FIGURES

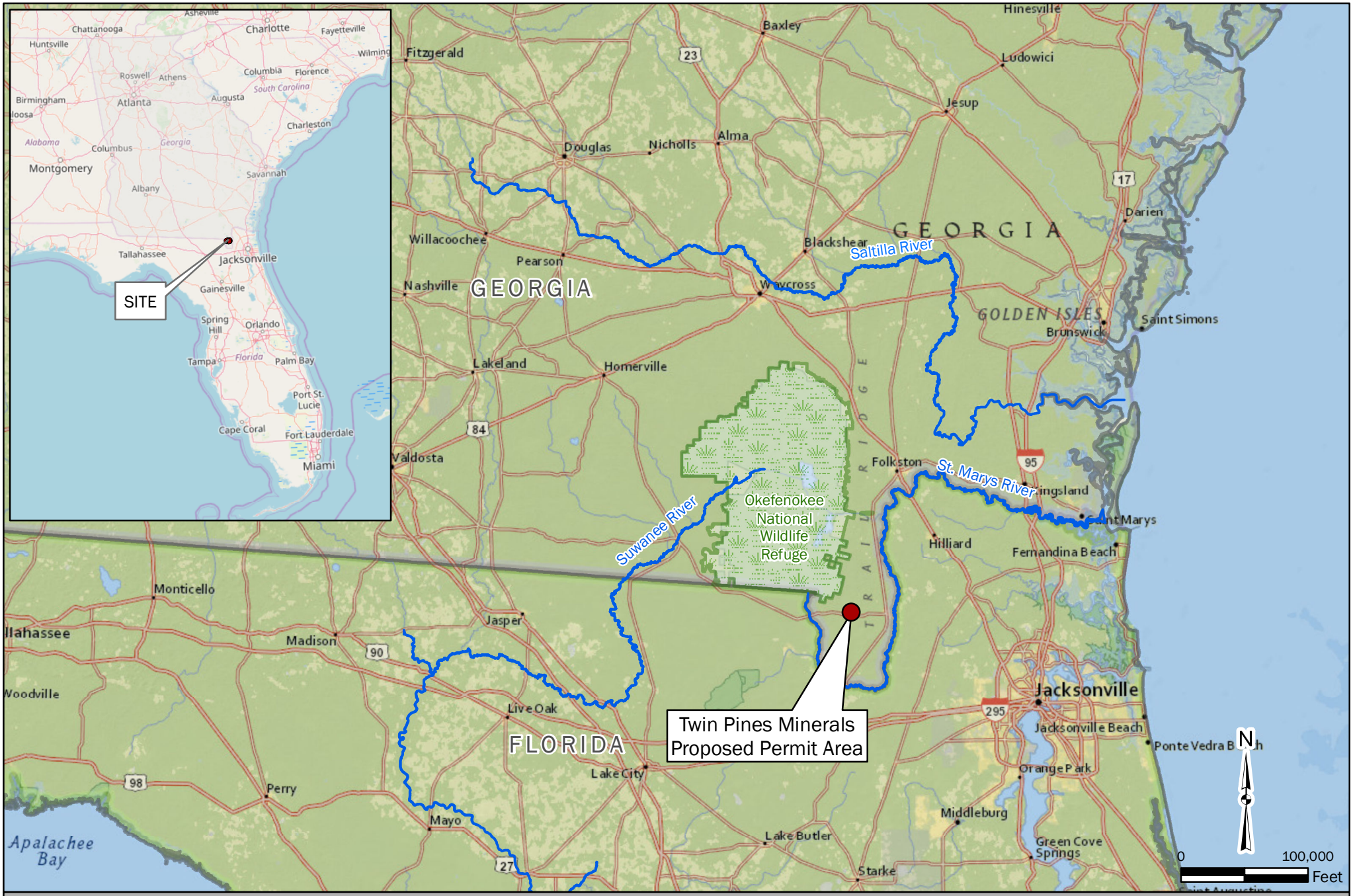


FIGURE 1: LOCATION OF THE PROPOSED TWIN PINES MINE

TWIN PINES MINERALS

ST. GEORGE, CHARLTON COUNTY, GEORGIA

INSET BASEMAP: Open Street Map. BASEMAP: National Geographic World Map.

DRAWN BY:	DEK
CHECKED BY:	JMT
DRAWING DATE:	10/28/2019
REVISION DATE:	N/A
TTL JOB NO.:	000180200804.00
APPROX. SCALE:	1 in = 100,000 ft

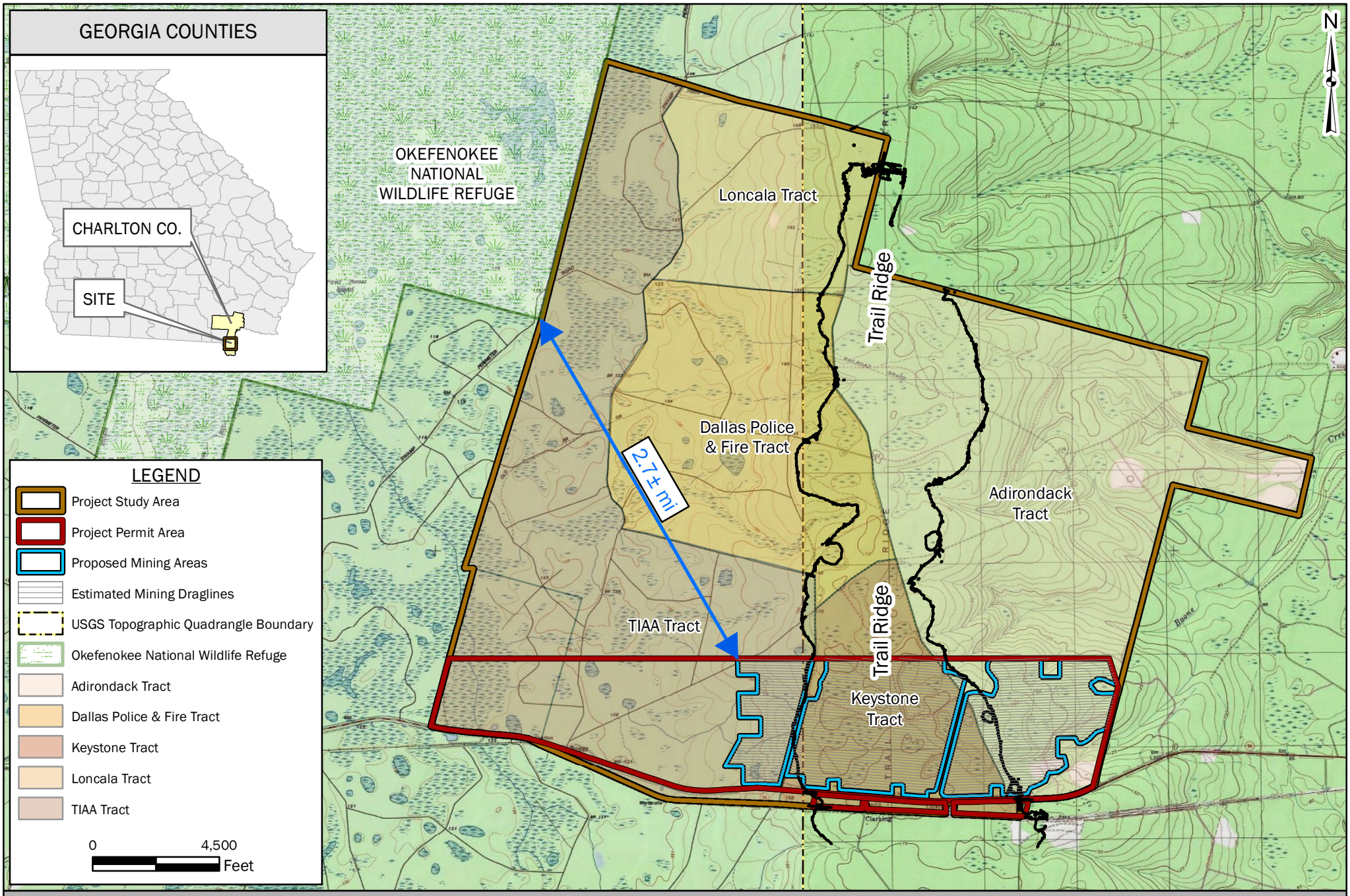


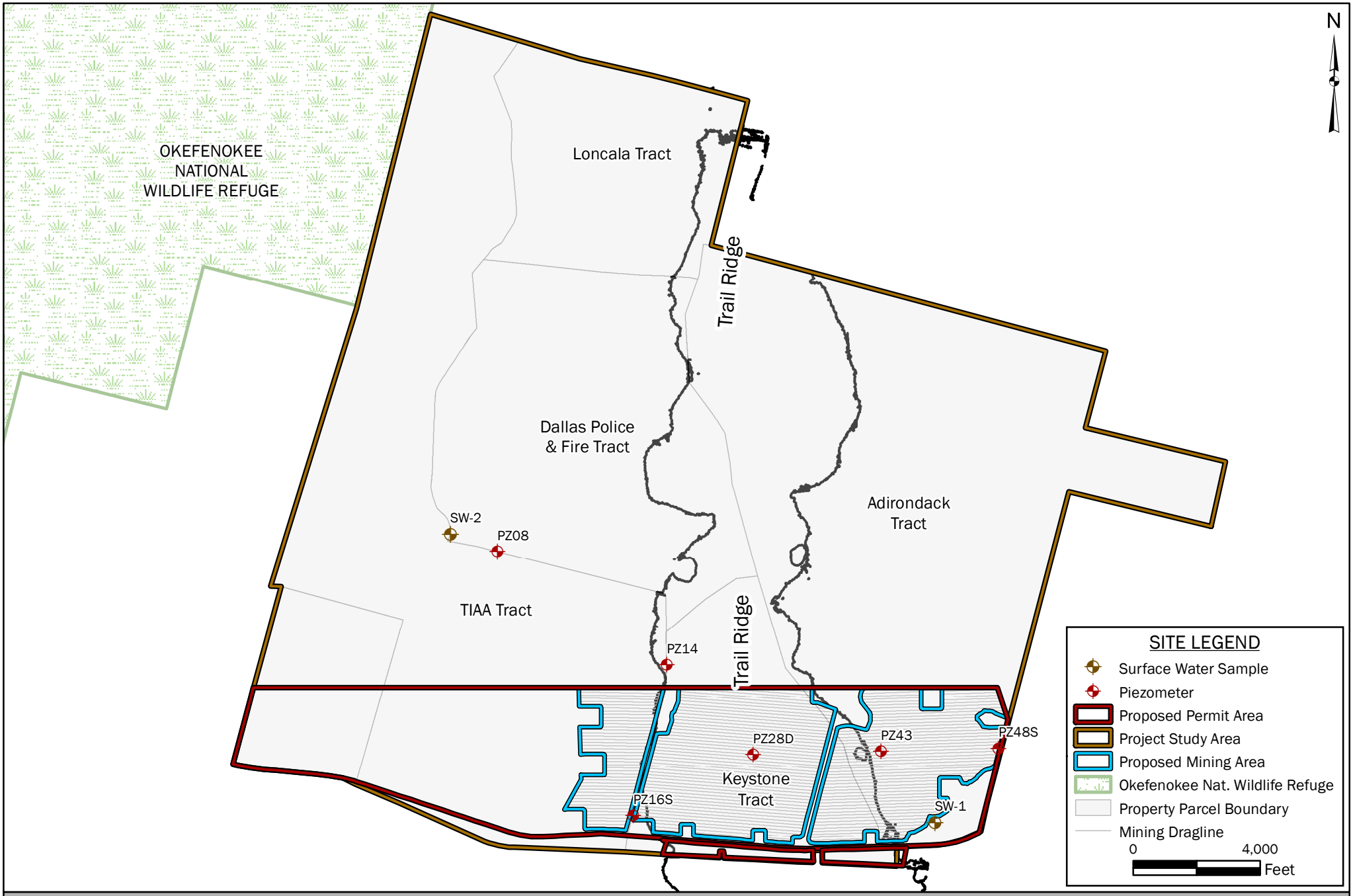
FIGURE 2: PROJECT STUDY & PROPOSED PERMIT AREA

TWIN PINES MINERALS

ST. GEORGE, CHARLTON COUNTY, GEORGIA

BASEMAP: USGS 7.5 Minute Quadrangle Map, Florida & Georgia, (West) Moniac 1968 (10-ft Contour Interval), (East) Saint George 1982 (5-ft Contour Interval).

DRAWN BY:	DEK
CHECKED BY:	JMT
DRAWING DATE:	10/28/2019
REVISION DATE:	N/A
TTL JOB NO.:	000180200804.00
APPROX. SCALE:	1 in = 4,500 ft



TTL

FIGURE 3: GROUNDWATER & SURFACE WATER SAMPLE LOCATION MAP

TWIN PINES MINERALS

ST. GEORGE, CHARLTON COUNTY, GEORGIA

DRAWN BY:	DEK
CHECKED BY:	JRS
DRAWING DATE:	10/28/2019
REVISION DATE:	N/A
TTL JOB NO.:	000180200804.00
APPROX. SCALE:	1 in = 4,000 ft

TABLES

Table 1. Groundwater and Surface Water Purge Parameters; Water Quality Data at Twin Pines Mine; Twin Pines Minerals, LLC; St. George, Charlton County, Georgia. TTL Project No. 000180200804.00

Sample ID	Sample Date	pH	Conductivity	Temperature	Oxidation Reduction Potential	Dissolved Oxygen	Turbidity
Units:		S.U.	uS/cm	°C	mV	mg/L	NTU
PZ08	4/25/2019	4.89	66	21.3	269.1	0.86	104
PZ14	4/25/2019	4.11	65	21.4	221.2	0.72	5.21
PZ16S	4/25/2019	4.48	43	20.7	310.4	0.86	4.31
PZ28D	4/25/2019	4.21	60	21.1	226.3	0.61	8.42
PZ43	4/26/2019	4.12	52	20.3	306.6	2.40	114
PZ48S	4/26/2019	4.76	70	20.1	288.4	3.54	7.19
SW-1 (W)	4/25/2019	6.22	392	28.7	---	7.09	12.90
SW-2 (E)	4/26/2019	4.05	87	19.7	---	7.93	10.90

S.U. = Standard Units
uS/cm = Microsiemens per centimeter
°C = Degrees celsius
mV = Millivolt
Mg/L = milligram per liter
NTU = Nephelemetric Turbidity Unit

Table 2. Groundwater and Surface Water Sampling Locations and Laboratory Analyses; Water Quality Data at Twin Pines Mine; Twin Pines Minerals, LLC; St. George, Charlton County, Georgia. TTL Project No. 000180200804.00

Sample ID	Laboratory Analysis	Method
Groundwater Samples PZ08 PZ14 PZ16S PZ28D PZ48S PZ43 Surface Water Samples SW1 (W) SW2 (E)	Alkalinity, Total (as CACO3) Alkalinity, Bicarbonate (as CACO3) Alkalinity, Carbonate (as CACO3)	SM2320B
	Bromide, Chloride, Fluoride, Sulfate, Acetate, Formate	EPA 300
	Isovaleric Acid Valeric Acid Isocaproic Acid Heptanoic Acid Butyric-Isobutyric Acid	Organic & Volatile Acids by HPLC
	Total Dissolved Solids	SM2540C
	Total Organic Carbon	SM5310C
	Phosphorous, Total (as P)	EPA 365.1
	Aluminum, Arsenic, Barium, Boron, Calcium, Copper, Iron, Magnesium, Manganese, Potassium, Selenium, Sodium, Titanium, Thorium, Uranium Zinc	SW-846 6020A
	Mercury	SW-846 7470A
	Lithium, Silicon, Scandium 45,	SW-846 6010C
	Nitrogen, Ammonia (as N)	EPA 350.1
	Nitrogen, Total Kjeldahl (TKN)	EPA 351.2
	Nitrogen, Nitrate-Nitrite	EPA 353.2

Table 3. Summary of Groundwater / Surface Water Background Analytical Data; Water Quality Data at Twin Pines Mine; Twin Pines Minerals, LLC; St. George, Charlton County, Georgia. TTL Project No. 000180200804.00

Summary of Groundwater/Surface Water Background Analytical Data for Alkalinity, Inorganic & Select Anions, Total Dissolved Solids, Total Organic Carbon & Total Phosphorus

Sample Location	Easting	Northing	Land Surface Elevation (ft amsl)	Alkalinity, Total (as CaCO3 in mg/L)	Alkalinity, Bicarbonate (as CaCO3 in mg/L)	Alkalinity, Carbonate (as CaCO3 in mg/L)	Bromide (in mg/L)	Chloride (in mg/L)	Fluoride (in mg/L)	Sulfate (in mg/L)	Acetate (in mg/L)	Formate (in mg/L)	Total Dissolved Solids (in mg/L)	Total Organic Carbon (in mg/L)	Total Phosphorus (as P in mg/L)
Groundwater Protection Standard[1]				**NE**	**NE**	**NE**	**NE**	**250[4]**	**4.00[3]**	**250[4]**	**NE**	**NE**	**250[4]**	**NE**	**NE**
PZ08	664403.2655	197508.9048	130.19	5.62	5.62	<4.00	<0.500	8.19	<0.500	2.18	<4.00	<4.00	45.0	6.32	0.150
PZ14	669743.4272	193936.6051	167.32	<4.00	<4.00	<4.00	<0.500	10.7	<0.500	3.19	<4.00	<4.00	41.5	7.88	<0.0200
PZ16S	668683.7808	189192.1062	160.60	5.63	5.63	<4.00	<0.500	6.05	<0.500	0.991	<4.00	<4.00	30.5	2.34	<0.0200
PZ28D	672470.6111	191101.7018	174.13	<4.00	<4.00	<4.00	<0.500	12.6	<0.500	<0.500	<4.00	<4.00	37.0	13.9	<0.0200
PZ43	676493.9937	191206.1308	161.68	<4.00	<4.00	<4.00	<0.500	9.40	<0.500	<0.500	<4.00	<4.00	36.5	12.4	0.0355
PZ48S	680199.1634	191305.7477	133.04	16.5	16.5	<4.00	<0.500	5.36	<0.500	2.17	<4.00	<4.00	122	8.33	<0.0200
SW-1 (E)	Not Surveyed	Not Surveyed	---	178	178	<4.00	<0.500	13.6	<0.500	1.03	<4.00	<4.00	285	28.1	0.0947
SW-2 (W)	Not Surveyed	Not Surveyed	---	<4.00	<4.00	<4.00	<0.500	12.7	<0.500	6.69	<4.00	<4.00	81.0	20.6	0.0562

Summary of Groundwater/Surface Water Background Analytical Data for Total Metals;

Sample Location	Easting	Northing	Land Surface Elevation (ft amsl)	Thorium (in mg/L)	Aluminum (in mg/L)	Arsenic (in mg/L)	Barium (in mg/L)	Boron (in mg/L)	Calcium (in mg/L)	Copper (in mg/L)	Iron (in mg/L)	Magnesium (in mg/L)	Maganese (in mg/L)	Potassium (in mg/L)	Selenium (in mg/L)
Groundwater Protection Standard[1]				**NE**	**2.00[2]**	**0.010[3]**	**2.00[3]**	**0.400[2]**	**NE**	**1.00[4]**	**0.300[4]**	**NE**	**0.050[4]**	**NE**	**0.050[3]**
PZ08	664403.2655	197508.9048	130.19	0.00108	**3.47**	<0.00400	0.00862	<0.0100	0.903	<0.00400	**8.80**	0.596	**0.0554**	0.546	<0.00200
PZ14	669743.4272	193936.6051	167.32	<0.00100	1.23	<0.00400	0.01630	0.0142	0.652	<0.00400	**0.365**	0.572	<0.00200	0.212	<0.00200
PZ16S	668683.7808	189192.1062	160.60	<0.00100	0.320	<0.00400	0.02570	<0.0100	1.24	<0.00400	**2.36**	0.511	0.0149	0.193	<0.00200
PZ28D	672470.6111	191101.7018	174.13	<0.00100	1.59	<0.00400	0.01200	0.0125	0.408	0.00683	**0.931**	0.555	0.00586	0.574	<0.00200
PZ43	676493.9937	191206.1308	161.68	<0.00100	**3.75**	<0.00400	0.02610	<0.0100	0.639	<0.00400	**2.20**	0.563	0.00962	0.420	<0.00200
PZ48S	680199.1634	191305.7477	133.04	<0.00100	0.671	<0.00400	0.01950	<0.0100	10.1	<0.00400	**2.66**	0.389	0.0326	0.157	<0.00200
SW-1 (E)	Not Surveyed	Not Surveyed	---	<0.00100	0.453	<0.00400	0.03180	0.0134	82.4	<0.00400	0.204	2.40	0.00687	1.86	<0.00200
SW-2 (W)	Not Surveyed	Not Surveyed	---	<0.00100	0.748	<0.00400	0.01690	0.0304	3.32	<0.00400	1.17	0.617	0.00939	0.834	<0.00200

Sample Location	Easting	Northing	Land Surface Elevation (ft amsl)	Sodium (in mg/L)	Strontium (in mg/L)	Titanium (in mg/L)	Uranium (in mg/L)	Zinc (in mg/L)	Mercury (in mg/L)	Lithium (in mg/L)	Silicon (in mg/L)	Scandium 45 (in mg/L)
Groundwater Protection Standard[1]				**NE**	**1.20[2]**	**NE**	**0.030[3]**	**5.00[4]**	**0.002[3]**	**0.004[2]**	**NE**	**NE**
PZ08	664403.2655	197508.9048	130.19	4.29	<0.0100	0.266	<0.00200	<0.0300	<0.000200	<0.0200	5.01	<0.0200
PZ14	669743.4272	193936.6051	167.32	5.14	0.0110	<0.00400	<0.00200	<0.0300	<0.000200	<0.0200	2.82	<0.0200
PZ16S	668683.7808	189192.1062	160.60	3.78	0.0102	0.00489	<0.00200	<0.0300	<0.000200	<0.0200	2.85	<0.0200
PZ28D	672470.6111	191101.7018	174.13	7.60	<0.0100	0.09570	<0.00200	<0.0300	<0.000200	<0.0200	6.69	<0.0200
PZ43	676493.9937	191206.1308	161.68	5.48	<0.0100	0.105	<0.00200	<0.0300	<0.000200	<0.0200	4.34	<0.0200
PZ48S	680199.1634	191305.7477	133.04	2.78	0.0287	0.0103	<0.00200	<0.0300	<0.000200	<0.0200	3.42	<0.0200
SW-1 (E)	Not Surveyed	Not Surveyed	---	7.89	0.0954	0.00555	<0.00200	<0.0300	<0.000200	<0.0200	<0.500	<0.0200
SW-2 (W)	Not Surveyed	Not Surveyed	---	NA	0.0186	<0.00400	<0.00200	<0.0300	<0.000200	<0.0200	5.45	<0.0200

Summary of Groundwater/Surface Water Background Analytical Data for Organic & Volatile Acids & Nitrogen;

Sample Location	Easting	Northing	Land Surface Elevation (ft amsl)	Isovaleric Acid (in mg/L)	Valeric Acid (in mg/L)	Icocaproic Acid (in mg/L)	Caproic Acid (in mg/L)	Heptanoic Acid (in mg/L)	Butyric-Isobutyric Acid (in mg/L)	Nitrogen, Ammonia (as N in mg/L)	Nitrogen, Total Kjeldahl (in mg/L)	Nitrogen, Nitrate-Nitrite (in mg/L)
Groundwater Protection Standard[1]				**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
PZ08	664403.2655	197508.9048	130.19	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	0.357	1.32	<0.500
PZ14	669743.4272	193936.6051	167.32	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	0.655	0.894	<0.500
PZ16S	668683.7808	189192.1062	160.60	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	0.133	3.50	<0.500
PZ28D	672470.6111	191101.7018	174.13	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	0.565	7.90	<0.500
PZ43	676493.9937	191206.1308	161.68	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	0.259	1.33	<0.500
PZ48S	680199.1634	191305.7477	133.04	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	0.123	3.01	<0.500
SW-1 (E)	Not Surveyed	Not Surveyed	---	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	0.233	0.516	<0.500
SW-2 (W)	Not Surveyed	Not Surveyed	---	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	0.184	0.442	<0.500

Notes: *mg/L = milligrams per liter* *ft amsl = feet above mean sea level* *NA = Not Analyzed* *NE = Not Established*
[1] = EPA RSL, MCL or Secondary MCL *[2] = EPA Regional Screening Level* *[3] = Maximum Contaminant Level* *[4] = Secondary MCL*

Table 4. Comparison Groundwater / Surface Water Background Analytical Data; Water Quality Data of Twin Pines Mine; Twin Pines Minerals, LLC; St. George, Charlton County, Georgia. TTL Project No. 000180200804.00

Constituent	Groundwater Samples				Surface Water Samples			
	n	# Detects	Median	Range	n	# Detects	Median	Range
Depth of Well (ft)	6	---	19.75	9-29	--	---	---	---
Temperature (degrees °C)	6	---	20.9	20.1-21.4	2	---	24.2	19.7-28.7
pH (standard units)	6	---	4.35	4.11-4.89	2	---	5.14	4.05-6.22
Specific Conductance (µS/cm)	6	---	62.5	43-70	2	---	240	87-392
Oxidation Reduction Potential (mV)	6	---	279	221-310	0	---	---	---
Dissolved Oxygen (mg/L)	6	---	0.86	0.6-3.54	2	---	7.51	7.09-7.93
Alkalinity, Total (CaCO3) (mg/L)	6	3	5.63	<4.00-16.5	2	1	---	<4.00-178
Alkalinity, Bicarbonate (CaCO3) (mg/L)	6	3	5.63	<4.00-16.5	2	1	---	<4.00-178
Alkalinity, Carbonate (CaCO3) (mg/L)	6	0	---	---	2	0	---	---
Acetate (mg/L)	6	0	---	---	2	0	---	---
Bromide (mg/L)	6	0	---	---	2	0	---	---
Chloride (mg/L)	6	6	8.80	5.36-12.6	2	2	13.2	12.7-13.6
Formate (mg/L)	6	0	---	---	2	0	---	---
Fluoride (mg/L)	6	0	---	---	2	0	---	---
Sulfate (mg/L)	6	4	2.18	<0.500-3.19	2	2	3.86	1.03-6.69
Nitrate-Nitrite (mg/L)	6	0	---	---	2	0	---	---
Aluminum (mg/L)	6	6	1.41	0.32-3.75	2	2	0.601	0.453-0.748
Arsenic (mg/L)	6	0	---	---	2	0	---	---
Barium (mg/L)	6	6	0.0179	0.00862-0.0261	2	2	0.0244	0.0169-0.0318
Boron (mg/L)	6	2	0.013	<0.0100-0.0142	2	2	0.0219	0.0134-0.0304
Calcium (mg/L)	6	6	0.778	0.408-10.1	2	2	42.9	3.32-82.4
Copper (mg/L)	6	1	---	<0.0040-0.00683	2	0	---	---
Iron (mg/L)	6	6	2.28	0.365-8.80	2	2	0.687	0.204-1.17
Lithium (mg/L)	6	0	---	---	2	0	---	---
Magnesium (mg/L)	6	6	0.559	0.389-0.596	2	2	1.51	0.617-2.40
Manganese (mg/L)	6	5	0.0149	<0.0020-0.0554	2	2	0.0081	0.0069-0.0094
Mercury (mg/L)	6	0	---	---	2	0	---	---
Potassium (mg/L)	6	6	0.316	0.157-0.574	2	2	1.35	0.834-1.86
Scandium (mg/L)	6	0	---	---	2	0	---	---
Selenium (mg/L)	6	0	---	---	2	0	---	---
Silicon (mg/L)	6	6	3.88	2.82-6.69	2	1	---	<0.500-5.45
Sodium (mg/L)	6	6	4.72	2.78-7.60	1	1	---	---
Strontium (mg/L)	6	3	0.011	<0.010-0.0287	2	2	0.0570	0.0186-0.0954
Titanium (mg/L)	6	5	0.096	<0.0040-0.266	2	1	----	<0.0040-0.0555
Zinc (mg/L)	6	0	---	---	2	0	---	---
Total Dissolved Solids (mg/L)	6	6	39.3	30.5-122	2	2	183	81-285
Total Organic Carbon (mg/L)	6	6	8.11	2.34-13.9	2	2	24.4	20.6-28.1
Total Phosphorus (mg/L)	6	2	0.093	<0.0200-0.150	2	2	0.0755	0.0562-0.0947
Isovaleric Acid (mg/L)	6	0	---	---	2	0	---	---
Valeric Acid (mg/L)	6	0	---	---	2	0	---	---
Icocaproic Acid (mg/L)	6	0	---	---	2	0	---	---
Caproic Acid (mg/L)	6	0	---	---	2	0	---	---
Hepanoic Acid (mg/L)	6	0	---	---	2	0	---	---
Butyric-Isobutyric Acid (mg/L)	6	0	---	---	2	0	---	---
Nitrogen, Ammonia (as N) (mg/L)	6	6	0.308	0.123-0.655	2	2	0.209	0.184-0.233
Nitogen, Total Kjeldahl (mg/L)	6	6	2.17	0.894-7.90	2	2	0.479	0.442-0.516

n = number of measurements
ft. bgs = feet below ground surface
°C = degrees celcius
µS/cm = microsiemens per centimeter mV = millivolts
mg/L - micrograms per liter

APPENDIX A
PARAMETER STABILIZATION/
SAMPLING DATA SHEETS

WELL PARAMETER STABILIZATION / SAMPLING DATA SHEET

TTL

Project Name: TWin Pines | Date: 4/25/19

Permit No. | Location: Charlton County, GA

Project No.: 000180200804.00 | Personnel: Zachary Hill

Purge Method: [ ] Low Flow [X] Well Volumes

Pump Method: [X] Peristaltic Pump [ ] Bladder Pump [ ] Other (Specify)

Water Intake: [ ] Mid Screen [X] Top of Water Column [ ] Other (Specify)

Page 1 of 1

Well ID: PZ-14 | Total Dept (ft): 29.60 | Casing Size (in Dia.): 2" | [X] Flush Mounted [ ] Stick Up

Initial WL (ft): 2.39 | Well Volume (Gal): 4.625 (L): 17.508 | Purge Volume x 3 (Gal): 13.875 (L): 52.524 | [X] Required

Well Condition: Good | Purge Volume x 5 (Gal): (L): | [ ] Required

Water Quality Meters: YSI 556 MPS, Serial No. / Hach 2100P Turbidity Meter, Serial No.

Time (24 Hr)	Flow Rate (GPM or LPM) (LPM)	Volume* (Gals or Liters) (Liters)	Water Level (ft -TOC)	pH (SU) ± 0.1	Sp. Cond. (µSm/cm^c) ± 5%	Temp. (°C or °F) (°) ± 10%	ORP (mV) No Std	D.O. (mg/L) ± 0.2 mg/L Suggested	Turbidity (NTUs) Landfill < 5 Other < 10	Comments (i.e. Observations, Pump Started, Pump Stopped, Sample Collected, App I VOCs & Metals, App II Full Suite, dissolved metals yes/no)
1445	.600	0	2.39	—	—	—	—	—	—	Started pumping
1455	.600	6.0	3.27	3.43	66	21.19	260.4	0.88	54.6	
1505	.600	12.0	3.24	3.74	65	20.75	257.3	1.14	24.8	
1515	.600	18.0	3.29	3.97	65	20.99	250.9	0.68	12.2	
1525	.600	24.0	3.24	3.89	65	20.91	234.1	0.59	24.4	
1535	.600	30.0	3.26	4.01	65	21.07	235.2	0.70	52.1	
1545	.600	36.0	3.23	4.09	65	21.03	242.3	0.74	16.9	
1555	.600	42.0	3.24	4.12	65	21.41	220.9	0.82	3.96	
1605	.600	48.0	3.25	4.10	65	21.40	226.5	0.71	4.47	
1615	.600	54.0	3.27	4.11	65	21.41	221.2	0.72	5.21	Stopped pumping / Collected Samples

Observations (Appearance/Color/Odor of Water/Other Field Analysis): No Odor

WELL PARAMETER STABILIZATION / SAMPLING DATA SHEET

TTL

Project Name: Twin Pines | Date: 4/25/19

Permit No. | Location: Charlton County, GA

Project No.: 000180200804.00 | Personnel: Zachary Hill

Purge Method: [ ] Low Flow [X] Well Volumes

Pump Method: [X] Peristaltic Pump [ ] Bladder Pump [ ] Other (Specify)

Water Intake: [ ] Mid Screen [X] Top of Water Column [ ] Other (Specify)

Page 1 of 1

Well ID: P208 | Total Dept (ft): 19.27 | Casing Size (in Dia.): 2" | [X] Flush Mounted [ ] Stick Up

Initial WL (ft): 2.95 | Well Volume (Gal): 2.774 (L): 10.501 | Purge Volume x 3 (Gal): 8.322 (L): 31.503 [X] Required

Well Condition: Good | Purge Volume x 5 (Gal): (L): [ ] Required

Water Quality Meters: YSI 556 MPS, Serial No. / Hach 2100P Turbidity Meter, Serial No.

Time (24 Hr)	Flow Rate (GPM or LPM) (LPM)	Volume* (Gals or Liters) (Liters)	Water Level (ft -TOC)	pH (SU) ± 0.1	Sp. Cond. (µSm/cm^c) ± 5%	Temp. (°C or °F) (°) ± 10%	ORP (mV) No Std	D.O. (mg/L) ± 0.2 mg/L Suggested	Turbidity (NTUs) Landfill < 5 Other < 10	Comments (i.e. Observations, Pump Started, Pump Stopped, Sample Collected, App I VOCs & Metals, App II Full Suite, dissolved metals yes/no)
1315	.600	0	2.95	—	—	—	—	—	—	Started pumping
1325	.600	6.0	3.50	4.39	69	21.55	310.2	0.44	934	
1335	.600	12.0	3.51	4.54	69	21.56	297.4	0.67	857	
1345	.600	18.0	3.50	4.63	67	21.44	292.4	0.97	177	
1355	.600	24.0	3.52	4.69	67	21.00	282.3	0.98	143	
1405	.600	30.0	3.51	4.88	66	21.35	270.5	0.86	109	
1410	.600	33.0	3.52	4.89	66	21.27	269.1	0.96	104	Stopped pumping / collected Samples

Observations (Appearance/Color/Odor of Water/Other Field Analysis): No Odor / Turbid

WELL PARAMETER STABILIZATION / SAMPLING DATA SHEET

TTL

Project Name: TWIN PINES MINERALS | Date: 4/25/19

Permit No. | Location: Charlton County, GA

Project No.: 000180200804.00 | Personnel: Zachary Hill

Purge Method: [ ] Low Flow [X] Well Volumes

Pump Method: [X] Peristaltic Pump [ ] Bladder Pump [ ] Other (Specify)

Water Intake: [ ] Mid Screen [X] Top of Water Column [ ] Other (Specify)

Page 1 of 1

Well ID: PZ-28D | Total Dept (ft): 29.81 | Casing Size (in Dia.): 2" | [X] Flush Mounted [ ] Stick Up

Initial WL (ft): 2.43 | Well Volume (Gal): 4.655 (L): 17.618 | Purge Volume x 3 (Gal): 13.963 (L): 52.854 [X] Required

Well Condition: Good | Purge Volume x 5 (Gal): (L): [ ] Required

Water Quality Meters: YSI 556 MPS, Serial No. / Hach 2100P Turbidity Meter, Serial No.

Time (24 Hr)	Flow Rate (GPM or LPM) (LPM)	Volume* (Gals or Liters) (L)	Water Level (ft -TOC)	pH (SU) ± 0.1	Sp. Cond. (µSm/cm^c) ± 5%	Temp. (°C or °F) (°) ± 10%	ORP (mV) No Std	D.O. (mg/L) ± 0.2 mg/L Suggested	Turbidity (NTUs) Landfill < 5 Other < 10	Comments (i.e. Observations, Pump Started, Pump Stopped, Sample Collected, App I VOCs & Metals, App II Full Suite, dissolved metals yes/no)
1100	.600	0	2.43	—	—	—	—	—	—	Started pumping
1110	.600	6.0	5.62	4.16	64	20.70	250	4.94	17.1	
1120	.600	12.0	5.67	4.27	62	20.93	246.1	4.01	16.2	
1130	.600	18.0	5.54	4.28	62	20.97	240.7	2.78	11.1	
1140	.600	24.0	5.55	4.17	62	21.06	241.3	2.17	9.79	
1150	.600	30.0	5.58	4.23	61	21.00	239.9	1.49	10.2	
1200	.600	36.0	5.56	4.28	60	21.10	284.9	1.14	9.35	
1210	.600	42.0	5.56	4.31	60	21.06	296.1	0.93	11.8	
1220	.600	48.0	5.55	4.17	60	21.06	235.8	0.69	11.0	
1230	.600	54.0	5.54	4.21	60	21.08	226.3	0.61	8.42	Stopped pumping / Collected Sample

Observations (Appearance/Color/Odor of Water/Other Field Analysis): No odor

WELL PARAMETER STABILIZATION / SAMPLING DATA SHEET

TTL

Project Name: TWIN PINES		Date: 4/24/19	
Permit No.	Location: Charlton County, GA		
Project No.: 000180200804.00	Personnel: Zachary Hill		
Purge Method: ☐ Low Flow ☒ Well Volumes			
Pump Method: ☒ Peristaltic Pump ☐ Bladder Pump ☐ Other (Specify)			
Water Intake: ☐ Mid Screen ☒ Top of Water Column ☐ Other (Specify)			Page 1 of 1
Well ID: PZ-415	Total Dept (ft): 9.28	Casing Size (in Dia.): 2"	☒ Flush Mounted ☐ Stick Up
Initial WL (ft): 3.42	Well Volume (Gal): 0.996 (L): 3.768	Purge Volume x 3 (Gal): 2.989 (L): 11.312	☒ Required
Well Condition: Good		Purge Volume x 5 (Gal): (L):	☐ Required

Water Quality Meters: YSI 556 MPS, Serial No. / Hach 2100P Turbidity Meter, Serial No.

Time (24 Hr)	Flow Rate (GPM or LPM) (LPM)	Volume* (Gals or Liters) ( )	Water Level (ft -TOC)	pH (SU) ± 0.1	Sp. Cond. (µSm/cm^c) ± 5%	Temp. (°C or °F) (°) ± 10%	ORP (mV) No Std	D.O. (mg/L) ± 0.2 mg/L Suggested	Turbidity (NTUs) Landfill < 5 Other < 10	Comments (i.e. Observations, Pump Started, Pump Stopped, Sample Collected, App I VOCs & Metals, App II Full Suite, dissolved metals yes/no)
1000	.600	0	3.42	—	—	—	—	—	—	Started Pumping
1005	.600	3.0	3.72	4.58	72	19.99	312.9	2.37	33.2	
1010	.600	6.0	3.69	4.55	71	20.02	344.3	3.42	13.7	
1015	.600	9.0	3.73	4.66	69	20.03	321.2	3.45	8.83	
1020	.600	12.0	3.72	4.76	70	20.07	288.4	3.54	7.19	Stopped pumping / collected Sample

Observations (Appearance/Color/Odor of Water/Other Field Analysis): No odor

WELL PARAMETER STABILIZATION / SAMPLING DATA SHEET

TTL

Project Name: TWIN PINES		Date:	
Permit No.	Location: Charlton County, GA		
Project No.: 000180200804.00	Personnel:		
Purge Method: ☐ Low Flow ☒ Well Volumes			
Pump Method: ☒ Peristaltic Pump ☐ Bladder Pump ☐ Other (Specify)			
Water Intake: ☐ Mid Screen ☒ Top of Water Column ☐ Other (Specify)			Page 1 of 1
Well ID: P2-43	Total Dept (ft): 14.47	Casing Size (in Dia.): 2"	☑ Flush Mounted ☐ Stick Up
Initial WL (ft): 2.49	Well Volume (Gal): 2.037 (L): 7.709	Purge Volume x 3 (Gal): 6.111 (L): 23.126	☒ Required
Well Condition: Good		Purge Volume x 5 (Gal): (L):	☐ Required

Water Quality Meters: YSI 556 MPS, Serial No. / Hach 2100P Turbidity Meter, Serial No.

Time (24 Hr)	Flow Rate (GPM or LPM) (LPM)	Volume* (Gals or Liters) (L)	Water Level (ft -TOC)	pH (SU) ± 0.1	Sp. Cond. (µSm/cm^c) ± 5%	Temp. (°C or °F) (°) ± 10%	ORP (mV) No Std	D.O. (mg/L) ± 0.2 mg/L Suggested	Turbidity (NTUs) Landfill < 5 Other < 10	Comments (i.e. Observations, Pump Started, Pump Stopped, Sample Collected, App I VOCs & Metals, App II Full Suite, dissolved metals yes/no)
1115	.600	0	2.49	—	—	—	—	—	—	Started pumping
1125	.600	6.0	2.67	3.73	54	20.24	340.3	1.92	127	
1130	.600	9.0	2.64	3.71	51	20.24	316.1	2.26	194	
1135	.600	12.0	2.64	3.90	53	20.36	333.7	2.03	163	
1140	.600	15.0	2.67	4.11	51	20.36	311.6	2.15	129	
1145	.600	18.0	2.66	4.14	53	20.28	273.4	2.45	112	
1150	.600	21.0	2.69	4.10	51	20.31	360.2	2.31	119	
1155	.600	24.0	2.70	4.12	52	20.28	306.6	2.40	114	Stopped pumping/Collected Samples

Observations (Appearance/Color/Odor of Water/Other Field Analysis): No Odor / Very Turbid

WELL PARAMETER STABILIZATION / SAMPLING DATA SHEET

TTL

Project Name: Twin Pines | Date: 4/25/19

Permit No. | Location: Charlton County, GA

Project No.: 000180200804.00 | Personnel: Zachary Hill

Purge Method: [ ] Low Flow [X] Well Volumes

Pump Method: [X] Peristaltic Pump [ ] Bladder Pump [ ] Other (Specify)

Water Intake: [ ] Mid Screen [X] Top of Water Column [ ] Other (Specify)

Page 1 of 1

Well ID: PZ-16S | Total Dept (ft): 20.49 | Casing Size (in Dia.): 2" | [X] Flush Mounted [ ] Stick Up

Initial WL (ft): 3.28 | Well Volume (Gal): 2.926 (L): 11.075 | Purge Volume x 3 (Gal): 8.778 (L): 33.225 [X] Required

Well Condition: Good | Purge Volume x 5 (Gal): (L): [ ] Required

Water Quality Meters: YSI 556 MPS, Serial No. / Hach 2100P Turbidity Meter, Serial No.

Time (24 Hr)	Flow Rate (GPM or LPM) (LPM)	Volume* (Gals or Liters) ( )	Water Level (ft -TOC)	pH (SU) ± 0.1	Sp. Cond. (µSm/cm^c) ± 5%	Temp. (°C or °F) (°) ± 10%	ORP (mV) No Std	D.O. (mg/L) ± 0.2 mg/L Suggested	Turbidity (NTUs) Landfill < 5 Other < 10	Comments (i.e. Observations, Pump Started, Pump Stopped, Sample Collected, App I VOCs & Metals, App II Full Suite, dissolved metals yes/no)
1645	.600	0	3.28	—	—	—	—	—	—	Started pumping
1655	.600	6.0	3.43	4.26	46	20.71	330.9	1.45	26.1	
1705	.600	12.0	3.42	4.29	43	20.69	326.4	1.26	14.2	
1715	.600	18.0	3.42	4.38	43	20.68	327.4	1.02	4.87	
1725	.600	24.0	3.44	4.51	43	20.67	320.9	0.99	4.19	
1735	.600	30.0	3.43	4.49	44	20.68	303.4	0.91	4.27	
1745	.600	36.0	3.41	4.48	43	20.69	310.4	0.86	4.31	Stopped pumping/Collected Samples
	~~.600~~									

Observations (Appearance/Color/Odor of Water/Other Field Analysis): No odor

FIELD DATA SHEET

SITE NAME: Twin Pines PERMIT NO:

PROJECT NO: 0001802008804.00 EVENT NO: N = EVENT DATE: 4/25/19

MULTI PARAMETER METER YSI 556 MPS, SN# 09610379 HACH 2100P TURBIDITY METER, SN#

Sample Location ID	Sample Type (Surface Water, Domestic Well, Leachate, Other)	Sample Date/Time	Temp. (°C or °F) (°C)	pH (SU)	Sp. Cond. (µSm/cm^c)	D.O. (mg/L)	Turbidity (NTUs)	Comments / Additional Data
SW-1 (E)	Surface	4/25/19 1805	28.69	6.22	392	7.09	12.9	
SW-2 (W)	Surface	4/26/19 0900	19.65	4.05	87	7.93	10.9	

SAMPLED BY: J. Hill

NOTES:

TTL

APPENDIX B
LABORATORY REPORT

Analytical Report 622514

for

TTL, Inc.

Project Manager: Jim Smith

Twin Pines

000180200.00

14-MAY-19

Collected By: Client

1600 Oakbrook Dr., Suite 565, Norcross, GA 30093
Ph:(770) 449-8800

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

14-MAY-19

Project Manager: **Jim Smith**
TTL, Inc.
4589 Val North Drive
Valdosta, GA 31602

Reference: XENCO Report No(s): **622514**
Twin Pines
Project Address:

Jim Smith:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 622514. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 622514 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

John Andros
Lab Manager

Sample Cross Reference 622514

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PZ-14	W	04-25-19 16:15		622514-001
PZ-08	W	04-25-19 14:10		622514-002
PZ-28D	W	04-25-19 12:30		622514-003
PZ-16S	W	04-25-19 17:45		622514-004
PZ-48S	W	04-26-19 10:20		622514-005
PZ-43	W	04-26-19 11:55		622514-006
SW-1 (W)	W	04-25-19 18:05		622514-007
SW-2 (E)	W	04-26-19 09:06		622514-008

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3088305 Select Total Metals By SW6010C

Lab Sample ID 622514-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Silicon recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 622514-001, -002, -003, -004, -005, -006, -007, -008.

The Laboratory Control Sample for Silicon is within laboratory Control Limits, therefore the data was accepted.

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-14** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-001 Date Collected: Apr-25-19 16:15

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-08-19 10:00
Seq Number: 3088354 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Alkalinity, Total (as CaCO3)	ND	4.00	U	mg/L	05/08/19 12:38	1
Alkalinity, Bicarbonate (as CaCO3)	ND	4.00	U	mg/L	05/08/19 12:38	1
Alkalinity, Carbonate (as CaCO3)	ND	4.00	U	mg/L	05/08/19 12:38	1

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: Apr-30-19 11:02
Seq Number: 3087472 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Bromide	ND	0.500	U	mg/L	04/30/19 14:48	1
Chloride	10.7	0.500		mg/L	04/30/19 14:48	1
Fluoride	ND	0.500	U	mg/L	04/30/19 14:48	1
Sulfate	3.19	0.500		mg/L	04/30/19 14:48	1

Analytical Method: Organic & Volatile Acids by HPLC Prep Method: OACIDS_PREP
Tech: ALA % Moisture:
Analyst: ALA Date Prep: May-01-19 14:38
Seq Number: 3087700 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Isovaleric Acid	ND	2.00	U	mg/L	05/01/19 17:45	1
Valeric Acid	ND	2.00	U	mg/L	05/01/19 17:45	1
Isocaproic Acid	ND	2.00	U	mg/L	05/01/19 17:45	1
Caproic Acid	ND	2.00	U	mg/L	05/01/19 17:45	1
Heptanoic Acid	ND	2.00	U	mg/L	05/01/19 17:45	1
Butyric-Isobutyric Acid	ND	2.00	U	mg/L	05/01/19 17:45	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-14** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-001 Date Collected: Apr-25-19 16:15

Analytical Method: Select Anions By EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: May-01-19 16:00
Seq Number: 3087621 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Acetate	ND	4.00	U	mg/L	05/01/19 21:02	20
Formate	ND	4.00	U	mg/L	05/01/19 21:02	20

Analytical Method: TDS by SM2540C
Tech: JCL % Moisture:
Analyst: JCL
Seq Number: 3087827 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total dissolved solids (residue, filterable)	41.5	5.00		mg/L	05/02/19 18:00	1

Analytical Method: TOC by SM 5310C Prep Method: SM5310P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-06-19 09:00
Seq Number: 3088125 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total Organic Carbon	7.88	1.00		mg/L	05/06/19 15:17	1

Analytical Method: Total Phosphorus by EPA 365.1 Prep Method: E365.1_P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-05-19 16:00
Seq Number: 3088080 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Phosphorus, Total (as P)	ND	0.0200	U	mg/L	05/05/19 20:04	1

Analytical Method: 1 Select Metals by SW-846 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:15
Seq Number: 3088262 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Thorium *	ND	0.00100	U	mg/L	05/07/19 02:47	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-14** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-001 Date Collected: Apr-25-19 16:15

Analytical Method: ICP-MS Metals by SW 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-01-19 08:35
Seq Number: 3087575 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Aluminum	1.23	0.0200		mg/L	05/01/19 15:10	1
Arsenic	ND	0.00400	U	mg/L	05/01/19 15:10	1
Barium	0.0163	0.00400		mg/L	05/01/19 15:10	1
Boron	0.0142	0.0100		mg/L	05/01/19 15:10	1
Calcium	0.652	0.100		mg/L	05/01/19 15:10	1
Copper	ND	0.00400	U	mg/L	05/01/19 15:10	1
Iron	0.365	0.100		mg/L	05/01/19 15:10	1
Magnesium	0.572	0.100		mg/L	05/01/19 15:10	1
Manganese	ND	0.00200	U	mg/L	05/01/19 15:10	1
Potassium	0.212	0.100		mg/L	05/01/19 15:10	1
Selenium	ND	0.00200	U	mg/L	05/01/19 15:10	1
Sodium	5.14	0.100		mg/L	05/01/19 16:46	1
Strontium	0.0110	0.0100		mg/L	05/01/19 15:10	1
Titanium	ND	0.00400	U	mg/L	05/01/19 15:10	1
Uranium	ND	0.00200	U	mg/L	05/01/19 15:10	1
Zinc	ND	0.0300	U	mg/L	05/01/19 15:10	1

Analytical Method: Mercury by SW-846 7470A Prep Method: SW7470P
Tech: MLI % Moisture:
Analyst: ANJ Date Prep: May-07-19 08:30
Seq Number: 3088202 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Mercury	ND	0.000200	U	mg/L	05/07/19 13:46	1

Analytical Method: Select Total Metals By SW6010C Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:20
Seq Number: 3088305 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Lithium	ND	0.0200	U	mg/L	05/07/19 11:32	1
Silicon	2.82	0.500		mg/L	05/07/19 11:32	1
Scandium 45	ND	0.0200	U	mg/L	05/07/19 11:32	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-14** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-001 Date Collected: Apr-25-19 16:15

Analytical Method: Nitrogen Ammonia by EPA 350.1 Prep Method: E350.1P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-10-19 09:00
Seq Number: 3088668 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Ammonia (as N)	0.655	0.100		mg/L	05/10/19 11:55	1

Analytical Method: Nitrogen, Kjeldahl, Total (Colorime by EPA 351.2 Prep Method: E351.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-11-19 13:00
Seq Number: 3088747 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Total Kjeldahl	0.894	0.300		mg/L	05/11/19 18:45	1

Analytical Method: Nitrogen, Nitrate-Nitrite by EPA 353.2 Prep Method: E353.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-06-19 14:00
Seq Number: 3088095 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Nitrate-Nitrite	ND	0.500	U	mg/L	05/06/19 17:00	5

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-08** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-002 Date Collected: Apr-25-19 14:10

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-08-19 10:00
Seq Number: 3088354 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Alkalinity, Total (as CaCO3)	5.62	4.00		mg/L	05/08/19 12:46	1
Alkalinity, Bicarbonate (as CaCO3)	5.62	4.00		mg/L	05/08/19 12:46	1
Alkalinity, Carbonate (as CaCO3)	ND	4.00	U	mg/L	05/08/19 12:46	1

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: Apr-30-19 11:02
Seq Number: 3087472 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Bromide	ND	0.500	U	mg/L	04/30/19 14:57	1
Chloride	8.19	0.500		mg/L	04/30/19 14:57	1
Fluoride	ND	0.500	U	mg/L	04/30/19 14:57	1
Sulfate	2.18	0.500		mg/L	04/30/19 14:57	1

Analytical Method: Organic & Volatile Acids by HPLC Prep Method: OACIDS_PREP
Tech: ALA % Moisture:
Analyst: ALA Date Prep: May-01-19 14:38
Seq Number: 3087700 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Isovaleric Acid	ND	2.00	U	mg/L	05/01/19 18:27	1
Valeric Acid	ND	2.00	U	mg/L	05/01/19 18:27	1
Isocaproic Acid	ND	2.00	U	mg/L	05/01/19 18:27	1
Caproic Acid	ND	2.00	U	mg/L	05/01/19 18:27	1
Heptanoic Acid	ND	2.00	U	mg/L	05/01/19 18:27	1
Butyric-Isobutyric Acid	ND	2.00	U	mg/L	05/01/19 18:27	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-08** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-002 Date Collected: Apr-25-19 14:10

Analytical Method: Select Anions By EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: May-01-19 16:00
Seq Number: 3087621 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Acetate	ND	4.00	U	mg/L	05/01/19 21:44	20
Formate	ND	4.00	U	mg/L	05/01/19 21:44	20

Analytical Method: TDS by SM2540C
Tech: JCL % Moisture:
Analyst: JCL
Seq Number: 3087827 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total dissolved solids (residue, filterable)	45.0	5.00		mg/L	05/02/19 18:00	1

Analytical Method: TOC by SM 5310C Prep Method: SM5310P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-06-19 09:00
Seq Number: 3088125 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total Organic Carbon	6.32	1.00		mg/L	05/06/19 15:32	1

Analytical Method: Total Phosphorus by EPA 365.1 Prep Method: E365.1_P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-05-19 16:00
Seq Number: 3088080 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Phosphorus, Total (as P)	0.150	0.0200		mg/L	05/05/19 20:05	1

Analytical Method: 1 Select Metals by SW-846 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:15
Seq Number: 3088262 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Thorium *	0.00108	0.00100		mg/L	05/07/19 03:03	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-08** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-002 Date Collected: Apr-25-19 14:10

Analytical Method: ICP-MS Metals by SW 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-01-19 08:35
Seq Number: 3087575 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Aluminum	3.47	0.0200		mg/L	05/01/19 15:13	1
Arsenic	ND	0.00400	U	mg/L	05/01/19 15:13	1
Barium	0.00862	0.00400		mg/L	05/01/19 15:13	1
Boron	ND	0.0100	U	mg/L	05/01/19 15:13	1
Calcium	0.903	0.100		mg/L	05/01/19 15:13	1
Copper	ND	0.00400	U	mg/L	05/01/19 15:13	1
Iron	8.80	0.100		mg/L	05/01/19 15:13	1
Magnesium	0.596	0.100		mg/L	05/01/19 15:13	1
Manganese	0.0554	0.00200		mg/L	05/01/19 15:13	1
Potassium	0.546	0.100		mg/L	05/01/19 15:13	1
Selenium	ND	0.00200	U	mg/L	05/01/19 15:13	1
Sodium	4.29	0.100		mg/L	05/01/19 16:49	1
Strontium	ND	0.0100	U	mg/L	05/01/19 15:13	1
Titanium	0.266	0.00400		mg/L	05/01/19 15:13	1
Uranium	ND	0.00200	U	mg/L	05/01/19 15:13	1
Zinc	ND	0.0300	U	mg/L	05/01/19 15:13	1

Analytical Method: Mercury by SW-846 7470A Prep Method: SW7470P
Tech: MLI % Moisture:
Analyst: ANJ Date Prep: May-07-19 08:30
Seq Number: 3088202 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Mercury	ND	0.000200	U	mg/L	05/07/19 13:48	1

Analytical Method: Select Total Metals By SW6010C Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:20
Seq Number: 3088305 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Lithium	ND	0.0200	U	mg/L	05/07/19 11:16	1
Silicon	5.01	0.500		mg/L	05/07/19 11:16	1
Scandium 45	ND	0.0200	U	mg/L	05/07/19 11:16	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-08** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-002 Date Collected: Apr-25-19 14:10

Analytical Method: Nitrogen Ammonia by EPA 350.1 Prep Method: E350.1P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-10-19 09:00
Seq Number: 3088668 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Ammonia (as N)	0.357	0.100		mg/L	05/10/19 11:58	1

Analytical Method: Nitrogen, Kjeldahl, Total (Colorime by EPA 351.2 Prep Method: E351.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-11-19 13:00
Seq Number: 3088747 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Total Kjeldahl	1.32	0.300		mg/L	05/11/19 18:49	1

Analytical Method: Nitrogen, Nitrate-Nitrite by EPA 353.2 Prep Method: E353.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-06-19 14:00
Seq Number: 3088095 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Nitrate-Nitrite	ND	0.500	U	mg/L	05/06/19 17:02	5

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-28D** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-003 Date Collected: Apr-25-19 12:30

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-08-19 10:00
Seq Number: 3088354 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Alkalinity, Total (as CaCO3)	ND	4.00	U	mg/L	05/08/19 12:51	1
Alkalinity, Bicarbonate (as CaCO3)	ND	4.00	U	mg/L	05/08/19 12:51	1
Alkalinity, Carbonate (as CaCO3)	ND	4.00	U	mg/L	05/08/19 12:51	1

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: Apr-30-19 11:02
Seq Number: 3087472 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Bromide	ND	0.500	U	mg/L	04/30/19 15:22	1
Chloride	12.6	0.500		mg/L	04/30/19 15:22	1
Fluoride	ND	0.500	U	mg/L	04/30/19 15:22	1
Sulfate	ND	0.500	U	mg/L	04/30/19 15:22	1

Analytical Method: Organic & Volatile Acids by HPLC Prep Method: OACIDS_PREP
Tech: ALA % Moisture:
Analyst: ALA Date Prep: May-01-19 14:38
Seq Number: 3087700 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Isovaleric Acid	ND	2.00	U	mg/L	05/01/19 18:48	1
Valeric Acid	ND	2.00	U	mg/L	05/01/19 18:48	1
Isocaproic Acid	ND	2.00	U	mg/L	05/01/19 18:48	1
Caproic Acid	ND	2.00	U	mg/L	05/01/19 18:48	1
Heptanoic Acid	ND	2.00	U	mg/L	05/01/19 18:48	1
Butyric-Isobutyric Acid	ND	2.00	U	mg/L	05/01/19 18:48	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-28D** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-003 Date Collected: Apr-25-19 12:30

Analytical Method: Select Anions By EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: May-01-19 16:00
Seq Number: 3087621 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Acetate	ND	4.00	U	mg/L	05/01/19 21:58	20
Formate	ND	4.00	U	mg/L	05/01/19 21:58	20

Analytical Method: TDS by SM2540C
Tech: JCL % Moisture:
Analyst: JCL
Seq Number: 3087827 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total dissolved solids (residue, filterable)	37.0	5.00		mg/L	05/02/19 18:00	1

Analytical Method: TOC by SM 5310C Prep Method: SM5310P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-06-19 09:00
Seq Number: 3088125 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total Organic Carbon	13.9	1.00		mg/L	05/06/19 15:47	1

Analytical Method: Total Phosphorus by EPA 365.1 Prep Method: E365.1_P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-05-19 16:00
Seq Number: 3088080 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Phosphorus, Total (as P)	ND	0.0200	U	mg/L	05/05/19 20:06	1

Analytical Method: 1 Select Metals by SW-846 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:15
Seq Number: 3088262 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Thorium *	ND	0.00100	U	mg/L	05/07/19 03:05	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-28D** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-003 Date Collected: Apr-25-19 12:30

Analytical Method: ICP-MS Metals by SW 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-01-19 08:35
Seq Number: 3087575 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Aluminum	1.59	0.0200		mg/L	05/01/19 15:16	1
Arsenic	ND	0.00400	U	mg/L	05/01/19 15:16	1
Barium	0.0120	0.00400		mg/L	05/01/19 15:16	1
Boron	0.0125	0.0100		mg/L	05/01/19 15:16	1
Calcium	0.408	0.100		mg/L	05/01/19 15:16	1
Copper	0.00683	0.00400		mg/L	05/01/19 15:16	1
Iron	0.931	0.100		mg/L	05/01/19 15:16	1
Magnesium	0.555	0.100		mg/L	05/01/19 15:16	1
Manganese	0.00586	0.00200		mg/L	05/01/19 15:16	1
Potassium	0.574	0.100		mg/L	05/01/19 15:16	1
Selenium	ND	0.00200	U	mg/L	05/01/19 15:16	1
Sodium	7.60	0.100		mg/L	05/01/19 16:52	1
Strontium	ND	0.0100	U	mg/L	05/01/19 15:16	1
Titanium	0.0957	0.00400		mg/L	05/01/19 15:16	1
Uranium	ND	0.00200	U	mg/L	05/01/19 15:16	1
Zinc	ND	0.0300	U	mg/L	05/01/19 15:16	1

Analytical Method: Mercury by SW-846 7470A Prep Method: SW7470P
Tech: MLI % Moisture:
Analyst: ANJ Date Prep: May-07-19 08:30
Seq Number: 3088202 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Mercury	ND	0.000200	U	mg/L	05/07/19 13:53	1

Analytical Method: Select Total Metals By SW6010C Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:20
Seq Number: 3088305 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Lithium	ND	0.0200	U	mg/L	05/07/19 11:34	1
Silicon	6.69	0.500		mg/L	05/07/19 11:34	1
Scandium 45	ND	0.0200	U	mg/L	05/07/19 11:34	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-28D** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-003 Date Collected: Apr-25-19 12:30

Analytical Method: Nitrogen Ammonia by EPA 350.1 Prep Method: E350.1P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-10-19 09:00
Seq Number: 3088668 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Ammonia (as N)	0.565	0.100		mg/L	05/10/19 11:59	1

Analytical Method: Nitrogen, Kjeldahl, Total (Colorime by EPA 351.2 Prep Method: E351.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-11-19 13:00
Seq Number: 3088747 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Total Kjeldahl	7.90	1.50		mg/L	05/11/19 18:52	1

Analytical Method: Nitrogen, Nitrate-Nitrite by EPA 353.2 Prep Method: E353.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-06-19 14:00
Seq Number: 3088095 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Nitrate-Nitrite	ND	0.500	U	mg/L	05/06/19 17:03	5

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-16S** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-004 Date Collected: Apr-25-19 17:45

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-08-19 10:00
Seq Number: 3088354 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Alkalinity, Total (as CaCO3)	5.63	4.00		mg/L	05/08/19 12:55	1
Alkalinity, Bicarbonate (as CaCO3)	5.63	4.00		mg/L	05/08/19 12:55	1
Alkalinity, Carbonate (as CaCO3)	ND	4.00	U	mg/L	05/08/19 12:55	1

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: Apr-30-19 11:02
Seq Number: 3087472 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Bromide	ND	0.500	U	mg/L	04/30/19 15:31	1
Chloride	6.05	0.500		mg/L	04/30/19 15:31	1
Fluoride	ND	0.500	U	mg/L	04/30/19 15:31	1
Sulfate	0.991	0.500		mg/L	04/30/19 15:31	1

Analytical Method: Organic & Volatile Acids by HPLC Prep Method: OACIDS_PREP
Tech: ALA % Moisture:
Analyst: ALA Date Prep: May-01-19 14:38
Seq Number: 3087700 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Isovaleric Acid	ND	2.00	U	mg/L	05/01/19 19:09	1
Valeric Acid	ND	2.00	U	mg/L	05/01/19 19:09	1
Isocaproic Acid	ND	2.00	U	mg/L	05/01/19 19:09	1
Caproic Acid	ND	2.00	U	mg/L	05/01/19 19:09	1
Heptanoic Acid	ND	2.00	U	mg/L	05/01/19 19:09	1
Butyric-Isobutyric Acid	ND	2.00	U	mg/L	05/01/19 19:09	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-16S** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-004 Date Collected: Apr-25-19 17:45

Analytical Method: Select Anions By EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: May-01-19 16:00
Seq Number: 3087621 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Acetate	ND	4.00	U	mg/L	05/01/19 22:12	20
Formate	ND	4.00	U	mg/L	05/01/19 22:12	20

Analytical Method: TDS by SM2540C
Tech: JCL % Moisture:
Analyst: JCL
Seq Number: 3087827 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total dissolved solids (residue, filterable)	30.5	5.00		mg/L	05/02/19 18:00	1

Analytical Method: TOC by SM 5310C Prep Method: SM5310P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-06-19 09:00
Seq Number: 3088125 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total Organic Carbon	2.34	1.00		mg/L	05/06/19 16:02	1

Analytical Method: Total Phosphorus by EPA 365.1 Prep Method: E365.1_P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-05-19 16:00
Seq Number: 3088080 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Phosphorus, Total (as P)	ND	0.0200	U	mg/L	05/05/19 20:08	1

Analytical Method: 1 Select Metals by SW-846 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:15
Seq Number: 3088262 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Thorium *	ND	0.00100	U	mg/L	05/07/19 03:07	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-16S** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-004 Date Collected: Apr-25-19 17:45

Analytical Method: ICP-MS Metals by SW 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-01-19 08:35
Seq Number: 3087575 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Aluminum	0.320	0.0200		mg/L	05/01/19 15:19	1
Arsenic	ND	0.00400	U	mg/L	05/01/19 15:19	1
Barium	0.0257	0.00400		mg/L	05/01/19 15:19	1
Boron	ND	0.0100	U	mg/L	05/01/19 15:19	1
Calcium	1.24	0.100		mg/L	05/01/19 15:19	1
Copper	ND	0.00400	U	mg/L	05/01/19 15:19	1
Iron	2.36	0.100		mg/L	05/01/19 15:19	1
Magnesium	0.511	0.100		mg/L	05/01/19 15:19	1
Manganese	0.0149	0.00200		mg/L	05/01/19 15:19	1
Potassium	0.193	0.100		mg/L	05/01/19 15:19	1
Selenium	ND	0.00200	U	mg/L	05/01/19 15:19	1
Sodium	3.78	0.100		mg/L	05/01/19 16:54	1
Strontium	0.0102	0.0100		mg/L	05/01/19 15:19	1
Titanium	0.00489	0.00400		mg/L	05/01/19 15:19	1
Uranium	ND	0.00200	U	mg/L	05/01/19 15:19	1
Zinc	ND	0.0300	U	mg/L	05/01/19 15:19	1

Analytical Method: Mercury by SW-846 7470A Prep Method: SW7470P
Tech: MLI % Moisture:
Analyst: ANJ Date Prep: May-07-19 08:30
Seq Number: 3088202 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Mercury	ND	0.000200	U	mg/L	05/07/19 13:55	1

Analytical Method: Select Total Metals By SW6010C Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:20
Seq Number: 3088305 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Lithium	ND	0.0200	U	mg/L	05/07/19 11:36	1
Silicon	2.85	0.500		mg/L	05/07/19 11:36	1
Scandium 45	ND	0.0200	U	mg/L	05/07/19 11:36	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-16S** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-004 Date Collected: Apr-25-19 17:45

Analytical Method: Nitrogen Ammonia by EPA 350.1 Prep Method: E350.1P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-10-19 09:00
Seq Number: 3088668 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Ammonia (as N)	0.133	0.100		mg/L	05/10/19 12:00	1

Analytical Method: Nitrogen, Kjeldahl, Total (Colorime by EPA 351.2 Prep Method: E351.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-11-19 13:00
Seq Number: 3088747 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Total Kjeldahl	3.50	1.50		mg/L	05/11/19 18:53	1

Analytical Method: Nitrogen, Nitrate-Nitrite by EPA 353.2 Prep Method: E353.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-06-19 14:00
Seq Number: 3088095 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Nitrate-Nitrite	ND	0.500	U	mg/L	05/06/19 17:04	5

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-48S** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-005 Date Collected: Apr-26-19 10:20

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-08-19 10:00
Seq Number: 3088354 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Alkalinity, Total (as CaCO3)	16.5	4.00		mg/L	05/08/19 13:00	1
Alkalinity, Bicarbonate (as CaCO3)	16.5	4.00		mg/L	05/08/19 13:00	1
Alkalinity, Carbonate (as CaCO3)	ND	4.00	U	mg/L	05/08/19 13:00	1

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: Apr-30-19 11:02
Seq Number: 3087472 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Bromide	ND	0.500	U	mg/L	04/30/19 15:39	1
Chloride	5.36	0.500		mg/L	04/30/19 15:39	1
Fluoride	ND	0.500	U	mg/L	04/30/19 15:39	1
Sulfate	2.17	0.500		mg/L	04/30/19 15:39	1

Analytical Method: Organic & Volatile Acids by HPLC Prep Method: OACIDS_PREP
Tech: ALA % Moisture:
Analyst: ALA Date Prep: May-01-19 14:38
Seq Number: 3087700 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Isovaleric Acid	ND	2.00	U	mg/L	05/01/19 19:29	1
Valeric Acid	ND	2.00	U	mg/L	05/01/19 19:29	1
Isocaproic Acid	ND	2.00	U	mg/L	05/01/19 19:29	1
Caproic Acid	ND	2.00	U	mg/L	05/01/19 19:29	1
Heptanoic Acid	ND	2.00	U	mg/L	05/01/19 19:29	1
Butyric-Isobutyric Acid	ND	2.00	U	mg/L	05/01/19 19:29	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-48S** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-005 Date Collected: Apr-26-19 10:20

Analytical Method: Select Anions By EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: May-01-19 16:00
Seq Number: 3087621 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Acetate	ND	4.00	U	mg/L	05/01/19 22:26	20
Formate	ND	4.00	U	mg/L	05/01/19 22:26	20

Analytical Method: TDS by SM2540C
Tech: JCL % Moisture:
Analyst: JCL
Seq Number: 3087827 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total dissolved solids (residue, filterable)	122	5.00		mg/L	05/02/19 18:00	1

Analytical Method: TOC by SM 5310C Prep Method: SM5310P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-06-19 09:00
Seq Number: 3088125 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total Organic Carbon	8.33	1.00		mg/L	05/06/19 16:47	1

Analytical Method: Total Phosphorus by EPA 365.1 Prep Method: E365.1_P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-05-19 16:00
Seq Number: 3088080 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Phosphorus, Total (as P)	ND	0.0200	U	mg/L	05/05/19 20:09	1

Analytical Method: 1 Select Metals by SW-846 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:15
Seq Number: 3088262 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Thorium *	ND	0.00100	U	mg/L	05/07/19 03:09	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-48S** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-005 Date Collected: Apr-26-19 10:20

Analytical Method: ICP-MS Metals by SW 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-01-19 08:35
Seq Number: 3087575 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Aluminum	0.671	0.0200		mg/L	05/01/19 15:22	1
Arsenic	ND	0.00400	U	mg/L	05/01/19 15:22	1
Barium	0.0195	0.00400		mg/L	05/01/19 15:22	1
Boron	ND	0.0100	U	mg/L	05/01/19 15:22	1
Calcium	10.1	0.100		mg/L	05/01/19 15:22	1
Copper	ND	0.00400	U	mg/L	05/01/19 15:22	1
Iron	2.66	0.100		mg/L	05/01/19 15:22	1
Magnesium	0.389	0.100		mg/L	05/01/19 15:22	1
Manganese	0.0326	0.00200		mg/L	05/01/19 15:22	1
Potassium	0.157	0.100		mg/L	05/01/19 15:22	1
Selenium	ND	0.00200	U	mg/L	05/01/19 15:22	1
Sodium	2.78	0.100		mg/L	05/01/19 16:57	1
Strontium	0.0287	0.0100		mg/L	05/01/19 15:22	1
Titanium	0.0103	0.00400		mg/L	05/01/19 15:22	1
Uranium	ND	0.00200	U	mg/L	05/01/19 15:22	1
Zinc	ND	0.0300	U	mg/L	05/01/19 15:22	1

Analytical Method: Mercury by SW-846 7470A Prep Method: SW7470P
Tech: MLI % Moisture:
Analyst: ANJ Date Prep: May-07-19 08:30
Seq Number: 3088202 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Mercury	ND	0.000200	U	mg/L	05/07/19 13:57	1

Analytical Method: Select Total Metals By SW6010C Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:20
Seq Number: 3088305 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Lithium	ND	0.0200	U	mg/L	05/07/19 11:39	1
Silicon	3.42	0.500		mg/L	05/07/19 11:39	1
Scandium 45	ND	0.0200	U	mg/L	05/07/19 11:39	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-48S** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-005 Date Collected: Apr-26-19 10:20

Analytical Method: Nitrogen Ammonia by EPA 350.1 Prep Method: E350.1P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-10-19 09:00
Seq Number: 3088668 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Ammonia (as N)	0.123	0.100		mg/L	05/10/19 12:01	1

Analytical Method: Nitrogen, Kjeldahl, Total (Colorime by EPA 351.2 Prep Method: E351.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-11-19 13:00
Seq Number: 3088747 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Total Kjeldahl	3.01	1.50		mg/L	05/11/19 18:54	1

Analytical Method: Nitrogen, Nitrate-Nitrite by EPA 353.2 Prep Method: E353.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-06-19 14:00
Seq Number: 3088095 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Nitrate-Nitrite	ND	0.500	U	mg/L	05/06/19 17:04	5

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-43** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-006 Date Collected: Apr-26-19 11:55

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-08-19 10:00
Seq Number: 3088354 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Alkalinity, Total (as CaCO3)	ND	4.00	U	mg/L	05/08/19 13:04	1
Alkalinity, Bicarbonate (as CaCO3)	ND	4.00	U	mg/L	05/08/19 13:04	1
Alkalinity, Carbonate (as CaCO3)	ND	4.00	U	mg/L	05/08/19 13:04	1

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: Apr-30-19 11:02
Seq Number: 3087472 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Bromide	ND	0.500	U	mg/L	04/30/19 15:48	1
Chloride	9.40	0.500		mg/L	04/30/19 15:48	1
Fluoride	ND	0.500	U	mg/L	04/30/19 15:48	1
Sulfate	ND	0.500	U	mg/L	04/30/19 15:48	1

Analytical Method: Organic & Volatile Acids by HPLC Prep Method: OACIDS_PREP
Tech: ALA % Moisture:
Analyst: ALA Date Prep: May-01-19 14:38
Seq Number: 3087700 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Isovaleric Acid	ND	2.00	U	mg/L	05/01/19 19:50	1
Valeric Acid	ND	2.00	U	mg/L	05/01/19 19:50	1
Isocaproic Acid	ND	2.00	U	mg/L	05/01/19 19:50	1
Caproic Acid	ND	2.00	U	mg/L	05/01/19 19:50	1
Heptanoic Acid	ND	2.00	U	mg/L	05/01/19 19:50	1
Butyric-Isobutyric Acid	ND	2.00	U	mg/L	05/01/19 19:50	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-43** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-006 Date Collected: Apr-26-19 11:55

Analytical Method: Select Anions By EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: May-01-19 16:00
Seq Number: 3087621 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Acetate	ND	4.00	U	mg/L	05/01/19 23:08	20
Formate	ND	4.00	U	mg/L	05/01/19 23:08	20

Analytical Method: TDS by SM2540C
Tech: JCL % Moisture:
Analyst: JCL
Seq Number: 3087827 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total dissolved solids (residue, filterable)	36.5	5.00		mg/L	05/02/19 18:00	1

Analytical Method: TOC by SM 5310C Prep Method: SM5310P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-06-19 09:00
Seq Number: 3088125 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total Organic Carbon	12.4	1.00		mg/L	05/06/19 17:02	1

Analytical Method: Total Phosphorus by EPA 365.1 Prep Method: E365.1_P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-05-19 16:00
Seq Number: 3088080 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Phosphorus, Total (as P)	0.0355	0.0200		mg/L	05/05/19 20:12	1

Analytical Method: 1 Select Metals by SW-846 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:15
Seq Number: 3088262 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Thorium *	0.00128	0.00100		mg/L	05/07/19 03:11	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-43** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-006 Date Collected: Apr-26-19 11:55

Analytical Method: ICP-MS Metals by SW 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-01-19 08:35
Seq Number: 3087575 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Aluminum	3.75	0.0200		mg/L	05/01/19 15:24	1
Arsenic	ND	0.00400	U	mg/L	05/01/19 15:24	1
Barium	0.0261	0.00400		mg/L	05/01/19 15:24	1
Boron	ND	0.0100	U	mg/L	05/01/19 15:24	1
Calcium	0.639	0.100		mg/L	05/01/19 15:24	1
Copper	ND	0.00400	U	mg/L	05/01/19 15:24	1
Iron	2.20	0.100		mg/L	05/01/19 15:24	1
Magnesium	0.563	0.100		mg/L	05/01/19 15:24	1
Manganese	0.00962	0.00200		mg/L	05/01/19 15:24	1
Potassium	0.420	0.100		mg/L	05/01/19 15:24	1
Selenium	ND	0.00200	U	mg/L	05/01/19 15:24	1
Sodium	5.48	0.100		mg/L	05/01/19 17:00	1
Strontium	ND	0.0100	U	mg/L	05/01/19 15:24	1
Titanium	0.105	0.00400		mg/L	05/01/19 15:24	1
Uranium	ND	0.00200	U	mg/L	05/01/19 15:24	1
Zinc	ND	0.0300	U	mg/L	05/01/19 15:24	1

Analytical Method: Mercury by SW-846 7470A Prep Method: SW7470P
Tech: MLI % Moisture:
Analyst: ANJ Date Prep: May-07-19 08:30
Seq Number: 3088202 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Mercury	ND	0.000200	U	mg/L	05/07/19 13:59	1

Analytical Method: Select Total Metals By SW6010C Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:20
Seq Number: 3088305 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Lithium	ND	0.0200	U	mg/L	05/07/19 11:41	1
Silicon	4.34	0.500		mg/L	05/07/19 11:41	1
Scandium 45	ND	0.0200	U	mg/L	05/07/19 11:41	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **PZ-43** Matrix: Ground Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-006 Date Collected: Apr-26-19 11:55

Analytical Method: Nitrogen Ammonia by EPA 350.1 Prep Method: E350.1P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-10-19 09:00
Seq Number: 3088668 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Ammonia (as N)	0.259	0.100		mg/L	05/10/19 12:03	1

Analytical Method: Nitrogen, Kjeldahl, Total (Colorime by EPA 351.2 Prep Method: E351.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-11-19 13:00
Seq Number: 3088747 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Total Kjeldahl	1.33	0.300		mg/L	05/11/19 18:56	1

Analytical Method: Nitrogen, Nitrate-Nitrite by EPA 353.2 Prep Method: E353.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-06-19 14:00
Seq Number: 3088095 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Nitrate-Nitrite	ND	0.500	U	mg/L	05/06/19 17:05	5

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **SW-1 (W)** Matrix: Surface Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-007 Date Collected: Apr-25-19 18:05

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-08-19 10:00
Seq Number: 3088354 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Alkalinity, Total (as CaCO3)	178	4.00		mg/L	05/08/19 13:22	1
Alkalinity, Bicarbonate (as CaCO3)	178	4.00		mg/L	05/08/19 13:22	1
Alkalinity, Carbonate (as CaCO3)	ND	4.00	U	mg/L	05/08/19 13:22	1

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: Apr-30-19 11:02
Seq Number: 3087472 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Bromide	ND	0.500	U	mg/L	04/30/19 15:57	1
Chloride	13.6	0.500		mg/L	04/30/19 15:57	1
Fluoride	ND	0.500	U	mg/L	04/30/19 15:57	1
Sulfate	1.03	0.500		mg/L	04/30/19 15:57	1

Analytical Method: Organic & Volatile Acids by HPLC Prep Method: OACIDS_PREP
Tech: ALA % Moisture:
Analyst: ALA Date Prep: May-01-19 14:38
Seq Number: 3087700 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Isovaleric Acid	ND	2.00	U	mg/L	05/01/19 20:11	1
Valeric Acid	ND	2.00	U	mg/L	05/01/19 20:11	1
Isocaproic Acid	ND	2.00	U	mg/L	05/01/19 20:11	1
Caproic Acid	ND	2.00	U	mg/L	05/01/19 20:11	1
Heptanoic Acid	ND	2.00	U	mg/L	05/01/19 20:11	1
Butyric-Isobutyric Acid	ND	2.00	U	mg/L	05/01/19 20:11	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **SW-1 (W)** Matrix: Surface Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-007 Date Collected: Apr-25-19 18:05

Analytical Method: Select Anions By EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: May-01-19 16:00
Seq Number: 3087621 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Acetate	ND	4.00	U	mg/L	05/01/19 23:22	20
Formate	ND	4.00	U	mg/L	05/01/19 23:22	20

Analytical Method: TDS by SM2540C
Tech: JCL % Moisture:
Analyst: JCL
Seq Number: 3087827 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total dissolved solids (residue, filterable)	285	5.00		mg/L	05/02/19 18:00	1

Analytical Method: TOC by SM 5310C Prep Method: SM5310P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-06-19 09:00
Seq Number: 3088125 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total Organic Carbon	28.1	2.00		mg/L	05/06/19 17:37	2

Analytical Method: Total Phosphorus by EPA 365.1 Prep Method: E365.1_P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-05-19 16:00
Seq Number: 3088080 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Phosphorus, Total (as P)	0.0947	0.0200		mg/L	05/05/19 20:13	1

Analytical Method: 1 Select Metals by SW-846 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:15
Seq Number: 3088262 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Thorium *	ND	0.00100	U	mg/L	05/07/19 03:13	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **SW-1 (W)** Matrix: Surface Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-007 Date Collected: Apr-25-19 18:05

Analytical Method: ICP-MS Metals by SW 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-01-19 08:35
Seq Number: 3087575 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Aluminum	0.453	0.0200		mg/L	05/01/19 15:27	1
Arsenic	ND	0.00400	U	mg/L	05/01/19 15:27	1
Barium	0.0318	0.00400		mg/L	05/01/19 15:27	1
Boron	0.0134	0.0100		mg/L	05/01/19 15:27	1
Calcium	82.4	5.00	D	mg/L	05/01/19 15:36	50
Copper	ND	0.00400	U	mg/L	05/01/19 15:27	1
Iron	0.204	0.100		mg/L	05/01/19 15:27	1
Magnesium	2.40	0.100		mg/L	05/01/19 15:27	1
Manganese	0.00687	0.00200		mg/L	05/01/19 15:27	1
Potassium	1.86	0.100		mg/L	05/01/19 15:27	1
Selenium	ND	0.00200	U	mg/L	05/01/19 15:27	1
Sodium	7.89	0.100		mg/L	05/01/19 17:03	1
Strontium	0.0954	0.0100		mg/L	05/01/19 15:27	1
Titanium	0.00555	0.00400		mg/L	05/01/19 15:27	1
Uranium	ND	0.00200	U	mg/L	05/01/19 15:27	1
Zinc	ND	0.0300	U	mg/L	05/01/19 15:27	1

Analytical Method: Mercury by SW-846 7470A Prep Method: SW7470P
Tech: MLI % Moisture:
Analyst: ANJ Date Prep: May-07-19 08:30
Seq Number: 3088202 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Mercury	ND	0.000200	U	mg/L	05/07/19 14:01	1

Analytical Method: Select Total Metals By SW6010C Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:20
Seq Number: 3088305 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Lithium	ND	0.0200	U	mg/L	05/07/19 11:43	1
Silicon	ND	0.500	U	mg/L	05/07/19 11:43	1
Scandium 45	ND	0.0200	U	mg/L	05/07/19 11:43	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **SW-1 (W)** Matrix: Surface Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-007 Date Collected: Apr-25-19 18:05

Analytical Method: Nitrogen Ammonia by EPA 350.1 Prep Method: E350.1P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-10-19 09:00
Seq Number: 3088668 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Ammonia (as N)	0.233	0.100		mg/L	05/10/19 12:04	1

Analytical Method: Nitrogen, Kjeldahl, Total (Colorime by EPA 351.2 Prep Method: E351.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-11-19 13:00
Seq Number: 3088747 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Total Kjeldahl	0.516	0.300		mg/L	05/11/19 18:57	1

Analytical Method: Nitrogen, Nitrate-Nitrite by EPA 353.2 Prep Method: E353.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-06-19 14:00
Seq Number: 3088095 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Nitrate-Nitrite	ND	0.500	U	mg/L	05/06/19 17:06	5

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **SW-2 (E)** Matrix: Surface Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-008 Date Collected: Apr-26-19 09:06

Analytical Method: Alkalinity by SM2320B Prep Method: SM2320P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-08-19 10:00
Seq Number: 3088354 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Alkalinity, Total (as CaCO3)	ND	4.00	U	mg/L	05/08/19 13:26	1
Alkalinity, Bicarbonate (as CaCO3)	ND	4.00	U	mg/L	05/08/19 13:26	1
Alkalinity, Carbonate (as CaCO3)	ND	4.00	U	mg/L	05/08/19 13:26	1

Analytical Method: Inorganic Anions by EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: Apr-30-19 11:02
Seq Number: 3087472 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Bromide	ND	0.500	U	mg/L	04/30/19 16:05	1
Chloride	12.7	0.500		mg/L	04/30/19 16:05	1
Fluoride	ND	0.500	U	mg/L	04/30/19 16:05	1
Sulfate	6.69	0.500		mg/L	04/30/19 16:05	1

Analytical Method: Organic & Volatile Acids by HPLC Prep Method: OACIDS_PREP
Tech: ALA % Moisture:
Analyst: ALA Date Prep: May-01-19 14:38
Seq Number: 3087700 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Isovaleric Acid	ND	2.00	U	mg/L	05/01/19 20:32	1
Valeric Acid	ND	2.00	U	mg/L	05/01/19 20:32	1
Isocaproic Acid	ND	2.00	U	mg/L	05/01/19 20:32	1
Caproic Acid	ND	2.00	U	mg/L	05/01/19 20:32	1
Heptanoic Acid	ND	2.00	U	mg/L	05/01/19 20:32	1
Butyric-Isobutyric Acid	ND	2.00	U	mg/L	05/01/19 20:32	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **SW-2 (E)** Matrix: Surface Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-008 Date Collected: Apr-26-19 09:06

Analytical Method: Select Anions By EPA 300 Prep Method: E300P
Tech: JYM % Moisture:
Analyst: JYM Date Prep: May-01-19 16:00
Seq Number: 3087621 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Acetate	ND	4.00	U	mg/L	05/01/19 23:36	20
Formate	ND	4.00	U	mg/L	05/01/19 23:36	20

Analytical Method: TDS by SM2540C
Tech: JCL % Moisture:
Analyst: JCL
Seq Number: 3087827 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total dissolved solids (residue, filterable)	81.0	5.00		mg/L	05/02/19 18:00	1

Analytical Method: TOC by SM 5310C Prep Method: SM5310P
Tech: YAV % Moisture:
Analyst: YAV Date Prep: May-06-19 09:00
Seq Number: 3088125 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Total Organic Carbon	20.6	2.00		mg/L	05/06/19 18:07	2

Analytical Method: Total Phosphorus by EPA 365.1 Prep Method: E365.1_P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-05-19 16:00
Seq Number: 3088080 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Phosphorus, Total (as P)	0.0562	0.0200		mg/L	05/05/19 20:14	1

Analytical Method: 1 Select Metals by SW-846 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:15
Seq Number: 3088262 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Thorium *	ND	0.00100	U	mg/L	05/07/19 03:16	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **SW-2 (E)** Matrix: Surface Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-008 Date Collected: Apr-26-19 09:06

Analytical Method: ICP-MS Metals by SW 6020A Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-01-19 08:35
Seq Number: 3087575 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Aluminum	0.748	0.0200		mg/L	05/01/19 15:30	1
Arsenic	ND	0.00400	U	mg/L	05/01/19 15:30	1
Barium	0.0169	0.00400		mg/L	05/01/19 15:30	1
Boron	0.0304	0.0100		mg/L	05/01/19 15:30	1
Calcium	3.32	0.100		mg/L	05/01/19 15:30	1
Copper	ND	0.00400	U	mg/L	05/01/19 15:30	1
Iron	1.17	0.100		mg/L	05/01/19 15:30	1
Magnesium	0.617	0.100		mg/L	05/01/19 15:30	1
Manganese	0.00939	0.00200		mg/L	05/01/19 15:30	1
Potassium	0.834	0.100		mg/L	05/01/19 15:30	1
Selenium	ND	0.00200	U	mg/L	05/01/19 15:30	1
Strontium	0.0186	0.0100		mg/L	05/01/19 15:30	1
Titanium	ND	0.00400	U	mg/L	05/01/19 15:30	1
Uranium	ND	0.00200	U	mg/L	05/01/19 15:30	1
Zinc	ND	0.0300	U	mg/L	05/01/19 15:30	1

Analytical Method: Mercury by SW-846 7470A Prep Method: SW7470P
Tech: MLI % Moisture:
Analyst: ANJ Date Prep: May-07-19 08:30
Seq Number: 3088202 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Mercury	ND	0.000200	U	mg/L	05/07/19 14:03	1

Analytical Method: Select Total Metals By SW6010C Prep Method: SW3010A
Tech: AHI % Moisture:
Analyst: DEP Date Prep: May-03-19 09:20
Seq Number: 3088305 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Lithium	ND	0.0200	U	mg/L	05/07/19 11:46	1
Silicon	5.45	0.500		mg/L	05/07/19 11:46	1
Scandium 45	ND	0.0200	U	mg/L	05/07/19 11:46	1

Project: Twin Pines

TTL, Inc., Valdosta, GA

Twin Pines

Sample Id: **SW-2 (E)** Matrix: Surface Water Date Received: Apr-27-19 12:39
Lab Sample Id: 622514-008 Date Collected: Apr-26-19 09:06

Analytical Method: Nitrogen Ammonia by EPA 350.1 Prep Method: E350.1P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-10-19 09:00
Seq Number: 3088668 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Ammonia (as N)	0.184	0.100		mg/L	05/10/19 12:05	1

Analytical Method: Nitrogen, Kjeldahl, Total (Colorime by EPA 351.2 Prep Method: E351.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-11-19 13:00
Seq Number: 3088747 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Total Kjeldahl	0.442	0.300		mg/L	05/11/19 18:58	1

Analytical Method: Nitrogen, Nitrate-Nitrite by EPA 353.2 Prep Method: E353.2P
Tech: KCS % Moisture:
Analyst: KCS Date Prep: May-06-19 14:00
Seq Number: 3088095 **SUB: E871002**

Parameter	Result	RL	Flag	Units	Analysis Date	Dil
Nitrogen, Nitrate-Nitrite	ND	0.500	U	mg/L	05/06/19 17:07	5

Project: Twin Pines

QC Summary 622514

TTL, Inc.

Twin Pines

Analytical Method: **Alkalinity by SM2320B** Prep Method: SM2320P
Seq Number: 3088354 Matrix: Water Date Prep: 05.08.19
MB Sample Id: 7677435-1-BLK LCS Sample Id: 7677435-1-BKS LCSD Sample Id: 7677435-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Alkalinity, Total (as CaCO3)	<4.00	250	245	98	249	100	80-120	2	20	mg/L	05.08.19 12:27	

Analytical Method: **Alkalinity by SM2320B** Prep Method: SM2320P
Seq Number: 3088354 Matrix: Ground Water Date Prep: 05.08.19
Parent Sample Id: 622514-001 MD Sample Id: 622514-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Alkalinity, Total (as CaCO3)	<4.00	<4.00	0	20	mg/L	05.08.19 12:42	
Alkalinity, Bicarbonate (as CaCO3)	<4.00	<4.00	0	20	mg/L	05.08.19 12:42	
Alkalinity, Carbonate (as CaCO3)	<4.00	<4.00	0	20	mg/L	05.08.19 12:42	

Analytical Method: **Alkalinity by SM2320B** Prep Method: SM2320P
Seq Number: 3088354 Matrix: Liquid Date Prep: 05.08.19
Parent Sample Id: 623220-001 MD Sample Id: 623220-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Alkalinity, Total (as CaCO3)	346	345	0	20	mg/L	05.08.19 13:52	
Alkalinity, Bicarbonate (as CaCO3)	346	345	0	20	mg/L	05.08.19 13:52	
Alkalinity, Carbonate (as CaCO3)	<4.00	<4.00	0	20	mg/L	05.08.19 13:52	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3087472 Matrix: Water Date Prep: 04.30.19
MB Sample Id: 7676814-1-BLK LCS Sample Id: 7676814-1-BKS LCSD Sample Id: 7676814-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Bromide	<0.00600	10.0	10.1	101	10.1	101	90-110	0	20	mg/L	04.30.19 12:06	
Chloride	<0.0280	10.0	10.1	101	10.2	102	90-110	1	20	mg/L	04.30.19 12:06	
Fluoride	<0.0360	10.0	10.4	104	10.4	104	90-110	0	20	mg/L	04.30.19 12:06	
Sulfate	<0.0460	10.0	10.4	104	10.4	104	90-110	0	20	mg/L	04.30.19 12:06	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 622514

TTL, Inc.

Twin Pines

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3087472 Matrix: Water Date Prep: 04.30.19
Parent Sample Id: 622499-001 MS Sample Id: 622499-001 S MSD Sample Id: 622499-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Bromide	2.00	10.0	12.7	107	12.7	107	90-110	0	20	mg/L	04.30.19 12:32	
Chloride	131	10.0	138	70	138	70	90-110	0	20	mg/L	04.30.19 12:32	X
Fluoride	<0.0360	10.0	9.95	100	9.87	99	90-110	1	20	mg/L	04.30.19 12:32	
Sulfate	1.09	10.0	11.2	101	11.2	101	90-110	0	20	mg/L	04.30.19 12:32	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3087472 Matrix: Waste Water Date Prep: 04.30.19
Parent Sample Id: 622558-001 MS Sample Id: 622558-001 S MSD Sample Id: 622558-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Bromide	<0.00600	10.0	10.2	102	10.2	102	90-110	0	20	mg/L	04.30.19 13:49	
Chloride	36.8	10.0	45.8	90	45.8	90	90-110	0	20	mg/L	04.30.19 13:49	
Fluoride	0.118	10.0	10.8	107	10.8	107	90-110	0	20	mg/L	04.30.19 13:49	
Sulfate	9.01	10.0	19.5	105	19.6	106	90-110	1	20	mg/L	04.30.19 13:49	

Analytical Method: **Organic & Volatile Acids by HPLC** Prep Method: OACIDS_PREP
Seq Number: 3087700 Matrix: Water Date Prep: 05.01.19
MB Sample Id: 7677013-1-BLK LCS Sample Id: 7677013-1-BKS LCSD Sample Id: 7677013-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Isovaleric Acid	<2.00	50.0	49.3	99	49.3	99	70-130	0	30	mg/L	05.01.19 17:03	
Valeric Acid	<2.00	50.0	50.6	101	50.9	102	70-130	1	30	mg/L	05.01.19 17:03	
Isocaproic Acid	<2.00	50.0	48.7	97	48.7	97	70-130	0	30	mg/L	05.01.19 17:03	
Caproic Acid	<2.00	50.0	50.9	102	51.0	102	70-130	0	30	mg/L	05.01.19 17:03	
Heptanoic Acid	<2.00	50.0	51.8	104	52.5	105	70-130	1	30	mg/L	05.01.19 17:03	

Analytical Method: **Organic & Volatile Acids by HPLC** Prep Method: OACIDS_PREP
Seq Number: 3087700 Matrix: Ground Water Date Prep: 05.01.19
Parent Sample Id: 622514-001 MD Sample Id: 622514-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Isovaleric Acid	<2.00	<2.00	0	30	mg/L	05.01.19 18:06	
Valeric Acid	<2.00	<2.00	0	30	mg/L	05.01.19 18:06	
Isocaproic Acid	<2.00	<2.00	0	30	mg/L	05.01.19 18:06	
Caproic Acid	<2.00	<2.00	0	30	mg/L	05.01.19 18:06	
Heptanoic Acid	<2.00	<2.00	0	30	mg/L	05.01.19 18:06	
Butyric-Isobutyric Acid	<2.00	<2.00	0	25	mg/L	05.01.19 18:06	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 622514

TTL, Inc.

Twin Pines

Analytical Method: **Select Anions By EPA 300** Prep Method: E300P
Seq Number: 3087621 Matrix: Water Date Prep: 05.01.19
MB Sample Id: 7676972-1-BLK LCS Sample Id: 7676972-1-BKS LCSD Sample Id: 7676972-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acetate	<0.100	10.0	10.7	107	10.4	104	70-130	3	30	mg/L	05.01.19 20:34	
Formate	<0.200	10.0	10.5	105	10.3	103	70-130	2	30	mg/L	05.01.19 20:34	

Analytical Method: **Select Anions By EPA 300** Prep Method: E300P
Seq Number: 3087621 Matrix: Ground Water Date Prep: 05.01.19
Parent Sample Id: 622514-001 MS Sample Id: 622514-001 S MSD Sample Id: 622514-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acetate	<2.00	200	216	108	215	108	70-130	0	30	mg/L	05.01.19 21:16	
Formate	<4.00	200	217	109	217	109	70-130	0	30	mg/L	05.01.19 21:16	

Analytical Method: **TDS by SM2540C**
Seq Number: 3087827 Matrix: Water
MB Sample Id: 3087827-1-BLK LCS Sample Id: 3087827-1-BKS LCSD Sample Id: 3087827-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Total dissolved solids (residue, filterable	<5.00	1000	1050	105	1100	110	80-120	5	10	mg/L	05.02.19 18:00	

Analytical Method: **TDS by SM2540C**
Seq Number: 3087827 Matrix: Water
Parent Sample Id: 622493-004 MD Sample Id: 622493-004 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Total dissolved solids (residue, filterable	579	566	2	10	mg/L	05.02.19 18:00	

Analytical Method: **TDS by SM2540C**
Seq Number: 3087827 Matrix: Ground Water
Parent Sample Id: 622519-002 MD Sample Id: 622519-002 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Total dissolved solids (residue, filterable	373	380	2	10	mg/L	05.02.19 18:00	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 622514

TTL, Inc.

Twin Pines

Analytical Method: TOC by SM 5310C — Prep Method: SM5310P
Seq Number: 3088125 — Matrix: Water — Date Prep: 05.06.19
MB Sample Id: 7677276-1-BLK — LCS Sample Id: 7677276-1-BKS — LCSD Sample Id: 7677276-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Organic Carbon	<0.500	5.00	4.93	99	4.95	99	90-110	0	20	mg/L	05.06.19 11:03	

Analytical Method: TOC by SM 5310C — Prep Method: SM5310P
Seq Number: 3088125 — Matrix: Water — Date Prep: 05.06.19
Parent Sample Id: 621542-001 — MS Sample Id: 621542-001 S — MSD Sample Id: 621542-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Organic Carbon	6.60	5.00	10.7	82	10.8	84	90-110	1	20	mg/L	05.06.19 11:47	X

Analytical Method: TOC by SM 5310C — Prep Method: SM5310P
Seq Number: 3088125 — Matrix: Water — Date Prep: 05.06.19
Parent Sample Id: 622640-001 — MS Sample Id: 622640-001 S — MSD Sample Id: 622640-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Organic Carbon	8.01	5.00	13.3	106	13.3	106	90-110	0	20	mg/L	05.06.19 14:02	

Analytical Method: Total Phosphorus by EPA 365.1 — Prep Method: E365.1_P
Seq Number: 3088080 — Matrix: Water — Date Prep: 05.05.19
MB Sample Id: 7677249-1-BLK — LCS Sample Id: 7677249-1-BKS — LCSD Sample Id: 7677249-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Phosphorus, Total (as P)	<0.00311	0.250	0.265	106	0.265	106	90-110	0	20	mg/L	05.05.19 19:51	

Analytical Method: Total Phosphorus by EPA 365.1 — Prep Method: E365.1_P
Seq Number: 3088080 — Matrix: Ground Water — Date Prep: 05.05.19
Parent Sample Id: 622514-003 — MS Sample Id: 622514-003 S — MSD Sample Id: 622514-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Phosphorus, Total (as P)	0.00390	0.250	0.265	104	0.264	104	90-110	0	20	mg/L	05.05.19 20:07	

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

QC Summary 622514

TTL, Inc.

Twin Pines

Analytical Method: **Total Phosphorus by EPA 365.1** Prep Method: E365.1_P
Seq Number: 3088080 Matrix: Ground Water Date Prep: 05.05.19
Parent Sample Id: 622741-001 MS Sample Id: 622741-001 S MSD Sample Id: 622741-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Phosphorus, Total (as P)	<0.00311	0.250	0.254	102	0.256	102	90-110	1	20	mg/L	05.05.19 19:53	

Analytical Method: **1 Select Metals by SW-846 6020A** Prep Method: SW3010A
Seq Number: 3088262 Matrix: Water Date Prep: 05.03.19
MB Sample Id: 7677086-1-BLK LCS Sample Id: 7677086-1-BKS LCSD Sample Id: 7677086-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Thorium	<0.000232	0.0500	0.0479	96	0.0485	97	30-120	1	20	mg/L	05.07.19 02:43	

Analytical Method: **1 Select Metals by SW-846 6020A** Prep Method: SW3010A
Seq Number: 3088262 Matrix: Ground Water Date Prep: 05.03.19
Parent Sample Id: 622514-001 MS Sample Id: 622514-001 S MSD Sample Id: 622514-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Thorium	0.000392	0.0500	0.0503	100	0.0506	100	30-120	1	20	mg/L	05.07.19 02:49	

Analytical Method: **ICP-MS Metals by SW 6020A** Prep Method: SW3010A
Seq Number: 3087575 Matrix: Water Date Prep: 05.01.19
MB Sample Id: 7676883-1-BLK LCS Sample Id: 7676883-1-BKS LCSD Sample Id: 7676883-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Aluminum	<0.00252	0.500	0.513	103	0.512	102	80-120	0	20	mg/L	05.01.19 13:09	
Arsenic	<0.000246	0.100	0.104	104	0.104	104	80-120	0	20	mg/L	05.01.19 13:09	
Barium	<0.000484	0.100	0.0996	100	0.0985	99	80-120	1	20	mg/L	05.01.19 13:09	
Boron	<0.00126	0.100	0.0962	96	0.0964	96	80-120	0	20	mg/L	05.01.19 13:09	
Calcium	<0.0172	2.50	2.60	104	2.57	103	80-120	1	20	mg/L	05.01.19 13:09	
Copper	<0.000747	0.100	0.101	101	0.104	104	80-120	3	20	mg/L	05.01.19 13:09	
Iron	<0.0227	0.500	0.504	101	0.513	103	80-120	2	20	mg/L	05.01.19 13:09	
Magnesium	<0.00521	2.50	2.49	100	2.55	102	80-120	2	20	mg/L	05.01.19 13:09	
Manganese	<0.000199	0.100	0.0990	99	0.102	102	80-120	3	20	mg/L	05.01.19 13:09	
Potassium	<0.0178	1.00	0.987	99	1.02	102	80-120	3	20	mg/L	05.01.19 13:09	
Selenium	<0.000454	0.100	0.107	107	0.107	107	80-120	0	20	mg/L	05.01.19 13:09	
Sodium	<0.0184	2.50	2.52	101	2.57	103	80-120	2	20	mg/L	05.01.19 13:09	
Strontium	<0.00109	0.100	0.0994	99	0.101	101	80-120	2	20	mg/L	05.01.19 13:09	
Titanium	<0.000744	0.100	0.0964	96	0.103	103	80-120	7	20	mg/L	05.01.19 13:09	
Uranium	<0.000211	0.0250	0.0256	102	0.0255	102	80-120	0	20	mg/L	05.01.19 13:09	
Zinc	<0.000802	0.100	0.100	100	0.103	103	80-120	3	20	mg/L	05.01.19 13:09	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

TTL, Inc.

Twin Pines

Analytical Method: **ICP-MS Metals by SW 6020A** Prep Method: SW3010A
Seq Number: 3087575 Matrix: Soil Date Prep: 05.01.19
Parent Sample Id: 622494-001 MS Sample Id: 622494-001 S MSD Sample Id: 622494-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Aluminum	0.248	2.50	2.74	100	2.70	98	75-125	1	20	mg/L	05.01.19 13:18	
Arsenic	<0.00123	0.500	0.512	102	0.511	102	75-125	0	20	mg/L	05.01.19 13:18	
Barium	1.74	0.500	2.14	80	2.15	82	75-125	0	20	mg/L	05.01.19 13:18	
Boron	0.213	0.500	0.707	99	0.711	100	75-125	1	20	mg/L	05.01.19 13:18	
Calcium	30.5	12.5	42.0	92	42.2	94	75-125	0	20	mg/L	05.01.19 13:18	
Copper	0.0153	0.500	0.523	102	0.528	103	75-125	1	20	mg/L	05.01.19 13:18	
Iron	1.74	2.50	4.14	96	4.15	96	75-125	0	20	mg/L	05.01.19 13:18	
Magnesium	0.285	12.5	12.6	99	12.6	99	75-125	0	20	mg/L	05.01.19 13:18	
Manganese	0.0418	0.500	0.516	95	0.518	95	75-125	0	20	mg/L	05.01.19 13:18	
Potassium	1.26	5.00	6.00	95	6.03	95	75-125	0	20	mg/L	05.01.19 13:18	
Selenium	<0.00227	0.500	0.512	102	0.510	102	75-125	0	20	mg/L	05.01.19 13:18	
Sodium	1680	12.5	1660	0	1640	0	75-125	1	20	mg/L	05.01.19 13:18	X
Strontium	0.0471	0.500	0.515	94	0.521	95	75-125	1	20	mg/L	05.01.19 13:18	
Titanium	<0.00372	0.500	0.481	96	0.499	100	80-120	4	20	mg/L	05.01.19 13:18	
Uranium	<0.00105	0.125	0.134	107	0.137	110	75-125	2	20	mg/L	05.01.19 13:18	
Zinc	1.16	0.500	1.58	84	1.59	86	75-125	1	20	mg/L	05.01.19 13:18	

Analytical Method: **Mercury by SW-846 7470A** Prep Method: SW7470P
Seq Number: 3088202 Matrix: Water Date Prep: 05.07.19
MB Sample Id: 7677305-1-BLK LCS Sample Id: 7677305-1-BKS LCSD Sample Id: 7677305-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0000263	0.00200	0.00182	91	0.00181	91	80-120	1	20	mg/L	05.07.19 13:12	

Analytical Method: **Mercury by SW-846 7470A** Prep Method: SW7470P
Seq Number: 3088202 Matrix: Solid Date Prep: 05.07.19
Parent Sample Id: 622559-001 MS Sample Id: 622559-001 S MSD Sample Id: 622559-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.0000263	0.00200	0.00183	92	0.00184	92	75-125	1	20	mg/L	05.07.19 13:18	

Analytical Method: **Select Total Metals By SW6010C** Prep Method: SW3010A
Seq Number: 3088305 Matrix: Water Date Prep: 05.03.19
MB Sample Id: 7677089-1-BLK LCS Sample Id: 7677089-1-BKS LCSD Sample Id: 7677089-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Lithium	<0.00448	0.500	0.500	100	0.509	102	75-125	2	20	mg/L	05.07.19 11:11	
Silicon	<0.0365	5.00	4.83	97	4.88	98	75-125	1	20	mg/L	05.07.19 11:11	
Scandium 45	<0.000452	0.500	0.497	99	0.505	101	75-125	2	20	mg/L	05.07.19 11:11	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 622514

TTL, Inc.

Twin Pines

Analytical Method: **Select Total Metals By SW6010C** Prep Method: SW3010A
Seq Number: 3088305 Matrix: Ground Water Date Prep: 05.03.19
Parent Sample Id: 622514-002 MS Sample Id: 622514-002 S MSD Sample Id: 622514-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Lithium	<0.00448	0.500	0.535	107	0.533	107	75-125	0	20	mg/L	05.07.19 11:18	
Silicon	5.01	5.00	12.0	140	12.5	150	75-125	4	20	mg/L	05.07.19 11:18	X
Scandium 45	0.000735	0.500	0.506	101	0.504	101	75-125	0	20	mg/L	05.07.19 11:18	

Analytical Method: **Nitrogen Ammonia by EPA 350.1** Prep Method: E350.1P
Seq Number: 3088668 Matrix: Water Date Prep: 05.10.19
MB Sample Id: 7677628-1-BLK LCS Sample Id: 7677628-1-BKS LCSD Sample Id: 7677628-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Ammonia (as N)	<0.0345	1.00	0.989	99	0.976	98	90-110	1	20	mg/L	05.10.19 11:53	

Analytical Method: **Nitrogen Ammonia by EPA 350.1** Prep Method: E350.1P
Seq Number: 3088668 Matrix: Ground Water Date Prep: 05.10.19
Parent Sample Id: 622514-001 MS Sample Id: 622514-001 S MSD Sample Id: 622514-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Ammonia (as N)	0.655	1.00	1.66	101	1.66	101	90-110	0	20	mg/L	05.10.19 11:56	

Analytical Method: **Nitrogen Ammonia by EPA 350.1** Prep Method: E350.1P
Seq Number: 3088668 Matrix: Water Date Prep: 05.10.19
Parent Sample Id: 623682-005 MS Sample Id: 623682-005 S MSD Sample Id: 623682-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Ammonia (as N)	0.361	1.00	1.35	99	1.39	103	90-110	3	20	mg/L	05.10.19 12:09	

Analytical Method: **Nitrogen, Kjeldahl, Total (Colorime by EPA 351.2** Prep Method: E351.2P
Seq Number: 3088747 Matrix: Water Date Prep: 05.11.19
MB Sample Id: 7677663-1-BLK LCS Sample Id: 7677663-1-BKS LCSD Sample Id: 7677663-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Total Kjeldahl	<0.0500	5.00	5.07	101	5.07	101	90-110	0	20	mg/L	05.11.19 18:43	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

TTL, Inc.

Twin Pines

Analytical Method: Nitrogen, Kjeldahl, Total (Colorime by EPA 351.2 — Prep Method: E351.2P
Seq Number: 3088747 — Matrix: Ground Water — Date Prep: 05.11.19
Parent Sample Id: 622514-001 — MS Sample Id: 622514-001 S — MSD Sample Id: 622514-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Total Kjeldahl	0.894	5.00	5.92	101	5.77	98	90-110	3	20	mg/L	05.11.19 18:46	

Analytical Method: Nitrogen, Kjeldahl, Total (Colorime by EPA 351.2 — Prep Method: E351.2P
Seq Number: 3088747 — Matrix: Water — Date Prep: 05.11.19
Parent Sample Id: 623682-001 — MS Sample Id: 623682-001 S — MSD Sample Id: 623682-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Total Kjeldahl	1.61	5.00	6.42	96	6.61	100	90-110	3	20	mg/L	05.11.19 19:03	

Analytical Method: Nitrogen, Nitrate-Nitrite by EPA 353.2 — Prep Method: E353.2P
Seq Number: 3088095 — Matrix: Water — Date Prep: 05.06.19
MB Sample Id: 7677259-1-BLK — LCS Sample Id: 7677259-1-BKS — LCSD Sample Id: 7677259-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Nitrate-Nitrite	<0.0283	1.00	0.948	95	0.938	94	90-110	1	20	mg/L	05.06.19 15:48	

Analytical Method: Nitrogen, Nitrate-Nitrite by EPA 353.2 — Prep Method: E353.2P
Seq Number: 3088095 — Matrix: Waste Water — Date Prep: 05.06.19
Parent Sample Id: 622841-001 — MS Sample Id: 622841-001 S — MSD Sample Id: 622841-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Nitrate-Nitrite	0.0370	1.00	1.05	101	0.999	96	90-110	5	20	mg/L	05.06.19 16:20	

Analytical Method: Nitrogen, Nitrate-Nitrite by EPA 353.2 — Prep Method: E353.2P
Seq Number: 3088095 — Matrix: Liquid — Date Prep: 05.06.19
Parent Sample Id: 622925-001 — MS Sample Id: 622925-001 S — MSD Sample Id: 622925-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Nitrate-Nitrite	0.217	1.00	1.16	94	1.24	102	90-110	7	20	mg/L	05.06.19 15:57	

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

Chain of Custody

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

Work Order No: 622514

www.xenco.com Page 1 of 1

Project Manager:	Jim Smith	Bill to: (if different)	
Company Name:	TTL Inc.	Company Name:	
Address:	4589 Valnorth Dr.	Address:	
City, State ZIP:	Valdosta, GA 31602-6837	City, State ZIP:	
Phone:	(229) 244-8419	Email:	Jsmith@ttlusa.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Twin Pines	Turn Around	
Project Number:	000180200.00	Routine	☒
P.O. Number:	000180200.00	Rush:	
Sampler's Name:	Zachary Hill	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	3.0	Thermometer ID	T-70	
Received Intact:	(Yes) No			
Cooler Custody Seals:	(Yes) No N/A	Correction Factor:	0	
Sample Custody Seals:	Yes No (N/A)	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	See Attached Copy
PZ-14		4/25/19	1615		8	X
PZ-08		4/25/19	1410		8	X
PZ-28D		4/25/19	1230		8	X
PZ-16S		4/25/19	1745		8	X
PZ-48S		4/26/19	1020		8	X
PZ-43		4/26/19	1155		8	X
SW-1 (W)		4/25/19	1805		8	X
SW-2 (E)		4/26/19	0906		8	X

ANALYSIS REQUEST

Work Order Notes

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Zach Hill	Fed Ex	4/26/19 1700	2 FedEx	John Andrew	4/27/19 12:39
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Laboratory analytical will consist of the following:

Anions
Fluoride
Chloride
Bromide
Sulfate
Nitrate-Nitrite

Miscellaneous
Total Alkalinity
Bicarbonate Alkalinity
Carbonate Alkalinity
TOC
Total dissolved solids
Total Organic Nitrogen
Total Phosphorous

Organic Acids:
Formic
Acetic
Butyric
Isobutyric
Caproic
Isocaproic
Valeric
Isovaleric
Heptanoic

Cations
Potassium
Sodium
Calcium
Magnesium
Lithium
Silicon
Fluoride
Boron
Aluminum
Scandium
Manganese
Iron
Copper
Zinc
Arsenic
Strontium
Barium
Titanium
Mercury
Selenium
Uranium
Thorium

Inter-Office Shipment

IOS Number : 38077

Date/Time:	04.29.2019 09:31	Created by:	John Andros	Please send report to:	John Andros
Lab# From:	**Atlanta**	Delivery Priority:		Address:	1600 Oakbrook Dr., Suite 565, Norcross, GA 300
Lab# To:	**Houston**	Air Bill No.:	775087842096	E-Mail:	john.andros@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
622514-001	W	PZ-14	04.25.2019 16:15	E300	Inorganic Anions by EPA 300	05.07.2019	05.23.2019	JNA	BR CL F SO4	
622514-001	W	PZ-14	04.25.2019 16:15	E300_Select	Select Anions By EPA 300	05.07.2019	05.23.2019	JNA	NO2N NO3N SO4	
622514-001	W	PZ-14	04.25.2019 16:15	SW7470A	Mercury by SW-846 7470A	05.07.2019	05.23.2019	JNA	HG	
622514-001	W	PZ-14	04.25.2019 16:15	SW6020_Select_1	1 Select Metals by SW-846 6020A	05.07.2019	10.22.2019	JNA	Th	
622514-001	W	PZ-14	04.25.2019 16:15	SW6020	ICP-MS Metals by SW 6020A	05.07.2019	10.22.2019	JNA	AL AS B BA CA CU FE I	
622514-001	W	PZ-14	04.25.2019 16:15	SW6010C_Select2	Select Total Metals By SW6010C	05.07.2019	10.22.2019	JNA	Li Si	
622514-001	W	PZ-14	04.25.2019 16:15	SM5310C	TOC by SM 5310C	05.07.2019	05.23.2019	JNA		
622514-001	W	PZ-14	04.25.2019 16:15	SM2540C	TDS by SM2540C	05.07.2019	**05.02.2019 16:15**	JNA	TDS	
622514-001	W	PZ-14	04.25.2019 16:15	SM2320B	Alkalinity by SM2320B	05.07.2019	05.09.2019	JNA	ALK ALKB ALKC	
622514-001	W	PZ-14	04.25.2019 16:15	OACIDS	Organic & Volatile Acids by HPLC	05.07.2019	05.23.2019	JNA		
622514-001	W	PZ-14	04.25.2019 16:15	E365.1	Total Phosphorus by EPA 365.1	05.07.2019	05.23.2019	JNA	Total Phos.	
622514-001	W	PZ-14	04.25.2019 16:15	E353.2	Nitrogen, Nitrate-Nitrite by EPA 353.2	05.07.2019	05.23.2019	JNA		
622514-001	W	PZ-14	04.25.2019 16:15	E351.2	Nitrogen, Kjeldahl, Total (Colorime by EI	05.07.2019	05.23.2019	JNA	TKN	
622514-001	W	PZ-14	04.25.2019 16:15	E350.1	Nitrogen Ammonia by EPA 350.1	05.07.2019	05.23.2019	JNA	NH3N	
622514-002	W	PZ-08	04.25.2019 14:10	E300	Inorganic Anions by EPA 300	05.07.2019	05.23.2019	JNA	BR CL F SO4	
622514-002	W	PZ-08	04.25.2019 14:10	SW6020_Select_1	1 Select Metals by SW-846 6020A	05.07.2019	10.22.2019	JNA	Th	
622514-002	W	PZ-08	04.25.2019 14:10	SW6020	ICP-MS Metals by SW 6020A	05.07.2019	10.22.2019	JNA	AL AS B BA CA CU FE I	
622514-002	W	PZ-08	04.25.2019 14:10	SW6010C_Select2	Select Total Metals By SW6010C	05.07.2019	10.22.2019	JNA	Li Si	
622514-002	W	PZ-08	04.25.2019 14:10	SM5310C	TOC by SM 5310C	05.07.2019	05.23.2019	JNA		
622514-002	W	PZ-08	04.25.2019 14:10	SM2540C	TDS by SM2540C	05.07.2019	**05.02.2019 14:10**	JNA	TDS	
622514-002	W	PZ-08	04.25.2019 14:10	SW7470A	Mercury by SW-846 7470A	05.07.2019	05.23.2019	JNA	HG	
622514-002	W	PZ-08	04.25.2019 14:10	OACIDS	Organic & Volatile Acids by HPLC	05.07.2019	05.23.2019	JNA		
622514-002	W	PZ-08	04.25.2019 14:10	E365.1	Total Phosphorus by EPA 365.1	05.07.2019	05.23.2019	JNA	Total Phos.	
622514-002	W	PZ-08	04.25.2019 14:10	E353.2	Nitrogen, Nitrate-Nitrite by EPA 353.2	05.07.2019	05.23.2019	JNA		
622514-002	W	PZ-08	04.25.2019 14:10	E351.2	Nitrogen, Kjeldahl, Total (Colorime by EI	05.07.2019	05.23.2019	JNA	TKN	

Inter-Office Shipment

IOS Number : 38077

Date/Time:	04.29.2019 09:31	Created by:	John Andros	Please send report to:	John Andros
Lab# From:	**Atlanta**	Delivery Priority:		Address:	1600 Oakbrook Dr., Suite 565, Norcross, GA 300
Lab# To:	**Houston**	Air Bill No.:	775087842096	E-Mail:	john.andros@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
622514-002	W	PZ-08	04.25.2019 14:10	E350.1	Nitrogen Ammonia by EPA 350.1	05.07.2019	05.23.2019	JNA	NH3N	
622514-002	W	PZ-08	04.25.2019 14:10	E300_Select	Select Anions By EPA 300	05.07.2019	05.23.2019	JNA	NO2N NO3N SO4	
622514-002	W	PZ-08	04.25.2019 14:10	SM2320B	Alkalinity by SM2320B	05.07.2019	05.09.2019	JNA	ALK ALKB ALKC	
622514-003	W	PZ-28D	04.25.2019 12:30	E300	Inorganic Anions by EPA 300	05.07.2019	05.23.2019	JNA	BR CL F SO4	
622514-003	W	PZ-28D	04.25.2019 12:30	E300_Select	Select Anions By EPA 300	05.07.2019	05.23.2019	JNA	NO2N NO3N SO4	
622514-003	W	PZ-28D	04.25.2019 12:30	E350.1	Nitrogen Ammonia by EPA 350.1	05.07.2019	05.23.2019	JNA	NH3N	
622514-003	W	PZ-28D	04.25.2019 12:30	E351.2	Nitrogen, Kjeldahl, Total (Colorime by EI	05.07.2019	05.23.2019	JNA	TKN	
622514-003	W	PZ-28D	04.25.2019 12:30	E353.2	Nitrogen, Nitrate-Nitrite by EPA 353.2	05.07.2019	05.23.2019	JNA		
622514-003	W	PZ-28D	04.25.2019 12:30	E365.1	Total Phosphorus by EPA 365.1	05.07.2019	05.23.2019	JNA	Total Phos.	
622514-003	W	PZ-28D	04.25.2019 12:30	OACIDS	Organic & Volatile Acids by HPLC	05.07.2019	05.23.2019	JNA		
622514-003	W	PZ-28D	04.25.2019 12:30	SM2320B	Alkalinity by SM2320B	05.07.2019	05.09.2019	JNA	ALK ALKB ALKC	
622514-003	W	PZ-28D	04.25.2019 12:30	SM2540C	TDS by SM2540C	05.07.2019	**05.02.2019 12:30**	JNA	TDS	
622514-003	W	PZ-28D	04.25.2019 12:30	SM5310C	TOC by SM 5310C	05.07.2019	05.23.2019	JNA		
622514-003	W	PZ-28D	04.25.2019 12:30	SW6010C_Select2	Select Total Metals By SW6010C	05.07.2019	10.22.2019	JNA	Li Si	
622514-003	W	PZ-28D	04.25.2019 12:30	SW6020	ICP-MS Metals by SW 6020A	05.07.2019	10.22.2019	JNA	AL AS B BA CA CU FE I	
622514-003	W	PZ-28D	04.25.2019 12:30	SW6020_Select_1	1 Select Metals by SW-846 6020A	05.07.2019	10.22.2019	JNA	Th	
622514-003	W	PZ-28D	04.25.2019 12:30	SW7470A	Mercury by SW-846 7470A	05.07.2019	05.23.2019	JNA	HG	
622514-004	W	PZ-16S	04.25.2019 17:45	E300	Inorganic Anions by EPA 300	05.07.2019	05.23.2019	JNA	BR CL F SO4	
622514-004	W	PZ-16S	04.25.2019 17:45	E300_Select	Select Anions By EPA 300	05.07.2019	05.23.2019	JNA	NO2N NO3N SO4	
622514-004	W	PZ-16S	04.25.2019 17:45	SW7470A	Mercury by SW-846 7470A	05.07.2019	05.23.2019	JNA	HG	
622514-004	W	PZ-16S	04.25.2019 17:45	SW6020_Select_1	1 Select Metals by SW-846 6020A	05.07.2019	10.22.2019	JNA	Th	
622514-004	W	PZ-16S	04.25.2019 17:45	SW6020	ICP-MS Metals by SW 6020A	05.07.2019	10.22.2019	JNA	AL AS B BA CA CU FE I	
622514-004	W	PZ-16S	04.25.2019 17:45	SW6010C_Select2	Select Total Metals By SW6010C	05.07.2019	10.22.2019	JNA	Li Si	
622514-004	W	PZ-16S	04.25.2019 17:45	SM5310C	TOC by SM 5310C	05.07.2019	05.23.2019	JNA		
622514-004	W	PZ-16S	04.25.2019 17:45	SM2540C	TDS by SM2540C	05.07.2019	**05.02.2019 17:45**	JNA	TDS	

Inter Office Shipment or Sample Comments:

Inter-Office Shipment

IOS Number : 38077

Date/Time:	04.29.2019 09:31	Created by:	John Andros	Please send report to:	John Andros
Lab# From:	**Atlanta**	Delivery Priority:		Address:	1600 Oakbrook Dr., Suite 565, Norcross, GA 300
Lab# To:	**Houston**	Air Bill No.:	775087842096	E-Mail:	john.andros@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
622514-004	W	PZ-16S	04.25.2019 17:45	SM2320B	Alkalinity by SM2320B	05.07.2019	05.09.2019	JNA	ALK ALKB ALKC	
622514-004	W	PZ-16S	04.25.2019 17:45	OACIDS	Organic & Volatile Acids by HPLC	05.07.2019	05.23.2019	JNA		
622514-004	W	PZ-16S	04.25.2019 17:45	E365.1	Total Phosphorus by EPA 365.1	05.07.2019	05.23.2019	JNA	Total Phos.	
622514-004	W	PZ-16S	04.25.2019 17:45	E353.2	Nitrogen, Nitrate-Nitrite by EPA 353.2	05.07.2019	05.23.2019	JNA		
622514-004	W	PZ-16S	04.25.2019 17:45	E351.2	Nitrogen, Kjeldahl, Total (Colorime by EI	05.07.2019	05.23.2019	JNA	TKN	
622514-004	W	PZ-16S	04.25.2019 17:45	E350.1	Nitrogen Ammonia by EPA 350.1	05.07.2019	05.23.2019	JNA	NH3N	
622514-005	W	PZ-48S	04.26.2019 10:20	SM5310C	TOC by SM 5310C	05.07.2019	05.24.2019	JNA		
622514-005	W	PZ-48S	04.26.2019 10:20	SM2540C	TDS by SM2540C	05.07.2019	**05.03.2019 10:20**	JNA	TDS	
622514-005	W	PZ-48S	04.26.2019 10:20	SM2320B	Alkalinity by SM2320B	05.07.2019	05.10.2019	JNA	ALK ALKB ALKC	
622514-005	W	PZ-48S	04.26.2019 10:20	OACIDS	Organic & Volatile Acids by HPLC	05.07.2019	05.24.2019	JNA		
622514-005	W	PZ-48S	04.26.2019 10:20	E365.1	Total Phosphorus by EPA 365.1	05.07.2019	05.24.2019	JNA	Total Phos.	
622514-005	W	PZ-48S	04.26.2019 10:20	SW6020	ICP-MS Metals by SW 6020A	05.07.2019	10.23.2019	JNA	AL AS B BA CA CU FE I	
622514-005	W	PZ-48S	04.26.2019 10:20	E351.2	Nitrogen, Kjeldahl, Total (Colorime by EI	05.07.2019	05.24.2019	JNA	TKN	
622514-005	W	PZ-48S	04.26.2019 10:20	E350.1	Nitrogen Ammonia by EPA 350.1	05.07.2019	05.24.2019	JNA	NH3N	
622514-005	W	PZ-48S	04.26.2019 10:20	E300_Select	Select Anions By EPA 300	05.07.2019	05.24.2019	JNA	NO2N NO3N SO4	
622514-005	W	PZ-48S	04.26.2019 10:20	E300	Inorganic Anions by EPA 300	05.07.2019	05.24.2019	JNA	BR CL F SO4	
622514-005	W	PZ-48S	04.26.2019 10:20	SW6010C_Select2	Select Total Metals By SW6010C	05.07.2019	10.23.2019	JNA	Li Si	
622514-005	W	PZ-48S	04.26.2019 10:20	E353.2	Nitrogen, Nitrate-Nitrite by EPA 353.2	05.07.2019	05.24.2019	JNA		
622514-005	W	PZ-48S	04.26.2019 10:20	SW6020_Select_1	1 Select Metals by SW-846 6020A	05.07.2019	10.23.2019	JNA	Th	
622514-005	W	PZ-48S	04.26.2019 10:20	SW7470A	Mercury by SW-846 7470A	05.07.2019	05.24.2019	JNA	HG	
622514-006	W	PZ-43	04.26.2019 11:55	E350.1	Nitrogen Ammonia by EPA 350.1	05.07.2019	05.24.2019	JNA	NH3N	
622514-006	W	PZ-43	04.26.2019 11:55	E351.2	Nitrogen, Kjeldahl, Total (Colorime by EI	05.07.2019	05.24.2019	JNA	TKN	
622514-006	W	PZ-43	04.26.2019 11:55	E353.2	Nitrogen, Nitrate-Nitrite by EPA 353.2	05.07.2019	05.24.2019	JNA		
622514-006	W	PZ-43	04.26.2019 11:55	SW7470A	Mercury by SW-846 7470A	05.07.2019	05.24.2019	JNA	HG	
622514-006	W	PZ-43	04.26.2019 11:55	OACIDS	Organic & Volatile Acids by HPLC	05.07.2019	05.24.2019	JNA		

Inter Office Shipment or Sample Comments:

Relinquished By:

Received By:

Inter-Office Shipment

IOS Number : 38077

Date/Time:	04.29.2019 09:31	Created by:	John Andros	Please send report to:	John Andros
Lab# From:	**Atlanta**	Delivery Priority:		Address:	1600 Oakbrook Dr., Suite 565, Norcross, GA 300
Lab# To:	**Houston**	Air Bill No.:	775087842096	E-Mail:	john.andros@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
622514-006	W	PZ-43	04.26.2019 11:55	SM2320B	Alkalinity by SM2320B	05.07.2019	05.10.2019	JNA	ALK ALKB ALKC	
622514-006	W	PZ-43	04.26.2019 11:55	SM2540C	TDS by SM2540C	05.07.2019	**05.03.2019 11:55**	JNA	TDS	
622514-006	W	PZ-43	04.26.2019 11:55	SM5310C	TOC by SM 5310C	05.07.2019	05.24.2019	JNA		
622514-006	W	PZ-43	04.26.2019 11:55	SW6010C_Select2	Select Total Metals By SW6010C	05.07.2019	10.23.2019	JNA	Li Si	
622514-006	W	PZ-43	04.26.2019 11:55	SW6020	ICP-MS Metals by SW 6020A	05.07.2019	10.23.2019	JNA	AL AS B BA CA CU FE I	
622514-006	W	PZ-43	04.26.2019 11:55	SW6020_Select_1	1 Select Metals by SW-846 6020A	05.07.2019	10.23.2019	JNA	Th	
622514-006	W	PZ-43	04.26.2019 11:55	E300_Select	Select Anions By EPA 300	05.07.2019	05.24.2019	JNA	NO2N NO3N SO4	
622514-006	W	PZ-43	04.26.2019 11:55	E300	Inorganic Anions by EPA 300	05.07.2019	05.24.2019	JNA	BR CL F SO4	
622514-006	W	PZ-43	04.26.2019 11:55	E365.1	Total Phosphorus by EPA 365.1	05.07.2019	05.24.2019	JNA	Total Phos.	
622514-007	W	SW-1 (W)	04.25.2019 18:05	E300	Inorganic Anions by EPA 300	05.07.2019	05.23.2019	JNA	BR CL F SO4	
622514-007	W	SW-1 (W)	04.25.2019 18:05	E300_Select	Select Anions By EPA 300	05.07.2019	05.23.2019	JNA	NO2N NO3N SO4	
622514-007	W	SW-1 (W)	04.25.2019 18:05	SW7470A	Mercury by SW-846 7470A	05.07.2019	05.23.2019	JNA	HG	
622514-007	W	SW-1 (W)	04.25.2019 18:05	SW6020_Select_1	1 Select Metals by SW-846 6020A	05.07.2019	10.22.2019	JNA	Th	
622514-007	W	SW-1 (W)	04.25.2019 18:05	SW6020	ICP-MS Metals by SW 6020A	05.07.2019	10.22.2019	JNA	AL AS B BA CA CU FE I	
622514-007	W	SW-1 (W)	04.25.2019 18:05	SW6010C_Select2	Select Total Metals By SW6010C	05.07.2019	10.22.2019	JNA	Li Si	
622514-007	W	SW-1 (W)	04.25.2019 18:05	E350.1	Nitrogen Ammonia by EPA 350.1	05.07.2019	05.23.2019	JNA	NH3N	
622514-007	W	SW-1 (W)	04.25.2019 18:05	E351.2	Nitrogen, Kjeldahl, Total (Colorime by EI	05.07.2019	05.23.2019	JNA	TKN	
622514-007	W	SW-1 (W)	04.25.2019 18:05	E353.2	Nitrogen, Nitrate-Nitrite by EPA 353.2	05.07.2019	05.23.2019	JNA		
622514-007	W	SW-1 (W)	04.25.2019 18:05	E365.1	Total Phosphorus by EPA 365.1	05.07.2019	05.23.2019	JNA	Total Phos.	
622514-007	W	SW-1 (W)	04.25.2019 18:05	OACIDS	Organic & Volatile Acids by HPLC	05.07.2019	05.23.2019	JNA		
622514-007	W	SW-1 (W)	04.25.2019 18:05	SM2320B	Alkalinity by SM2320B	05.07.2019	05.09.2019	JNA	ALK ALKB ALKC	
622514-007	W	SW-1 (W)	04.25.2019 18:05	SM2540C	TDS by SM2540C	05.07.2019	**05.02.2019 18:05**	JNA	TDS	
622514-007	W	SW-1 (W)	04.25.2019 18:05	SM5310C	TOC by SM 5310C	05.07.2019	05.23.2019	JNA		
622514-008	W	SW-2 (E)	04.26.2019 09:06	E351.2	Nitrogen, Kjeldahl, Total (Colorime by EI	05.07.2019	05.24.2019	JNA	TKN	
622514-008	W	SW-2 (E)	04.26.2019 09:06	E350.1	Nitrogen Ammonia by EPA 350.1	05.07.2019	05.24.2019	JNA	NH3N	

Inter Office Shipment or Sample Comments:

Date Relinquished:

Date Received:

Inter-Office Shipment

IOS Number : 38077

Date/Time:	04.29.2019 09:31	Created by:	John Andros	Please send report to:	John Andros
Lab# From:	**Atlanta**	Delivery Priority:		Address:	1600 Oakbrook Dr., Suite 565, Norcross, GA 300
Lab# To:	**Houston**	Air Bill No.:	775087842096	E-Mail:	john.andros@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
622514-008	W	SW-2 (E)	04.26.2019 09:06	E300_Select	Select Anions By EPA 300	05.07.2019	05.24.2019	JNA	NO2N NO3N SO4	
622514-008	W	SW-2 (E)	04.26.2019 09:06	E300	Inorganic Anions by EPA 300	05.07.2019	05.24.2019	JNA	BR CL F SO4	
622514-008	W	SW-2 (E)	04.26.2019 09:06	E353.2	Nitrogen, Nitrate-Nitrite by EPA 353.2	05.07.2019	05.24.2019	JNA		
622514-008	W	SW-2 (E)	04.26.2019 09:06	E365.1	Total Phosphorus by EPA 365.1	05.07.2019	05.24.2019	JNA	Total Phos.	
622514-008	W	SW-2 (E)	04.26.2019 09:06	OACIDS	Organic & Volatile Acids by HPLC	05.07.2019	05.24.2019	JNA		
622514-008	W	SW-2 (E)	04.26.2019 09:06	SM2320B	Alkalinity by SM2320B	05.07.2019	05.10.2019	JNA	ALK ALKB ALKC	
622514-008	W	SW-2 (E)	04.26.2019 09:06	SM2540C	TDS by SM2540C	05.07.2019	**05.03.2019 09:06**	JNA	TDS	
622514-008	W	SW-2 (E)	04.26.2019 09:06	SW7470A	Mercury by SW-846 7470A	05.07.2019	05.24.2019	JNA	HG	
622514-008	W	SW-2 (E)	04.26.2019 09:06	SW6010C_Select2	Select Total Metals By SW6010C	05.07.2019	10.23.2019	JNA	Li Si	
622514-008	W	SW-2 (E)	04.26.2019 09:06	SW6020	ICP-MS Metals by SW 6020A	05.07.2019	10.23.2019	JNA	AL AS B BA CA CU FE I	
622514-008	W	SW-2 (E)	04.26.2019 09:06	SW6020_Select_1	1 Select Metals by SW-846 6020A	05.07.2019	10.23.2019	JNA	Th	
622514-008	W	SW-2 (E)	04.26.2019 09:06	SM5310C	TOC by SM 5310C	05.07.2019	05.24.2019	JNA		

Inter Office Shipment or Sample Comments:

John Andros

04.29.2019

Taha Hedib

04.30.2019 09:15

Cooler Temperature: 2.0

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 38077

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : hou-068

Sent By: John Andros **Date Sent:** 04/29/2019 09:31 AM

Received By: Taha Hedib **Date Received:** 04/30/2019 09:15 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**No**	
#5 *Custody Seals Signed and dated for Containers/coolers	**No**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 04/30/2019

Taha Hedib