808267-03</b>		Prepared: 08/16/18 15:00		Analyzed: 08/16/18 21:27			
Nitrite as N	5.05	0.10	mg/L	5.00	<0.10	101	90-110		
Nitrate as N	6.17	0.10	mg/L	5.00	0.797	108	90-110		

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

<b>Batch B834012 - EPA 245.1</b>				Prepared: 08/20/18 10:00		Analyzed: 08/20/18 13:34			
<b>Blank (B834012-BLK1)</b>									

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B834012 - EPA 245.1**

**Blank (B834012-BLK1)** Prepared: 08/20/18 10:00 Analyzed: 08/20/18 13:34

Mercury	<0.0002	0.0002	mg/L						
---------	---------	--------	------	--	--	--	--	--	--

**LCS (B834012-BS1)** Prepared: 08/20/18 10:00 Analyzed: 08/20/18 13:36

Mercury	0.00994	0.0002	mg/L	0.0100		99	85-115		
---------	---------	--------	------	--------	--	----	--------	--	--

**LCS Dup (B834012-BSD1)** Prepared: 08/20/18 10:00 Analyzed: 08/20/18 13:38

Mercury	0.0103	0.0002	mg/L	0.0100		103	85-115	4	25
---------	--------	--------	------	--------	--	-----	--------	---	----

**Duplicate (B834012-DUP1)** **Source: 1808256-01** Prepared: 08/20/18 10:00 Analyzed: 08/20/18 14:02

Mercury	<0.0002	0.0002	mg/L	<0.0002					25
---------	---------	--------	------	---------	--	--	--	--	----

**Matrix Spike (B834012-MS1)** **Source: 1808256-01** Prepared: 08/20/18 10:00 Analyzed: 08/20/18 14:04

Mercury	0.00932	0.0002	mg/L	0.0100	<0.0002	93	75-125		
---------	---------	--------	------	--------	---------	----	--------	--	--

**Batch B834073 - EPA 200.7**

**Blank (B834073-BLK1)** Prepared: 08/23/18 09:15 Analyzed: 08/23/18 12:27

Antimony	<0.010	0.010	mg/L						
Arsenic	<0.010	0.010	mg/L						
Beryllium	<0.004	0.004	mg/L						
Cadmium	<0.010	0.010	mg/L						
Chromium	<0.010	0.010	mg/L						
Copper	<0.010	0.010	mg/L						
Lead	<0.010	0.010	mg/L						
Nickel	<0.010	0.010	mg/L						
Phosphorus	<0.010	0.010	mg/L						
Selenium	<0.010	0.010	mg/L						
Silver	<0.005	0.005	mg/L						
Thallium	<0.010	0.010	mg/L						
Zinc	<0.010	0.010	mg/L						

**LCS (B834073-BS1)** Prepared: 08/23/18 09:15 Analyzed: 08/23/18 12:33

Antimony	1.96	0.010	mg/L	2.00		98	85-115		
Arsenic	1.96	0.010	mg/L	2.00		98	85-115		
Beryllium	1.95	0.004	mg/L	2.00		98	85-115		
Cadmium	1.95	0.010	mg/L	2.00		97	85-115		
Chromium	1.94	0.010	mg/L	2.00		97	85-115		
Copper	1.98	0.010	mg/L	2.00		99	85-115		

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B834073 - EPA 200.7**

**LCS (B834073-BS1)**

Prepared: 08/23/18 09:15 Analyzed: 08/23/18 12:33

Lead	1.94	0.010	mg/L	2.00		97	85-115		
Nickel	1.96	0.010	mg/L	2.00		98	85-115		
Phosphorus	1.94	0.010	mg/L	2.00		97	85-115		
Selenium	1.97	0.010	mg/L	2.00		99	85-115		
Silver	1.00	0.005	mg/L	1.00		100	85-115		
Thallium	1.98	0.010	mg/L	2.00		99	85-115		
Zinc	1.96	0.010	mg/L	2.00		98	85-115		

**LCS Dup (B834073-BSD1)**

Prepared: 08/23/18 09:15 Analyzed: 08/23/18 12:39

Antimony	1.88	0.010	mg/L	2.00		94	85-115	4	20
Arsenic	1.89	0.010	mg/L	2.00		95	85-115	4	20
Beryllium	1.87	0.004	mg/L	2.00		94	85-115	4	20
Cadmium	1.87	0.010	mg/L	2.00		94	85-115	4	20
Chromium	1.87	0.010	mg/L	2.00		93	85-115	4	20
Copper	1.90	0.010	mg/L	2.00		95	85-115	4	20
Lead	1.86	0.010	mg/L	2.00		93	85-115	4	20
Nickel	1.88	0.010	mg/L	2.00		94	85-115	4	20
Phosphorus	1.87	0.010	mg/L	2.00		93	85-115	4	20
Selenium	1.90	0.010	mg/L	2.00		95	85-115	4	20
Silver	0.976	0.005	mg/L	1.00		98	85-115	3	20
Thallium	1.90	0.010	mg/L	2.00		95	85-115	4	20
Zinc	1.89	0.010	mg/L	2.00		94	85-115	4	20

**Duplicate (B834073-DUP1)**

Source: 1808355-01

Prepared: 08/23/18 09:15 Analyzed: 08/23/18 12:50

Antimony	<0.010	0.010	mg/L	<0.010					
Arsenic	0.000900	0.010	mg/L	0.000800				12	20
Beryllium	<0.004	0.004	mg/L	0.000300					20
Cadmium	0.0125	0.010	mg/L	0.0103				19	20
Chromium	0.0229	0.010	mg/L	0.0208				10	20
Copper	0.0338	0.010	mg/L	0.0254				28	20
Lead	0.00600	0.010	mg/L	0.00530				12	20
Nickel	0.00460	0.010	mg/L	0.00450				2	20
Phosphorus	0.0727	0.010	mg/L	0.214				99	20
Selenium	0.00270	0.010	mg/L	0.00270				0	20
Silver	0.000500	0.005	mg/L	<0.005					20
Thallium	<0.010	0.010	mg/L	<0.010					20

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	---------	-----------

**Batch B834073 - EPA 200.7**

<b>Duplicate (B834073-DUP1)</b>		<b>Source: 1808355-01</b>		Prepared: 08/23/18 09:15 Analyzed: 08/23/18 12:50	
Zinc	0.101	0.010	mg/L	0.0808	22 20 S

<b>Duplicate (B834073-DUP2)</b>		<b>Source: 1808246-02</b>		Prepared: 08/23/18 09:15 Analyzed: 08/23/18 13:13	
Antimony	0.00330	0.010	mg/L	0.00270	20 20
Arsenic	0.0113	0.010	mg/L	0.0115	2 20
Beryllium	<0.004	0.004	mg/L	<0.004	20
Cadmium	0.000900	0.010	mg/L	0.000900	0 20
Chromium	0.00330	0.010	mg/L	0.00300	10 20
Copper	<0.010	0.010	mg/L	<0.010	20
Lead	0.00280	0.010	mg/L	0.00310	10 20
Nickel	0.00330	0.010	mg/L	0.00290	13 20
Phosphorus	0.531	0.010	mg/L	0.363	38 20 S
Selenium	0.00320	0.010	mg/L	0.00390	20 20
Silver	<0.005	0.005	mg/L	<0.005	20
Thallium	<0.010	0.010	mg/L	<0.010	20
Zinc	0.0101	0.010	mg/L	0.00930	8 20

<b>Matrix Spike (B834073-MS1)</b>		<b>Source: 1808355-01</b>		Prepared: 08/23/18 09:15 Analyzed: 08/23/18 12:55	
Antimony	1.91	0.010	mg/L	2.00 <0.010	96 75-125
Arsenic	1.96	0.010	mg/L	2.00 0.000800	98 75-125
Beryllium	1.94	0.004	mg/L	2.00 0.000300	97 75-125
Cadmium	1.91	0.010	mg/L	2.00 0.0103	95 75-125
Chromium	1.92	0.010	mg/L	2.00 0.0208	95 75-125
Copper	1.94	0.010	mg/L	2.00 0.0254	96 75-125
Lead	1.91	0.010	mg/L	2.00 0.00530	95 75-125
Nickel	1.94	0.010	mg/L	2.00 0.00450	97 75-125
Phosphorus	2.01	0.010	mg/L	2.00 0.214	90 75-125
Selenium	1.97	0.010	mg/L	2.00 0.00270	98 75-125
Silver	0.998	0.005	mg/L	1.00 <0.005	100 75-125
Thallium	1.92	0.010	mg/L	2.00 <0.010	96 75-125
Zinc	1.99	0.010	mg/L	2.00 0.0808	96 75-125

<b>Matrix Spike (B834073-MS2)</b>		<b>Source: 1808246-02</b>		Prepared: 08/23/18 09:15 Analyzed: 08/23/18 13:19	
Antimony	2.05	0.010	mg/L	2.00 0.00270	102 75-125
Arsenic	2.16	0.010	mg/L	2.00 0.0115	107 75-125
Beryllium	2.05	0.004	mg/L	2.00 <0.004	103 75-125

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B834073 - EPA 200.7**

**Matrix Spike (B834073-MS2)**

Source: 1808246-02

Prepared: 08/23/18 09:15 Analyzed: 08/23/18 13:19

Cadmium	2.03	0.010	mg/L	2.00	0.000900	101	75-125		
Chromium	1.94	0.010	mg/L	2.00	0.00300	97	75-125		
Copper	2.03	0.010	mg/L	2.00	<0.010	101	75-125		
Lead	1.96	0.010	mg/L	2.00	0.00310	98	75-125		
Nickel	2.05	0.010	mg/L	2.00	0.00290	102	75-125		
Phosphorus	2.36	0.010	mg/L	2.00	0.363	100	75-125		
Selenium	2.14	0.010	mg/L	2.00	0.00390	107	75-125		
Silver	1.12	0.005	mg/L	1.00	<0.005	112	75-125		
Thallium	1.89	0.010	mg/L	2.00	<0.010	94	75-125		
Zinc	2.10	0.010	mg/L	2.00	0.00930	105	75-125		

**Polychlorinated Biphenyls [PCB] - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B834040 - EPA 3510C**

**Blank (B834040-BLK1)**

Prepared: 08/21/18 11:30 Analyzed: 08/21/18 15:49

PCB 1016	<0.0001	0.0001	mg/L						
PCB 1221	<0.0001	0.0001	mg/L						
PCB 1232	<0.0001	0.0001	mg/L						
PCB 1242	<0.0001	0.0001	mg/L						
PCB 1248	<0.0001	0.0001	mg/L						
PCB 1254	<0.0001	0.0001	mg/L						
PCB 1260	<0.0001	0.0001	mg/L						

**LCS (B834040-BS1)**

Prepared: 08/21/18 11:30 Analyzed: 08/21/18 16:01

PCB 1016	0.00628	0.0001	mg/L	0.0100		63	50-114		
PCB 1260	0.00675	0.0001	mg/L	0.0100		67	8-127		

**LCS Dup (B834040-BSD1)**

Prepared: 08/21/18 11:30 Analyzed: 08/21/18 16:14

PCB 1016	0.00638	0.0001	mg/L	0.0100		64	50-114	2	38
PCB 1260	0.00674	0.0001	mg/L	0.0100		67	8-127	0.05	34

**Duplicate (B834040-DUP1)**

Source: 1808246-02

Prepared: 08/21/18 11:30 Analyzed: 08/21/18 16:38

Za

PCB 1016	<0.0001	0.0001	mg/L	<0.0001					200
----------	---------	--------	------	---------	--	--	--	--	-----



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

**Polychlorinated Biphenyls [PCB] - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B834040 - EPA 3510C**

<b>Duplicate (B834040-DUP1)</b>		<b>Source: 1808246-02</b>			Prepared: 08/21/18 11:30 Analyzed: 08/21/18 16:38			<b>Za</b>	
PCB 1221	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1232	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1242	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1248	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1254	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1260	<0.0001	0.0001	mg/L	<0.0001					200

<b>Matrix Spike (B834040-MS1)</b>		<b>Source: 1808246-02</b>			Prepared: 08/21/18 11:30 Analyzed: 08/21/18 16:51			<b>Za</b>	
PCB 1016	0.00345	0.0001	mg/L	0.0100	<0.0001	35	35-146		M
PCB 1260	0.00390	0.0001	mg/L	0.0100	<0.0001	39	40-140		M

**Chlorinated Pesticides by GC/ECD - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B834039 - EPA 3510C**

<b>Blank (B834039-BLK1)</b>					Prepared: 08/21/18 11:30 Analyzed: 08/21/18 15:53				
alpha-BHC	<0.0001	0.0001	mg/L						
gamma-BHC (Lindane)	<0.0001	0.0001	mg/L						
beta-BHC	<0.0001	0.0001	mg/L						
delta-BHC	<0.0001	0.0001	mg/L						
Heptachlor	<0.0001	0.0001	mg/L						
Aldrin	<0.0001	0.0001	mg/L						
Heptachlor Epoxide	<0.0001	0.0001	mg/L						
gamma-Chlordane	<0.0001	0.0001	mg/L						
alpha-Chlordane	<0.0001	0.0001	mg/L						
Endosulfan I	<0.0001	0.0001	mg/L						
4,4'-DDE	<0.0001	0.0001	mg/L						
Dieldrin	<0.0001	0.0001	mg/L						
Endrin	<0.0001	0.0001	mg/L						
4,4'-DDD	<0.0001	0.0001	mg/L						
Endosulfan II	<0.0001	0.0001	mg/L						
4,4'-DDT	<0.0001	0.0001	mg/L						
Endrin Aldehyde	<0.0001	0.0001	mg/L						

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

**Chlorinated Pesticides by GC/ECD - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B834039 - EPA 3510C**

**Blank (B834039-BLK1)**

Prepared: 08/21/18 11:30 Analyzed: 08/21/18 15:53

Endosulfan Sulfate	<0.0001	0.0001	mg/L						
Methoxychlor	<0.0001	0.0001	mg/L						
Endrin Ketone	<0.0001	0.0001	mg/L						
Toxaphene	<0.01	0.01	mg/L						

Surrogate: Decachlorobiphenyl	0.000575		mg/L	0.00100		58	36-150		
Surrogate: Tetrachloro-meta-xylene	0.000542		mg/L	0.00100		54	30-144		

**LCS (B834039-BS1)**

Prepared: 08/21/18 11:30 Analyzed: 08/21/18 16:08

alpha-BHC	0.000558	0.0001	mg/L	0.00100		56	37-134		
gamma-BHC (Lindane)	0.000569	0.0001	mg/L	0.00100		57	32-127		
beta-BHC	0.000590	0.0001	mg/L	0.00100		59	17-147		
delta-BHC	0.000565	0.0001	mg/L	0.00100		56	19-140		
Heptachlor	0.000474	0.0001	mg/L	0.00100		47	34-111		
Aldrin	0.000446	0.0001	mg/L	0.00100		45	42-122		
Heptachlor Epoxide	0.000583	0.0001	mg/L	0.00100		58	37-142		
gamma-Chlordane	0.000577	0.0001	mg/L	0.00100		58	45-119		
alpha-Chlordane	0.000589	0.0001	mg/L	0.00100		59	45-119		
Endosulfan I	0.000569	0.0001	mg/L	0.00100		57	45-153		
4,4'-DDE	0.000679	0.0001	mg/L	0.00100		68	30-145		
Dieldrin	0.000606	0.0001	mg/L	0.00100		61	36-146		
Endrin	0.000703	0.0001	mg/L	0.00100		70	30-147		
4,4'-DDD	0.000624	0.0001	mg/L	0.00100		62	31-141		
Endosulfan II	0.000603	0.0001	mg/L	0.00100		60	5-202		
4,4'-DDT	0.000608	0.0001	mg/L	0.00100		61	25-160		
Endrin Aldehyde	0.000591	0.0001	mg/L	0.00100		59	31-144		
Endosulfan Sulfate	0.000645	0.0001	mg/L	0.00100		64	26-144		
Methoxychlor	0.000657	0.0001	mg/L	0.00100		66	46-177		
Endrin Ketone	0.000662	0.0001	mg/L	0.00100		66	39-149		

Surrogate: Decachlorobiphenyl	0.000603		mg/L	0.00100		60	36-150		
Surrogate: Tetrachloro-meta-xylene	0.000458		mg/L	0.00100		46	30-144		

**LCS Dup (B834039-BS1)**

Prepared: 08/21/18 11:30 Analyzed: 08/21/18 16:23

alpha-BHC	0.000591	0.0001	mg/L	0.00100		59	37-134	6	22
gamma-BHC (Lindane)	0.000613	0.0001	mg/L	0.00100		61	32-127	7	25
beta-BHC	0.000638	0.0001	mg/L	0.00100		64	17-147	8	20
delta-BHC	0.000610	0.0001	mg/L	0.00100		61	19-140	8	22

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

**Chlorinated Pesticides by GC/ECD - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B834039 - EPA 3510C**

**LCS Dup (B834039-bsd1)**

Prepared: 08/21/18 11:30 Analyzed: 08/21/18 16:23

Heptachlor	0.000505	0.0001	mg/L	0.00100		50	34-111	6	22
Aldrin	0.000476	0.0001	mg/L	0.00100		48	42-122	7	22
Heptachlor Epoxide	0.000617	0.0001	mg/L	0.00100		62	37-142	6	25
gamma-Chlordane	0.000609	0.0001	mg/L	0.00100		61	45-119	5	20
alpha-Chlordane	0.000620	0.0001	mg/L	0.00100		62	45-119	5	20
Endosulfan I	0.000608	0.0001	mg/L	0.00100		61	45-153	7	23
4,4'-DDE	0.000710	0.0001	mg/L	0.00100		71	30-145	4	22
Dieldrin	0.000643	0.0001	mg/L	0.00100		64	36-146	6	21
Endrin	0.000743	0.0001	mg/L	0.00100		74	30-147	6	21
4,4'-DDD	0.000660	0.0001	mg/L	0.00100		66	31-141	6	21
Endosulfan II	0.000638	0.0001	mg/L	0.00100		64	5-202	6	22
4,4'-DDT	0.000651	0.0001	mg/L	0.00100		65	25-160	7	29
Endrin Aldehyde	0.000611	0.0001	mg/L	0.00100		61	31-144	3	30
Endosulfan Sulfate	0.000666	0.0001	mg/L	0.00100		67	26-144	3	23
Methoxychlor	0.000676	0.0001	mg/L	0.00100		68	46-177	3	22
Endrin Ketone	0.000689	0.0001	mg/L	0.00100		69	39-149	4	19
Surrogate: Decachlorobiphenyl	0.000613		mg/L	0.00100		61	36-150		
Surrogate: Tetrachloro-meta-xylene	0.000483		mg/L	0.00100		48	30-144		

**Duplicate (B834039-DUP1)**

Source: 1808246-02

Prepared: 08/21/18 11:30 Analyzed: 08/21/18 16:53

alpha-BHC	<0.0001	0.0001	mg/L		<0.0001				20
gamma-BHC (Lindane)	<0.0001	0.0001	mg/L		<0.0001				20
beta-BHC	<0.0001	0.0001	mg/L		<0.0001				20
delta-BHC	<0.0001	0.0001	mg/L		<0.0001				20
Heptachlor	<0.0001	0.0001	mg/L		<0.0001				20
Aldrin	<0.0001	0.0001	mg/L		<0.0001				20
Heptachlor Epoxide	<0.0001	0.0001	mg/L		<0.0001				20
gamma-Chlordane	<0.0001	0.0001	mg/L		<0.0001				20
alpha-Chlordane	<0.0001	0.0001	mg/L		<0.0001				20
Endosulfan I	<0.0001	0.0001	mg/L		<0.0001				20
4,4'-DDE	<0.0001	0.0001	mg/L		<0.0001				20
Dieldrin	<0.0001	0.0001	mg/L		<0.0001				20
Endrin	<0.0001	0.0001	mg/L		<0.0001				20
4,4'-DDD	<0.0001	0.0001	mg/L		<0.0001				20
Endosulfan II	<0.0001	0.0001	mg/L		<0.0001				20
4,4'-DDT	<0.0001	0.0001	mg/L		<0.0001				20

NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

Reported:  
08/27/18 17:16  
Received:  
08/15/18 14:37

Additional Notes:

Report No. 1808246

Chlorinated Pesticides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

Batch B834039 - EPA 3510C

Duplicate (B834039-DUP1)		Source: 1808246-02		Prepared: 08/21/18 11:30		Analyzed: 08/21/18 16:53	
Endrin Aldehyde	<0.0001	0.0001	mg/L	<0.0001			20
Endosulfan Sulfate	<0.0001	0.0001	mg/L	<0.0001			20
Methoxychlor	<0.0001	0.0001	mg/L	<0.0001			20
Endrin Ketone	<0.0001	0.0001	mg/L	<0.0001			20
Toxaphene	<0.01	0.01	mg/L	<0.01			20
Surrogate: Decachlorobiphenyl	0.000181		mg/L	0.00100	18	36-150	SurrL
Surrogate: Tetrachloro-meta-xylene	0.000157		mg/L	0.00100	16	30-144	SurrL

Matrix Spike (B834039-MS1)		Source: 1808246-02		Prepared: 08/21/18 11:30		Analyzed: 08/21/18 17:08		Za
alpha-BHC	0.000305	0.0001	mg/L	0.00100	<0.0001	31	30-135	
gamma-BHC (Lindane)	0.000372	0.0001	mg/L	0.00100	<0.0001	37	34-138	
beta-BHC	0.000378	0.0001	mg/L	0.00100	<0.0001	38	34-128	
delta-BHC	0.000314	0.0001	mg/L	0.00100	<0.0001	31	32-148	M
Heptachlor	0.000216	0.0001	mg/L	0.00100	<0.0001	22	33-145	M
Aldrin	0.000129	0.0001	mg/L	0.00100	<0.0001	13	18-127	M
Heptachlor Epoxide	0.000322	0.0001	mg/L	0.00100	<0.0001	32	28-132	
gamma-Chlordane	0.000338	0.0001	mg/L	0.00100	<0.0001	34	29-128	
alpha-Chlordane	0.000340	0.0001	mg/L	0.00100	<0.0001	34	27-121	
Endosulfan I	0.000258	0.0001	mg/L	0.00100	<0.0001	26	26-130	M
4,4'-DDE	0.000441	0.0001	mg/L	0.00100	<0.0001	44	20-136	
Dieldrin	0.000360	0.0001	mg/L	0.00100	<0.0001	36	25-132	
Endrin	0.000459	0.0001	mg/L	0.00100	<0.0001	46	34-169	
4,4'-DDD	0.000371	0.0001	mg/L	0.00100	<0.0001	37	28-137	
Endosulfan II	0.000372	0.0001	mg/L	0.00100	<0.0001	37	27-136	
4,4'-DDT	0.000283	0.0001	mg/L	0.00100	<0.0001	28	12-138	
Endrin Aldehyde	0.000356	0.0001	mg/L	0.00100	<0.0001	36	22-135	
Endosulfan Sulfate	0.000452	0.0001	mg/L	0.00100	<0.0001	45	36-162	
Methoxychlor	0.000700	0.0001	mg/L	0.00100	<0.0001	70	54-147	
Endrin Ketone	0.000430	0.0001	mg/L	0.00100	<0.0001	43	37-132	
Surrogate: Decachlorobiphenyl	0.000261		mg/L	0.00100	26	36-150	SurrL	
Surrogate: Tetrachloro-meta-xylene	0.000232		mg/L	0.00100	23	30-144	SurrL	



NELAC Cert. No.: T104704360-17-17

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

**SAMPLE QUALIFIERS**

- Zb Surrogates and MS recoveries outside laboratory control limits due to emulsification of the sample and associated QC in the sample extraction process.
- Za Surrogates and MS recoveries outside laboratory control limits due to emulsification of the sample and associated QC in the sample extraction process
- Z Sample and the associated QC produced heavy emulsions during sample prep.
- C Continuing Calibration Verificaiton Standard recovery is outside the acceptance limits.

**DEFINITIONS**

- \* TNI / NELAC accredited analyte
- PQL Practical Quantitation Limit
- MCL Maximum Contaminant Level
- mg/Kg Milligrams per Kilogram (Parts per Million)
- mg/L Milligrams per Liter (Parts per Million)
- PPM Parts per Million
- L LCS recovery is outside QC acceptance limits, the results may have a slight bias.
- M MS recovery is outside QC limits, the results may have a slight bias due to possible matrix interferences.
- RMCCCL Recommended Maximum Concentration of Contaminants Level
- Surr L Surrogate recovery is outside QC limits due to matrix interferences.
- Surr H Surrogate recovery is high due to contribution from hydrocarbon interferences.
- µR/hr MicroRoentgens per hour (Measure of Radioactivity Level)
- HT Sample received past holdtime
- IC Improper Container
- IT Improper Temperature
- V Inssufficient Volume
- B Sample collected in Bulk
- S RPD is outside QC limits. This may be due to possible matrix interferences in Matrix spike samples.

Test Methods followed by the laboratory are referenced in the following approved methodology, unless otherwise specified.

Standard Methods for the Examination of Water and Wastewater, 21st Edition 2005  
Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Rev. March 1983  
EPA SW Test Methods for the Examination of Solid Waste, SW-846, 1996

**Subcontracted Analyses**

Subcontractor Lab	Lab Number	Analysis
Analysis Inc.	1808246-02	Total_Phenols



Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

NELAC Cert. No.: T104704360-17-17

**Reported:**  
08/27/18 17:16  
**Received:**  
08/15/18 14:37

Additional Notes:

**Report No. 1808246**

Aimee Landon For Marcela Gracia Hawk, President For

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Richard Hawk, General Manager

**CHAIN-OF-CUSTODY RECORD**

**REPORT TO:** COMPANY Alan Plummer Associates Inc ADDRESS 6300 Laredo St #400 Austin TX 78732 CITY Austin STATE TX ZIP 78732 PHONE # 210-233-3742 ATTN: Tim Noack

**INVOICE TO:** COMPANY 11 ADDRESS 11 CITY 11 STATE 11 ZIP 11 PHONE # 11

**REPORT NUMBER:** 1808246

**P.O. #:** 1808246

**E-MAIL:** timnoack@aplum.com

**REQUESTED TURNAROUND TIME IN BUSINESS DAYS & SURCHARGE:** 2-10 Days REG +25% 4 Days +50% 3 Days +75% 2 Days +100% Next Day +150% +300%

**THE TURNAROUND TIME FOR SAMPLES RECEIVED AFTER 3:00 PM SHALL BEGIN AT 8:00 AM THE FOLLOWING BUSINESS DAY**

**PROJECT NAME/LOCATION/SITE:** Mitchell Lake

**PROJECT NO.:** 280c

**SAMPLED BY:** Bio-west

**MATRIX:** Soil

**SAMPLING METHOD:** Hand

**COND. OF SAMPLE:** 280c

**TRRP 13:**  YES  NO **LPST POLS:**  YES  NO

**SPECIAL REQ.:**  YES  NO

**TEMP. I.R. GUN #:** 6 **SAMPLE TEMPERATURE WITHIN COMPLIANCE (> 0°C ≤ 6°C):**  YES  NO

**INITIAL TO AUTHORIZE BULK ANALYSIS:**  YES  NO

**INITIAL HERE TO AUTHORIZE ANALYSIS:**  YES  NO

DATE	TIME	DRINKING WATER	LAUNCH	LIQUID	SLOTTED	PROHIBITIVE	COMPOSITE	CONTAINER	NO. OF SAMPLES	CONSTITUENTS	ANALYSIS REQUESTED	REMARKS
8-15	10:29	X						6	3625 mL	COBALT	PCB / 608 / 8082A	
8-15	11:00	X						12	6250	COBALT	PCB / 608 / 8082A	
8-15	11:10	X						6	3625	COBALT	PCB / 608 / 8082A	
8-15	12:00	X						6	3625	COBALT	PCB / 608 / 8082A	
8-15	12:05	X						6	3625	COBALT	PCB / 608 / 8082A	
8-15	12:15	X						2	125	COBALT	PCB / 608 / 8082A	

DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)
8-15 2:31	<u>Alan Plummer</u>				
	<u>Tim Noack</u>				
	<u>Alan Plummer</u>				
	<u>Tim Noack</u>				

Table 2

Mitchell Lake Quality Treatment Initiatives  
Water and Sediment Quality Study Plan  
Water Sample Analytical Methods, Preservation, and Holding Times

Category	Parameter	Analytical* Method	Minimum Analytical Level (mg/L)	Detection Limit (mg/L)	Preservation	Holding Time
Conventional Parameters	CBOD <sub>5</sub>	SM 5210 B	2	2	Cool, ≤6 °C	48 hours
	Total Kjeldahl nitrogen	351.3 <sup>(1)</sup>	1	1	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Ammonia	SM 4500-NH <sub>3</sub> B/C <sup>(1)</sup>	1	1	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Nitrate+nitrite	300	0.1	0.01	Cool, ≤6 °C	48 hours
	Total phosphorus	200.7	0.01	0.0013	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Total suspended solids	SM 2540-D	2.5	2.5	Cool, ≤6 °C	7 days
	Volatile suspended solids	SM 2540-E	0.1	0.1	Cool, ≤6 °C	7 days
	Total dissolved solids	SM 2540-C	2	2	Cool, ≤6 °C	7 days
	Alkalinity	SM 2320-B	20	20	Cool, ≤6 °C	14 days
	Chlorophyll-a	SM 10200 H Modified	(2)	(2)	Cool, ≤6 °C, amber bottle	24 hours
Pollutants of Potential Concern Parameters	Metals digestion	200.7	N/A		HNO <sub>3</sub> to pH <2	6 months
	Antimony	200.7	0.01	0.0016		
	Arsenic	200.7	0.01	0.0009		
	Beryllium	200.7	0.01	0.0003		
	Cadmium	200.7	0.01	0.0003		
	Chromium, Total	200.7	0.01	0.0031		
	Chromium (III)	Cacl.	0.01	0.0006		
	Copper	200.7	0.01	0.0006		
	Lead	200.7	0.01	0.0006		
	Nickel	200.7	0.01	0.0003		
	Selenium	200.7	0.01	0.0019		
	Silver	200.7	0.005	0.0006		
	Thallium	200.7	0.01	0.0019		
	Zinc	200.7	0.01	0.0003		
	Mercury	245.1	0.002	0.000031	HNO <sub>3</sub> to pH <2, Cool, <6 °C	28 days
	Chromium (VI)	USGS 1-1230-85	0.005	0.0031	Cool, ≤6 °C, NaOH to pH 9.3 - 9.7 or Cool, ≤6 °C, (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	48 hrs
	Cyanide, Total	SM 4500 CN C/E	0.02	0.0041	Cool, ≤6 °C, NaOH to pH>12	14 days
	Phenols, total	420.I	0.05	0.005	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days until extraction
	<b>Organochlorine pesticides</b>	608	<b>ug/L</b>	<b>ug/L</b>	Cool, ≤6 °C	7 days until extraction, 40 days after extraction.
	Aldrin <sup>®</sup>		0.1	0.02		
	Chlordane		0.1	0.02		
	4,4-DDD		0.1	0.02		
	4,4-DDE		0.1	0.01		
	4,4-DDT		0.1	0.03		
	Dieldrin		0.1	0.02		
	Endosulphan, alpha		0.1	0.02		
	Endosulphan, beta		0.1	0.02		
Endosulphan, sulfate	0.1		0.03			
Endrin	0.1		0.03			
Endrin aldehyde	0.1		0.03			
Heptachlor	0.1		0.04			
Heptachlor epoxide	0.1		0.02			
alpha Hexachlorocyclohexane	0.1		0.01			
beta Hexachlorocyclohexane	0.1		0.03			
delta Hexachlorocyclohexane	0.1		0.02			
Lindane	0.1		0.02			
PCB 1242	0.2		0.04			
PCB 1254	0.2		0.04			
PCB 1221	0.2	0.04				
PCB 1232	0.2	0.04				
PCB 1248	0.2	0.04				
PCB 1260	0.2	0.02				
PCB 1016	0.2	0.04				
Toxaphene	1	0.5				

(1)Sensitivity and method are for SATL. SAWS method is SM 4500-NH<sub>3</sub>-C and Reporting Limit (RL) is 1.2 mg/L for TKN and 0.25 mg/L for ammonia.

(2)RL is 5 ug/L based on 1,000 ml of sample; due to nature of sample, staff expects to use 5 ml of sample with RL of 1,000 ug/L.



**Sample Receipt Checklist**

Client: Alan Plummer Report Number: 1808246  
 Project Name: Mitchell Lake Date Received: 08/15/18  
 Shipped via:  FedEx  UPS  Lonestar  Hand Delivered  DHL  SATL  Other Date Due: 08/24/18  
 Rush:  Specify:  3-5  2  1

**Items to be checked upon Receipt: [Yes, No, N/A]**

1. Custody Seals present?	Yes	No	NA	If NA-reason:
2. Custody Seals intact?	Yes	No	NA	If NA-reason:
3. Air Bill included in folder, if received?	Yes	No	NA	If NA-reason:
4. Is COC included with samples?	Yes	No	NA	If NA-reason:
5. Is COC signed and dated by client?	Yes	No	NA	If NA-reason:
6. Sample temperature: Thermal preservation between >0°- 6° C? (Samples that are delivered to the laboratory on the same day that they are collected may not meet this criterion, but are acceptable if they arrive on ice.)	Yes	No	NA	Temp <u>28</u> °C
7. Samples received with ice <input checked="" type="checkbox"/> ice packs <input type="checkbox"/> other cooling <input type="checkbox"/>	Yes	No	NA	If NA-reason:
8. Is the COC filled out correctly, and completely?	Yes	No	NA	If NA-reason:
9. Information on the COC matches the samples?	Yes	No	NA	If NA-reason:
10. Samples received within holding time?	Yes	No	NA	If NA-reason:
11. Samples properly labeled?	Yes	No	NA	If NA-reason:
12. Samples submitted with chemical preservation? (e.g. pH adjusted, or sodium thiosulfate added for microbiological tests)	Yes	No	NA	If NA-reason:
13. Proper sample containers used?	Yes	No	NA	If NA-reason:
14. All samples received intact, containers not damaged or leaking?	Yes	No	NA	If NA-reason:
15. VOA vials (requesting BTEX/VOC analysis) received with no air bubbles? Bubbles acceptable on VOA vials for TPH.	Yes	No	NA	If NA-reason: <u>NO VOA</u>
16. Sample volume sufficient for requested analysis?	Yes	No	NA	If NA-reason:
17. Sample amount sufficient for TCLP analysis?	Yes	No	N/A	If NA-reason: <u>NO TCLP</u>
18. Subcontracted Samples: [if Yes, complete the next section]	<input checked="" type="checkbox"/> Yes	No	NA	If NA-reason:

Analyses Subcontracted Out: T. Phenols No. of Samples 1  
 Samples sent to: Analysis INC Sent By: AL  
 Date samples sent: 08/15/18 Samples shipped via: UPS  
 TAT Requested: Req  
 Tracking number [if any]: \_\_\_\_\_

Comments:

Received By: SA Date: 08/15/18  
 Labeled By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Logged into LIMS By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Logged into RF By: \_\_\_\_\_ Date: \_\_\_\_\_

**Client:** San Antonio Testing Laboratory  
**Attn:** Sandra  
**Address:** 1610 S Larado St.  
 San Antonio TX 78207  
**Phone:** 210-229-9920 **FAX:**



T104704268-18-15

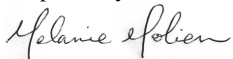

**Report#/Lab ID#:** 584778 **Report Date:** 08/21/18  
**Project ID:**  
**Sample Name:** 1808246.02 #6 Surface  
**Sample Matrix:** water  
**Date Received:** 08/16/2018 **Time:** 10:30  
**Date Sampled:** 08/15/2018 **Time:** 11:00

**REPORT OF ANALYSIS**

**QUALITY ASSURANCE DATA <sup>1</sup>**

Parameter	Result	Units	RQL <sup>5</sup>	Blank	Date/Time Analyzed	Method <sup>6</sup>	Analyst	Data Qual. <sup>7</sup>	Prec. <sup>2</sup>	Recov. <sup>3</sup>	CCV <sup>4</sup>	LCS <sup>4</sup>
Total Phenols	0.00837	mg/L	0.005	<0.005	08/21/18 12:04	420.4	ES	---	3.8	102.3	91.2	97.4

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results reflect only the sample identified above. The results have been carefully reviewed and to the best of my knowledge, unless otherwise indicated, meet NELAP requirements as described by AnalySys, Inc.'s Quality Assurance/Quality Control Program. © Copyright 2003, AnalySys, Inc., Austin, TX. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of AnalySys, Inc.


Respectfully Submitted, Respectfully Submitted,  
   
 Quality Manager Assistant Quality Manager

Numbers in RED are above our MDLs and may or may not indicate a permit exceedance.  
 1. Quality assurance data for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent difference between duplicate results. 3. Recovery (Recov.) is the percent of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent recovery of analyte. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than (<) values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte detected between the RQL and the MDL. B = Analyte detected in associated method blank(s). C = poor CCV recovery. L = poor LCS recovery. S & S1 = MS and/or MSD recovery exceeds advisory limits. S2 = Post digestion spike (PDS) recovery exceeds advisory limit. S3 = MS and/or MSD and PDS recoveries exceed advisory limits. P = Precision higher than advisory limit. M = Matrix interference. N = not NELAP certified. N1 = subcontract result enquire concerning NELAP certification. Solid sample results for all metals, except Mercury, reported on a dry weight basis (DWB)s. All other results for solid samples reported on an as received basis unless specifically identified as DWB.

**Exceptions Report (FINAL SECTION / END-OF-REPORT):**

**Report #/Lab ID#:** 584778 **Matrix:** water  
**Client:** San Antonio Testing Laboratory **Attn:** Sandra  
**Project ID:**  
**Sample Name:** 1808246.02 #6 Surface

Unless otherwise identified by data qualifier "N" or by an exception report, all reported results represent parameters and tests for which AnalySys maintains NELAP certification; or results provided by a subcontractor with NELAP certification for the test



**T104704268-18-15**

**Sample Temperature/Condition:** ≤6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is ≤ 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

**Standard sample acceptability conditions met? : NO**

Sample temperature on receipt out of compliance.

**J flag Discussion:**

A J-flag data qualifier indicates that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

**Comments pertaining to Data Qualifiers and QC data (where applicable):**

Parameter	Qualif.	Comments

1610 S. Laredo Street, San Antonio, Texas 78207  
 (210) 229-9920 • Fax (210) 229-9921  
 www.satestinglab.com

### CHAIN-OF-CUSTODY RECORD

REPORT TO:		INVOICE TO:		P.O. #
COMPANY <i>San Antonio Testing Lab</i>		COMPANY <i>S.A.T.L.</i>		REPORT NUMBER
ADDRESS <i>1610 S. Laredo St.</i>		ADDRESS		
CITY <i>San Antonio TX</i> STATE <i>TX</i> ZIP <i>78207</i>		CITY STATE ZIP		FAX #
ATTN: <i>Aimee Landon</i> PHONE # <i>210-229-9920</i>		ATTN: <i>Sandra</i> PHONE #		E-MAIL <i>satesting@satestinglab.com</i>
REQUESTED TURNAROUND TIME IN BUSINESS DAYS & SURCHARGE <input type="checkbox"/> 7-10 Days REG <input type="checkbox"/> 5 Days +25% <input type="checkbox"/> 4 Days +50% <input type="checkbox"/> 3 DAYS +75% <input type="checkbox"/> 2 DAYS +100% <input type="checkbox"/> Next Day +150% <input type="checkbox"/> SAME DAY WHEN POSSIBLE +300%				

PROJECT NAME/LOCATION/SITE: THE TURNAROUND TIME FOR SAMPLES RECEIVED AFTER 3:00 PM SHALL BEGIN AT 8:00 AM THE FOLLOWING BUSINESS DAY

HARDCOPY  YES  NO / FOR STATE COMPLIANCE  YES  NO SPECIAL REQ: \_\_\_\_\_

PROJECT NO. TEMP. I.R. GUN # *107* SAMPLE TEMPERATURE WITHIN COMPLIANCE (> 0°C ≤ 6°C)  YES  NO INITIAL TO AUTHORIZE BULK ANALYSIS  
 PROPER CONTAINERS  YES  NO IF NO, INITIAL HERE TO AUTHORIZE ANALYSIS

SAMPLED BY: \_\_\_\_\_ TEMP. ON RECP. *14.1 +0.1 = 14.2* COND. OF SAMPLE: \_\_\_\_\_ TRRP 13  YES  NO LPST PCLS

SAMPLE NUMBER	DATE	TIME	MATRIX							SAMPLING METHOD				SAMPLE IDENTIFICATION	CONTAINER NUMBER OF	CONTAINER SIZE	ANALYSIS REQUESTED	PRESERVED WITH	REMARKS		
			DRINKING WATER	LIQUID	SOLID	OTHER	COMPOSITE	CORRE	OTHER	OTHER	OTHER										
<i>1</i>	<i>8/15/18</i>	<i>1100</i>	<i>X</i>						<i>X</i>			<i>(800246) #16 Surface</i>	<i>1</i>	<i>250ml</i>		<i>584778</i>	<i>Total Phenols 400.1</i>	<i>X</i>			

RELINQUISHED BY (SIGNATURE) <i>Aimee Landon</i>	DATE / TIME <i>8/15/18</i>	RECEIVED BY (SIGNATURE) <i>Santiago Ortega</i>	DATE / TIME <i>8/16/18 10:30</i>	RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME
RELINQUISHED BY (PRINT NAME)	DATE / TIME	RECEIVED BY (PRINT NAME)	DATE / TIME	RELINQUISHED BY (PRINT NAME)	DATE / TIME	RECEIVED BY (PRINT NAME)	DATE / TIME
RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME	METHOD OF SHIPMENT		SUBCONTRACTED <input type="checkbox"/> YES <input type="checkbox"/> NO	
RELINQUISHED BY (PRINT NAME)	DATE / TIME	RECEIVED BY (PRINT NAME)	DATE / TIME	SAMPLED IN 5035 CONTAINERS <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		CUSTODY SEAL IN PLACE & INTACT	

**From:** SATESTING satesting@satestinglab.com  
**Subject:** RE: 8-16-18 San Antonio Testing Laboratory Sample Acknowledgment  
**Date:** August 17, 2018 at 11:35 AM  
**To:** Elizabeth Prokop eprokop@analySysinc.com

---



Yes, please proceed.

Aimee

-----Original Message-----

**From:** Elizabeth Prokop [mailto:eprokop@analySysinc.com]  
**Sent:** Thursday, August 16, 2018 5:25 PM  
**To:** SATESTING <satesting@satestinglab.com>  
**Subject:** 8-16-18 San Antonio Testing Laboratory Sample Acknowledgment

Please review the attached Sample Acknowledgement. A sample integrity issue has been identified and requires your notification. If you have questions or concerns, please contact me immediately.

Please confirm if you wish us to proceed with analysis or would like to cancel and resample.

Thank you for your business.

Sincerely,

Elizabeth Prokop  
Project Manager  
AnalySys, Inc.  
3512 Montopolis Dr.  
Austin, TX 78744  
eprokop@analySysinc.com  
(512) 385-5886

SAMPLE CHECK-IN

Date: 8/16/18

Sample IDs: 594778

Samples Checked by: S.O

COC Entry Line	1	2	3	4	5	6	7	8	9	10
a 4 oz soil jar										
b 8 oz soil jar										
c 16 oz soil jar										
d 32 oz soil jar										
e Soil VOA vials w/Stir Bar										
f Soil VOA vials (unpres)										
<b>VOA Vials</b>	if Headspace Present (+#s)	if Headspace Present (+#s)	if Headspace Present (+#s)	if Headspace Present (+#s)	if Headspace Present (+#s)	if Headspace Present (+#s)	if Headspace Present (+#s)	if Headspace Present (+#s)	if Headspace Present (+#s)	if Headspace Present (+#s)
g 40 mL VOA vials (unpres)										
h 40 mL VOA vials (HCl)										
<b>Unpreserved Bottles</b>										
i 500 mL amber (unpres)										
j 950 mL amber (unpres)										
k 8 oz HDPE (unpres)										
l 16 oz HDPE (unpres)										
m 32 oz HDPE (unpres)										
<b>Preserved Bottles</b>										
Acid pH paper CL# 102307	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH
n 120 mL amber (H2SO4)										
o 250 mL amber (H2SO4)	1	<2								
p 500 mL amber (H2SO4)										
q 8 oz Nalgene (HNO3)										
r 16 oz Nalgene (HNO3)										
s 32 oz Nalgene (HNO3)										
Base pH paper CL#	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH
t 8 oz HDPE (NaOH)										
u 8 oz HDPE (ZnAc/NaOH)										
v 16 oz HDPE (Ascorbic acid)										
<b>Air</b>										
w Tedlar bag										
x SUMA canister										
<b>Miscellaneous</b>										
y Sterile Bottle										
z Other										
Bottles in Austin	0									
Bottles in Corpus Christi										
Bottles to Subcontract Lab(s)										

UPS Internet Shipping: View/Print Label

1. Ensure there are no other shipping or tracking labels attached to your package. Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. Fold the printed label at the solid line below. Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. GETTING YOUR SHIPMENT TO UPS  
Customers with a Daily Pickup  
Your driver will pickup your shipment(s) as usual.

Customers without a Daily Pickup

Take your package to any location of The UPS Store®, UPS Access Point™ location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the 'Find Locations' Quick link at ups.com.  
Schedule a same day or future day Pickup to have a UPS driver pickup all of your Internet Shipping packages. Hand the package to any UPS driver in your area.

UPS Access Point™  
THE UPS STORE  
1819 N MAIN AVE  
SAN ANTONIO, TX 78212

UPS Access Point™  
THE UPS STORE  
203 NORTON ST  
SAN ANTONIO, TX 78226

UPS Access Point™  
THE UPS STORE  
1801 MARTIN LUTHER KING DR  
SAN ANTONIO, TX 78203

FOLD HERE

14.1 + 0.1 = 14.2

T#107

• 1808246.02

MARCELA HAWK  
210-229-9920  
SAN ANTONIO TESTING LABORATORY  
1610 S. LAREDO STREET  
SAN ANTONIO TX 78207

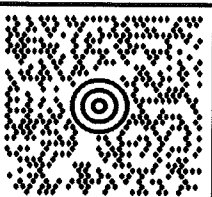
7 LBS

1 OF 1

SHIP TO:

SAMPLE RECEIVING  
ANALYSIS INC.  
3512 MONTOPOLIS DR.

AUSTIN TX 78744-1418



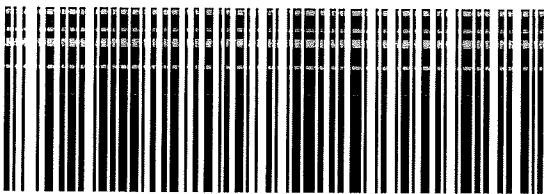
TX 787 9-03



UPS NEXT DAY AIR

1

TRACKING #: 1Z 785 26E 01 9850 1794



BILLING: P/P



UIS 20.5.12. WNTNVS0 03.0A 07/2018

ASI Sample Evaluation

F-0029 V7-052715  
Effective Date: 6/1/15  
1 of 1

Date: 8/16/18

Sample IDs: 584778

# of C-O-Cs: 1

Samples Delievery by: Client  Bus  LSO  UPS  Fed-Ex  ASI/PU  Courier  Carrier Bill # \_\_\_\_\_

Sample Receiving		Initials		Cooler Comment
Item	Cooler	Y	N	
1	Cooler temperature appropriate		<input checked="" type="checkbox"/>	14.1 + 0.1 = 14.2
2	Samples on ice/from fridge	<input checked="" type="checkbox"/>		
3	Custody Seal Present (if shipped)		<input checked="" type="checkbox"/>	
3a	custody seal was intact			
3b	custody seal was signed/dated			

Project Management		Initials	
Item	Hold Time	Y	N
13	Samples received within hold-time	<input checked="" type="checkbox"/>	
14	Samples received with time to complete analysis within hold-time	<input checked="" type="checkbox"/>	
List of affected parameters:			

Request		Initials
Special report formats		
TRRP <input type="checkbox"/>	Landfill <input type="checkbox"/>	NPDES (2) <input checked="" type="checkbox"/> SW-846 (3) <input type="checkbox"/>
Dry-Weight(9) <input type="checkbox"/>	TRRP (no QC) <input type="checkbox"/>	Other _____
QC Pages <input type="checkbox"/>	Unit Conversion <input type="checkbox"/>	
EDD Required		
General <input type="checkbox"/>	TRRP <input type="checkbox"/>	Client Specific <input type="checkbox"/>
TAT Request		
5-day <input type="checkbox"/>	Standard <input checked="" type="checkbox"/>	Rush <input type="checkbox"/>
Requested Due Date _____		

Item	COC	Y	N	COC Comment
4	COC received	<input checked="" type="checkbox"/>		
5	COC Complete			
5a	Sample identification	<input checked="" type="checkbox"/>		
5b	Date Collected	<input checked="" type="checkbox"/>		
5c	Time Collected	<input checked="" type="checkbox"/>		
5d	Number of containers	<input checked="" type="checkbox"/>		
5e	Preservation type	<input checked="" type="checkbox"/>		
5f	Matrix	<input checked="" type="checkbox"/>		
5g	Parameters	<input checked="" type="checkbox"/>		
5h	Relinquished by Client	<input checked="" type="checkbox"/>		
6	COC info match sample labels	<input checked="" type="checkbox"/>		
7	Assist with completion of COC	<input type="checkbox"/>		
8	Additional information supplied by client	<input type="checkbox"/>		

Item	Water VOC-VOAs	Y	N
15	Special compounds required		
If required indicate if received in proper container			
15a	Acrolein (unpreserved-3d)		
15b	Acrolein/Acrylonitrile (pH 4-5)		
15c	Vinyl chloride/Styrene/2-chloroethyl vinyl ether (unpreserved)		

Client Requested Changes	
TAT Change Request to	
Standard <input type="checkbox"/>	Rush <input type="checkbox"/>
Requested Due Date _____	
Date of change	Initials
Method of notification: phone <input type="checkbox"/> email <input type="checkbox"/>	

Item	Bulk Soil Sampling (TPH/VOC/BTEX)	Y	N
16	Bulk soil samples received		
16a	Petroleum Storage Tank Rule		
16b	Client indicated no hydrocarbons in C6-C12 for TPH or high level VOC		
16c	Client indicated VOA not used due to sampling difficulty		
16d	ASI assesed VOA not used due to sample physical characteristics		

Parameter Change Request	
Add	_____
Remove	_____
Date of change	Initials
Method of notification: phone <input type="checkbox"/> email <input type="checkbox"/>	

Item	Sample Containers	Y	N
17	Samples in proper containers excluding items 15 and 16	<input checked="" type="checkbox"/>	

COC Correction Notes	
Date of change	Initials
Method of notification: phone <input type="checkbox"/> email <input type="checkbox"/>	

Item	Sample Containers	Y	N	Sample Container Comments
9	Bottles Intact/Integrity OK	<input checked="" type="checkbox"/>		if no for item 9-10 comment req.
10	Samples properly labelled/identifiable	<input checked="" type="checkbox"/>		
11	VOA vials headspace OK (if required)			
12	Samples Properly pH Preserved (if required)			
12a	Dissolved Metals field filtered and preserved			
12b	Acid Preserved (pH OK)	<input checked="" type="checkbox"/>		
12c	Base Preserved (pH OK)			

Item	COC	Y	N
7	Assist with completion of COC	<input type="checkbox"/>	
8	Additional information supplied by client	<input type="checkbox"/>	
18	Hold requested	<input type="checkbox"/>	
19	Sub-contract analysis required	<input type="checkbox"/>	

Client notification required due to sample integrity issue identified on the COC or ASI Sample Evaluation Form (F-0029)   
 Method of notification to client: Phone  E-Mail   
 Client response: Proceed with analysis  Resample and re-submit  Method of response: Phone  E-Mail





# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-12  
Report Date/Time: 8/17/2018 6:08:44PM

**REPORT TO:** Production and Treatment  
San Antonio Water System  
517 Mission Road  
San Antonio, TX 78204

**Login Batch ID:** 18080282

**Log Number:**

**Sample ID:** AD76936      CID\_19877      MITCHELL LAKE SPECIAL (#1 SURFACE)

**Collected:** 08/15/2018 10:24      **Sampled By:** JEREMY HULL      **License Number:**

**Submitted:** 08/15/2018 13:21      **Workorder Number:**      **Field Comments:**

**Matrix:** WASTE\_WATER      **Non-Conformance:** Y - See chain of custody.

Analyte	Results	RL	Units	Qual	Analyzed	Analyst	Method
Chlorophyll-a	11300	1000	ug/L		8/16/18 13:58	LKR	SM 10200 H*

**Sample Comments:**



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-12  
Report Date/Time: 8/17/2018 6:08:44PM

**REPORT TO:** Production and Treatment  
San Antonio Water System  
517 Mission Road  
San Antonio, TX 78204

**Login Batch ID:** 18080282

**Log Number:**

**Sample ID:** AD76937      CID\_19877      MITCHELL LAKE SPECIAL (#6 SURFACE)

**Collected:** 08/15/2018 11:00      **Sampled By:** JEREMY HULL      **License Number:**

**Submitted:** 08/15/2018 13:21      **Workorder Number:**      **Field Comments:**

**Matrix:** WASTE\_WATER      **Non-Conformance:** Y - See chain of custody.

Analyte	Results	RL	Units	Qual	Analyzed	Analyst	Method
Chlorophyll-a	8840	1000	ug/L		8/16/18 13:58	LKR	SM 10200 H*

**Sample Comments:**



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-12  
Report Date/Time: 8/17/2018 6:08:44PM

**REPORT TO:** Production and Treatment  
San Antonio Water System  
517 Mission Road  
San Antonio, TX 78204

**Login Batch ID:** 18080282

**Log Number:**

**Sample ID:** AD76938      CID\_19877      MITCHELL LAKE SPECIAL (#6 BOTTOM)

**Collected:** 08/15/2018 11:10      **Sampled By:** JEREMY HULL      **License Number:**

**Submitted:** 08/15/2018 13:21      **Workorder Number:**      **Field Comments:**

**Matrix:** WASTE\_WATER      **Non-Conformance:** Y - See chain of custody.

Analyte	Results	RL	Units	Qual	Analyzed	Analyst	Method
Chlorophyll-a	9580	1000	ug/L		8/16/18 13:58	LKR	SM 10200 H*

**Sample Comments:**



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-12  
Report Date/Time: 8/17/2018 6:08:44PM

**REPORT TO:** Production and Treatment  
San Antonio Water System  
517 Mission Road  
San Antonio, TX 78204

**Login Batch ID:** 18080282

**Log Number:**

**Sample ID:** AD76939      CID\_19877      MITCHELL LAKE SPECIAL (#9 SURFACE)

**Collected:** 08/15/2018 12:00      **Sampled By:** JEREMY HULL      **License Number:**

**Submitted:** 08/15/2018 13:21      **Workorder Number:**      **Field Comments:**

**Matrix:** WASTE\_WATER      **Non-Conformance:** Y - See chain of custody.

Analyte	Results	RL	Units	Qual	Analyzed	Analyst	Method
Chlorophyll-a	9020	1000	ug/L		8/16/18 13:58	LKR	SM 10200 H*

**Sample Comments:**



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-12  
Report Date/Time: 8/17/2018 6:08:44PM

**REPORT TO:** Production and Treatment  
San Antonio Water System  
517 Mission Road  
San Antonio, TX 78204

**Login Batch ID:** 18080282

**Log Number:**

**Sample ID:** AD76940      CID\_19877      MITCHELL LAKE SPECIAL (#9 B)

**Collected:** 08/15/2018 12:05      **Sampled By:** JEREMY HULL      **License Number:**

**Submitted:** 08/15/2018 13:21      **Workorder Number:**      **Field Comments:**

**Matrix:** WASTE\_WATER      **Non-Conformance:** Y - See chain of custody.

Analyte	Results	RL	Units	Qual	Analyzed	Analyst	Method
Chlorophyll-a	9750	1000	ug/L		8/16/18 13:58	LKR	SM 10200 H*

**Sample Comments:**

**Definitions:**

RL = Reporting Limit  
--- = Not Applicable  
NC = Not Calculated

**Qualifiers:**

H = Result is above Upper Specification  
L = Result is below Lower Specification  
J = Positive result below the Reporting Limit  
Q = Unacceptable Results due to QC Check failure  
X = The result is extrapolated  
T = Sample exceeded Hold Time

E = Estimated Result  
B = Analyte detected in Blank  
S = Spike Recovery outside Recovery Limits  
D = Outside Duplicate Precision Limits  
M = Matrix or Chemical Interference  
LE = Laboratory Error

An asterisk (\*) appended to the method reference or analyte denotes that the laboratory is not accredited for the method or analyte.  
A double asterisk (\*\*) appended to the method reference or analyte denotes that the analytical results meets accreditation requirements for non-potable matrix only.

**References:**

EPA, Office of Water, Methods and Guidance for the Analysis of Water, Version 2  
Standard Methods for the Examination of Water and Wastewater, Online Edition, American Public Health Association  
EPA, Office of Solid Waste, Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846

Anna B. Polanco-Ramos or approved signatory  
Laboratory Manager  
SAWS Environmental Laboratory

This report provides results relating only to the referenced sample ID numbers and may not be reproduced except in its entirety without written approval of SAWS Laboratory. All samples were received in acceptable condition unless otherwise stated. For questions concerning this report, please contact Anna Ramos, SAWS Environmental Laboratory Manager, (210) 233-3210



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-12

Report Date/Time: 8/17/2018 6:08:44PM

REPORT TO: Production and Treatment  
San Antonio Water System  
517 Mission Road  
San Antonio, TX 78204

Login Batch ID: 18080282

Log Number:

Client/Project Information			Other Information			Parameter/Method												
Client Name	Operations Technical Service	Project Manager	Project No.	Y2018	Work Order No.													
Facility Name		Project Manager			Fire Hydrant													
Name	Tim Nock	Email Address	tnock@sws.com	Telephone Number	Take													
Send Report To	Mrs. Passch				Pipe													
Best Serial No.					AC													
DPD Rhinoceros Lot #					Septage													
Cell Standards Lot #					Main Break													
Special Instructions						Other												

No.	Sample Type	Chlorine Results	Sample Description/Location	No. of Bottles	Collected Date	Time	Sampler Name	Matrix	Preservative	Parameter/Method												Collet Bottle Lot #	LAB USE ONLY			
										A	B	C	D	E	F	G	H	I	J	K	L					
1	G		#1 Surface	1	8/15/18	10:24	SH	NPW	0																	A576336
2	D		#6 Surface	1	8/15/18	11:00	SH	NPW	0																	A576337
3	G		#6 Bottom	1	8/15/18	11:10	SH	NPW	0																	A576338
4	G		#9 Surface	1	8/15/18	12:00	SH	NPW	0																	A576339
5	G		#9 B	1	8/15/18	12:05	SH	NPW	0																	A576340
6																										
7			* 3C RC		8/15/18																					

Requested by	TCM	Received by	[Signature]
Requested by	Hull	Received by	[Signature]
Requested by	[Signature]	Received by	[Signature]

Requested by	Date	Time	Requested by	Date	Time
	8/15/18	13:21		8/15/18	13:21

Per Laboratory Use Only: 18080282 BC 8/15/18



SAN ANTONIO WATER SYSTEM  
ENVIRONMENTAL LABORATORY SERVICES  
CHAIN OF CUSTODY RECORD  
3610 Valley Road - San Antonio, TX 78221 - (210) 233-3200

Effective Date: 3/13/17  
Revision 2.0  
15 02-022  
COC

November 14, 2018

**Tim Noack**

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin, TX 78752

**SATL Report No.: 1811010**

**RE: Mitchell Lake**

Dear Tim Noack

SATL received 6 Sample(s) on 11/01/2018 for analyses identified on the chain of custody. The analyses were performed using methods indicated on the laboratory report. Any deviations observed at sample receiving are notated on the Sample Receipt Checklist and/or Chain of Custody documents attached as part of this analytical report.

There were no problems in the sample analyses unless otherwise noted. Sample data and associated QC are presented in the attached laboratory report. QC sample data were within laboratory acceptance limits except where noted on the report.

Sincerely,

For San Antonio Testing Laboratory, Inc.



Richard Hawk,  
General Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

NELAC Cert. No.: T104704360-18-20

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

**SAMPLE SUMMARY**

Total Samples received in this work order: 6

The following samples were requested for analysis as per the CoC. Any re-runs or re-analyses requested are identified as such.

<u>Sample ID</u>	<u>Laboratory ID</u>	<u>Matrix</u>	<u>Sampling Method</u>	<u>Date Sampled</u>	<u>Date Received</u>
1 - Surface	1811010-01	Liquid	Grab	11/01/18 11:10	11/01/18 13:54
1 B Surface	1811010-02	Liquid	Grab	11/01/18 11:13	11/01/18 13:54
6 Surface	1811010-03	Liquid	Grab	11/01/18 11:35	11/01/18 13:54
6 Bottom	1811010-04	Liquid	Grab	11/01/18 11:38	11/01/18 13:54
9 Surface	1811010-05	Liquid	Grab	11/01/18 12:10	11/01/18 13:54
Field Blank	1811010-06	Liquid	Grab	11/01/18 11:42	11/01/18 13:54

**Notes**

All quality control samples and checks are within acceptance limits unless otherwise indicated.  
Test results pertain only to those items tested.  
All samples were in good condition when received by the laboratory unless otherwise noted.



NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

Sample ID #: 1 - Surface

Sampling Method: Grab

Lab Sample ID #: 1811010-01

Sample Matrix: Liquid

Date/Time Collected: 11/01/18 11:10

Analyte	Result	Units	PQL	RMCLL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	126	mg/L	0.010			B845096	11/08/18 13:49	SM2540E	HC	
Total Alkalinity *	88.0	mg/L as CaCO3	20.0		SM2320B	B845085	11/08/18 11:01	SM2320B	HC	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B845031	11/05/18 15:34	4500NH3CB	HC	
CBOD *	11.6	mg/L	2.00		SM5210B	B845074	11/07/18 11:59	SM5210B	HC	
Total Suspended Solids *	136	mg/L	50.0		SM2540D	B845056	11/06/18 14:39	SM2540D	HC	
Total Kjeldahl Nitrogen *	15.1	mg/L	1.00		EPA 351.3	B845036	11/02/18 15:12	EPA 351.3	JL	
Total Dissolved Solids *	1590	mg/L	40.0		SM2540D	B845090	11/07/18 09:05	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B844118	11/01/18 20:17	EPA 300.0	HC	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B844118	11/01/18 20:17	EPA 300.0	HC	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	11/01/18 20:17	EPA 300.0	HC	
<b>Total Metals</b>										
Phosphorus *	0.448	mg/L	0.010		EPA 200.7	B845047	11/07/18 15:06	EPA 200.7	XE	

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

**Sample ID #: 1 B Surface**

**Sampling Method: Grab**

**Lab Sample ID #: 1811010-02**

**Sample Matrix: Liquid**

**Date/Time Collected: 11/01/18 11:13**

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	116	mg/L	0.010			B845096	11/08/18 13:49	SM2540E	HC	
Total Alkalinity *	92.0	mg/L as CaCO3	20.0		SM2320B	B845085	11/08/18 11:07	SM2320B	HC	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B845031	11/05/18 15:34	4500NH3CB	HC	
CBOD *	11.8	mg/L	2.00		SM5210B	B845074	11/07/18 11:59	SM5210B	HC	
Total Suspended Solids *	122	mg/L	55.6		SM2540D	B845056	11/06/18 14:39	SM2540D	HC	
Total Kjeldahl Nitrogen *	12.3	mg/L	1.00		EPA 351.3	B845036	11/02/18 15:12	EPA 351.3	JL	
Total Dissolved Solids *	1730	mg/L	40.0		SM2540D	B845090	11/07/18 09:05	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B844118	11/01/18 20:35	EPA 300.0	HC	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B844118	11/01/18 20:35	EPA 300.0	HC	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	11/01/18 20:35	EPA 300.0	HC	
<b>Total Metals</b>										
Phosphorus *	0.426	mg/L	0.010		EPA 200.7	B845047	11/07/18 15:29	EPA 200.7	XE	

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

Reported:  
11/14/18 16:01  
Received:  
11/01/18 13:54

Additional Notes:

Report No. 1811010

Sample ID #: 6 Surface

Sampling Method: Grab

Lab Sample ID #: 1811010-03

Sample Matrix: Liquid

Date/Time Collected: 11/01/18 11:35

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	120	mg/L	0.010			B845096	11/08/18 13:49	SM2540E	HC	
Total Alkalinity *	92.0	mg/L as CaCO3	20.0		SM2320B	B845085	11/08/18 11:11	SM2320B	HC	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B845031	11/05/18 15:34	4500NH3CB	HC	
CBOD *	10.7	mg/L	2.00		SM5210B	B845074	11/07/18 11:59	SM5210B	HC	
Cyanide, Total *	<0.020	mg/L	0.020		SM4500-CNC	B846025	11/12/18 13:42	4500CN_C&E	JL	
Total Suspended Solids *	124	mg/L	55.6		SM2540D	B845056	11/06/18 14:39	SM2540D	HC	
Total Kjeldahl Nitrogen *	9.50	mg/L	1.00		EPA 351.3	B845036	11/02/18 15:12	EPA 351.3	JL	
Total Recoverable Phenols *	0.302	mg/L	0.050		EPA 420.1	B846031	11/12/18 16:18	EPA 420.1	JL	
Hexavalent Chromium *	<0.005	mg/L	0.005		I-1230-85	B845026	11/02/18 11:22	I-1230-85	JL	
Total Dissolved Solids *	1760	mg/L	40.0		SM2540D	B845090	11/07/18 09:05	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B844118	11/01/18 20:53	EPA 300.0	HC	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B844118	11/01/18 20:53	EPA 300.0	HC	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	11/01/18 20:53	EPA 300.0	HC	
<b>Total Metals</b>										
Antimony *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:38	EPA 200.7	XE	
Arsenic *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:38	EPA 200.7	XE	
Beryllium *	<0.004	mg/L	0.004		EPA 200.7	B845047	11/09/18 16:38	EPA 200.7	XE	
Cadmium *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:38	EPA 200.7	XE	
Chromium *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:38	EPA 200.7	XE	
Copper *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:38	EPA 200.7	XE	
Mercury *	<0.0002	mg/L	0.0002		EPA 245.1	B845092	11/08/18 15:27	EPA 245.1	ME	
Lead *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:38	EPA 200.7	XE	
Nickel *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:38	EPA 200.7	XE	
Phosphorus *	0.282	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:38	EPA 200.7	XE	
Selenium *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:38	EPA 200.7	XE	
Silver *	<0.005	mg/L	0.005		EPA 200.7	B845047	11/09/18 16:38	EPA 200.7	XE	
Thallium *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:38	EPA 200.7	XE	
Zinc *	0.017	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:38	EPA 200.7	XE	

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

Reported:  
11/14/18 16:01  
Received:  
11/01/18 13:54

Additional Notes:

Report No. 1811010

Sample ID #: 6 Surface

Sampling Method: Grab

Lab Sample ID #: 1811010-03

Sample Matrix: Liquid

Date/Time Collected: 11/01/18 11:35

Analyte	Result	Units	PQL	RMCLL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>Trivalent Chromium (Calculated)</b>										
Trivalent Chromium	<0.0100	mg/L	0.0100		[CALC]	[CALC]	11/09/18 16:38	CALC	JL	
<b>Polychlorinated Biphenyls [PCB]</b>										
PCB 1016 *	<0.0001	mg/L	0.0001		EPA 3510C	B846002	11/14/18 09:25	EPA 608	DW	
PCB 1221 *	<0.0001	mg/L	0.0001		EPA 3510C	B846002	11/14/18 09:25	EPA 608	DW	
PCB 1232 *	<0.0001	mg/L	0.0001		EPA 3510C	B846002	11/14/18 09:25	EPA 608	DW	
PCB 1242 *	<0.0001	mg/L	0.0001		EPA 3510C	B846002	11/14/18 09:25	EPA 608	DW	
PCB 1248 *	<0.0001	mg/L	0.0001		EPA 3510C	B846002	11/14/18 09:25	EPA 608	DW	
PCB 1254 *	<0.0001	mg/L	0.0001		EPA 3510C	B846002	11/14/18 09:25	EPA 608	DW	
PCB 1260 *	<0.0001	mg/L	0.0001		EPA 3510C	B846002	11/14/18 09:25	EPA 608	DW	
Surrogate: Decachlorobiphenyl	79 %	36-150			EPA 3510C	B846002	11/14/18 09:25	EPA 608	DW	
Surrogate: Tetrachloro-meta-xylene	72 %	28-131			EPA 3510C	B846002	11/14/18 09:25	EPA 608	DW	
<b>Chlorinated Pesticides by GC/ECD</b>										
alpha-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
gamma-BHC (Lindane) *	<0.0001	mg/L	0.0001	8	EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
beta-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
delta-BHC *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
Heptachlor *	<0.0001	mg/L	0.0001	0.16	EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
Aldrin *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
Heptachlor Epoxide *	<0.0001	mg/L	0.0001	0.16	EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
gamma-Chlordane *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
alpha-Chlordane *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
Endosulfan I *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
4,4'-DDE *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
Dieldrin *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
Endrin *	<0.0001	mg/L	0.0001	0.4	EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
4,4'-DDD *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
Endosulfan II *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
4,4'-DDT *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
Endrin Aldehyde *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
Endosulfan Sulfate *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
Methoxychlor *	<0.0001	mg/L	0.0001	200	EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
Endrin Ketone *	<0.0001	mg/L	0.0001		EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
Surrogate: Decachlorobiphenyl	79 %	36-150			EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	
Surrogate: Tetrachloro-meta-xylene	72 %	30-144			EPA 3510C	B845123	11/14/18 09:25	EPA 608	DW	

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

Sample ID #: 6 Bottom

Sampling Method: Grab

Lab Sample ID #: 1811010-04

Sample Matrix: Liquid

Date/Time Collected: 11/01/18 11:38

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	104	mg/L	0.010			B845096	11/08/18 13:49	SM2540E	HC	
Total Alkalinity *	96.0	mg/L as CaCO3	20.0		SM2320B	B845085	11/08/18 11:17	SM2320B	HC	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B845031	11/05/18 15:34	4500NH3CB	HC	
CBOD *	10.7	mg/L	2.00		SM5210B	B845074	11/07/18 11:59	SM5210B	HC	
Total Suspended Solids *	107	mg/L	55.6		SM2540D	B845056	11/06/18 14:39	SM2540D	HC	
Total Kjeldahl Nitrogen *	10.1	mg/L	1.00		EPA 351.3	B845036	11/02/18 15:12	EPA 351.3	JL	
Total Dissolved Solids *	1770	mg/L	40.0		SM2540D	B845090	11/07/18 09:05	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B844118	11/01/18 21:11	EPA 300.0	HC	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B844118	11/01/18 21:11	EPA 300.0	HC	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	11/01/18 21:11	EPA 300.0	HC	
<b>Total Metals</b>										
Phosphorus *	0.285	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:44	EPA 200.7	XE	

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

Sample ID #: 9 Surface

Sampling Method: Grab

Lab Sample ID #: 1811010-05

Sample Matrix: Liquid

Date/Time Collected: 11/01/18 12:10

Analyte	Result	Units	PQL	RMCLL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Volatile Suspended Solids	122	mg/L	0.010			B845096	11/08/18 13:49	SM2540E	HC	
Total Alkalinity *	92.0	mg/L as CaCO3	20.0		SM2320B	B845085	11/08/18 11:22	SM2320B	HC	
Ammonia-Nitrogen *	<1.00	mg/L	1.00		SM4500NH3B	B845031	11/05/18 15:34	4500NH3CB	HC	
CBOD *	13.2	mg/L	2.00		SM5210B	B845074	11/07/18 11:59	SM5210B	HC	
Total Suspended Solids *	129	mg/L	55.6		SM2540D	B845056	11/06/18 14:39	SM2540D	HC	
Total Kjeldahl Nitrogen *	12.3	mg/L	1.00		EPA 351.3	B845036	11/02/18 15:12	EPA 351.3	JL	
Total Dissolved Solids *	1720	mg/L	40.0		SM2540D	B845090	11/07/18 09:05	SM2540C	HC	
<b>Anions by Ion Chromatography</b>										
Nitrite as N *	<0.10	mg/L	0.10		EPA 300.0	B844118	11/01/18 21:29	EPA 300.0	HC	
Nitrate as N *	<0.10	mg/L	0.10		EPA 300.0	B844118	11/01/18 21:29	EPA 300.0	HC	
Nitrate/Nitrite as Nitrogen	<0.200	mg/L	0.200		[CALC]	[CALC]	11/01/18 21:29	EPA 300.0	HC	
<b>Total Metals</b>										
Phosphorus *	0.374	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:51	EPA 200.7	XE	

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

Sample ID #: Field Blank

Sampling Method: Grab

Lab Sample ID #: 1811010-06

Sample Matrix: Liquid

Date/Time Collected: 11/01/18 11:42

Analyte	Result	Units	PQL	RMCL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
<b>General Chemistry</b>										
Hexavalent Chromium *	<0.005	mg/L	0.005		I-1230-85	B845026	11/02/18 11:22	I-1230-85	JL	
<b>Total Metals</b>										
Antimony *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:57	EPA 200.7	XE	
Arsenic *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:57	EPA 200.7	XE	
Beryllium *	<0.004	mg/L	0.004		EPA 200.7	B845047	11/09/18 16:57	EPA 200.7	XE	
Cadmium *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:57	EPA 200.7	XE	
Chromium *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:57	EPA 200.7	XE	
Copper *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:57	EPA 200.7	XE	
Mercury *	<0.0002	mg/L	0.0002		EPA 245.1	B845092	11/08/18 15:38	EPA 245.1	ME	
Lead *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:57	EPA 200.7	XE	
Nickel *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:57	EPA 200.7	XE	
Selenium *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:57	EPA 200.7	XE	
Silver *	<0.005	mg/L	0.005		EPA 200.7	B845047	11/09/18 16:57	EPA 200.7	XE	
Thallium *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:57	EPA 200.7	XE	
Zinc *	<0.010	mg/L	0.010		EPA 200.7	B845047	11/09/18 16:57	EPA 200.7	XE	
<b>Trivalent Chromium (Calculated)</b>										
Trivalent Chromium	<0.0100	mg/L	0.0100		[CALC]	[CALC]	11/09/18 16:57	CALC	JL	

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	---------	-----------

**Batch B845026 - I-1230-85**

<b>Blank (B845026-BLK1)</b>				Prepared: 11/02/18 11:05 Analyzed: 11/02/18 11:22					
Hexavalent Chromium	<0.005	0.005	mg/L						
<b>LCS (B845026-BS1)</b>				Prepared: 11/02/18 11:05 Analyzed: 11/02/18 11:22					
Hexavalent Chromium	0.406	0.005	mg/L	0.400		102	90-110		
<b>LCS Dup (B845026-BSD1)</b>				Prepared: 11/02/18 11:05 Analyzed: 11/02/18 11:22					
Hexavalent Chromium	0.403	0.005	mg/L	0.400		101	90-110	0.7	20
<b>Duplicate (B845026-DUP1)</b>				<b>Source: 1810480-01</b> Prepared: 11/02/18 11:05 Analyzed: 11/02/18 11:22					
Hexavalent Chromium	<0.005	0.005	mg/L	<0.005					20
<b>Matrix Spike (B845026-MS1)</b>				<b>Source: 1810480-01</b> Prepared: 11/02/18 11:05 Analyzed: 11/02/18 11:22					
Hexavalent Chromium	0.418	0.005	mg/L	0.400	<0.005	104	80-120		

**Batch B845031 - SM4500NH3B**

<b>Blank (B845031-BLK1)</b>				Prepared: 11/05/18 13:39 Analyzed: 11/05/18 15:34					
Ammonia-Nitrogen	<1.00	1.00	mg/L						
<b>LCS (B845031-BS1)</b>				Prepared: 11/05/18 13:39 Analyzed: 11/05/18 15:34					
Ammonia-Nitrogen	20.2	1.00	mg/L	20.0		101	80-120		
<b>LCS Dup (B845031-BSD1)</b>				Prepared: 11/05/18 13:39 Analyzed: 11/05/18 15:34					
Ammonia-Nitrogen	20.7	1.00	mg/L	20.0		104	80-120	2	20
<b>Duplicate (B845031-DUP1)</b>				<b>Source: 1810479-01</b> Prepared: 11/05/18 13:39 Analyzed: 11/05/18 15:34					
Ammonia-Nitrogen	2.80	1.00	mg/L	2.80				0	20
<b>Matrix Spike (B845031-MS1)</b>				<b>Source: 1810479-01</b> Prepared: 11/05/18 13:39 Analyzed: 11/05/18 15:34					
Ammonia-Nitrogen	23.5	1.00	mg/L	20.0	2.80	104	80-120		

**Batch B845036 - EPA 351.3**

<b>Blank (B845036-BLK1)</b>				Prepared: 11/02/18 09:00 Analyzed: 11/02/18 15:12					
Total Kjeldahl Nitrogen	<1.00	1.00	mg/L						
<b>LCS (B845036-BS1)</b>				Prepared: 11/02/18 09:00 Analyzed: 11/02/18 15:12					
Total Kjeldahl Nitrogen	20.7	1.00	mg/L	20.0		104	80-120		
<b>LCS Dup (B845036-BSD1)</b>				Prepared: 11/02/18 09:00 Analyzed: 11/02/18 15:12					



NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	---------	-----------

**Batch B845036 - EPA 351.3**

**LCS Dup (B845036-BSD1)**

Prepared: 11/02/18 09:00 Analyzed: 11/02/18 15:12

Total Kjeldahl Nitrogen	23.5	1.00	mg/L	20.0		118	80-120	13	20
-------------------------	------	------	------	------	--	-----	--------	----	----

**Duplicate (B845036-DUP1)**

Source: 1811001-01

Prepared: 11/02/18 09:00 Analyzed: 11/02/18 15:12

Total Kjeldahl Nitrogen	<1.00	1.00	mg/L	<1.00					20
-------------------------	-------	------	------	-------	--	--	--	--	----

**Matrix Spike (B845036-MS1)**

Source: 1811001-01

Prepared: 11/02/18 09:00 Analyzed: 11/02/18 15:12

Total Kjeldahl Nitrogen	20.7	1.00	mg/L	20.0	<1.00	104	80-120		
-------------------------	------	------	------	------	-------	-----	--------	--	--

**Batch B845056 - SM2540D**

**Blank (B845056-BLK1)**

Prepared: 11/06/18 08:51 Analyzed: 11/06/18 14:39

Total Suspended Solids	<2.50	2.50	mg/L						
------------------------	-------	------	------	--	--	--	--	--	--

**LCS (B845056-BS1)**

Prepared: 11/06/18 08:51 Analyzed: 11/06/18 14:39

Total Suspended Solids	86.0	25.0	mg/L	100		86	80-120		
------------------------	------	------	------	-----	--	----	--------	--	--

**LCS Dup (B845056-BSD1)**

Prepared: 11/06/18 08:51 Analyzed: 11/06/18 14:39

Total Suspended Solids	91.0	25.0	mg/L	100		91	80-120	6	20
------------------------	------	------	------	-----	--	----	--------	---	----

**Duplicate (B845056-DUP1)**

Source: 1811010-01

Prepared: 11/06/18 08:51 Analyzed: 11/06/18 14:39

Total Suspended Solids	136	50.0	mg/L	136				0	20
------------------------	-----	------	------	-----	--	--	--	---	----

**Batch B845074 - SM5210B**

**Blank (B845074-BLK1)**

Prepared: 11/02/18 13:45 Analyzed: 11/07/18 11:59

CBOD	<2.00	2.00	mg/L						
------	-------	------	------	--	--	--	--	--	--

**LCS (B845074-BS1)**

Prepared: 11/02/18 13:45 Analyzed: 11/07/18 11:59

CBOD	178	2.00	mg/L	200		89	80-120		
------	-----	------	------	-----	--	----	--------	--	--

**LCS (B845074-BS2)**

Prepared: 11/02/18 13:45 Analyzed: 11/07/18 11:59

CBOD	184	2.00	mg/L	200		92	80-120		
------	-----	------	------	-----	--	----	--------	--	--

**LCS Dup (B845074-BSD1)**

Prepared: 11/02/18 13:45 Analyzed: 11/07/18 11:59

CBOD	160	2.00	mg/L	200		80	80-120	11	20
------	-----	------	------	-----	--	----	--------	----	----

**Batch B845085 - SM2320B**

**Blank (B845085-BLK1)**

Prepared: 11/08/18 10:30 Analyzed: 11/08/18 10:34

Total Alkalinity	<20.0	20.0	mg/L as CaCO3						
------------------	-------	------	---------------	--	--	--	--	--	--

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	
<b>Batch B845085 - SM2320B</b>									
<b>LCS (B845085-BS1)</b>					Prepared: 11/08/18 10:30 Analyzed: 11/08/18 10:40				
Total Alkalinity	100	20.0	mg/L as CaCO3	106		94	80-120		
<b>LCS Dup (B845085-BSD1)</b>					Prepared: 11/08/18 10:30 Analyzed: 11/08/18 10:45				
Total Alkalinity	100	20.0	mg/L as CaCO3	106		94	80-120	0 20	
<b>Duplicate (B845085-DUP1)</b>					Source: 1811007-01 Prepared: 11/08/18 10:30 Analyzed: 11/08/18 10:52				
Total Alkalinity	12.0	20.0	mg/L as CaCO3		12.0			0 20	
<b>Batch B845090 - SM2540D</b>									
<b>Blank (B845090-BLK1)</b>					Prepared: 11/06/18 08:51 Analyzed: 11/07/18 09:05				
Total Dissolved Solids	<10.0	10.0	mg/L						
<b>LCS (B845090-BS1)</b>					Prepared: 11/06/18 08:51 Analyzed: 11/07/18 09:05				
Total Dissolved Solids	89.0	10.0	mg/L	100		89	80-120		
<b>LCS Dup (B845090-BSD1)</b>					Prepared: 11/06/18 08:51 Analyzed: 11/07/18 09:05				
Total Dissolved Solids	91.0	10.0	mg/L	100		91	80-120	2 20	
<b>Duplicate (B845090-DUP1)</b>					Source: 1811008-01 Prepared: 11/06/18 08:51 Analyzed: 11/07/18 09:05				
Total Dissolved Solids	688	13.3	mg/L		657			5 20	
<b>Batch B845096 - NO PREP</b>									
<b>Blank (B845096-BLK1)</b>					Prepared: 11/06/18 08:51 Analyzed: 11/08/18 13:49				
Volatile Suspended Solids	<0.010	0.010	mg/L						
<b>Duplicate (B845096-DUP1)</b>					Source: 1811010-01 Prepared: 11/06/18 08:51 Analyzed: 11/08/18 13:49				
Volatile Suspended Solids	130	0.010	mg/L		126			3 30	
<b>Batch B846025 - SM4500-CNC</b>									
<b>Blank (B846025-BLK1)</b>					Prepared: 11/12/18 09:00 Analyzed: 11/12/18 13:42				
Cyanide, Total	<0.020	0.020	mg/L						
<b>LCS (B846025-BS1)</b>					Prepared: 11/12/18 09:00 Analyzed: 11/12/18 13:42				
Cyanide, Total	0.115	0.020	mg/L	0.100		115	80-120		
<b>LCS Dup (B846025-BSD1)</b>					Prepared: 11/12/18 09:00 Analyzed: 11/12/18 13:42				
Cyanide, Total	0.114	0.020	mg/L	0.100		114	80-120	0.9 20	

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B846025 - SM4500-CNC**

<b>Duplicate (B846025-DUP1)</b>		<b>Source: 1811108-01</b>		Prepared: 11/12/18 09:00		Analyzed: 11/12/18 13:42			
Cyanide, Total	0.0160	0.020	mg/L		0.0150			6	20

<b>Matrix Spike (B846025-MS1)</b>		<b>Source: 1811108-01</b>		Prepared: 11/12/18 09:00		Analyzed: 11/12/18 13:42			
Cyanide, Total	0.135	0.020	mg/L	0.100	0.0150	120	80-120		

**Batch B846031 - EPA 420.1**

<b>Blank (B846031-BLK1)</b>				Prepared: 11/12/18 15:45		Analyzed: 11/12/18 16:18			
Total Recoverable Phenols	<0.050	0.050	mg/L						

<b>LCS (B846031-BS1)</b>				Prepared: 11/12/18 15:45		Analyzed: 11/12/18 16:18			
Total Recoverable Phenols	0.491	0.050	mg/L	0.500		98	80-120		

<b>LCS Dup (B846031-BSD1)</b>				Prepared: 11/12/18 15:45		Analyzed: 11/12/18 16:18			
Total Recoverable Phenols	0.485	0.050	mg/L	0.500		97	80-120	1	20

<b>Duplicate (B846031-DUP1)</b>		<b>Source: 1811039-02</b>		Prepared: 11/12/18 15:45		Analyzed: 11/12/18 16:18			
Total Recoverable Phenols	0.0600	0.050	mg/L		0.0600			0	20

**Anions by Ion Chromatography - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B844118 - EPA 300.0**

<b>Blank (B844118-BLK1)</b>				Prepared: 11/01/18 15:45		Analyzed: 11/01/18 16:43			
Nitrite as N	<0.10	0.10	mg/L						
Nitrate as N	<0.10	0.10	mg/L						

<b>LCS (B844118-BS1)</b>				Prepared: 11/01/18 15:45		Analyzed: 11/01/18 17:01			
Nitrite as N	4.57	0.10	mg/L	5.00		91	90-110		
Nitrate as N	5.33	0.10	mg/L	5.00		107	90-110		

<b>LCS Dup (B844118-BSD1)</b>				Prepared: 11/01/18 15:45		Analyzed: 11/01/18 17:19			
Nitrite as N	4.62	0.10	mg/L	5.00		92	90-110	1	20
Nitrate as N	5.38	0.10	mg/L	5.00		108	90-110	1	20

<b>Duplicate (B844118-DUP1)</b>		<b>Source: 1811009-01</b>		Prepared: 11/01/18 15:45		Analyzed: 11/01/18 19:06			
---------------------------------	--	---------------------------	--	--------------------------	--	--------------------------	--	--	--

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

**Anions by Ion Chromatography - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B844118 - EPA 300.0**

**Duplicate (B844118-DUP1)**

Source: 1811009-01

Prepared: 11/01/18 15:45 Analyzed: 11/01/18 19:06

Nitrite as N	<0.10	0.10	mg/L	<0.10					20
Nitrate as N	0.795	0.10	mg/L	0.793				0.2	20

**Matrix Spike (B844118-MS1)**

Source: 1811009-01

Prepared: 11/01/18 15:45 Analyzed: 11/01/18 19:24

Nitrite as N	4.62	0.10	mg/L	5.00	<0.10	92	90-110		
Nitrate as N	6.06	0.10	mg/L	5.00	0.793	105	90-110		

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B845047 - EPA 200.7**

**Blank (B845047-BLK1)**

Prepared: 11/06/18 09:30 Analyzed: 11/06/18 14:25

Antimony	<0.010	0.010	mg/L						
Arsenic	<0.010	0.010	mg/L						
Beryllium	<0.004	0.004	mg/L						
Cadmium	<0.010	0.010	mg/L						
Chromium	<0.010	0.010	mg/L						
Copper	<0.010	0.010	mg/L						
Lead	<0.010	0.010	mg/L						
Nickel	<0.010	0.010	mg/L						
Phosphorus	<0.010	0.010	mg/L						
Selenium	<0.010	0.010	mg/L						
Silver	<0.005	0.005	mg/L						
Thallium	<0.010	0.010	mg/L						
Zinc	<0.010	0.010	mg/L						

**LCS (B845047-BS1)**

Prepared: 11/06/18 09:30 Analyzed: 11/06/18 14:31

Antimony	1.78	0.010	mg/L	2.00		89	85-115		
Arsenic	1.81	0.010	mg/L	2.00		90	85-115		
Beryllium	1.83	0.004	mg/L	2.00		92	85-115		
Cadmium	1.79	0.010	mg/L	2.00		89	85-115		
Chromium	1.81	0.010	mg/L	2.00		91	85-115		
Copper	1.79	0.010	mg/L	2.00		90	85-115		

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B845047 - EPA 200.7**

**LCS (B845047-BS1)**

Prepared: 11/06/18 09:30 Analyzed: 11/06/18 14:31

Lead	1.81	0.010	mg/L	2.00		91	85-115		
Nickel	1.80	0.010	mg/L	2.00		90	85-115		
Phosphorus	1.81	0.010	mg/L	2.00		91	85-115		
Selenium	1.80	0.010	mg/L	2.00		90	85-115		
Silver	0.882	0.005	mg/L	1.00		88	85-115		
Thallium	1.78	0.010	mg/L	2.00		89	85-115		
Zinc	1.79	0.010	mg/L	2.00		90	85-115		

**LCS Dup (B845047-BS1)**

Prepared: 11/06/18 09:30 Analyzed: 11/06/18 14:37

Antimony	1.85	0.010	mg/L	2.00		92	85-115	3	20
Arsenic	1.86	0.010	mg/L	2.00		93	85-115	3	20
Beryllium	1.88	0.004	mg/L	2.00		94	85-115	3	20
Cadmium	1.84	0.010	mg/L	2.00		92	85-115	3	20
Chromium	1.87	0.010	mg/L	2.00		93	85-115	3	20
Copper	1.84	0.010	mg/L	2.00		92	85-115	3	20
Lead	1.86	0.010	mg/L	2.00		93	85-115	3	20
Nickel	1.85	0.010	mg/L	2.00		92	85-115	3	20
Phosphorus	1.87	0.010	mg/L	2.00		93	85-115	3	20
Selenium	1.86	0.010	mg/L	2.00		93	85-115	3	20
Silver	0.912	0.005	mg/L	1.00		91	85-115	3	20
Thallium	1.84	0.010	mg/L	2.00		92	85-115	3	20
Zinc	1.85	0.010	mg/L	2.00		92	85-115	3	20

**Duplicate (B845047-DUP1)**

Source: 1810448-01

Prepared: 11/06/18 09:30 Analyzed: 11/06/18 14:59

Antimony	<0.010	0.010	mg/L		<0.010				20
Arsenic	<0.010	0.010	mg/L		<0.010				20
Beryllium	<0.004	0.004	mg/L		<0.004				20
Cadmium	<0.010	0.010	mg/L		<0.010				20
Chromium	<0.010	0.010	mg/L		<0.010				20
Copper	<0.010	0.010	mg/L		<0.010				20
Lead	<0.010	0.010	mg/L		<0.010				20
Nickel	<0.010	0.010	mg/L		<0.010				20
Phosphorus	<0.010	0.010	mg/L		<0.010				20
Selenium	<0.010	0.010	mg/L		<0.010				20
Silver	<0.005	0.005	mg/L		<0.005				20
Thallium	<0.010	0.010	mg/L		<0.010				20

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B845047 - EPA 200.7**

<b>Duplicate (B845047-DUP1)</b>		<b>Source: 1810448-01</b>		Prepared: 11/06/18 09:30 Analyzed: 11/06/18 14:59	
Zinc	<0.010	0.010	mg/L	<0.010	20

<b>Duplicate (B845047-DUP2)</b>		<b>Source: 1810475-01</b>		Prepared: 11/06/18 09:30 Analyzed: 11/07/18 16:59	
Antimony	<0.010	0.010	mg/L	0.00280	20
Arsenic	<0.010	0.010	mg/L	<0.010	20
Beryllium	<0.004	0.004	mg/L	<0.004	20
Cadmium	<0.010	0.010	mg/L	0.000300	20
Chromium	<0.010	0.010	mg/L	<0.010	20
Copper	<0.010	0.010	mg/L	<0.010	20
Lead	<0.010	0.010	mg/L	0.000400	20
Nickel	<0.010	0.010	mg/L	<0.010	20
Phosphorus	<0.010	0.010	mg/L	0.00220	20
Selenium	0.00300	0.010	mg/L	0.00300	0 20
Silver	<0.005	0.005	mg/L	<0.005	20
Thallium	<0.010	0.010	mg/L	<0.010	20
Zinc	<0.010	0.010	mg/L	<0.010	20

<b>Matrix Spike (B845047-MS1)</b>		<b>Source: 1810448-01</b>		Prepared: 11/06/18 09:30 Analyzed: 11/06/18 15:04	
Antimony	1.65	0.010	mg/L	2.00 <0.010	82 75-125
Arsenic	1.23	0.010	mg/L	2.00 <0.010	62 75-125 M
Beryllium	1.57	0.004	mg/L	2.00 <0.004	79 75-125
Cadmium	1.89	0.010	mg/L	2.00 <0.010	94 75-125
Chromium	0.234	0.010	mg/L	2.00 <0.010	12 75-125 M
Copper	1.99	0.010	mg/L	2.00 <0.010	99 75-125
Lead	0.0466	0.010	mg/L	2.00 <0.010	2 75-125 M
Nickel	1.97	0.010	mg/L	2.00 <0.010	98 75-125
Phosphorus	0.746	0.010	mg/L	2.00 <0.010	37 75-125 M
Selenium	1.85	0.010	mg/L	2.00 <0.010	93 75-125
Silver	0.975	0.005	mg/L	1.00 <0.005	97 75-125
Thallium	1.94	0.010	mg/L	2.00 <0.010	97 75-125
Zinc	1.77	0.010	mg/L	2.00 <0.010	89 75-125

<b>Matrix Spike (B845047-MS2)</b>		<b>Source: 1810475-01</b>		Prepared: 11/06/18 09:30 Analyzed: 11/07/18 17:05	
Antimony	1.76	0.010	mg/L	2.00 0.00280	88 75-125
Arsenic	1.18	0.010	mg/L	2.00 <0.010	59 75-125 M
Beryllium	1.74	0.004	mg/L	2.00 <0.004	87 75-125

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

**Batch B845047 - EPA 200.7**

Matrix Spike (B845047-MS2)	Source: 1810475-01	Prepared: 11/06/18 09:30	Analyzed: 11/07/18 17:05						
Cadmium	1.98	0.010	mg/L	2.00	0.000300	99	75-125		
Chromium	0.161	0.010	mg/L	2.00	<0.010	8	75-125		M
Copper	2.04	0.010	mg/L	2.00	<0.010	102	75-125		
Lead	0.0122	0.010	mg/L	2.00	0.000400	0.6	75-125		M
Nickel	2.01	0.010	mg/L	2.00	<0.010	101	75-125		
Phosphorus	0.786	0.010	mg/L	2.00	0.00220	39	75-125		M
Selenium	1.93	0.010	mg/L	2.00	0.00300	96	75-125		
Silver	1.03	0.005	mg/L	1.00	<0.005	103	75-125		
Thallium	2.00	0.010	mg/L	2.00	<0.010	100	75-125		
Zinc	1.76	0.010	mg/L	2.00	<0.010	88	75-125		

**Batch B845092 - EPA 245.1**

Blank (B845092-BLK1)	Prepared: 11/08/18 09:30	Analyzed: 11/08/18 15:08							
Mercury	<0.0002	0.0002	mg/L						
LCS (B845092-BS1)	Prepared: 11/08/18 09:30	Analyzed: 11/08/18 15:11							
Mercury	0.0103	0.0002	mg/L	0.0100		103	85-115		
LCS Dup (B845092-BSD1)	Prepared: 11/08/18 09:30	Analyzed: 11/08/18 15:13							
Mercury	0.0103	0.0002	mg/L	0.0100		103	85-115	0.05	25
Duplicate (B845092-DUP1)	Source: 1810475-01	Prepared: 11/08/18 09:30	Analyzed: 11/08/18 15:17						
Mercury	<0.0002	0.0002	mg/L	<0.0002					25
Duplicate (B845092-DUP2)	Source: 1811010-03	Prepared: 11/08/18 09:30	Analyzed: 11/08/18 15:34						
Mercury	<0.0002	0.0002	mg/L	<0.0002					25
Matrix Spike (B845092-MS1)	Source: 1810475-01	Prepared: 11/08/18 09:30	Analyzed: 11/08/18 15:19						
Mercury	0.00318	0.0002	mg/L	0.0100	<0.0002	32	75-125		M
Matrix Spike (B845092-MS2)	Source: 1811010-03	Prepared: 11/08/18 09:30	Analyzed: 11/08/18 15:36						
Mercury	0.00992	0.0002	mg/L	0.0100	<0.0002	99	75-125		

**Polychlorinated Biphenyls [PCB] - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

**Polychlorinated Biphenyls [PCB] - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B846002 - EPA 3510C**

**Blank (B846002-BLK1)**

Prepared: 11/06/18 09:00 Analyzed: 11/12/18 08:42

PCB 1016	<0.0001	0.0001	mg/L						
PCB 1221	<0.0001	0.0001	mg/L						
PCB 1232	<0.0001	0.0001	mg/L						
PCB 1242	<0.0001	0.0001	mg/L						
PCB 1248	<0.0001	0.0001	mg/L						
PCB 1254	<0.0001	0.0001	mg/L						
PCB 1260	<0.0001	0.0001	mg/L						

**LCS (B846002-BS1)**

Prepared: 11/06/18 09:00 Analyzed: 11/12/18 08:55

PCB 1016	0.00642	0.0001	mg/L	0.0100		64	50-114		
PCB 1260	0.00722	0.0001	mg/L	0.0100		72	8-127		

**LCS Dup (B846002-BSD1)**

Prepared: 11/06/18 09:00 Analyzed: 11/12/18 09:08

PCB 1016	0.00650	0.0001	mg/L	0.0100		65	50-114	1	38
PCB 1260	0.00733	0.0001	mg/L	0.0100		73	8-127	2	34

**Duplicate (B846002-DUP1)**

Source: 1811010-03

Prepared: 11/06/18 09:00 Analyzed: 11/12/18 09:34

PCB 1016	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1221	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1232	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1242	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1248	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1254	<0.0001	0.0001	mg/L	<0.0001					200
PCB 1260	<0.0001	0.0001	mg/L	<0.0001					200

**Chlorinated Pesticides by GC/ECD - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B845123 - EPA 3510C**

**Blank (B845123-BLK1)**

Prepared: 11/06/18 09:00 Analyzed: 11/14/18 10:40

alpha-BHC	<0.0001	0.0001	mg/L						
gamma-BHC (Lindane)	<0.0001	0.0001	mg/L						
beta-BHC	<0.0001	0.0001	mg/L						
delta-BHC	<0.0001	0.0001	mg/L						



NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

Reported:  
11/14/18 16:01  
Received:  
11/01/18 13:54

Additional Notes:

Report No. 1811010

Chlorinated Pesticides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

Batch B845123 - EPA 3510C

Blank (B845123-BLK1)

Prepared: 11/06/18 09:00 Analyzed: 11/14/18 10:40

Heptachlor	<0.0001	0.0001	mg/L						
Aldrin	<0.0001	0.0001	mg/L						
Heptachlor Epoxide	<0.0001	0.0001	mg/L						
gamma-Chlordane	<0.0001	0.0001	mg/L						
alpha-Chlordane	<0.0001	0.0001	mg/L						
Endosulfan I	<0.0001	0.0001	mg/L						
4,4'-DDE	<0.0001	0.0001	mg/L						
Dieldrin	<0.0001	0.0001	mg/L						
Endrin	<0.0001	0.0001	mg/L						
4,4'-DDD	<0.0001	0.0001	mg/L						
Endosulfan II	<0.0001	0.0001	mg/L						
4,4'-DDT	<0.0001	0.0001	mg/L						
Endrin Aldehyde	<0.0001	0.0001	mg/L						
Endosulfan Sulfate	<0.0001	0.0001	mg/L						
Methoxychlor	<0.0001	0.0001	mg/L						
Endrin Ketone	<0.0001	0.0001	mg/L						

Surrogate: Decachlorobiphenyl 0.000489 mg/L 0.00100 49 36-150  
Surrogate: Tetrachloro-meta-xylene 0.000408 mg/L 0.00100 41 30-144

LCS (B845123-BS1)

Prepared: 11/06/18 09:00 Analyzed: 11/14/18 10:55

alpha-BHC	0.000840	0.0001	mg/L	0.00100		84	37-134		
gamma-BHC (Lindane)	0.000843	0.0001	mg/L	0.00100		84	32-127		
beta-BHC	0.000970	0.0001	mg/L	0.00100		97	17-147		
delta-BHC	0.000816	0.0001	mg/L	0.00100		82	19-140		
Heptachlor	0.000545	0.0001	mg/L	0.00100		55	34-111		
Aldrin	0.000756	0.0001	mg/L	0.00100		76	42-122		
Heptachlor Epoxide	0.000823	0.0001	mg/L	0.00100		82	37-142		
gamma-Chlordane	0.000825	0.0001	mg/L	0.00100		82	45-119		
alpha-Chlordane	0.000809	0.0001	mg/L	0.00100		81	45-119		
Endosulfan I	0.000858	0.0001	mg/L	0.00100		86	45-153		
4,4'-DDE	0.000863	0.0001	mg/L	0.00100		86	30-145		
Dieldrin	0.000769	0.0001	mg/L	0.00100		77	36-146		
Endrin	0.000781	0.0001	mg/L	0.00100		78	30-147		
4,4'-DDD	0.000822	0.0001	mg/L	0.00100		82	31-141		
Endosulfan II	0.000788	0.0001	mg/L	0.00100		79	5-202		

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

Reported:  
11/14/18 16:01  
Received:  
11/01/18 13:54

Additional Notes:

Report No. 1811010

Chlorinated Pesticides by GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

Batch B845123 - EPA 3510C

LCS (B845123-BS1)

Prepared: 11/06/18 09:00 Analyzed: 11/14/18 10:55

4,4'-DDT	0.000844	0.0001	mg/L	0.00100		84	25-160		
Endrin Aldehyde	0.000580	0.0001	mg/L	0.00100		58	31-144		
Endosulfan Sulfate	0.000427	0.0001	mg/L	0.00100		43	26-144		
Methoxychlor	0.000789	0.0001	mg/L	0.00100		79	46-177		
Endrin Ketone	0.000818	0.0001	mg/L	0.00100		82	39-149		
Toxaphene	<0.01	0.01	mg/L				41-126		
Surrogate: Decachlorobiphenyl	0.000765		mg/L	0.00100		77	36-150		
Surrogate: Tetrachloro-meta-xylene	0.000593		mg/L	0.00100		59	30-144		

LCS Dup (B845123-BSD1)

Prepared: 11/06/18 09:00 Analyzed: 11/14/18 11:09

alpha-BHC	0.000828	0.0001	mg/L	0.00100		83	37-134	1	22
gamma-BHC (Lindane)	0.000836	0.0001	mg/L	0.00100		84	32-127	0.9	25
beta-BHC	0.000940	0.0001	mg/L	0.00100		94	17-147	3	20
delta-BHC	0.000814	0.0001	mg/L	0.00100		81	19-140	0.3	22
Heptachlor	0.000546	0.0001	mg/L	0.00100		55	34-111	0.08	22
Aldrin	0.000745	0.0001	mg/L	0.00100		74	42-122	2	22
Heptachlor Epoxide	0.000813	0.0001	mg/L	0.00100		81	37-142	1	25
gamma-Chlordane	0.000815	0.0001	mg/L	0.00100		81	45-119	1	20
alpha-Chlordane	0.000799	0.0001	mg/L	0.00100		80	45-119	1	20
Endosulfan I	0.000853	0.0001	mg/L	0.00100		85	45-153	0.6	23
4,4'-DDE	0.000858	0.0001	mg/L	0.00100		86	30-145	0.6	22
Dieldrin	0.000821	0.0001	mg/L	0.00100		82	36-146	6	21
Endrin	0.000763	0.0001	mg/L	0.00100		76	30-147	2	21
4,4'-DDD	0.000812	0.0001	mg/L	0.00100		81	31-141	1	21
Endosulfan II	0.000786	0.0001	mg/L	0.00100		79	5-202	0.2	22
4,4'-DDT	0.000843	0.0001	mg/L	0.00100		84	25-160	0.2	29
Endrin Aldehyde	0.000646	0.0001	mg/L	0.00100		65	31-144	11	30
Endosulfan Sulfate	0.000458	0.0001	mg/L	0.00100		46	26-144	7	23
Methoxychlor	0.000806	0.0001	mg/L	0.00100		81	46-177	2	22
Endrin Ketone	0.000832	0.0001	mg/L	0.00100		83	39-149	2	19
Surrogate: Decachlorobiphenyl	0.000765		mg/L	0.00100		77	36-150		
Surrogate: Tetrachloro-meta-xylene	0.000577		mg/L	0.00100		58	30-144		

Duplicate (B845123-DUP1)

Source: 1811010-03

Prepared: 11/06/18 09:00 Analyzed: 11/14/18 09:40

alpha-BHC	<0.0001	0.0001	mg/L	<0.0001					20
gamma-BHC (Lindane)	<0.0001	0.0001	mg/L	<0.0001					20

NELAC Cert. No.: T104704360-18-20

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

**Chlorinated Pesticides by GC/ECD - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------

**Batch B845123 - EPA 3510C**

**Duplicate (B845123-DUP1)**

**Source: 1811010-03**

Prepared: 11/06/18 09:00 Analyzed: 11/14/18 09:40

beta-BHC	<0.0001	0.0001	mg/L		<0.0001				20
delta-BHC	<0.0001	0.0001	mg/L		<0.0001				20
Heptachlor	<0.0001	0.0001	mg/L		<0.0001				20
Aldrin	<0.0001	0.0001	mg/L		<0.0001				20
Heptachlor Epoxide	<0.0001	0.0001	mg/L		<0.0001				20
gamma-Chlordane	<0.0001	0.0001	mg/L		<0.0001				20
alpha-Chlordane	<0.0001	0.0001	mg/L		<0.0001				20
Endosulfan I	<0.0001	0.0001	mg/L		<0.0001				20
4,4'-DDE	<0.0001	0.0001	mg/L		<0.0001				20
Dieldrin	<0.0001	0.0001	mg/L		<0.0001				20
Endrin	<0.0001	0.0001	mg/L		<0.0001				20
4,4'-DDD	<0.0001	0.0001	mg/L		<0.0001				20
Endosulfan II	<0.0001	0.0001	mg/L		<0.0001				20
4,4'-DDT	<0.0001	0.0001	mg/L		<0.0001				20
Endrin Aldehyde	<0.0001	0.0001	mg/L		<0.0001				20
Endosulfan Sulfate	<0.0001	0.0001	mg/L		<0.0001				20
Methoxychlor	<0.0001	0.0001	mg/L		<0.0001				20
Endrin Ketone	<0.0001	0.0001	mg/L		<0.0001				20
Surrogate: Decachlorobiphenyl	0.000788		mg/L	0.00100		79	36-150		
Surrogate: Tetrachloro-meta-xylene	0.000816		mg/L	0.00100		82	30-144		

Alan Plummer Assoc., Inc.  
6300 La Calma Drive #400  
Austin TX, 78752

Project: Mitchell Lake  
Project Number: [none]  
Project Manager: Tim Noack

NELAC Cert. No.: T104704360-18-20

**Reported:**  
11/14/18 16:01  
**Received:**  
11/01/18 13:54

Additional Notes:

**Report No. 1811010**

**DEFINITIONS**

*	TNI / NELAC accredited analyte
PQL	Practical Quantitation Limit
MCL	Maximum Contaminant Level
mg/Kg	Milligrams per Kilogram (Parts per Million)
mg/L	Milligrams per Liter (Parts per Million)
PPM	Parts per Million
L	LCS recovery is outside QC acceptance limits, the results may have a slight bias.
M	MS recovery is outside QC limits, the results may have a slight bias due to possible matrix interferences.
RMCCCL	Recommended Maximum Concentration of Contaminants Level
Surr L	Surrogate recovery is outside QC limits due to matrix interferences.
Surr H	Surrogate recovery is high due to contribution from hydrocarbon interferences.
μR/hr	MicroRoentgens per hour (Measure of Radioactivity Level)
HT	Sample received past holdtime
IC	Improper Container
IT	Improper Temperature
V	Inssufficient Volume
B	Sample collected in Bulk
S	RPD is outside QC limits. This may be due to possible matrix interferences in Matrix spike samples.
AB	VOA Vial contained air bubbles.

Test Methods followed by the laboratory are referenced in the following approved methodology, unless otherwise specified.

Standard Methods for the Examination of Water and Wastewater, 21st Edition 2005  
Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Rev. March 1983  
EPA SW Test Methods for the Examination of Solid Waste, SW-846, 1996

Marcela Gracia Hawk, President For

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Richard Hawk, General Manager



1610 S. Laredo Street, San Antonio, Texas 78207  
 (210) 229-9920 • Fax (210) 229-9921  
 www.satestinglab.com

# CHAIN-OF-CUSTODY RECORD

**REPORT TO:** COMPANY Alpaienviro **INVOICE TO:** COMPANY 11  
 ADDRESS 6300 La Caille pr # 400 ADDRESS 11  
 CITY Austin STATE TX ZIP 78732 CITY  STATE  ZIP   
 ATTN: Pin Noack PHONE # 810-233-3742 PHONE #   
 REG 7-10 Days  +25%  +50%  +75%  +100%  +150%  +300%  
 REQUESTED TURNAROUND TIME IN BUSINESS DAYS & SURCHARGE

**PROJECT NAME/LOCATION/SITE:** Mitchell Lake  
 THE TURNAROUND TIME FOR SAMPLES RECEIVED AFTER 3:00 PM SHALL BEGIN AT 8:00 AM THE FOLLOWING BUSINESS DAY

**HARDCOPY:**  YES  NO / **FOR STATE COMPLIANCE:**  YES  NO **SPECIAL REQ.:**  YES  NO  
 TEMP. I.R. GUN # 6020 **SAMPLE TEMPERATURE WITHIN COMPLIANCE (> 0°C ≤ 6°C):**  YES  NO **INITIAL TO AUTHORIZE BULK ANALYSIS:**  YES  NO  
 TEMP. ON RECP. 2.2c **COND. OF SAMPLE:** Red  YES  NO **IF NO, INITIAL HERE TO AUTHORIZE ANALYSIS:**  YES  NO  
 TRRP 13  YES  NO **LPST PCL:**  YES  NO

NUM SAMPLER	DATE	TIME	MATRIX	SAMPLING METHOD	CONTAINER	ANALYSIS REQUESTED	REMARKS
1	11-18	11:10	X		1 Surface	Metals 8 / 11 / 12 / 13 / TCLP / SPL / Total PAH / SVOC / 8270 / 625 / TCLP / SPL / Total VOC / 8260 / 624 / TCLP / SPL / Total Water Quality - Drinking / Livestock / Irrigation Col / TC / FC / HPC / ECol / EnteroCol / O-Tray BR / Cl / F / M3 / M210-P / S04 PCB / 608 / 802A OC Pest / 608 / 8081A / TCLP / SPL / Total	PREPARED IN THE LAB PRESERVED IN THE LAB COMPOSED IN THE LAB FILTERED IN THE LAB FILTERED IN THE FIELD
2	11:15				FB Surface		
3	11:35				6 Surface		
4	11:38				6 Bottom		
5	12:10				9 Surface		
6	11:42				Field Blank		

INQUIRED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	DATE / TIME
<u>Jeremy Hull</u>	11-18 13:53	<u>Walter</u>	
<u>Jeremy Hull</u>		<u>Walter</u>	

**RECEIVED**  
 NOV 01 2018  
 BY 1354  
 RECEIVED BY (SIGNATURE) Walter  
 RECEIVED BY (PRINT NAME) Walter  
 RECEIVED BY (SIGNATURE) Walter  
 RECEIVED BY (PRINT NAME) Walter

Table 2

Mitchell Lake Quality Treatment Initiatives  
 Water and Sediment Quality Study Plan  
 Water Sample Analytical Methods, Preservation, and Holding Times

Category	Parameter	Analytical* Method	Minimum Analytical Level (mg/L)	Detection Limit (mg/L)	Preservation	Holding Time
Conventional Parameters	CBOD <sub>5</sub>	SM 5210 B	2	2	Cool, ≤6 °C	48 hours
	Total Kjeldahl nitrogen	351.3 <sup>(1)</sup>	1	1	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Ammonia	SM 4500-NH <sub>3</sub> B/C <sup>(1)</sup>	1	1	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Nitrate+nitrite	300	0.1	0.01	Cool, ≤6 °C	48 hours
	Total phosphorus	200.7	0.01	0.0013	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days
	Total suspended solids	SM 2540-D	2.5	2.5	Cool, ≤6 °C	7 days
	Volatile suspended solids	SM 2540-E	0.1	0.1	Cool, ≤6 °C	7 days
	Total dissolved solids	SM 2540-C	2	2	Cool, ≤6 °C	7 days
	Alkalinity	SM 2320-B	20	20	Cool, ≤6 °C	14 days
<i>A</i> Chlorophyll a	SM 10200 H Modified	(2)	(2)	Cool, ≤6 °C, amber bottle	24 hours	
Pollutants of Potential Concern Parameters	Metals digestion	200.7	N/A		HNO <sub>3</sub> to pH <2	6 months
	Antimony	200.7	0.01	0.0016		
	Arsenic	200.7	0.01	0.0009		
	Beryllium	200.7	0.01	0.0003		
	Cadmium	200.7	0.01	0.0003		
	Chromium, Total	200.7	0.01	0.0031		
	Chromium (III)	Cacl.	0.01	0.0006		
	Copper	200.7	0.01	0.0006		
	Lead	200.7	0.01	0.0006		
	Nickel	200.7	0.01	0.0003		
	Selenium	200.7	0.01	0.0019		
	Silver	200.7	0.005	0.0006		
	Thallium	200.7	0.01	0.0019		
	Zinc	200.7	0.01	0.0003		
	Mercury	245.1	0.002	0.000031	HNO <sub>3</sub> to pH <2, Cool, <6 °C	28 days
	Chromium (VI)	USGS 1-1230-85	0.005	0.0031	Cool, ≤6 °C, NaOH to pH 9.3 - 9.7 or Cool, ≤6 °C, (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	48 hrs
	Cyanide, Total	SM 4500 CN C/E	0.02	0.0041	Cool, ≤6 °C, NaOH to pH>12	14 days
	Phenols, total	420.1	0.05	0.005	Cool, ≤6 °C, H <sub>2</sub> SO <sub>4</sub> to pH <2	28 days until extraction
	<b>Organochlorine pesticides</b>	608	<b>ug/L</b>	<b>ug/L</b>	Cool, ≤6 °C	7 days until extraction, 40 days after extraction.
	Aldrin		0.1	0.02		
	Chlordane		0.1	0.02		
	4,4-DDD		0.1	0.02		
	4,4-DDE		0.1	0.01		
	4,4-DDT		0.1	0.03		
	Dieldrin		0.1	0.02		
	Endosulphan, alpha		0.1	0.02		
	Endosulphan, beta		0.1	0.02		
	Endosulphan, sulfate		0.1	0.03		
	Endrin		0.1	0.03		
	Endrin aldehyde		0.1	0.03		
Heptachlor	0.1		0.04			
Heptachlor epoxide	0.1		0.02			
alpha Hexachlorocyclohexane	0.1		0.01			
beta Hexachlorocyclohexane	0.1		0.03			
delta Hexachlorocyclohexane	0.1		0.02			
Lindane	0.1		0.02			
PCB 1242	0.2		0.04			
PCB 1254	0.2		0.04			
PCB 1221	0.2	0.04				
PCB 1232	0.2	0.04				
PCB 1248	0.2	0.04				
PCB 1260	0.2	0.02				
PCB 1016	0.2	0.04				
Toxaphene	1	0.5				

(1)Sensitivity and method are for SATL. SAWS method is SM 4500-NH<sub>3</sub>-C and Reporting Limit (RL) is 1.2 mg/L for TKN and 0.25 mg/L for ammonia.

(2)RL is 5 ug/L based on 1,000 ml of sample; due to nature of sample, staff expects to use 5 ml of sample with RL of 1,000 ug/L.



# SAN ANTONIO TESTING LABORATORY, INC.

## Sample Receipt Checklist

Client: Allan Plumber Report Number: 1811010  
 Project Name: \_\_\_\_\_ Date Received: 11/1/18  
 Shipped via:  FedEx  UPS  Lonestar  Hand Delivered  DHL  SATL  Other Date Due: 11/12/18  
 Rush:  Specify:  3-5  2  1

### Items to be checked upon Receipt: [Yes, No, N/A]

Item	Yes	No	NA	If NA-reason:
1. Custody Seals present?			<input checked="" type="checkbox"/>	
2. Custody Seals intact?			<input checked="" type="checkbox"/>	
3. Air Bill included in folder, if received?			<input checked="" type="checkbox"/>	
4. Is COC included with samples?			<input checked="" type="checkbox"/>	
5. Is COC signed and dated by client?			<input checked="" type="checkbox"/>	
6. Sample temperature: Thermal preservation between >0° - 6°C? (Samples that are delivered to the laboratory on the same day that they are collected may not meet this criterion, but are acceptable if they arrive on ice.)				Temp: <u>22.76</u> °C
7. Samples received with ice <input checked="" type="checkbox"/> ice packs <input type="checkbox"/> other cooling <input type="checkbox"/>			<input checked="" type="checkbox"/>	
8. Is the COC filled out correctly, and completely?			<input checked="" type="checkbox"/>	
9. Information on the COC matches the samples?			<input checked="" type="checkbox"/>	
10. Samples received within holding time?			<input checked="" type="checkbox"/>	
11. Samples properly labeled?			<input checked="" type="checkbox"/>	
12. Samples submitted with chemical preservation? (e.g. pH adjusted, or sodium thiosulfate added for microbiological tests)			<input checked="" type="checkbox"/>	
13. Proper sample containers used?			<input checked="" type="checkbox"/>	
14. All samples received intact, containers not damaged or leaking?			<input checked="" type="checkbox"/>	
15. VOA vials (requesting BTEX/VOC analysis) received with no air bubbles? Bubbles acceptable on VOA vials for TPH.			<input checked="" type="checkbox"/>	<u>none vials</u>
16. Sample volume sufficient for requested analysis?			<input checked="" type="checkbox"/>	
17. Sample amount sufficient for TCLP analysis?			<input checked="" type="checkbox"/>	<u>not clp</u>
18. Subcontracted Samples: [if Yes, complete the next section]			<input checked="" type="checkbox"/>	

Analyses Subcontracted Out: \_\_\_\_\_ No. of Samples \_\_\_\_\_

Samples sent to: \_\_\_\_\_ Sent By: \_\_\_\_\_

Date samples sent: \_\_\_\_\_ Samples shipped via: \_\_\_\_\_

TAT Requested: \_\_\_\_\_

Tracking number [if any]: \_\_\_\_\_

Comments:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Received By: SF Date: 11/1/18

Labeled By: SP Date: \_\_\_\_\_

Logged into LIMS By: \_\_\_\_\_ Date: \_\_\_\_\_

Logged into RF By: \_\_\_\_\_ Date: \_\_\_\_\_



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-12  
Report Date/Time: 11/5/2018 9:25:20AM

**REPORT TO:** Production and Treatment  
517 Mission Road  
San Antonio, TX 78204

**Login Batch ID:** 18110019

**Log Number:**

**Sample ID:** AD83826      CID\_19877      MITCHELL LAKE SPECIAL (1 SURFACE)  
**Collected:** 11/01/2018 11:10      **Sampled By:** JEREMY HULL      **License Number:**  
**Submitted:** 11/01/2018 13:05      **Workorder Number:**      **Field Comments:**  
**Matrix:** WATER      **Non-Conformance:** Y - See chain of custody.

Analyte	Results	RL	Units	Qual	Analyzed	Analyst	Method
Chlorophyll-a	8960	1000	ug/L		11/2/18 13:37	MBO	SM 10200 H*

**Sample Comments:**





# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-12  
Report Date/Time: 11/5/2018 9:25:20AM

**REPORT TO:** Production and Treatment  
517 Mission Road  
San Antonio, TX 78204

**Login Batch ID:** 18110019

**Log Number:**

**Sample ID:** AD83827      CID\_19877      MITCHELL LAKE SPECIAL (1B SURFACE)

**Collected:** 11/01/2018 11:13      **Sampled By:** JEREMY HULL      **License Number:**

**Submitted:** 11/01/2018 13:05      **Workorder Number:**      **Field Comments:**

**Matrix:** WATER      **Non-Conformance:** Y - See chain of custody.

Analyte	Results	RL	Units	Qual	Analyzed	Analyst	Method
Chlorophyll-a	8540	1000	ug/L		11/2/18 13:37	MBO	SM 10200 H*

**Sample Comments:**



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-12  
Report Date/Time: 11/5/2018 9:25:20AM

**REPORT TO:** Production and Treatment  
517 Mission Road  
San Antonio, TX 78204

**Login Batch ID:** 18110019

**Log Number:**

**Sample ID:** AD83828      CID\_19877      MITCHELL LAKE SPECIAL (6 SURFACE)  
**Collected:** 11/01/2018 11:35      **Sampled By:** JEREMY HULL      **License Number:**  
**Submitted:** 11/01/2018 13:05      **Workorder Number:**      **Field Comments:**  
**Matrix:** WATER      **Non-Conformance:** Y - See chain of custody.

Analyte	Results	RL	Units	Qual	Analyzed	Analyst	Method
Chlorophyll-a	8210	1000	ug/L		11/2/18 13:37	MBO	SM 10200 H*

**Sample Comments:**



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-12  
Report Date/Time: 11/5/2018 9:25:20AM

**REPORT TO:** Production and Treatment  
517 Mission Road  
San Antonio, TX 78204

**Login Batch ID:** 18110019

**Log Number:**

**Sample ID:** AD83829      CID\_19877      MITCHELL LAKE SPECIAL (6 BOTTOM)  
**Collected:** 11/01/2018 11:38      **Sampled By:** JEREMY HULL      **License Number:**  
**Submitted:** 11/01/2018 13:05      **Workorder Number:**      **Field Comments:**  
**Matrix:** WATER      **Non-Conformance:** Y - See chain of custody.

Analyte	Results	RL	Units	Qual	Analyzed	Analyst	Method
Chlorophyll-a	8630	1000	ug/L		11/2/18 13:37	MBO	SM 10200 H*

**Sample Comments:**



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-12

Report Date/Time: 11/5/2018 9:25:20AM

**REPORT TO:** Production and Treatment  
517 Mission Road  
San Antonio, TX 78204

**Login Batch ID:** 18110019

**Log Number:**

**Sample ID:** AD83830      CID\_19877      MITCHELL LAKE SPECIAL (9 SURFACE)

**Collected:** 11/01/2018 12:10      **Sampled By:** JEREMY HULL      **License Number:**

**Submitted:** 11/01/2018 13:05      **Workorder Number:**      **Field Comments:**

**Matrix:** WATER      **Non-Conformance:** Y - See chain of custody.

Analyte	Results	RL	Units	Qual	Analyzed	Analyst	Method
Chlorophyll-a	9800	1000	ug/L		11/2/18 13:37	MBO	SM 10200 H*

**Sample Comments:**

**Definitions:**

RL = Reporting Limit  
--- = Not Applicable  
NC = Not Calculated

**Qualifiers:**

H = Result is above Upper Specification  
L = Result is below Lower Specification  
J = Positive result below the Reporting Limit  
Q = Unacceptable Results due to QC Check failure  
X = The result is extrapolated  
T = Sample exceeded Hold Time

E = Estimated Result  
B = Analyte detected in Blank  
S = Spike Recovery outside Recovery Limits  
D = Outside Duplicate Precision Limits  
M = Matrix or Chemical Interference  
LE = Laboratory Error

An asterisk (\*) appended to the method reference or analyte denotes that the laboratory is not accredited for the method or analyte.  
A double asterisk (\*\*) appended to the method reference or analyte denotes that the analytical results meets accreditation requirements for non-potable matrix only.

**References:**

EPA, Office of Water, Methods and Guidance for the Analysis of Water, Version 2  
Standard Methods for the Examination of Water and Wastewater, Online Edition, American Public Health Association  
EPA, Office of Solid Waste, Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846

Anna B. Polanco-Ramos or approved signatory  
Laboratory Manager  
SAWS Environmental Laboratory

This report provides results relating only to the referenced sample ID numbers and may not be reproduced except in its entirety without written approval of SAWS Laboratory. All samples were received in acceptable condition unless otherwise stated. For questions concerning this report, please contact Anna Ramos, SAWS Environmental Laboratory Manager, (210) 233-3210



# Analytical Results



Environmental Laboratory Services  
3610 Valley Road  
San Antonio, TX 78221

Certificate # T104704324-18-12

Report Date/Time: 11/5/2018 9:25:20AM

REPORT TO: Production and Treatment  
517 Mission Road  
San Antonio, TX 78204

Login Batch ID: 18110019

Log Number:

Client/Project Information				Other Information			
Client:	DW (Alta Power)	Project:	M-Vegete Lake	Work Order No.		Parameter/Method	
Facility:		Project Manager:	Jerry Hurt	Fire Hydrant		Total Coliform - E-Coli - SM 9223	
Name:	T.M. Nicks	Email Address:	tmnicks@alta.com	Valve		Chlor-DAT A	
Site Report To:	Chris Pock	Telephone Number:		Pipe			
			alta.com	AC			
				Scrapings			
Net Serial No.		Results of Standards:		Main Break			
DPD Pillows Lot #				Other			
Col Standards Lot #							
Special Instructions:							

No.	Sample Type	Coliform Results	Sample Description/Location	No. of Bottles	Collected Date	Time	Sampler Name	Matrix	Preservative	Collected Bottle Lab #	LAB USE ONLY
1	G-Composite	Multiple if "X" is requested	Surface	1	11-17-18	11:10	SH	RPW		A083826	
2			10 Surface			11:13				83822	
3			6 Surface			11:35				83828	
4			6 Bottom			11:38				83829	
5			9 Surface			12:10				83830	
6											
7											

Required Turn Around Time (TAT):	<input checked="" type="checkbox"/> STD 10 Business Days	<input type="checkbox"/> 5 Bus Days	<input type="checkbox"/> 2 Bus Days	<input type="checkbox"/> Next Day	Note: Must have Management approval for TAT less than 5 days						
Requested by:	TH	Date:	11/17/18	Time:	12:05	Received by:		Date:	11/18/18	Time:	1:30
Requested by:		Date:		Time:		Received by:		Date:		Time:	

13.6/13.6 °C  
327/11/18



SAN ANTONIO WATER SYSTEM  
ENVIRONMENTAL LABORATORY SERVICES  
CHAIN OF CUSTODY RECORD  
3610 Valley Road - San Antonio, TX 78221 - (210) 233-3200

Effective Date: 3/13/17  
Revision 2.0  
LS 02-022  
COC

## **APPENDIX C**

### **TABLES FOR WATER QUALITY**

- Table C-1 Dissolved oxygen, temperature, pH, and alkalinity
- Table C-2 Conductivity and TDS
- Table C-3 TSS, VSS, and Secchi depth
- Table C-4 Nitrogen, Phosphorus, and Chlorophyll-a
- Table C-5 Metals
- Table C-6 Pollutants of Potential Concern

**Table C-1**  
**Mitchell Lake**  
**Summary of Water Quality Data**  
**Dissolved Oxygen, pH, Temperature, and Total Alkalinity**

Station Number	Date	Time	Total Depth (ft)	DO (mg/L)		DO (% Saturation)		pH (s.u.)		Temperature (C°)		Total Alkalinity (mg/L)	
				Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface
1	1/25/2018	12:20 PM	1.8		13.98		145		9.39		10.72		96 <sup>(1)</sup>
1	1/25/2018	12:20 PM	1.8										104 <sup>(1)</sup>
1	5/31/2018	10:05 AM	2.0		6.17		80		8.97		27.61		
1	5/31/2018	10:15 AM	2.0										44
1	8/15/2018	10:24 AM	0.9		11.07		145		9.31		27.21		47
1	11/1/2018	11:10 AM	3.4	9.7	9.94	112	115	9.48	9.48	20.7	20.68		88
6	1/25/2018	1:10 PM	3.8	15.1	15.18	139	139	9.29	9.31	11.26	11.27	100	104
6	5/31/2018	10:45 AM	3.5	5.0	5.24	66	70	8.96	8.96	28.52	28.57		
6	5/31/2018	10:50 AM	3.5										48
6	5/31/2018	10:55 AM	3.5									48	
6	8/15/2018	11:00 AM	2.2	7.1	7.09	95	95	9.12	9.12	28.52	28.52		42
6	8/15/2018	11:10 AM	2.2									42	
6	11/1/2018	11:35 AM	4.8		9.68		113		9.37		21.11	96	92
6	11/1/2018	11:38 AM	4.8	7.6		89		8.59		21.02			
9	1/25/2018	11:15 AM	1.1		17.18		155		9.42		10.38		100
9	5/31/2018	11:30 AM	1.6		13.47		182		9.56		29.51		52 <sup>(2)</sup>
9	5/31/2018	11:35 AM	1.6										48 <sup>(2)</sup>
9	8/15/2018	12:00 PM	0.85									61	
9	8/15/2018	12:05 PM	0.85										61
9	8/15/2018	12:00 PM	0.85		18.5		256		9.69		30.16		
9	11/1/2018	12:10 PM	3.0		10.8		125		9.40		20.49		92

<b>Minimum</b>	5.0	5.2	66	70	8.6	9.0	11.3	10.4	42	42
<b>Average</b>	8.9	11.5	100	135	9.1	9.3	22.0	22.2	69	72
<b>Maximum</b>	15.1	18.5	139	256	9.5	9.7	28.5	30.2	100	104

<sup>(1)</sup>Duplicates

<sup>(2)</sup>Duplicates

**Table C-2  
Mitchell Lake  
Summary of Water Quality Data  
Conductivity and Total Dissolved Solids**

Station Number	Date	Time	Total Depth (ft)	Conductivity (µS/cm)		Total Dissolved Solids (mg/L)		TDS/ Conductivity Ratio
				Bottom	Surface	Bottom	Surface	Surface
1	1/25/2018	12:20 PM	1.8		3327.9		1840 <sup>(1)</sup>	0.55
1	1/25/2018	12:20 PM	1.8				1970 <sup>(1)</sup>	
1	5/31/2018	10:05 AM	2.0		4101.8			
1	5/31/2018	10:15 AM	2.0				2400	
1	8/15/2018	10:24 AM	0.9		6934.2		4650	0.67
1	11/1/2018	11:10 AM	3.4	2833.3	2834.3		1590 <sup>(2)</sup>	0.56
1	11/1/2018	10:30 AM	3.4				1730 <sup>(2)</sup>	
6	1/25/2018	1:10 PM	3.8	3310.3	3310.3	1770	1800	0.54
6	5/31/2018	10:45 AM	3.5	4030.6	4030.0			
6	5/31/2018	10:50 AM	3.5				2310	
6	5/31/2018	10:55 AM	3.5			2360		
6	8/15/2018	11:00 AM	2.2	7010.6	7010.6		6160	0.88
6	8/15/2018	11:10 AM	2.2			5470		
6	11/1/2018	11:35 AM	4.8		2807.5	1770	1760	0.63
6	11/1/2018	11:38 AM	4.8	2810.2				
9	1/25/2018	11:15 AM	1.1		3313.8		1620	
9	5/31/2018	11:30 AM	1.6		4103.1		2260 <sup>(3)</sup>	0.55
9	5/31/2018	11:35 AM	1.6				2350 <sup>(3)</sup>	
9	8/15/2018	12:05 PM	0.85				5950	
9	8/15/2018	12:00 PM	0.85		6948.2	5310		
9	11/1/2018	12:10 PM	3		2800.0		1720	0.61

<b>Minimum</b>	2810	2800	1770	1620	0.54
<b>Average</b>	3999	4293	3336	2853	0.62
<b>Maximum</b>	7011	7011	5470	6160	0.88

<sup>(1)</sup>Duplicates

<sup>(2)</sup>Duplicates

<sup>(3)</sup>Duplicates



**Table C-3  
Mitchell Lake  
Summary of Water Quality Data  
Secchi Depth, Total Suspended Solids, Volatile Suspended Solids**

Station Number	Date	Time	Total Depth (ft)	Secchi Depth (in)	Total Suspended Solids (mg/L)		Volatile Suspended Solids (mg/L)		VSS/TSS (%)
				Surface	Bottom	Surface	Bottom	Surface	Surface
1	1/25/2018	12:20 PM	1.8	5.0		100 <sup>(1)</sup>		100 <sup>(1)</sup>	100
1	1/25/2018	12:20 PM	1.8			101 <sup>(1)</sup>		101 <sup>(1)</sup>	
1	5/31/2018	10:05 AM	2.0	3.0					
1	5/31/2018	10:15 AM	2.0			138		126	91
1	8/15/2018	10:24 AM	0.9	4.0		162		137	85
1	11/1/2018	11:10 AM	3.4	4.8		136		126	93
6	1/25/2018	1:10 PM	3.8	5.5	110	104	110	104	100
6	5/31/2018	10:45 AM	3.5	4.0					
6	5/31/2018	10:50 AM	3.5			130		116	89
6	5/31/2018	10:55 AM	3.5		146		130		
6	8/15/2018	11:00 AM	2.2	3.4		160		142	89
6	8/15/2018	11:10 AM	2.2		178		151		
6	11/1/2018	11:35 AM	4.8	4.2	107	124	104	120	97
9	1/25/2018	11:15 AM	1.1	6.0		76		76	100
9	5/31/2018	11:30 AM	1.6	3.1		112 <sup>(2)</sup>		114 <sup>(2)</sup>	96
9	5/31/2018	11:35 AM	1.6			122 <sup>(2)</sup>		112 <sup>(2)</sup>	
9	8/15/2018	12:00 PM	0.85		167		151		
9	8/15/2018	12:05 PM	0.85			158		149	94
9	8/15/2018	12:00 PM	0.85	3.0					
9	11/1/2018	12:10 PM	3.0	4.8		129		122	95

<b>Minimum</b>	3.0	107	76	104	76
<b>Average</b>	4.2	142	128	129	119
<b>Maximum</b>	6.0	178	162	151	149

<sup>(1)</sup>Duplicates

<sup>(2)</sup>Duplicates

**Table C-4  
Mitchell Lake  
Summary of Water Quality Data  
Nitrogens, Chlorophyll-a, Phosphorus**

Station Number	Date	Time	Total Depth (ft)	Ammonia-Nitrogen (mg/L)		Nitrate as N (mg/L)		Nitrate + Nitrite (mg/L)		Nitrite as N (mg/L)		Chlorophyll-a (ug/L)		Total Phosphorus (mg/L)		TKN (mg/L)	
				Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface
1	1/25/2018	12:20 PM	1.8		< 1		< 0.1 <sup>(1)</sup>		< 0.2 <sup>(1)</sup>		< 0.1 <sup>(1)</sup>		4660 <sup>(1)</sup>		0.492 <sup>(1)</sup>		11.8 <sup>(1)</sup>
1	1/25/2018	12:20 PM	1.8				< 0.1 <sup>(1)</sup>		< 0.2 <sup>(1)</sup>		< 0.1 <sup>(1)</sup>		4640 <sup>(1)</sup>		0.224 <sup>(1)</sup>		7.8 <sup>(1)</sup>
1	5/31/2018	10:15 AM	2.0		< 1		< 0.1		< 0.2		< 0.1				0.270		11.2
1	8/15/2018	10:24 AM	0.9		< 1		< 0.1		< 0.2		< 0.1		11,300				15.9
1	8/15/2018	11:00 AM	0.9												0.305		
1	11/1/2018	11:10 AM	3.4		< 1		< 0.1		< 0.2		< 0.1		8,960		0.448		15.1
6	1/25/2018	1:10 PM	3.8	< 1	< 1	< 0.1	< 0.1	< 0.2	< 0.2	< 0.1	< 0.1	5,120	5,570	0.329	0.332	10.6	10
6	5/31/2018	10:50 AM	3.5		< 1		< 0.1		< 0.2		< 0.1				0.185		12.9
6	5/31/2018	10:55 AM	3.5	< 1		< 0.1		< 0.2		< 0.1				0.202		11.2	
6	8/15/2018	11:00 AM	2.2		< 1		< 0.1		< 0.2		< 0.1		8,840		0.363		14.5
6	8/15/2018	11:10 AM	2.2	< 1		< 0.1		< 0.2		< 0.1		9,580		0.271		15.2	
6	11/1/2018	11:35 AM	4.8	< 1	< 1	< 0.1	< 0.1	< 0.2	< 0.2	< 0.1	< 0.1	8,630	8,210	0.285	0.282	10.1	9.5
9	1/25/2018	11:15 AM	1.1		< 1		< 0.1 <sup>(2)</sup>		< 0.2 <sup>(2)</sup>		< 0.1 <sup>(2)</sup>				0.161		9.5 <sup>(2)</sup>
9	1/25/2018	11:20 AM	1.1		0.355		< 0.1 <sup>(2)</sup>		< 0.6 <sup>(2)</sup>		< 0.1 <sup>(2)</sup>		4,570				9.07 <sup>(2)</sup>
9	5/31/2018	11:30 AM	1.6		< 1		< 0.1 <sup>(3)</sup>		< 0.2 <sup>(3)</sup>		< 0.1 <sup>(3)</sup>				0.202 <sup>(3)</sup>		12.3 <sup>(3)</sup>
9	5/31/2018	11:35 AM	1.6		< 1		< 0.1 <sup>(3)</sup>		< 0.2 <sup>(3)</sup>		< 0.1 <sup>(3)</sup>				0.184 <sup>(3)</sup>		12.3 <sup>(3)</sup>
9	8/15/2018	12:00 PM	0.85		< 1												17.9
9	8/15/2018	12:05 PM	0.85		< 1		< 0.1		< 0.2		< 0.1		9,020		0.248		17.2
9	8/15/2018	12:00 PM	0.85			< 0.1		< 0.2		< 0.1		9,750	0.264				
9	11/1/2018	12:10 PM	3.0		< 1		< 0.1		< 0.2		< 0.1		9,800		0.374		12.3
<b>Minimum</b>				< 1	< 1	< 0.1	< 0.1	< 0.2	< 0.2	< 0.1	< 0.1	5,120	4,570	0.202	0.161	10.1	7.8
<b>Average</b>				< 1	< 1	< 0.1	< 0.1	< 0.2	< 0.2	< 0.1	< 0.1	7,780	7,756	0.270	0.291	13.0	12.1
<b>Maximum</b>				< 1	0.355	< 0.1	< 0.1	< 0.2	< 0.2	< 0.1	< 0.1	9,580	11,300	0.329	0.492	17.9	17.2

<sup>(1)</sup>Duplicates

<sup>(2)</sup>Duplicates

<sup>(3)</sup>Duplicates

**Table C-5**  
**Mitchell Lake**  
**Summary of Water Quality Data**  
**Metals**  
**Surface Concentration (mg/L)**

Parameter	PQL	Station 6		Station 6		Station 6		Station 6		Minimum	Average	Maximum	
		1/25/2018	1:10 PM	5/31/2018	10:50 AM	8/15/2018	11:00 AM	11/1/2018	11:35 AM				
Antimony	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Arsenic	0.01	<	0.01	<	0.01	<	0.012	<	0.01	<	0.01	<	0.01
Beryllium	0.004	<	0.004	<	0.004	<	0.004	<	0.004	<	0.004	<	0.004
Cadmium	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Chromium, Hexavalent	0.005	<	0.005	<	0.005	<	0.005	<	0.005	<	0.005	<	0.005
Chromium, Trivalent	0.01	<	0.005	<	0.01	<	0.01	<	0.01	<	0.005	<	0.01
Chromium, total	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Copper	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Cyanide	0.02	<	0.02	<	0.02	<	0.02	<	0.02	<	0.02	<	0.02
Lead	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Mercury	0.0002	<	0.0002	<	0.0002	<	0.0002	<	0.0002	<	0.0002	<	0.0002
Nickel	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Selenium	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Silver	0.005	<	0.005	<	0.005	<	0.005	<	0.005	<	0.005	<	0.005
Zinc	0.01		0.015	<	0.01	<	0.01		0.017	<	0.01		0.017

**Table C-6**  
**Mitchell Lake**  
**Summary of Water Quality Data**  
**Pollutants of Potential Concern**  
**Surface Concentration (mg/L)**

Parameter	PQL	Station 6		Station 6		Station 6		Station 6		Minimum	Average	Maximum	
		1/25/2018	1:10 PM	5/31/2018	10:50 AM	8/15/2018	11:00 AM	11/1/2018	11:35 AM				
4,4'-DDE	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
4,4'-DDT	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
Aldrin	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
BHC, alpha	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
BHC, beta	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
BHC,delta	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
BHC, gamma (Lindane)	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
Chlordane, alpha	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
Chlordane, gamma	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
Endosulfan I	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
Endosulfan II	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
Endosulfan Sulfate	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
Endrin Aldehyde	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
Endrin Ketone	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
Heptachlor	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
Heptachlor Epoxide	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
Methoxychlor	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0001
PCB 1016	0.0002	<	0.0002	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0002
PCB 1221	0.0002	<	0.0002	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0002
PCB 1232	0.0002	<	0.0002	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0002
PCB 1242	0.0002	<	0.0002	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0002
PCB 1248	0.0002	<	0.0002	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0002
PCB 1254	0.0002	<	0.0002	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0002
PCB 1260	0.0002	<	0.0002	<	0.0001	<	0.0001	<	0.0001	<	0.0001	<	0.0002
Toxaphene	0.01	<	0.01	<	0.01	<	0.01			<	0.01	<	0.01

## **APPENDIX D**

### **TABLES FOR SEDIMENT QUALITY**

- Table D-1 Conventional Parameters
- Table D-2 Calcium, Magnesium, and Sodium
- Table D-3 Metals
- Table D-4 Pollutants of Potential Concern

**Table D-1**  
**Mitchell Lake**  
**Summary of Sediment Quality Data**  
**Conductivity, Nitrogen, pH, Phosphorus, Solids, and Total Organic Carbon**

Parameter	Station #1	Station #2	Station #3	Station #4	Station #5	Station #6	Station #7	Station #8	Station #9
	5/31/2018	5/31/2018	5/31/2018	5/31/2018	5/31/2018	5/31/2018	5/31/2018	5/31/2018	5/31/2018
	10:05 AM	12:45 PM	12:33 PM	1:03 PM	12:15 PM	11:10 AM	1:20 PM	11:58 AM	11:45 AM
Conductivity ( $\mu$ S/cm)	717	409	310	193	370	681	416	658	407
Nitrogen, Ammonia (mg/kg)	118	72.8	67	28	50	112	62	112	106
Nitrogen, Total Kjeldahl(mg/kg)	1,110	1,050	1,470	410	801	1,000	1,660	1,170	1,820
pH (s.u.)	7.74	8.39	8.74	9.39	8.70	7.68	8.50	7.67	8.39
Phosphorus (mg/kg)	4,760	9,660	27,800	7,670	13,500	5,490	21,900	4,200	3,610
Solids, Volatile (%)	13.6	3.13	8.44	20.8	2.52	16.5	7.67	14.2	14.3
Solids, Total (%)	17.2	56.6	58.5	79.6	62.4	12.9	50.4	17.3	51.1
Temp at pH Measure (Celsius)	21	21	21	22	23	23	23	23	23
Total Organic Carbon (mg/kg)	18,900	17,300	12,700	14,700	12,500	21,100	16,900	20,400	23,100
% Solids (% by Wt.)	16.3	57.3	56.4	74.8	57.7	13.1	42.1	17.8	52.2

**Table D-2**  
**Mitchell Lake**  
**Summary of Sediment Quality Data**  
**Calcium, Magnesium, and Sodium (mg/kg)**

Parameter	Station #1	Station #2	Station #3	Station #4	Station #5	Station #6	Station #7	Station #8	Station #9
	5/31/2018	5/31/2018	5/31/2018	5/31/2018	5/31/2018	5/31/2018	5/31/2018	5/31/2018	5/31/2018
	10:05 AM	12:45 PM	12:33 PM	1:03 PM	12:15 PM	11:10 AM	1:20 PM	11:58 AM	11:45 AM
Calcium	123,000	37,900	75,600	145,000	44,700	89,500	98,200	68,100	53,600
Magnesium	6,800	2,030	3,330	2,460	1,770	5,310	2,880	3,800	2,560
Sodium				707				2,740	

**Table D-3**  
**Mitchell Lake**  
**Summary of Sediment Quality Data**  
**Metals (mg/kg)**

Parameter	Station #4	Station #8
	5/31/2018	5/31/2018
	1:03 PM	11:58 AM
Arsenic	6.00	3.34
Boron	38.6	24.5
Cadmium	<0.500	1.53
Calcium	145,000	68,100
Chromium	9.75	140
Copper	4.6	54.4
Iron	38,500	9,920
Lead	37.8	83
Magnesium	2,460	3,800
Manganese	782	150
Mercury	0.613	2.22
Nickel	18.9	14.2
Selenium	<1.00	<1.00
Zinc	65.6	231



**Table D-4  
Mitchell Lake  
Summary of Sediment Quality Data  
Pollutants of Potential Concern (µg/kg)**

Parameter	Station #4		Station #8	
	5/31/2018		5/31/2018	
	1:03 PM		11:58 AM	
2,4,5-T	<	106	<	83.8
2,4,5-TP (Silvex)	<	407	<	62.9
2,4-D	<	8.39	<	838
2,4-DB	<	1,820	<	838
Dalapon	<	109	<	2,100
Dicamba	<	4.37	<	83.8
Dichloroprop	<	43.7	<	838
Dinoseb	<	21.8	<	419
MCPA	<	4,370	<	83,800
MCPD	<	4,370	<	83,800
Pentachlorophenol	<	4.37	<	83.8