2020 Water Quality Report

U.S. Army Corps of Engineers
Saint Louis District

Lake Shelbyville Water Quality Conditions: 1984-2020

June 2021

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Prepared for

United States Army Corps of Engineers
Saint Louis District
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EXECUTIVE SUMMARY

The United States Army Corps of Engineers (USACE) commitment to environmental compliance and protection of estuaries, rivers, lakes, and navigable waters arises from the national policy and directives expressed in Federal Statutes, Executive Orders, and internal regulations. These regulations were designed to minimize pollution, maximize recreation, protect aesthetics, preserve natural resources, and promote the comprehensive planning and use of water bodies to enhance the public interest rather than private gain; therefore, USACE, in the design, construction, management, operation, and maintenance of its facilities, will exert leadership within existing authorities and appropriations in the nationwide effort to protect, enhance, and sustain the quality of the nation's resources. It is USACEs policy to comply with requirements of the Clean Water Act and not to degrade existing water quality conditions to the maximum extent that is practicable, consistent with project authorities, Federal legal and regulatory requirements, the public interest, and water control manuals.

The United States Army Corps of Engineers, Saint Louis District (CEMVS), implemented a water quality monitoring program during the 1970s to evaluate how its civil projects may be affecting water resources. Data collected from this effort serves as an invaluable tool for evaluating the significance of annual water quality measurements and tracking long-term trends. Water quality data is provided to the Missouri Department of Natural Resources and the Illinois Environmental Protection Agency to be used as a screening mechanism for the Missouri and Illinois Water Quality Report which is required every two years by the Clean Water Act Sections 303(d) and 305(b).

The National Water Quality Inventory Report to Congress (305(b) report) is the primary vehicle for informing law makers and the public about general water quality conditions in the United States. This document characterizes our water quality, identifies widespread water quality problems of national significance and describes various programs implemented to restore and protect our waters. Currently the Illinois Environmental Protection Agency (IEPA, 2018) has listed Lake Shelbyville impaired for Total Suspended Solids, total phosphorus, and mercury, while the Kaskaskia upstream of the Lake is impaired for PCB's, dissolved oxygen, pH, Fecal Coliform, and mercury. The lists of sources for these impairments are runoff, crop production, shore modifications, and recreational pollution.

Water quality sampling in 2020 revealed the following concerns at Lake Shelbyville: Atrazine, iron, chlorophyll, phosphorus and bacteria.

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INTRODUCTION

Lake Shelbyville is located in Shelby and Moultrie Counties of east-central Illinois with the dam site approximately one-half mile east of Shelbyville. Two rivers, the West Okaw and the Kaskaskia, drain into Lake Shelbyville. The Kaskaskia River begins in Champaign County, while the West Okaw headwaters drain farmland from Piatt County southward. At normal recreation pool, the 11,100 acre lake is approximately 20 miles long, varying in width from one-quarter to one mile. Average depth is 19 feet, with depths much deeper in the original river channel. The Kaskaskia River is an important and prominent natural feature in Central and Southwestern Illinois. The watershed, primarily agricultural, is the second largest river system within Illinois, originating in Champaign County and flowing in a southwesterly direction for approximately 292 miles, where it unites with the Mississippi River in Randolph County. The Kaskaskia River Watershed encompasses an area of 5,746 square miles (10.2% of the entire state). The CEMVS manages and operates two large reservoirs on the Kaskaskia River, Lake Shelbyville and Carlyle Lake, as well as the 36 mile long navigable channel and lock and dam at the Kaskaskia River Project.

Shelbyville Lake is managed and operated by the CEMVS for the authorized purposes of flood risk management, recreation, water supply, navigation, and fish and wildlife conservation. The lake serves as a heavy recreational usage lake. The land surrounding the lake is used predominately for agriculture. Surrounding communities have existing industrial/commercial operations and residents which discharge wastewater into municipal wastewater treatment plants that ultimately discharge treated water into the Kaskaskia River basin. Agricultural runoff and municipal wastewater treatment facilities are the primary potential source of pollution into the Lake Shelbyville watershed. Additional sources are marinas, recreational watercraft discharges and wildlife fecal material runoff.

Water quality is of paramount importance for sustaining ecological integrity and services provided by the Kaskaskia River and Lake Shelbyville. Water quality is influenced by a range of both point and nonpoint pollution sources, which may include natural processes, industrial and municipal effluents, and surface runoff from agricultural arenas.

The Saint Louis District (CEMVS) of United States Army Corps of Engineers (USACE) has implemented a Water Quality Management Plan (WQMP) as part of the operation and maintenance activities associated with managing USACEs' civil works projects throughout the District which includes, among other reservoirs and rivers, the Kaskaskia River and Lake Shelbyville. The WQMP addresses surface water quality management issues and adheres to the guidance and requirements specified by Clean Water Act (CWA), as well as the self-imposed Engineering Regulation (ER) 1110-2-8154, "Water Quality and Environmental Management for USACE Civil Works Projects" (USACE,

2018). Water quality monitoring is implemented to fulfill five primary objectives that drive the CEMVS WQMP:

1) Establish baseline conditions, identify significant water quality trends, and document problems and accomplishments.
2) Ensure that surface water quality, as affected by CEMVS projects, is suitable for project purposes, existing water uses, public health and safety, and in compliance with applicable state and federal water quality standards.
3) Provide support to water control, project operations, and navigation for regulations and modifications.
4) Investigate special problems, design and implement modifications, and improve water management procedures
5) Establish and maintain strong working partnerships and collaborations with appropriate entities within and outside USACE regarding water quality.

This report is intended to document and assess water quality conditions occurring at Lake Shelbyville. The report describes conditions observed in 2020, as well as baseline data collected from 1984-2019. Data are available upon request.

LAKE SHELBYVILLE WQMP COVERAGE

The WQMP for Lake Shelbyville includes water samples taken at the following locations: major tributaries (SBV-12 and SBV-13), main body of the lake (SBV-2, SBV-4, SBV-11, and the marinas), and just downstream of the dam (SBV-1). See figure 1 and Table 1 for a site map and site coordinates.

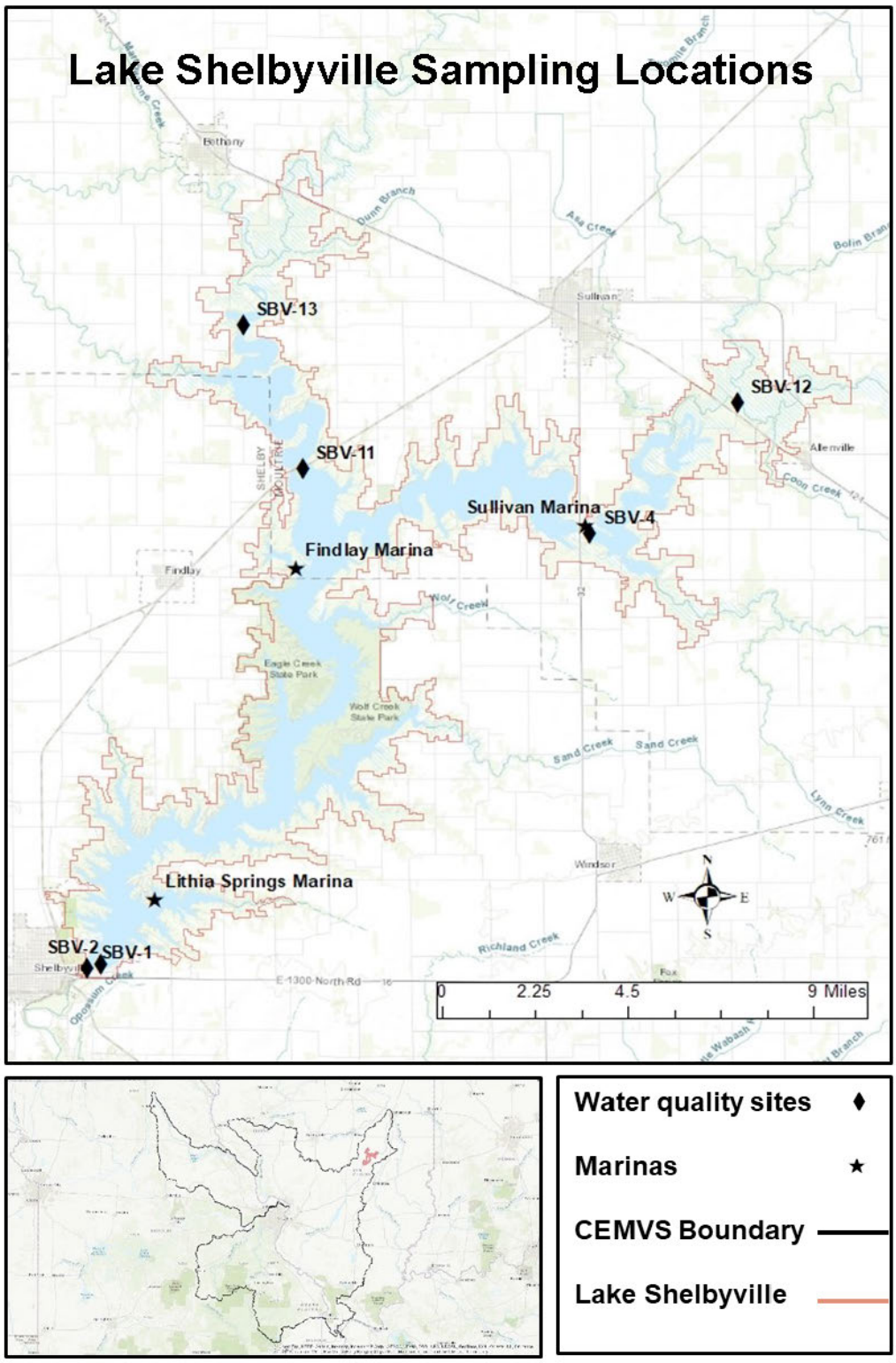


Figure 1. Water Quality (WQ) Sampling Locations at Lake Shelbyville

Sample Location Summary Table

Table 1: Sample Location Summary and Geographic Location (NAD 1983)

Sample Location Type	Abbreviation	Site Name	Latitude	Longitude
Major Tributary	TRIB	SBV-13	39.59417	-88.72651
	TRIB	SBV-12	39.57170	-88.55345
Main Reservoir Surface	RS	SBV-2	39.40947	-88.77614
	RS	SBV-4	39.53397	-88.60528
	RS	SBV-11	39.55269	-88.70556
	RS	SBV-FIN	39.52388	-88.70820
	RS	SBV-LS	39.42802	-88.75728
	RS	SBV-SUL	39.53635	-88.60675
Reservoir Benthic	RB	SBV-2-10	39.40947	-88.77614
Tail Race (below dam)	TR	SBV-1	39.40823	-88.78124

Samples at Marinas are not always taken in the exact same location.

METHODS AND ANALYSIS: WATER QUALITY

Data Collection and Historical Reference Data

During 2020, water quality samples were collected and analyzed for 10 locations during four separate sampling events (n=40; Table 1). One duplicate sample was also collected during each sampling event for quality control purposes. Samples were collected from the upper one meter of the water column, preserved, and transported to the Applied Research and Development Laboratory (ARDL) in Mount Vernon, Illinois for analysis.

For the purpose of this report, historical reference data refers to water quality data collected during the previous years ranging as far back as 1984 (parameter dependent) at Lake Shelbyville. Historical reference data are intended to represent the current condition of Lake Shelbyville.

Statistical Summary and Comparison to Applicable Water Quality Standards

Statistical analyses were performed on water quality monitoring data collected for 10 locations, and classified as TRIB (n= 2), RS (n=3), RB (n=1), and TR (n=1). For comparison, statistical analyses were also performed on historical water quality monitoring data and, although some sampling locations may have been removed, they were classified in the same manner. Descriptive statistics were calculated to describe central tendencies and corresponding 95% confidence levels for the mean. Monitoring results were compared to applicable water quality standard criteria established by the appropriate state agencies pursuant to the Federal Clean Water Act. If a state water quality standard criteria was not available, recommended criteria from the literature were considered.

Seasonal data are classified as: Winter (December 01 - March 14), Spring (March 15 – May 31), Summer (June 1 – September 15), Fall (September 16 – November 30).

Quality Assurance

The United States Army Corps of Engineers, Saint Louis District quality assurance procedures considers two primary focus areas: (1) those that involve laboratory analysis of samples, and (2) those concerning the collection and processing of the water samples in the field.

Since 2012, ARDL has analyzed water quality samples for CEMVS. Their quality assurance program includes the use of quality control charts, check standards, field and in-house matrix spikes, laboratory blanks and performance evaluation samples. In addition, one blind duplicate sample is submitted for at least every 20 samples, or, in this case, every sampling event (one event/day at Lake Shelbyville has 6 samples and one duplicate).

Internal checks are also used for field sampling. This includes adherence to operating procedures for data collection and periodic evaluation of sampling personnel. Field sampling equipment and multimeters are calibrated/serviced in accordance with factory recommendations.

Water Quality Parameters and Criteria

Parameters used to characterize water quality have been generally accepted criteria for assessing aquatic life and human health include:

Temperature (Temp) is important because it controls several aspects of water quality. Colder water holds more dissolved oxygen which is required by aquatic organisms. Plants grow more rapidly and use more oxygen in warmer water. Decomposition of organic matter which uses oxygen is accelerated in warmer water. Temperature can also determine the availability of toxic compounds such as ammonia. Since aquatic organisms are cold blooded, water temperature regulates their metabolism and ability to survive. The number and kinds of organisms that are found in streams or lakes is directly related to temperature. Certain organisms require a specific temperature range, such as Salmonids, which require water temperatures below 20°C. Water temperature criteria for warm water bodies in Illinois is within 2.8°C of the seasonal norm.

Dissolved Oxygen (DO) refers to the measurement of free oxygen molecules (O_2) that are not bonded to any other elements; thus, oxygen bonded in water (H_2O) would not be considered in a measurement of dissolved oxygen. Oxygen is dissolved in surface waters through interactions with the atmosphere and as a waste product of photosynthesis ($CO_2 + H_2O$ (CH_2O) + O_2) from phytoplankton and aquatic vegetation. Additional factors influencing DO include temperature, pressure, and salinity.

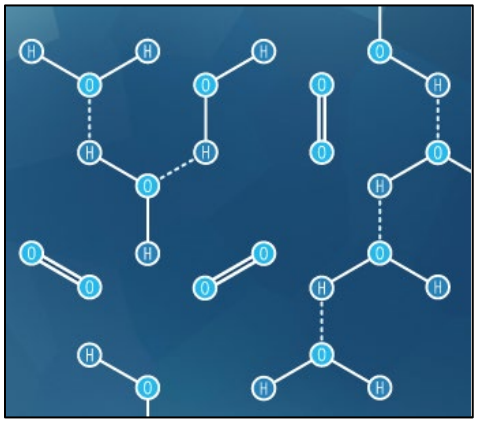


Figure 1: Dissolved oxygen (O_2) vs oxygen bonded in water (H_2O).

Dissolved oxygen is required for most aquatic life including fish, invertebrates, bacteria, and plants. Fish and invertebrates utilize DO for respiration through gills and cutaneous breathing, and plants require dissolved oxygen for respiration when photosynthesis is not possible. Smaller microbes and bacteria utilize DO for decomposition of organic materials, a process essential for nutrient cycling. Bottom feeders such as worms and mussels can persist when DO is ≥1mg/L, while most inland fish species require a minimum DO of 4mg/L. The DO water quality criteria for Illinois is ≥5mg/L.

Potential of Hydrogen (pH) is a measure of how acidic or basic water is. Potential of Hydrogen is reported on a logarithmic scale ranging from 0 – 14, with 7.0 being neutral. As pH increases from 7.0, water increases in alkalinity, whereas a decrease from 7.0 indicates an increase in acidity. Since pH is measured on a logarithmic scale, every

one-unit change in pH indicates a 10-fold change in acidity; thus, a pH of 6.0 is ten times more acidic than a pH of 7.0 and a pH of 4.0 would be one-thousand times more than a pH of 7.0.

The pH of water varies considerably beyond the local level. Natural variation in bedrock and soil composition through which water moves has been reported as one of the most influential factors. Additional factors include decomposition of organic materials, acidity of local precipitation, discharge of effluents and chemicals, and mining operations.

Most freshwater streams and rivers have a natural pH ranging from 6 to 8. As pH approaches 5 (acidic), less tolerant fish and aquatic invertebrate assemblages may be extirpated, and a pH below 4.5 would be without most desired aquatic life. Conversely, when pH exceeds 9.5 (alkaline), aquatic fish and invertebrate begins to rapidly decrease and beyond 10, fish become extirpated. The pH water quality criteria for Illinois ranges from 6.5 – 9.0.

Conductivity is a measure of water's ability to conduct electrical current. In its purist form, water has a *near* neutral charge, indicating that it is an inefficient conductor of electrical current. Thus the ability to carry electrical current is driven by water soluble ions (atoms and molecules with a charge) such as salts and other inorganic materials. Conductivity is also influenced by water temperature; as temperature increases, conductivity increases. For this reason, conductivity is commonly reported as Specific Conductivity (SpCond), which is the measurement of conductivity at 25 degrees Celsius.

Conductivity in streams and rivers is affected by the geology of the area. Streams running through granite tend to have lower conductivity due to granite being composed of inert material; materials that do not ionize or dissolve into ionic compounds in water. Conversely, streams that run through areas of limestone or clay soils tend to have higher conductivity readings because of the presence of materials that ionize. Conductivity is useful as a general measure of water quality. A stream tends to have a relatively constant range of conductivity that, once established, can be used as a baseline. Significant changes, either increases or decreases, might indicate a source of pollution has been introduced into the water. The pollution source could be a treatment plant, which raises the conductivity, or an oil spill, which would lower the conductivity. In general, there are no water quality criteria for SpCond. The District threshold of 500 µS/cm is a rule of thumb value that is often associated with some form of biological impairment.

Oxidation Reduction Potential (ORP) is a measurement of the net status of all the oxidation and reduction reactions in a given water sample. Oxidation involves an exchange of electrons between 2 atoms. The atom that loses an electron is oxidized and the one that gains an electron is reduced. Oxidation reduction potential sensors measure the electrochemical potential between the solution and a reference electrode. Readings are expressed in millivolts. Positive readings indicate increased oxidizing potential and negative readings increased reduction. Oxidation reduction potential

values are used much like pH values to determine water quality. While pH readings characterize the state of a system relative to the receiving or donating hydrogen ions (base or acid), ORP readings characterize the relative state of losing or gaining electrons. Generally ORP readings above 400mV are harmful to aquatic life; however, ORP is a non-specific measurement, which is a reflection of a combination of effects of all the dissolved materials in the water. Therefore, the measurement of ORP in relatively clean water has only limited utility unless a predominant redox-active material is known to be present.

Total Suspended Solids (TSS) concentrations, which cause the photosynthetic activity to be reduced by more than 10% from the seasonably established norm, can have a detrimental effect on aquatic life. Soil particles, organic material, and other debris comprise suspended solids in the water column. **Turbidity (FNU)** measurements are inverse to suspended solid measurements. As TSS increases, the FNU or water transparency decreases. Total suspended solids can be an important indicator of the type and degree of FNU. Total Suspended Solids measurements represent a combination of **Volatile Suspended Solids (VSS)**, which consist of organic material, and **Nonvolatile Suspended Solids (NVSS)**, which is comprised of inorganic mineral particles in the water. In order to more accurately determine the types and amounts of suspended solids, VSS are analyzed. Volatile suspended solid concentration represents the organic portion of the total suspended solids. Organic material often includes plankton, and additional plant and animal debris present in water. Total VSS indicates the presence of organics in suspension; and, therefore, show additional demand levels of oxygen. Illinois does not currently have a standard criteria for TSS, NVSS or VSS.

Total Organic Carbon (TOC) is a measure of the amount of organic carbon in a water body. In addition to natural organic substances, TOC includes insecticides and herbicides, as well as domestic and industrial waste. Industrial waste effluent may include carbon-containing compounds with various toxicity levels. Further, a high organic content means an increase in the growth of microorganisms which contribute to the depletion of oxygen supplies.

Currently, there are no state or federal water quality standard criteria set for TOC. Because carbon occurs naturally, its concentration varies based on physical and chemical attributes in a watershed; thus, this study relies on historical reference conditions to identify unfavorable conditions.

Metals Iron (TFe) and Manganese (TMn) (T=total) are nutrients for both plants and animals. Living organisms require trace amounts of metals. However, excessive amounts can be harmful to the organism. Heavy metals exist in surface waters in three forms, colloidal, particulate, and dissolved. Water chemistry determines the rate of adsorption and desorption of metals to and from sediment. Metals are desorbed from the sediment if the water experiences increases in salinity, decreases in redox potential, or decreases in pH. Metals in surface waters can be from natural or human sources. Metal levels in surface water may pose a health risk to humans and the environment.

Pesticides are commonly used throughout much of the agricultural landscape that the Kaskaskia River flows. This study considers one insecticide and seven herbicides. Atrazine and Alachlor herbicides are commonly used agricultural chemicals which can be readily transported by rainfall runoff. Both compounds are suspected of causing cancer; and therefore, were monitored for the protection of human and aquatic health. Herbicides which are pesticides used to kill vegetation are the most widely used and sampled. Two of the most widely used herbicides are Atrazine and Alachlor. Atrazine is a preemergence or postemergence herbicide use to control broadleaf weeds and annual grasses. Atrazine is most commonly detected in ground and surface water due to its wide use, and its ability to persist in soil and move in water. Alachlor is a Restricted Use Pesticide (RUP) due to the potential to contaminate groundwater. The water quality standards for the pesticides sampled are located in Table 2.

Nitrogen occurs naturally in water through several forms including nitrogen (N2), nitrite (NO2-N), nitrate (NO3-N), ammonia (NH3), and ammonium (NH4). Nitrates are the most commonly reported form of nitrogen, and may have a meaningful influence on a water body's trophic status. Algae and other plants use NO3-N as a food source, thus excess levels of NO3-N can promote increases in algae production and hypereutrophic conditions.

In general, NO3-N does not have a *direct* effect on fish or aquatic insects. Illinois has set criteria standards for NO3-N to 10 mg/L to accommodate safe drinking waters for human and livestock; however, this threshold likely exceeds the concentration that is appropriate for assessing ecosystem health.

Total Ammonia Nitrogen (TAN) includes NH3 and NH4. Total ammonia nitrogen is a colorless gas with a strong pungent odor. Ammonia occurs naturally and is a biological requirement for aquatic life, however elevated concentrations can be toxic to freshwater organisms. Unnatural sources of ammonia include, accidental releases of ammonia rich fertilizer, effluent from sewage treatment plants, improper disposal of ammonia products, and livestock waste.

Toxic concentrations for freshwater organisms range from 0.53 – 22.8 mg/L, and are strongly dependent on both pH and temperature. In general, an increase in pH and/or temperature corresponds with an increase in toxicity. Additional information in regards to the relationship between pH, temperature, and ammonia, as it relates to toxicity, can be reviewed in Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater (USEPA 2013).

Total Phosphorus (TP) is analyzed as phosphorus, and has been monitored due to the potential for uptake by nuisance algae. Levels of phosphate can indicate the potential for rapid growth of algae (algae bloom) which can cause serious oxygen depletion during the algae decay process. Phosphorous is typically the limiting nutrient in a water body; therefore, any addition of phosphorous to the ecosystem stimulates the growth of plants and algae. Phosphorous is delivered to lakes and streams by way of runoff from

agricultural fields and urban environments. Other sources of phosphorous are anaerobic decomposition of organic matter, leaking sewer systems, and point source pollution. The general standard for phosphorous in lake water is 0.05 mg/L. Dissolved phosphorous, also called **Orthophosphate (PO_4-P)** is generally found in much smaller concentrations than total phosphorous, and is readily available for algal uptake. Orthophosphate concentrations in a water body vary widely over short periods of time as plants take it up and release it.

Chlorophyll a (CHL_a) is a measure of the amount of algae growing in a waterbody, and therefore can be used to classify trophic status. Although algae are a natural part of freshwater ecosystems, too much algae can cause aesthetic problems such as green scums and bad odors, and can result in decreased levels of DO.

Pheophytin a (PHEO a) is a natural degradation product or digestion of CHL_a. The ratio of PHEO_a to CHL_a can provide an indication of the decline or growth in eukaryotic algae and cyanobacteria populations.

Trophic Status is determined using a modified **Trophic State Index (TSI)**, as described by Carlson (1977). Trophic State Index is calculated from secchi-depth transparency, total phosphorus, and chlorophyll-a measurements. Values for these three parameters are converted to an index number ranging from 0-100 according to the following equations:

TSI (Seechi Depth) = 10(6 - (ln SD/ln 2))
TSI (Chlorophyll-*a*) = TSI(Chl) = 10(6 - ((2.04 - 0.68 ln Chl)/ln 2))
TSI (Total Phosphorus) = TSI(TP) = 10(6 – (ln (48/TP)/ln 2))

where ln indicates the Natural Logarithm

A TSI average value, calculated as the average of the three individually determined TSI metrics, is used as an overall indicator of a water body's trophic state. The relationship between TSI and trophic condition is defined as follows:

TSI	Trophic Condition
0-40	Oligotrophic
40-50	Mesotrophic
50-70	Eutrophic
70-100	Hypereutrophic

Laboratory Methods and Water Quality Criteria Summary Table

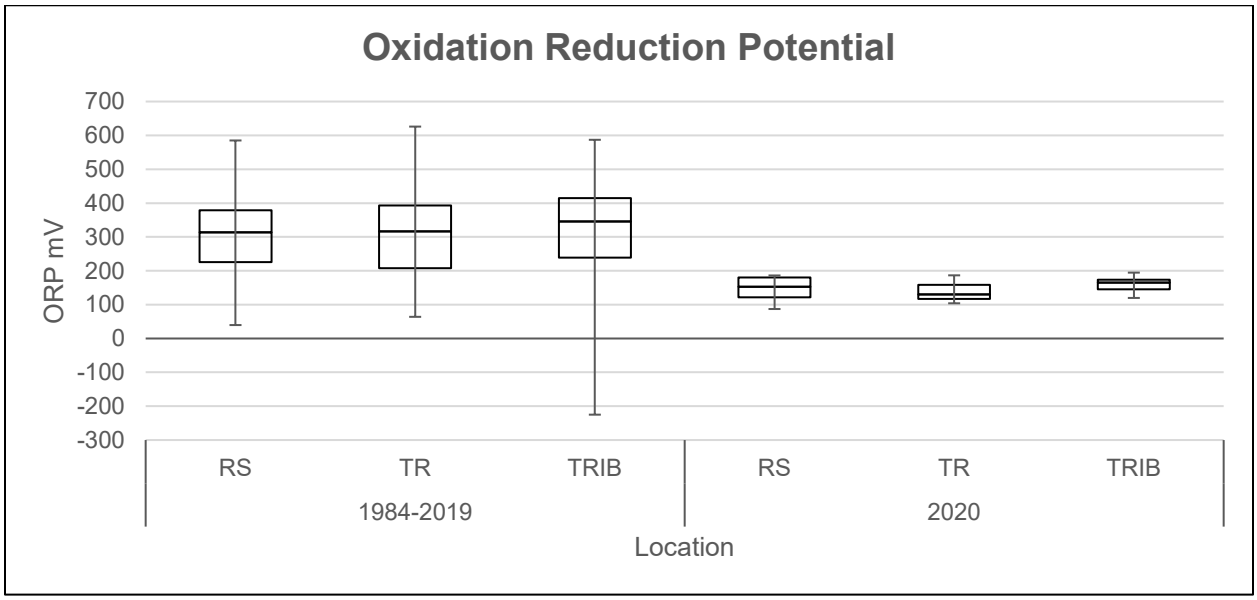
Table 2: Metrics, Methods, and Water Quality Criteria Used for Evaluating Water Quality

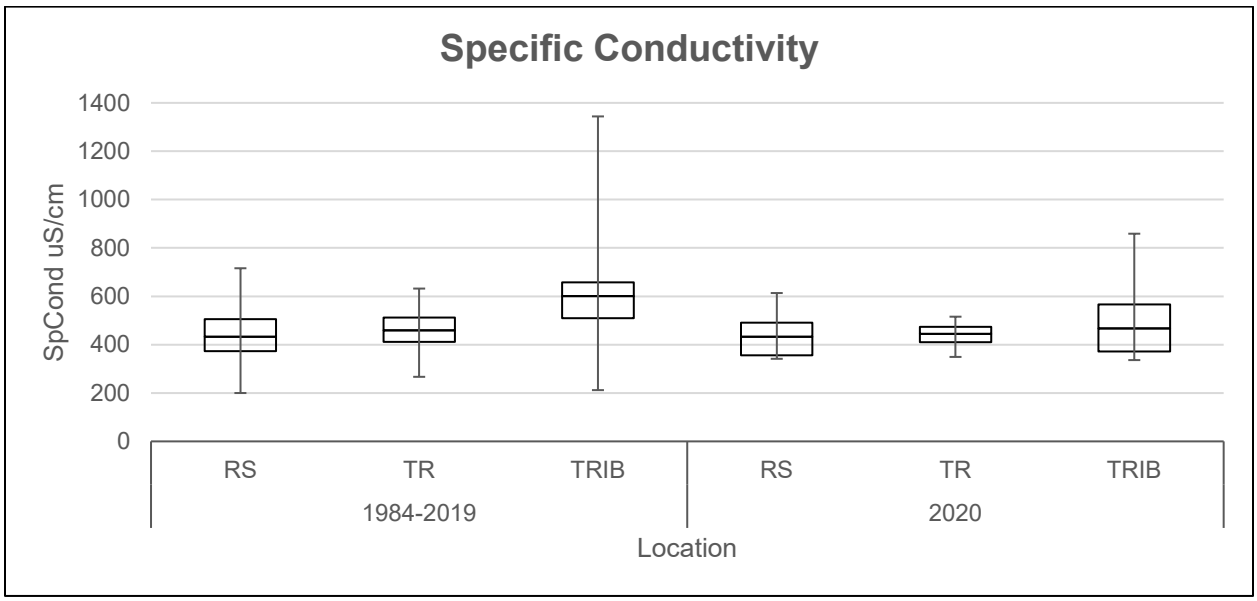
Metric	Abbreviation	Analysis Method	Water Quality Criteria	Source
Alachlor		EPA Method 8270C	< 2µg/L PWS or <1100 µg/L: aquatic life	Illinois EPA
Ammonia Nitrogen	NH_3	EPA Method 350.1	<15 mg/L	United States EPA
Atrazine	Atrazine	EPA Method 8270C	9 µg/L: Chronic or 82 µg/L: Acute or 3 µg/L DWS	Illinois EPA
Bacteria: E. Coliform	E Col	EPA Method 1604	< 235 E. Col per 100/mL for single sample	Illinois EPA
Chlorophyll a	Chl_a	SM Method 10200H	< 25mg/cm^3 (Eutrophic Upper Limit)	Carlson 1977
Chlorpyrifos		EPA Method 8270C	< 0.11 µg/L: aquatic life	Illinois EPA
Cyanazine		EPA Method 8270C	< 30 µg/L: chronic or < 370 µg/L acute (aquatic life)	Illinois EPA
Depth	Depth	Multiparameter Meter	Measurements reported at ~1 meter	-----
Dissolved Oxygen	DO	Multiparameter Meter	Greater than 5.0mg/L	Illinois EPA
Metolachlor		EPA Method 8270C	30.4 µg/L: Chronic or 380 µg/L: Acute	Illinois EPA
Metribuzin		EPA Method 8270C	8.4 mg/L: aquatic life or 8.3 mg/L: human health	Illinois EPA
Nitrate as Nitrogen	NO_3	Green Method	< 10 mg/L	Illinois EPA
Non-Volatile Suspended Solids	NVSS	TSS - VSS	-----	-----
Orthophosphate	Ortho	EPA Method 365.2	-----	-----
Pendmethalin		EPA Method 8270C	< 30 µg/L: chronic or < 350 µg/L acute (aquatic life)	Illinois EPA
Pheophytin a	Phpy_a	SM Method 10200H	-----	-----
Potential of Hydrogen	pH	Multiparameter Meter	Range: 6.5 – 9.0pH	Illinois EPA
Specific Conductivity	SpCond	Multiparameter Meter	500 uS/cm	-----
Temperature	Temp	Multiparameter Meter	Less than rise of 2.8°C above normal seasonal temperature	Illinois EPA
Total Dissolved Solids	TDS	Multiparameter Meter	< 500 mg/L	Illinois EPA
Total Manganese	TMn	EPA Method 6010C	< 1 mg/L	Illinois EPA

Metric	Abbreviation	Analysis Method	Water Quality Criteria	Source
Total Organic Carbon	TOC	EPA Method 415.1	-----	-----
Total Iron	TFe	EPA Method 6010C	< 1 mg/L	Illinois EPA
Total Phosphorus	TP	EPA Method 365.2	Less than 0.05 mg/L	Illinois EPA
Total Suspended Solids	TSS	EPA Method 160.2	-----	-----
Trifluralin		EPA Method 8270C	< 1.1 µg/L: chronic or < 26 µg/L acute (aquatic life)	Illinois EPA
Turbidity	Turb	Multiparameter Meter	-----	-----
Volatile Suspended Solids	VSS	EPA Method 160.4	-----	-----

**1 mg/L is equivalent to 1 drop in two bathtubs and 1 ug/L is equivalent to 1 drop in an Olympic size swimming pool. PWS is public water supply. DWS is drinking water standard.*

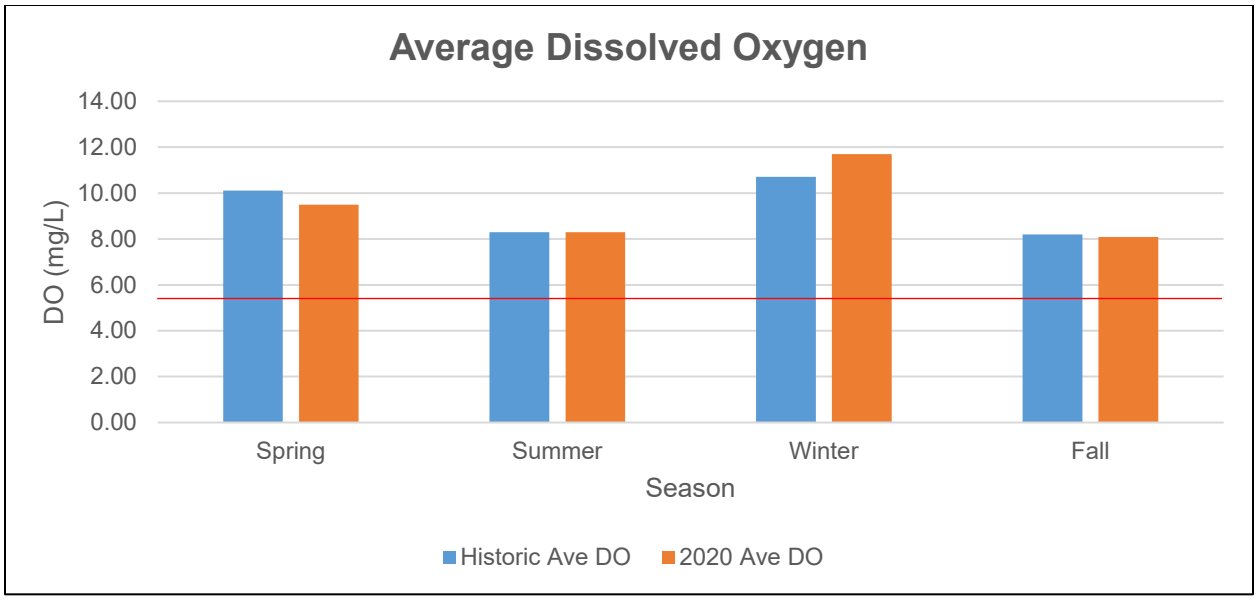
RESULTS AND SUMMARY STATISTICS: WATER QUALITY





		Historical Reference 1984-2019				2020			
	Location	Mean	Median	Count	CL (95.0%)	Mean	Median	Count	CL (95.0%)
SpCond	RS	444.71	433.00	301	10.46	439.45	432.50	23	39.43
	TR	455.93	459.50	138	12.51	438.55	444.60	4	110.26
	TRIB	582.54	601.00	191	19.04	502.24	467.10	8	148.13
ORP	RS	298.88	314.00	278	13.86	147.97	153.20	17	16.64
	TR	299.21	316.00	119	21.67	140.17	129.90	3	104.95
	TRIB	324.95	346.00	181	18.97	159.97	165.35	6	27.95

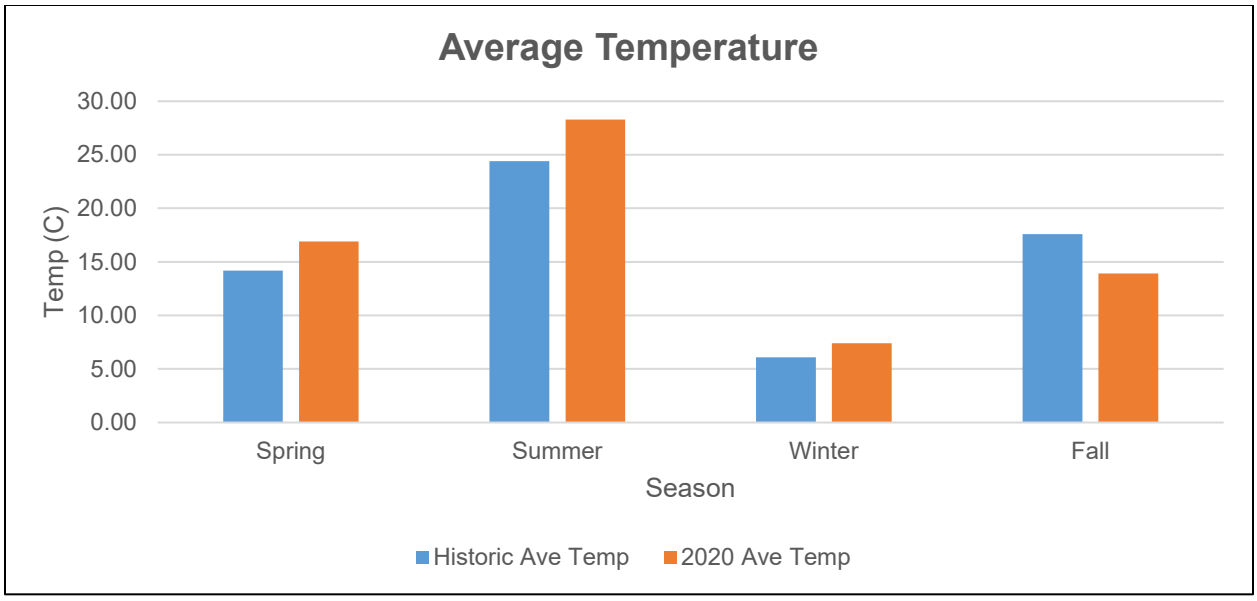
**This report does not acknowledge a water quality criteria for SpCond or ORP.*



Red line placed at the 5 mg/L level.

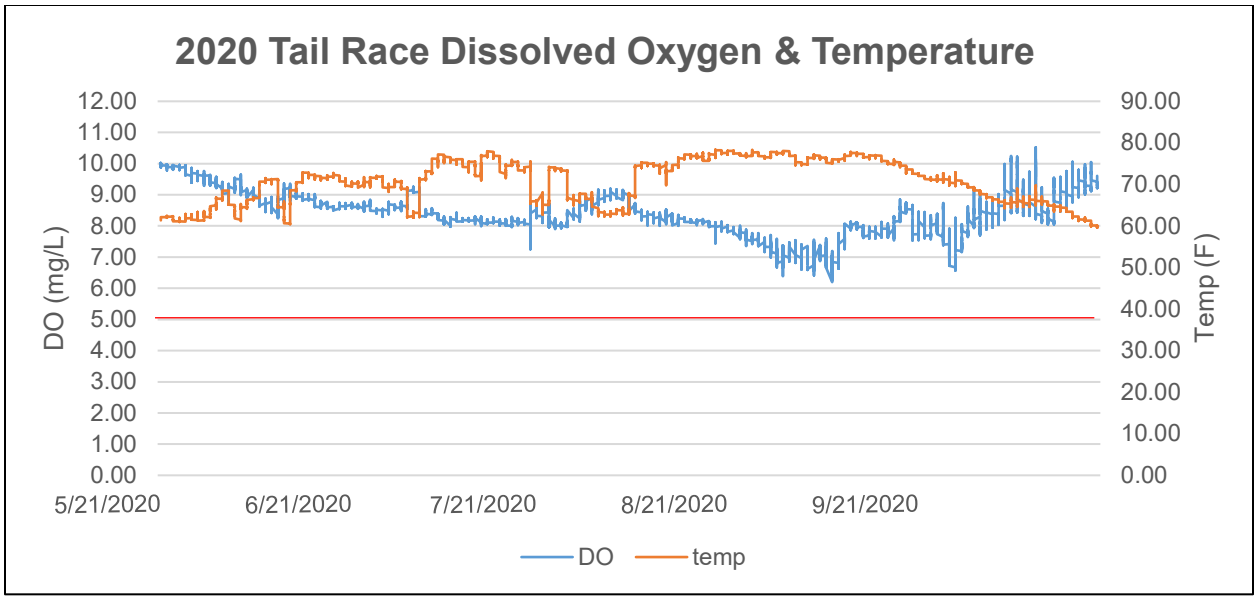
		Historical Reference 1992-2019				2020			
Season	Location	Mean	Median	Count	CL (95.0%)	Mean	Median	Count	CL (95.0%)
Spring	RS	10.57	10.75	92	0.48	9.32	9.51	5	1.89
	TR	10.76	10.60	44	0.58	16.20	16.20	1	
	TRIB	9.04	8.78	68	0.60	6.59	6.59	2	14.74
Summer	RS	8.82	9.08	149	0.45	7.45	7.22	6	1.21
	TR	8.54	8.67	70	0.35	9.05	9.05	1	
	TRIB	7.27	7.37	94	0.41	10.69	10.69	2	25.67
Winter	RS	12.10	12.38	6	1.36	11.34	11.06	6	0.63
	TR	12.20	13.49	3	6.84	13.03	13.03	1	
	TRIB	8.24	10.43	5	3.97	12.05	12.05	2	9.53
Fall	RS	8.87	9.26	52	0.66	7.92	8.09	6.00	0.78
	TR	9.15	9.20	23	1.00	9.56	9.56	1.00	
	TRIB	6.23	6.74	27	1.25	7.83	7.83	2.00	9.28

** There were no observations of DO recorded at <5 mg/L in 2020. All observations met the Illinois state standard.*



		Historical Reference 1992-2019				2020			
Season	Location	Mean	Median	Count	CL (95.0%)	Mean	Median	Count	CL (95.0%)
Spring	RS	14.46	15.35	92	1.14	17.20	17.20	5	0.50
	TR	13.04	14.40	44	1.26	16.20	16.20	1	
	TRIB	14.51	15.07	70	0.98	16.60	16.60	2	1.27
Summer	RS	26.12	26.53	152	0.41	28.87	28.90	6	0.22
	TR	21.14	20.62	71	0.70	19.40	19.40	1	
	TRIB	24.08	24.48	94	0.63	30.85	30.85	2	3.18
Fall	RS	18.43	19.45	54	1.46	14.40	14.40	6	1.46
	TR	17.82	19.10	23	1.81	15.30	15.30	1	
	TRIB	15.91	16.10	27	2.43	11.75	11.75	2	9.53
Winter	RS	6.78	6.83	6	1.50	7.40	7.86	6	1.20
	TR	5.03	4.70	3	4.12	5.72	5.72	1	
	TRIB	5.95	6.80	5	3.18	8.08	8.08	2	3.18

**The criterion of a 2.8C rise above natural/historic temperatures was exceeded in the tailrace during the spring and in the tributaries in the summer of 2020. This was based on mean comparisons between the historical seasonal reference and 2020 data.*

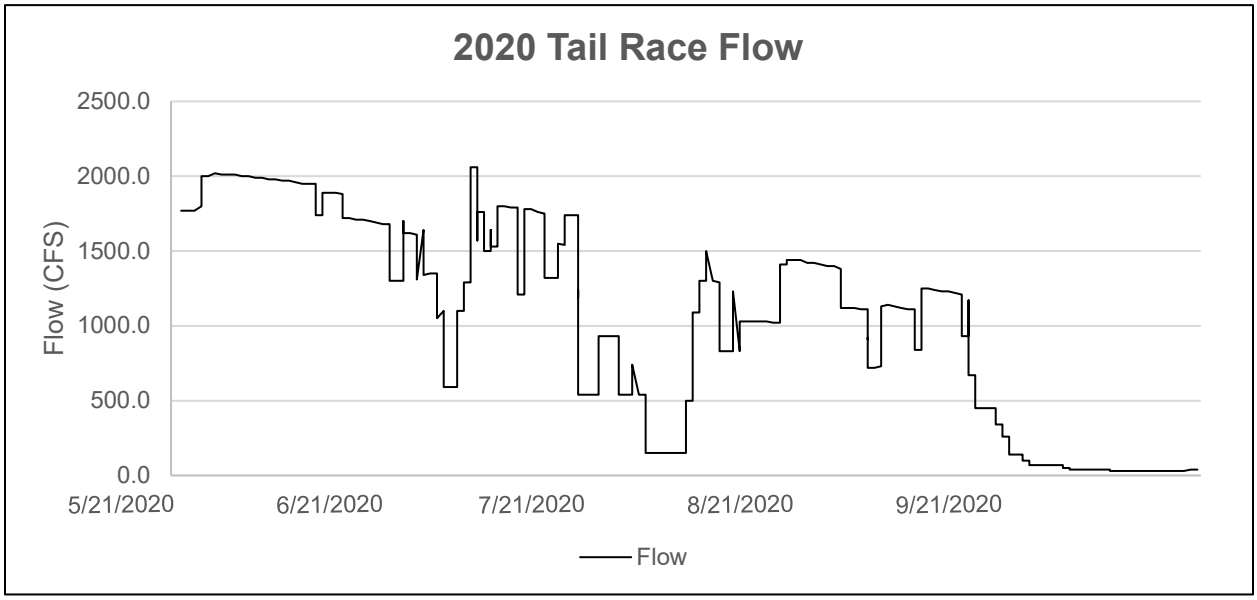


**Data recorded by multi-parameter sonde at tail race. 30 minute data shown. Red line placed at the 5 mg/L level. DO did not fall below 5 mg/L during 2020.*

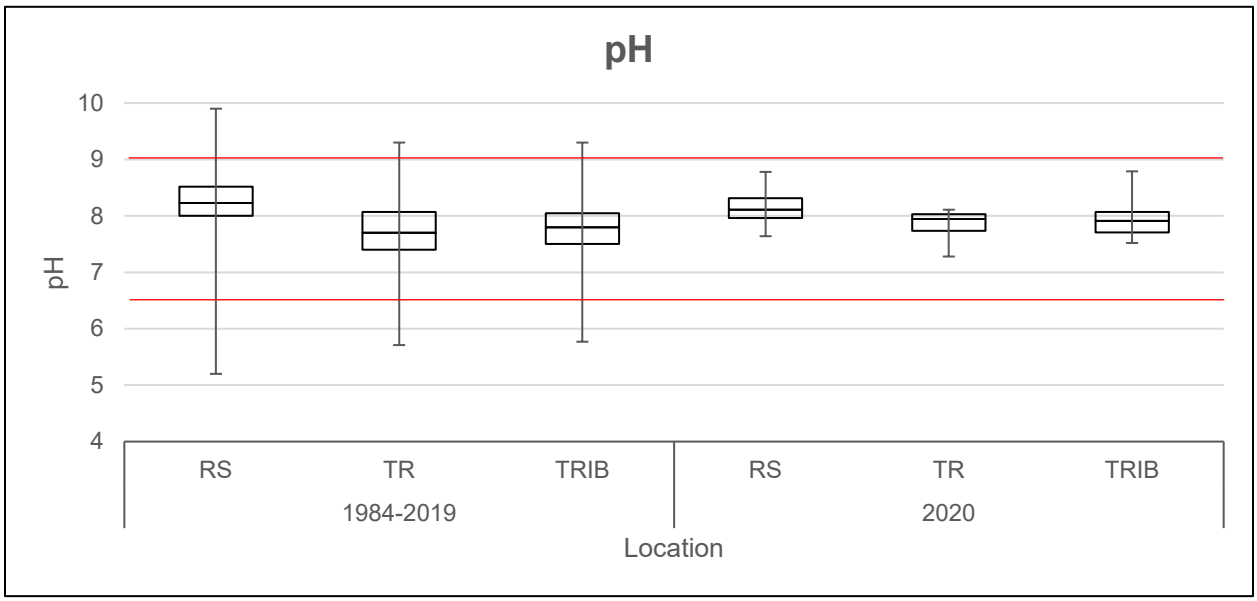
2020 Tail Race Continuous Temperature and DO

Parameter	Season	Mean	Median	Count	CL (95.0%)
DO	Spring	9.6	9.6	993	0.015
	Summer	8.3	8.3	10272	0.011
	Fall	8.4	8.3	3327	0.022
Temp	Spring	17.2	16.8	993	0.060
	Summer	22.4	23.1	10272	0.050
	Fall	19.8	19.4	3327	0.079

**Historical tail race continuous not included in this report.*



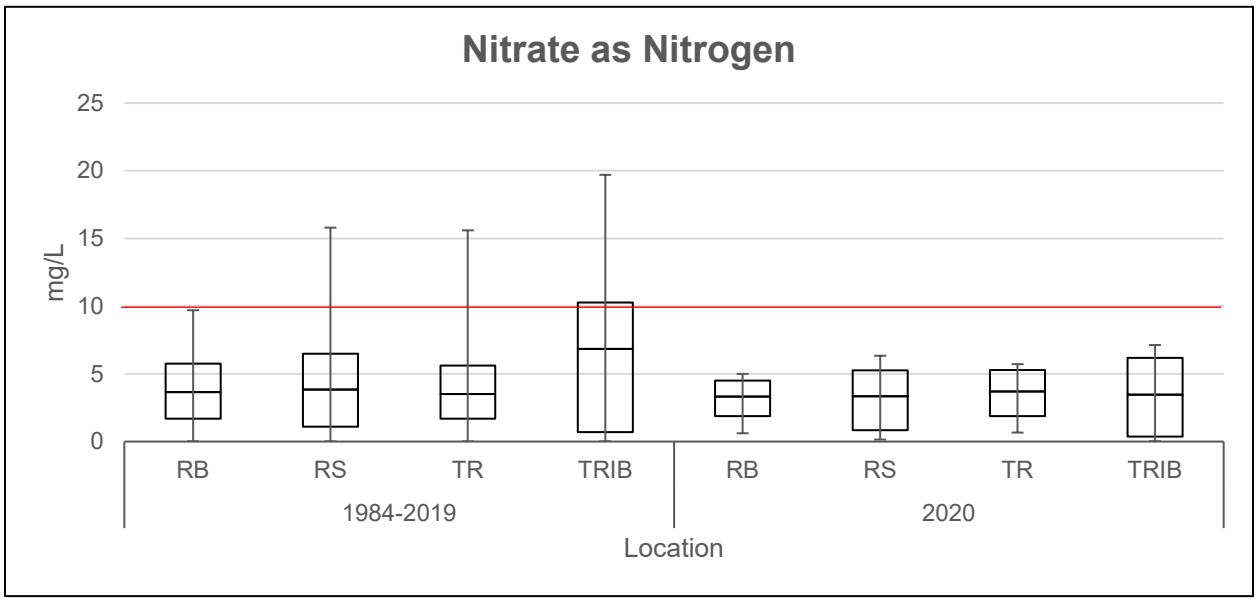
**Revised daily flow data shown as reviewed by the USACE water management office.*



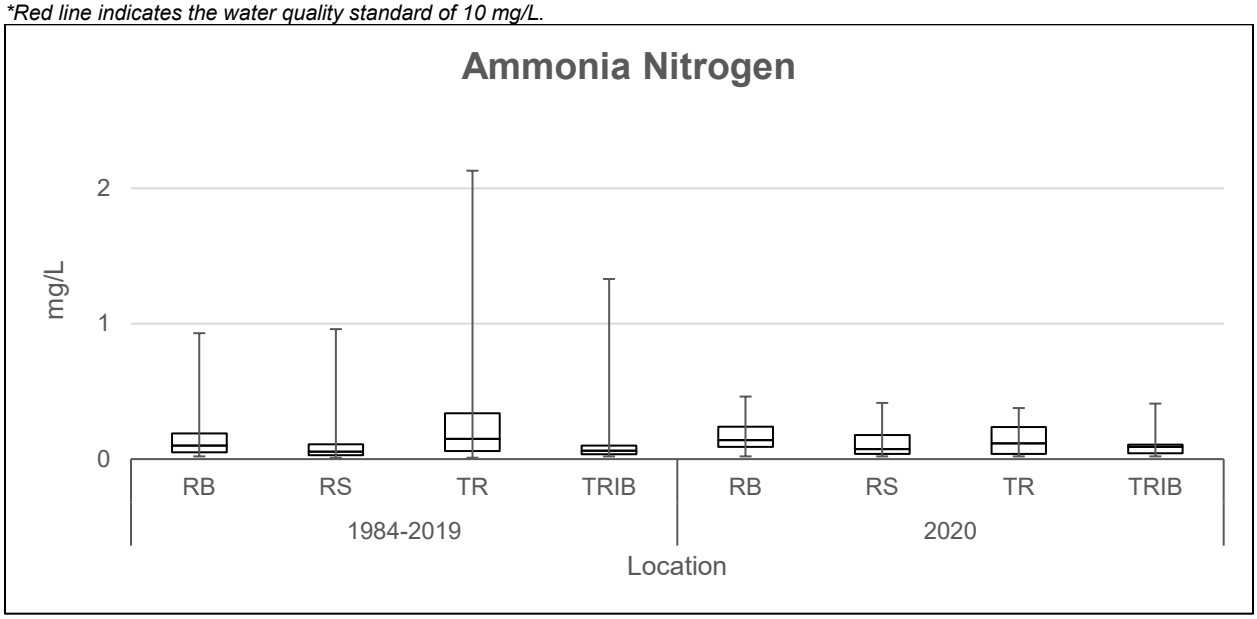
**Red lines indicate the upper and lower water quality criteria standards (9 and 6.5).*

		Historical Reference 1984-2019				2020			
	Location	Mean	Median	Count	CL (95.0%)	Mean	Median	Count	CL (95.0%)
pH	RS	8.20	8.23	301	0.06	8.16	8.11	23	0.14
	TR	7.72	7.70	136	0.09	7.82	7.95	4	0.59
	TRIB	7.77	7.80	192	0.07	7.95	7.91	8	0.34

pH observations were within water quality standards during 2020.

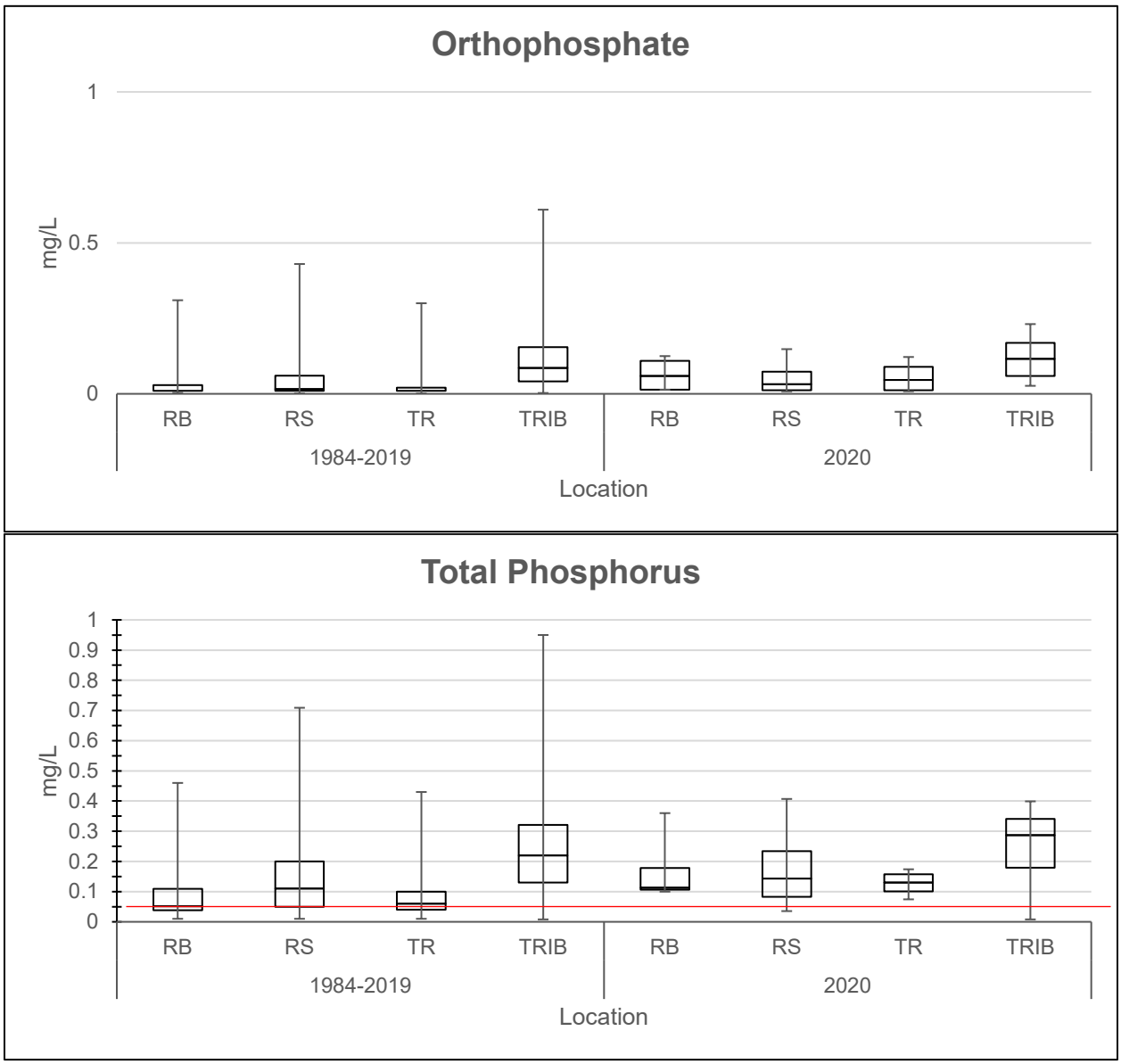


Red line indicates the water quality standard of 10 mg/L.



		Historical Reference 1984-2019				2020			
		Mean	Median	Count	CL (95.0%)	Mean	Median	Count	CL (95.0%)
NO3N	RB	3.86	3.65	106	0.48	3.07	3.33	4	3.18
	RS	4.23	3.84	333	0.37	3.17	3.35	12	1.51
	TR	3.90	3.50	156	0.45	3.45	3.71	4	3.81
	TRIB	6.32	6.85	222	0.69	3.40	3.46	8	2.63
NH3N	RB	0.15	0.10	106	0.03	0.19	0.14	4	0.30
	RS	0.09	0.06	331	0.01	0.13	0.07	12	0.09
	TR	0.30	0.15	158	0.06	0.16	0.12	4	0.26
	TRIB	0.09	0.06	222	0.02	0.12	0.09	8	0.11

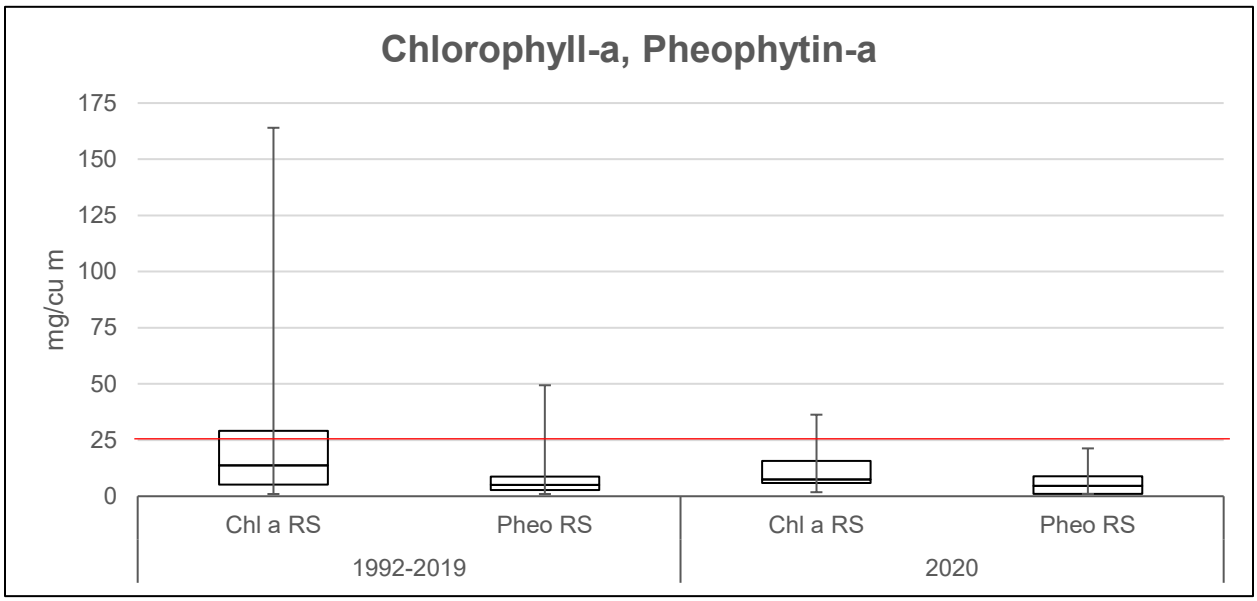
* *All observations of NO3 and ammonia were within the water quality standards.*



**Red line indicates the water quality standard of 0.05 mg/L.*

		Historical Reference 1984-2019				2020			
		Mean	Median	Count	CL (95.0%)	Mean	Median	Count	CL (95.0%)
Ortho	RB	0.03	0.01	106	0.01	0.06	0.06	4	0.09
	RS	0.05	0.02	333	0.01	0.05	0.03	12	0.03
	TR	0.03	0.01	157	0.01	0.06	0.05	4	0.09
	TRIB	0.11	0.09	226	0.01	0.12	0.12	8	0.06
TP	RB	0.09	0.05	107	0.02	0.17	0.11	4	0.20
	RS	0.14	0.11	337	0.01	0.17	0.14	12	0.07
	TR	0.08	0.06	158	0.01	0.13	0.13	4	0.07
	TRIB	0.25	0.22	226	0.02	0.26	0.29	8	0.11

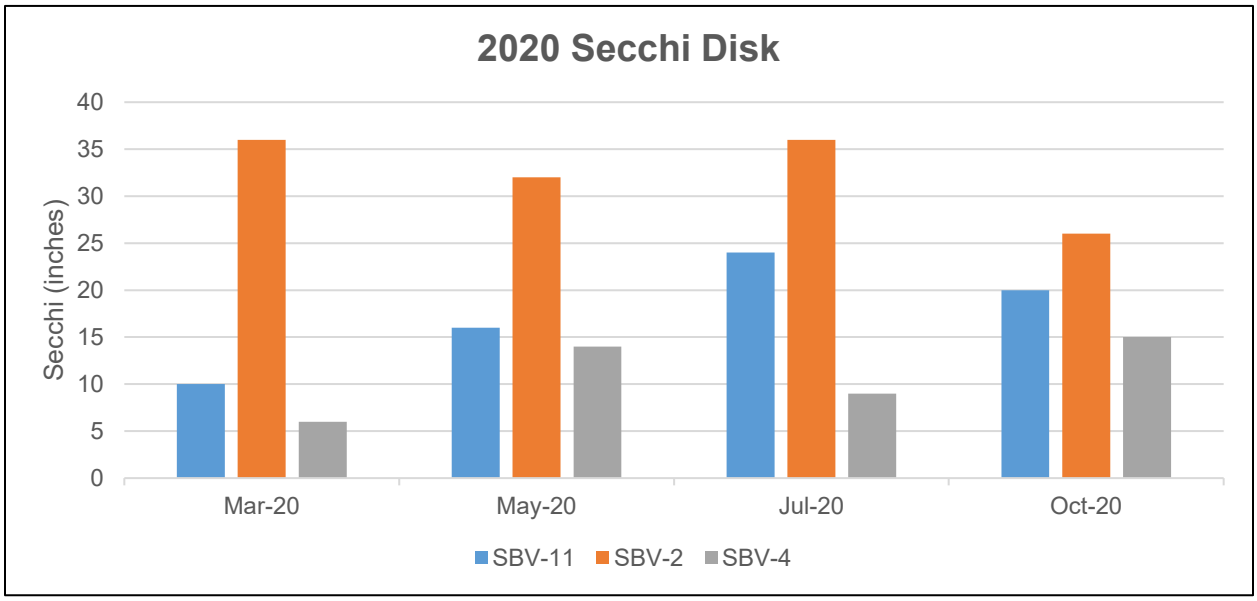
**Total phosphorus exceeded the proposed criteria of 0.05 mg/L for most locations throughout the year. This study does not acknowledge a water quality criteria for orthophosphate.*

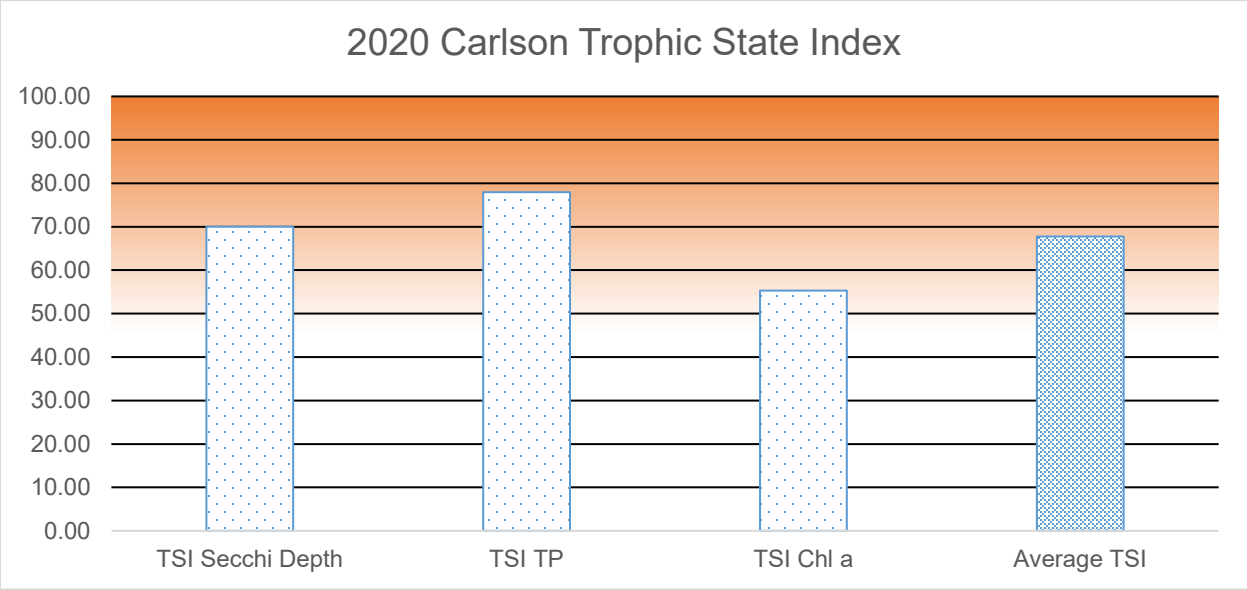


**Red line indicates the water quality standard of 25 mg/cm^3. See Carlson 1977.*

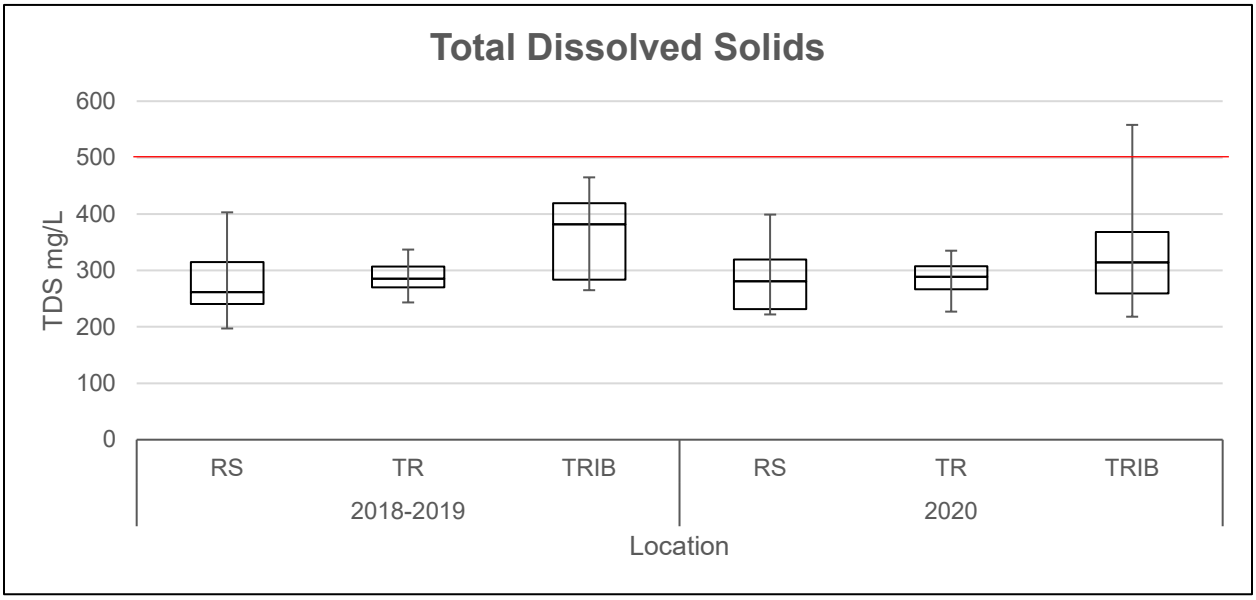
		Historical Reference 1992-2019				2020			
		Mean	Median	Count	CL(95.0%)	Mean	Median	Count	CL(95.0%)
Chl a	RS	21.77	13.70	297	2.63	12.39	7.45	12	7.00
Pheo a	RS	7.43	5.00	274	0.95	5.96	4.60	12	3.85

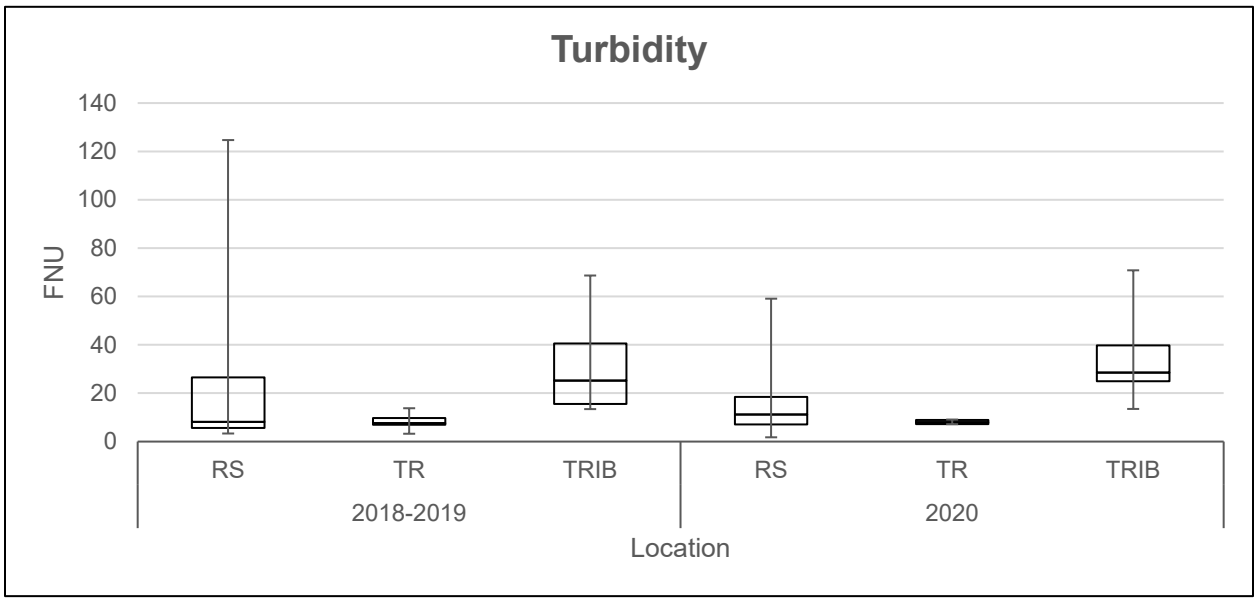
The proposed criteria for chlorophyll-a of 25mg/cm^3 was exceeded in the lake in October 2020. This study does not acknowledge a criteria for pheophytin.





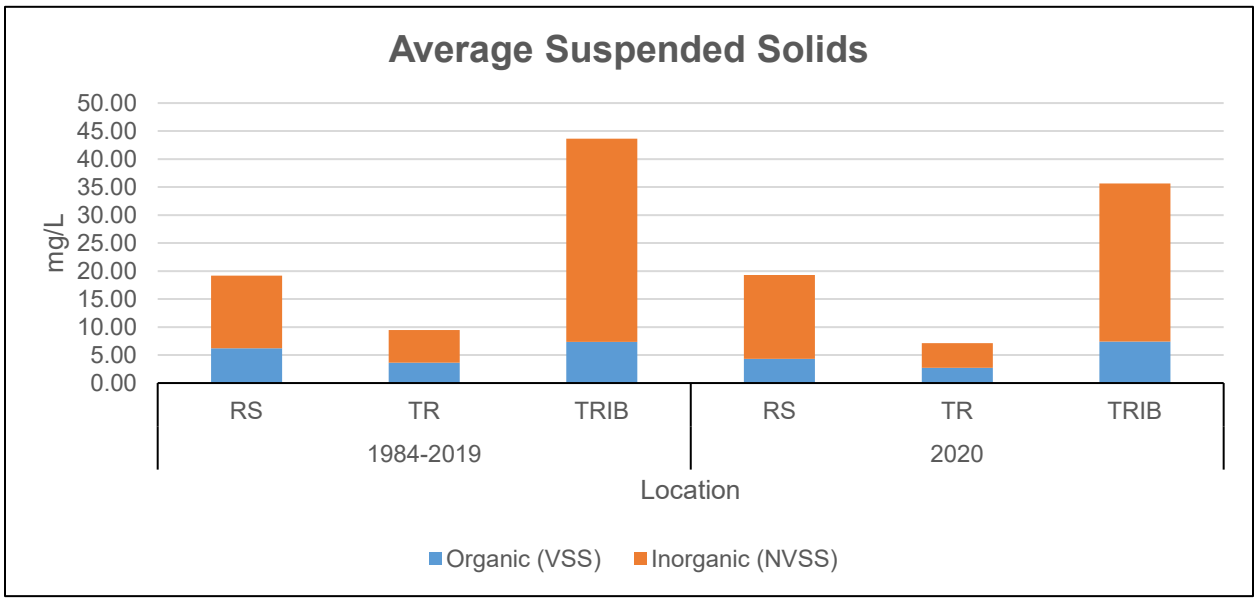
<40 = Oligotrophic __ 40-50 = Mesotrophic __ 50-70 = Eutrophic __ >70 Hypereutrophic





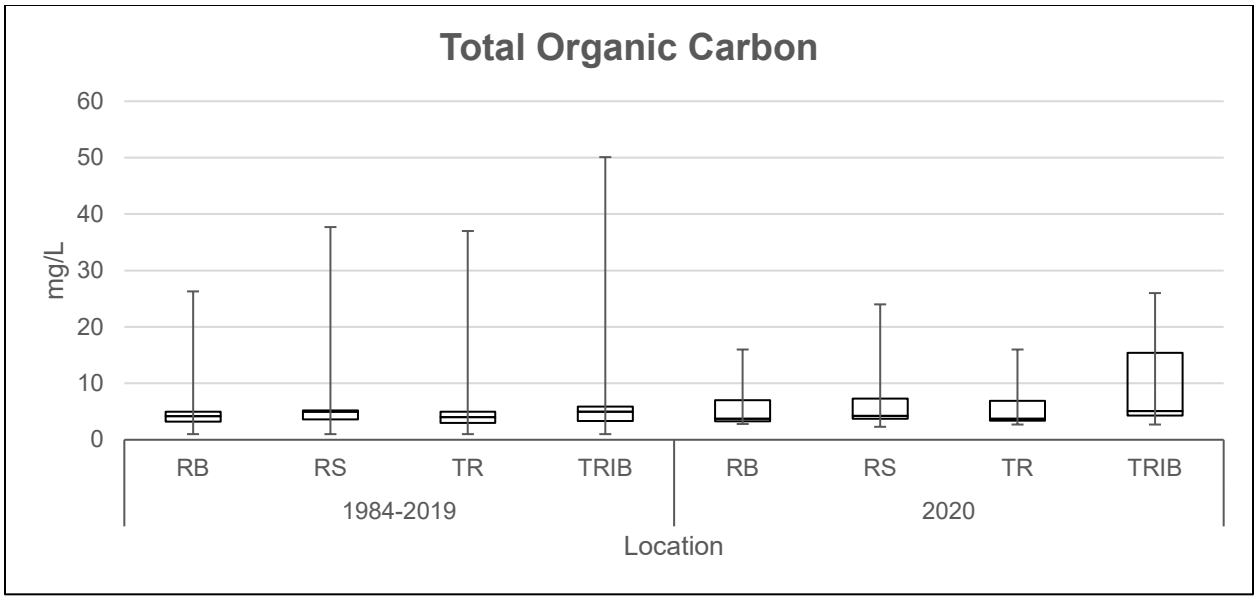
		Historical Reference 1984-2019				2020			
		Mean	Median	Count	CL (95.0%)	Mean	Median	Count	CL (95.0%)
TDS	RS	280.60	261.76	38	19.26	285.70	281.00	23	25.68
	TR	288.91	285.50	8	27.00	334.00	314.00	8	91.29
	TRIB	361.10	382.00	16	39.20	285.00	289.00	4	71.50
FNU	RS	19.52	8.18	38	8.04	15.93	11.20	23	6.16
	TR	8.47	7.66	8	2.79	8.11	8.07	4	1.60
	TRIB	29.47	25.25	16	8.66	35.34	28.50	8	16.48

* *One observation of TDS was greater than the water quality standard of 500 mg/L in a tributary in October 2020. This is not an exceedance because not 10% or greater of observations exceeded the standard. This study does not recognize a standard for Turbidity.*



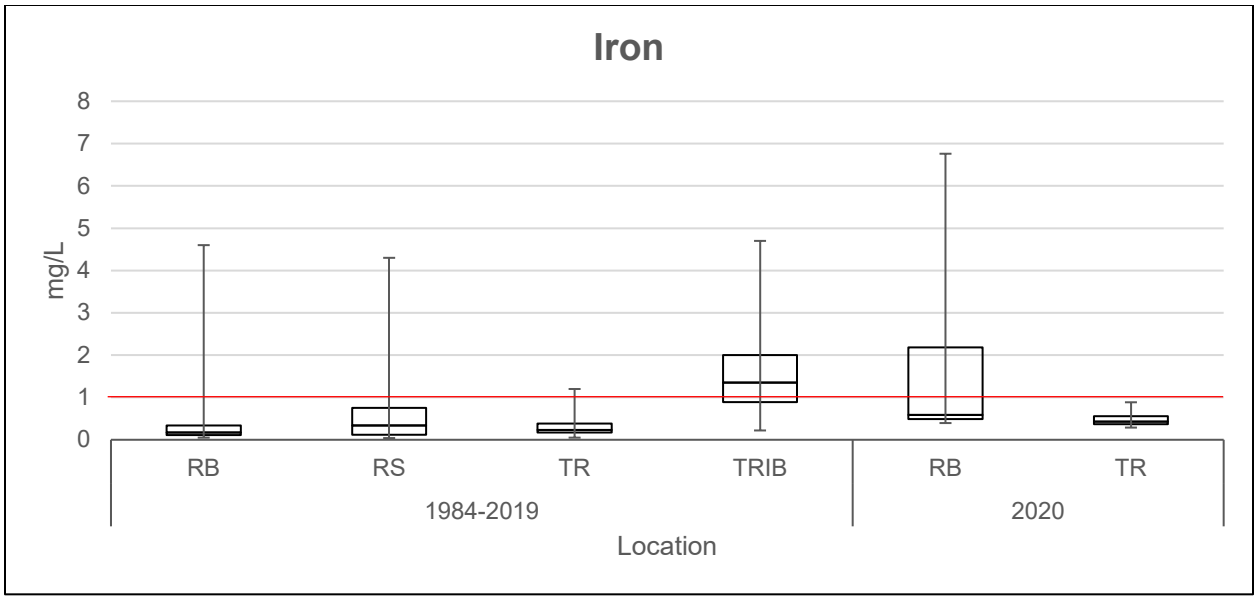
		Historical Reference 1984-2019				2020			
		Mean	Median	Count	CL (95.0%)	Mean	Median	Count	CL (95.0%)
TSS	RS	19.10	14.00	325	2.02	19.27	12.40	12	15.71
	TR	9.44	8.00	152	0.91	7.14	7.75	4	5.40
	TRIB	43.60	36.60	215	4.67	35.66	40.00	7	12.95
VSS	RS	6.19	5.00	322	0.41	4.33	4.00	12	1.43
	TR	3.64	3.00	151	0.38	2.74	2.68	4	1.07
	TRIB	7.33	6.00	213	0.71	7.40	6.67	7	2.08
NVSS	RS	12.96	7.30	325	1.79	14.94	8.60	12	14.54
	TR	5.83	5.00	152	0.76	4.40	5.30	4	5.12
	TRIB	36.34	29.60	215	4.13	28.26	33.33	7	11.56

**The solids data measured in 2020 were comparable to the historical data. There is no numeric standard for solids.*

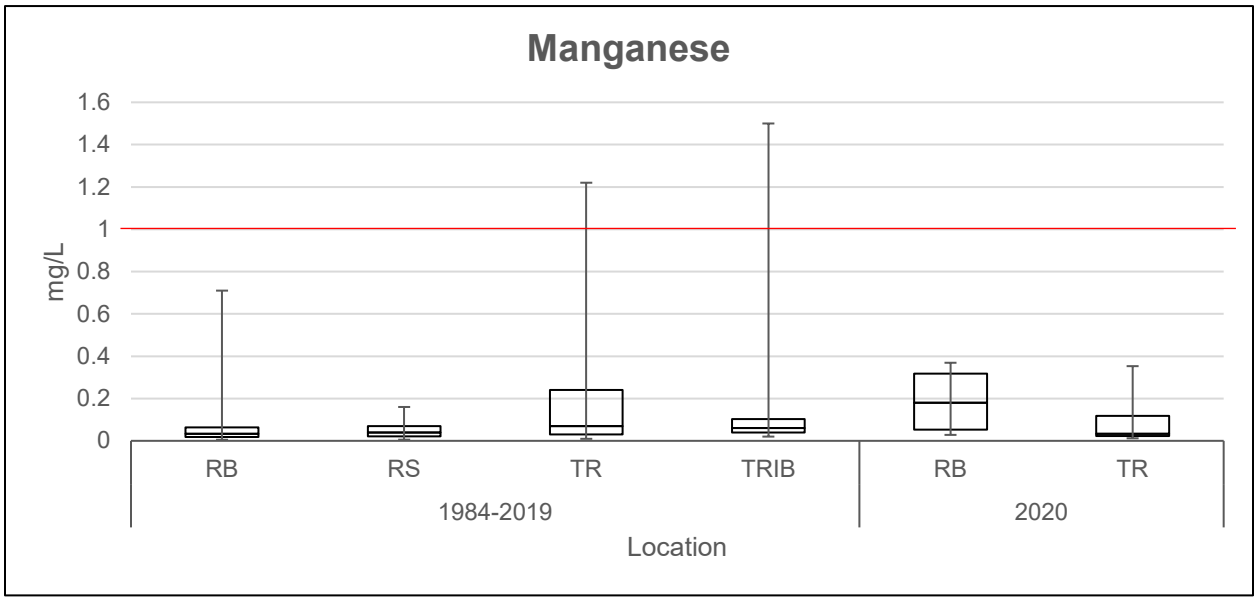


	Historical Reference 1984-2019				2020			
	Mean	Median	Count	CL (95.0%)	Mean	Median	Count	CL (95.0%)
RB	5.22	4.20	103	0.81	6.55	3.70	4	10.05
RS	5.45	5.00	325	0.44	7.55	4.25	12	4.59
TR	4.60	4.00	154	0.64	6.55	3.75	4	10.06
TRIB	5.81	5.00	218	0.74	10.46	5.10	7	9.56

**The TOC measured in 2020 were comparable to the historical data. This study does not recognize a water quality criteria for TOC.*



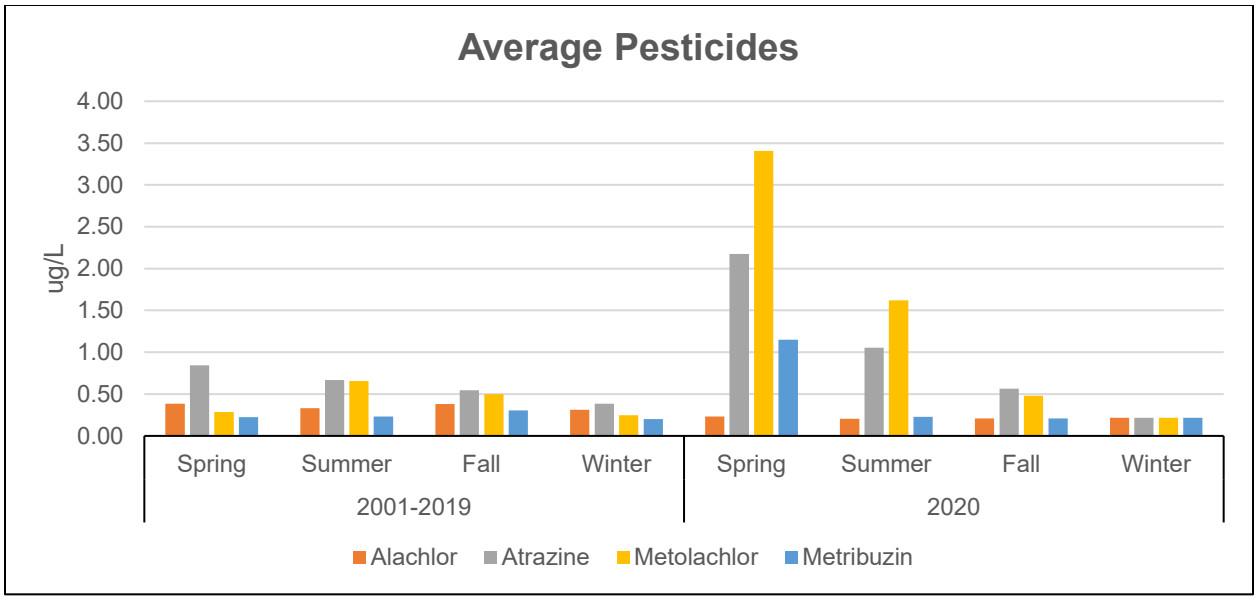
**Red line indicates the water quality standard of 1 mg/L.*



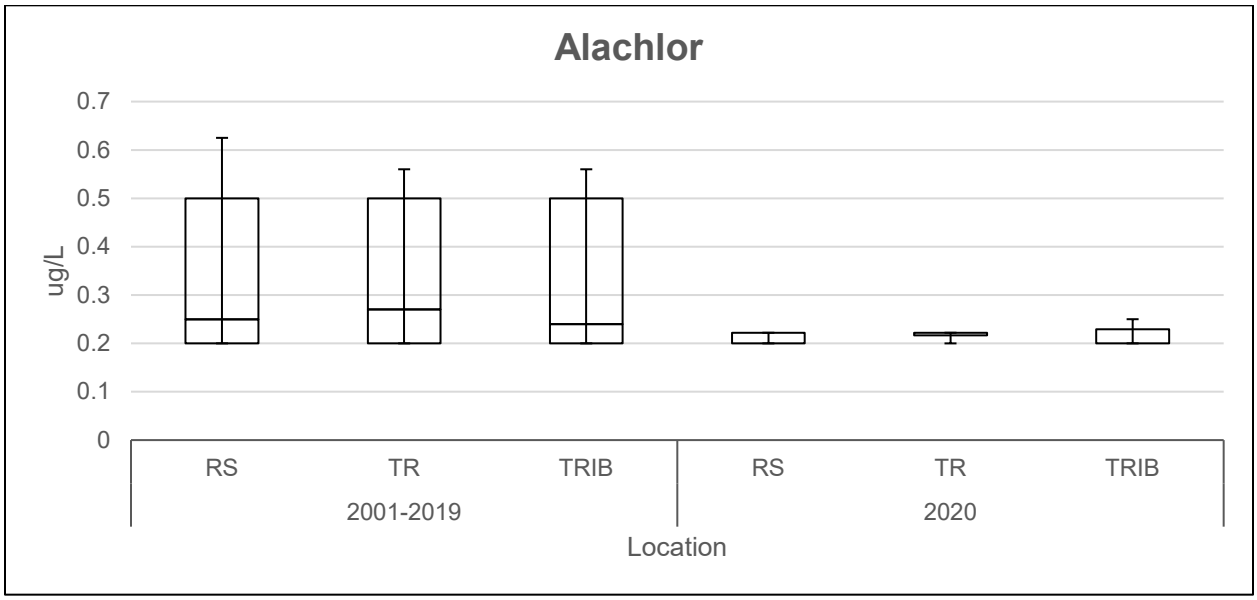
**Red line indicates the water quality standard of 1 mg/L.*

		Historical Reference 1984-2019				2020			
		Mean	Median	Count	CL (95.0%)	Mean	Median	Count	CL (95.0%)
Iron	RB	0.40	0.17	102	0.14	2.08	0.59	4	4.96
	RS	0.64	0.34	100	0.18				
	TR	0.30	0.23	152	0.03	0.51	0.43	4	0.42
	TRIB	1.49	1.35	68	0.22				
Mang	RB	0.07	0.03	102	0.02	0.19	0.18	4	0.27
	RS	0.05	0.04	95	0.01				
	TR	0.19	0.07	152	0.04	0.11	0.03	4	0.26
	TRIB	0.12	0.06	64	0.06				

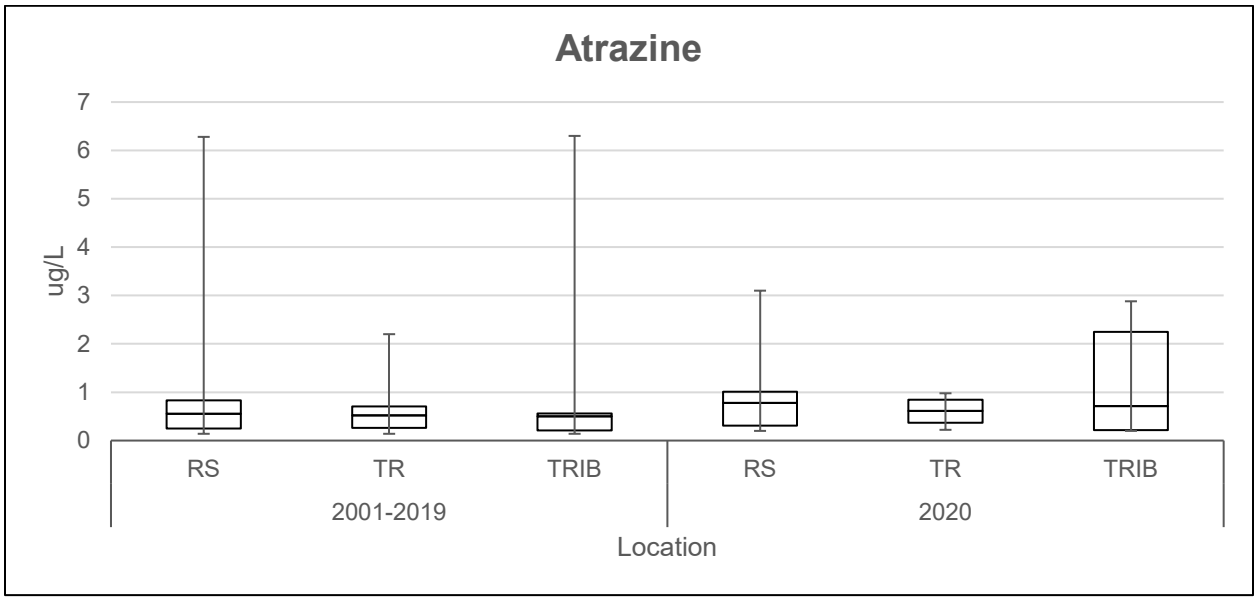
**In March 2020 iron exceeded the standard of 1 mg/L near the lake bottom in front of the dam. Manganese did not exceed the criteria.*



**Of the eight pesticides tested, only the above four were reported above detection levels for the period 2001-2020.*

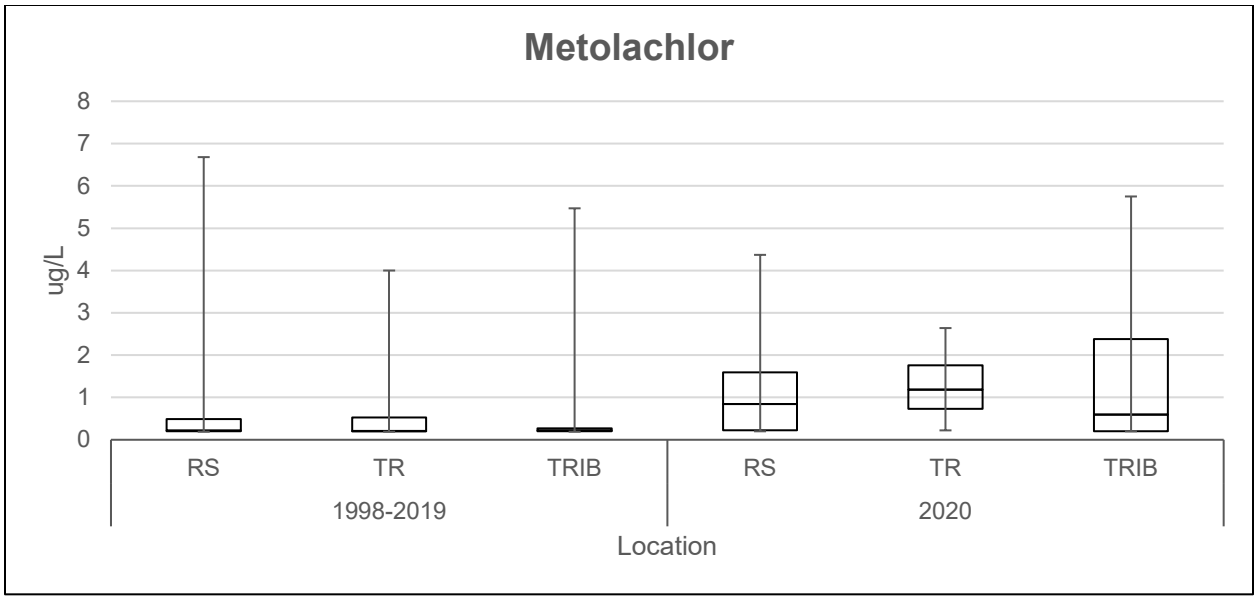


**Alachlor did not exceed water quality criteria in 2020. From 2001-2020 Alachlor was found above detection levels twice. There were not enough detected samples for statistical analyses.*



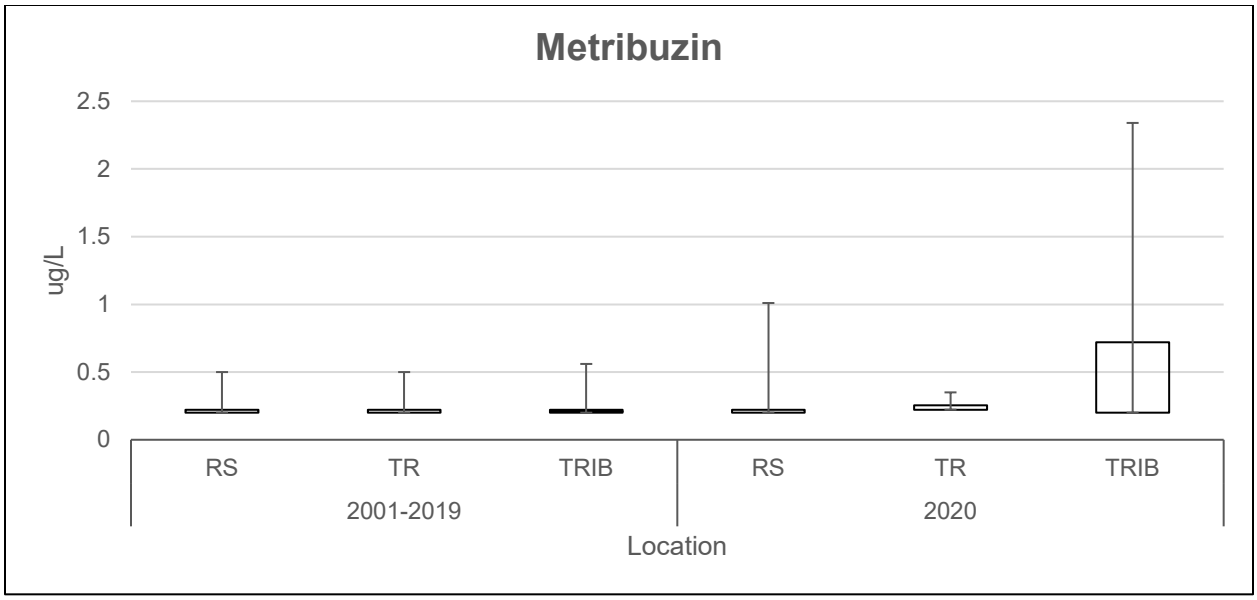
	Historical Reference 2001-2019				2020			
Atrazine	Mean	Median	Count	CL (95.0%)	Mean	Median	Count	CL (95.0%)
RS	0.76	0.56	189	0.13	0.99	0.78	12	0.57
TR	0.59	0.52	64	0.10	0.61	0.61	4	0.55
TRIB	0.67	0.50	121	0.16	1.22	0.71	8	0.98

**Atrazine exceeded the water quality criterion of 3 ug/L once in the lake in May 2020.*



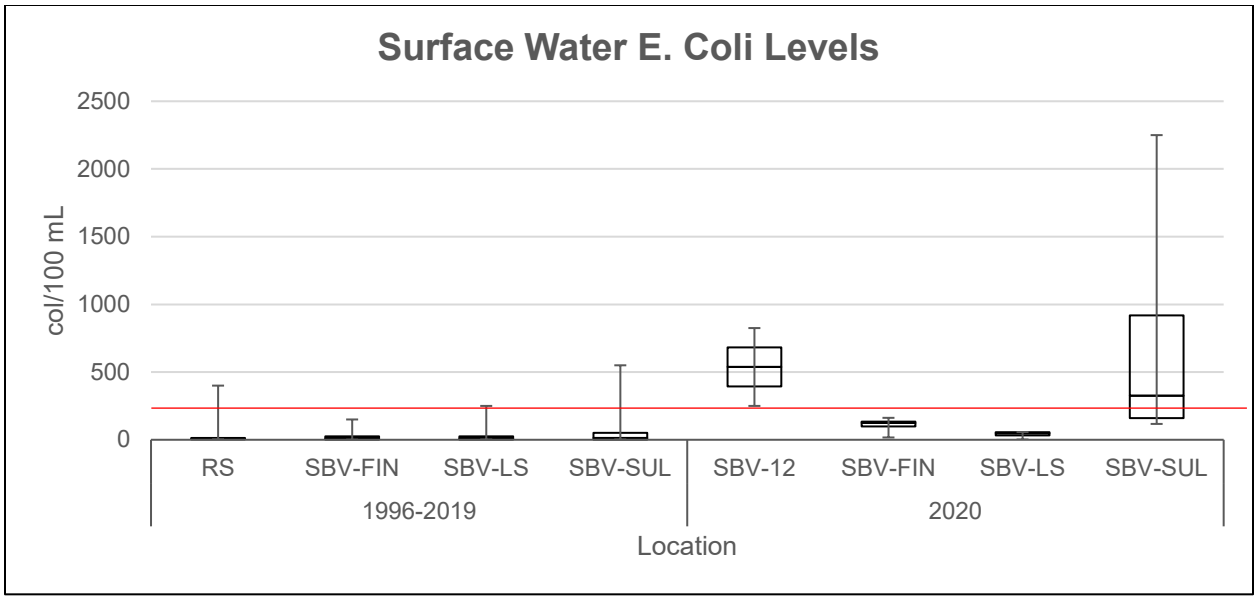
	Historical Reference 2001-2019				2020			
Metolachlor	Mean	Median	Count	CL (95.0%)	Mean	Median	Count	CL (95.0%)
RS	0.53	0.22	112	0.15	1.35	0.85	12	0.92
TR	0.62	0.21	37	0.30	1.31	1.19	4	1.63
TRIB	0.49	0.22	72	0.20	1.62	0.60	8	1.69

**Metolachlor did not exceed water quality criteria in 2020.*



	Historical Reference 2001-2019				2020			
Metribuzin	Mean	Median	Count	CL (95.0%)	Mean	Median	Count	CL (95.0%)
RS	0.53	0.22	112	0.15	1.35	0.85	12	0.92
TR	0.62	0.21	37	0.30	1.31	1.19	4	1.63
TRIB	0.49	0.22	72	0.20	1.62	0.60	8	1.69

**Metribuzin did not exceed water quality criteria in 2020.*



Red line approximately indicates the water quality standard of 235 col per 100 mL.

	Historical Reference 1996-2019				2020			
Location	Mean	Median	Count	CL (95.0%)	Mean	Median	Count	CL (95.0%)
RS	35.63	5.00	35	32.30				
TRIB					537.50	537.50	2	3653.03
Findlay	23.75	11.00	48	10.01	107.25	125.00	4	99.68
Lithia Springs	21.51	10	47	12.06	39.25	49.00	4	41.30
Sullivan	72.47	14	45	39.06	754.25	325	4	1606.23

Bacteria levels exceeded the water quality criterion at SBV-12 and Sullivan Marina.

2019 Swimming Beach Bacteria Levels (E. Coli / 100mL)

	Coon Creek		Dam West		Lithia Springs		Sullivan Beach		Wilborn Creek	
	shallow	deep	shallow	deep	shallow	deep	shallow	deep	shallow	deep
6/23/2020	17.9	17.9	23.3	27.9	7.4	10.9	9.8	13.1		
7/7/2020	60.2	5.2	1	1	1	1	3	5.2	816	2419
7/21/2020	1	1	1	3.1	1	1	1	1		
8/4/2020	3.1	2	2	1	8.6	1	6.3	13.1		
8/18/2020	1	2	1	1	6.3	6.3	2	1		
9/1/2020	1	1	1	1	1	1	1	42.8		

Beach bacteria levels did not exceed the reference water quality criteria except for Wilborn Creek. Wilborn Creek was tested in July, but never opened during 2020.

DISCUSSION: WATER QUALITY

Water quality metrics assessed by CEMVS can be sporadic and highly variable from year to year, thus long-term data collection using consistent and comparable methodology is critical to identify trends or patterns. In general, conditions observed during 2020 did not deviate far from conditions observed during the reference period (1984-2019); nevertheless, concerns regarding TP, TSS, TFe, Atrazine, and bacteria were evident. In addition, CHL_a and subsequent TSI levels were indicative of a eutrophic system.

TP levels have surpassed the 0.05 mg/L criterion for several years. In 2020 the TP criterion was exceeded at all locations with a mean concentration across all sites of 0.187 mg/L, which is 17.7% higher than the historical average of 0.15 mg/L. Mean NO3-N levels in 2020 (3.3 mg/L) were 30% lower, and did not exceed the criterion of 10 mg/L in 2020. This standard for NO3-N has been set for drinking water due to its potential to be harmful to infants between three and six months. Phosphorus is a limiting nutrient for primary producers (algae and plants) due to its relatively low amount in the environment. Higher inputs of TP and NO3-N into the lake contribute to a highly productive environment which stimulates algal growth that can lead to blooms that deplete the oxygen levels during die off. In addition, blooms can sometimes contain toxins which may be harmful to humans and wildlife.

Although there is not a state criterion for CHL_a the proposed standard of 25 mg/cm^3 was exceeded at two locations in the lake in October 2020. The 2020 mean CHL_a concentration of 12.4 mg/cm^3 was less than the historical mean of 21.77 mg/cm^3, and considerably less than the 2019 mean of 39.10 mg/cm^3. CHL_a is an indicator of the abundance of phytoplankton. Any water environment with a level recorded above 25 mg/cm^3 is considered to be eutrophic (nutrient enrichment increases algal and plant growth and negative effects). The 2020 TSI level, an average of the individual trophic state indexes for secchi depth, CHL_a, and TP, for Lake Shelbyville is 68.29, slightly less than 73.62 in 2019. The largest driver for the reduction in 2020 is due to the reduced observed CHL_a levels; a reduction of approximately 68.3%. Lake Shelbyville is considered eutrophic based on the TSI level of 68.29. This does not necessarily mean the water quality is poor, but that its trophic level indicates nutrient levels are abundant, which can support an abundance of plants and algae. Long term monitoring and analyses are important to assess changes over time.

Total suspended solids can affect water quality by increasing temperature through the absorption of sunlight by suspended particles in the water column, and consequently reduce DO. Total suspended solids are also strongly correlated with water clarity and the presence of Macrophytes. Though there are no numeric water quality standards for TSS, Lake Shelbyville is listed by IEPA as impaired by TSS. The 2020 TSS levels were comparable to the historical levels and show the same spatial patterns by occurring in higher concentrations in the tributaries and trending down near the dam and discharge. Mean 2020 TSS levels were 22.1 mg/L compared to 24.6 mg/L historical levels.

Living organisms require trace amounts of metals, excessive levels can be harmful. TFe exceeded the criterion of 1 mg/L one time at the bottom reservoir location in front of the dam in 2020 with a concentration of 6.76 mg/L. The 2020 mean TFe was 1.29 mg/L compared to 0.60 mg/L for the historical mean (54% greater). Iron cycling is a function of oxidation-reduction processes. Elevated levels of iron near the bottom of a lake is not immediately detrimental to the overall lake system. Iron oxidizes relatively rapidly (minutes to hours); therefore, any iron released through the spillway will be oxidized in a short period of time.

Atrazine is a commonly used agricultural herbicide readily transported by rainfall runoff. Atrazine is a preemergence or postemergence herbicide used to control broadleaf weeds and annual grasses and is most commonly detected in ground and surface water due to its wide use, and its ability to persist in soil and move in water. Along with other pesticides, Atrazine is suspected to cause cancer and is therefore monitored for the protection of human and aquatic health. In May 2020, the water quality standard (3 ug/L) for Atrazine was exceeded once in the lake with a value of 3.1 ug/L. Mean 2020 levels were 1 ug/L compared to the historical value of 0.70 ug/L. In general, Atrazine levels in 2020 were comparable to historical values.

Fecal coliform bacteria is monitored for the protection of human health as it relates to full body contact of recreational waters. People can be exposed to disease-causing organisms, such as bacteria, viruses and protozoa in beach and recreational waters mainly through accidental ingestion of contaminated water or through skin contact. These organisms, called pathogens, usually come from the feces of humans and other warm-blooded animals. If taken into the body, pathogens can cause various illnesses and on rare occasions, even death. Waterborne illnesses include diseases resulting from bacterial infection such as cholera, salmonellosis, and gastroenteritis, viral infections such as hepatitis, gastroenteritis, and intestinal diseases, and protozoan infections such as amoebic dysentery and giardiasis. The most commonly monitored recreational water indicator organisms are fecal coliform, Escherichia coli, (E. coli) and enterococci. Fecal coliform are bacteria that live in the intestinal tracts of warm-blooded animals. The Environmental Protection Agency (EPA) currently recommends E. coli or enterococci as an indicator organism for fresh waters. The standard for E. coli is less than 235 colonies per 100ml per single sample water or geometric mean of 126 colonies per 100ml. Swimming beaches (monitored by Lake Shelbyville staff) and surface water in the lake and in some of the tributaries are monitored for E. coli. In 2020 the water quality standard was exceeded once at a closed beach at Wilborn Creek, near Sullivan Marina, and in the tributary location SBV-12. Sampling at SBV-12 was added in 2020 to get a better understanding of bacteria levels coming into the lake. Recent investigations in this arm of the lake suggest an increasing trend for bacteria and observations in 2020 reinforce this finding (see Asa Creek Impacts below).

All remaining parameters evaluated during the 2020 water quality monitoring effort were within designated criteria or within historical reference norms.

ASA CREEK IMPACTS

A limited investigation was started in October 2017 into the possibility of potential negative impacts to the Asa Creek arm of Lake Shelbyville and continued through 2019. As described in the 2018 Shelbyville Lake Annual Water Quality Report, the Corps was made aware of a concern of potential degradation of the Asa Creek tributary just downstream of the City of Sullivan wastewater treatment plant (WTP). In addition to taking in-situ ambient water quality readings, water quality personnel took fecal coliform grab samples at the location where Asa Creek enters USACE waters and directly from the WTP effluent during the 2019 season. Data are available upon request. Low levels of DO was recorded at multiple locations from 2017-2019. Fecal coliform levels were high at the locations mentioned above.

Communications with the local Illinois Environmental Protection Agency Bureau of Water Division of Water Pollution Control has revealed that IEPA is aware and has been in contact with the WTP regarding the situation. In December 2019 a teleconference meeting occurred with USACE, IEPA, and the City of Sullivan to discuss the findings. As a result of the discussion, USACE and Sullivan shared recent data and conducted a joint sampling for fecal coliform in January 2020. Two samples were taken from each of the 15 locations upstream and downstream of the WTP in Asa Creek. One sample went to a lab Sullivan used, while the other was analyzed at the USACE contracted lab. The results were shared between USACE and Sullivan. While the results from the two labs weren't identical, there was a clear trend of high bacteria levels at the WTP effluent as well as downstream of it. The Sullivan NPDES permit does not require bacteria monitoring except during the period May through October. IEPA has been made aware of all the latest findings. USACE water quality staff will continue to investigate as needed and coordinate with Lake Shelbyville Project, IEPA, and affected landowners. As of February 2020, no further monitoring has been conducted in Asa Creek by USACE. During the preparation of this annual report the renewal IEPA NPDES permit for Sullivan STP is under review. An inspection of the facility is scheduled by the end of September 2021.

Historical (2001-2018) average bacteria levels are three times higher at the Sullivan Marina, located just downstream of the confluence of Asa Creek, when compared to the other two marinas in the lake (Findlay & Lithia Springs). The public beach located near Sullivan Marina has also had a higher number of closings due to unsafe bacteria levels. If current trends of high bacteria continue, negative impacts to beneficial uses are likely.

MONITORING PROGRAM RECOMMENDATIONS

In accordance with EM-1110-2-1201, sediment samples should be taken to monitor and assess potential impacts to aquatic and human health. Sediment sampling and analyses occurred at Lake Shelbyville in 2018, and prior to that in 2007. During these last analyses multiple exceedances over the recommended criteria were observed. Identifying trends over time is much more achievable with more consistent data. Contaminated sediments may have negative impacts on ecological processes. It is recommended, if possible, to sample and analyze for sediment metals and nutrients, as well as grain size analyses yearly or every two years.

Given the eutrophic status of Lake Shelbyville it is recommended that Nitrite (NO_2) and Total Khejdahl Nitrogen (TKN) be added to the monitoring program if possible. Doing so would allow CEMVS to evaluate Total Nitrogen (TN), which is a strong indicator of trophic status.

CHL_a has routinely been high at Lake Shelbyville in the lake, but there is no data for CHL_a in the tributaries or the tail race. It is recommended if possible to add this analyses to the tributaries and tail race to get a more complete understanding of algal activity upstream and downstream of the lake.

Given the above mentioned high bacteria levels observed in Asa Creek and near Sullivan Marina and public beach, it is recommended to add routine bacteria sampling to both tributary sites (SBV-12, SBV-13) as well as just downstream of Asa Creek. This would aid in isolating any further degradation in that section of the lake.

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APPENDIX A: FIELD DATA

Date	Location	Depth (m)	Temp (°C)	ORP (mV)	Sp Cond (µS/cm)	pH	ODO (% Sat)	ODO (mg/L)	TDS (mg/L)	Turbidity (FNU)	Secchi (in)
3/11/2020	SBV-1	1.1	5.7	129.9	515.7	8.11	104.1	13.0	335	7.2	
3/11/2020	SBV-11	0.9	8.7	183.3	589.2	8.26	93.2	10.8	383	25.5	10
3/11/2020	SBV-11	2.1	8.7	184.0	592.7	8.26	92.5	10.8	385	29.4	
3/11/2020	SBV-11	3.2	8.7	185.1	593.2	8.26	91.4	10.6	386	33.7	
3/11/2020	SBV-11	4.0	8.6	186.6	591.3	8.24	91.1	10.6	384	40.3	
3/11/2020	SBV-12	0.8	8.3	167.7	613.7	8.04	96.4	11.3	399	22.3	
3/11/2020	SBV-13	0.1	7.8	163.0	528.9	8.06	107.9	12.8	344	33.0	
3/11/2020	SBV-2	1.1	5.7	180.4	516.2	8.1	98.2	12.3	336	6.5	36
3/11/2020	SBV-2	2.2	5.7	181.8	516.1	8.09	98.1	12.3	335	6.3	
3/11/2020	SBV-2	3.1	5.7	183.3	516.0	8.08	97.9	12.3	335	6.6	
3/11/2020	SBV-2	4.1	5.7	184.0	516.0	8.07	97.9	12.3	335	6.1	
3/11/2020	SBV-2	5.1	5.7	185.4	515.6	8.06	97.7	12.3	335	6.4	
3/11/2020	SBV-2	6.0	5.7	186.5	516.1	8.05	97.5	12.2	335	6.3	
3/11/2020	SBV-2	7.2	5.7	187.4	516.5	8.04	97.3	12.2	336	7.0	
3/11/2020	SBV-2	8.7	5.7	188.2	516.8	8.03	97.1	12.2	336	7.6	
3/11/2020	SBV-2	10.3	5.7	189.4	516.7	8.02	97.0	12.2	336	7.1	
3/11/2020	SBV-2	11.7	5.7	190.4	516.9	8.01	96.9	12.1	336	7.4	
3/11/2020	SBV-2	13.9	5.7	191.7	517.0	8	96.8	12.1	336	7.8	
3/11/2020	SBV-2	14.6	5.7	165.6	517.0	7.99	96.7	12.1	336	7.5	
3/11/2020	SBV-4	0.8	7.9	184.9	613.1	8.07	92.3	10.9	399	63.4	6
3/11/2020	SBV-4	0.8	7.9	185.1	613.1	8.06	92.3	10.9	399	59.1	
3/11/2020	SBV-FIN	1.2	7.8	180.1	572.1	8.14	93.6	11.1	372	18.9	
3/11/2020	SBV-FIN	2.1	7.7	181.0	574.3	8.14	92.7	11.1	373	20.5	
3/11/2020	SBV-FIN	2.7	7.6	181.6	575.1	8.14	91.9	11.0	374	21.3	
3/11/2020	SBV-LS	1.0	6.3	153.2	473.4	8.11	96.3	11.9	308	13.3	
3/11/2020	SBV-SUL	1.0	8.0	163.2	613.5	8.07	93.0	11.0	399	47.0	
5/21/2020	SBV-1	1.0	16.2	186.6	459.0	8.64	105.2	10.3	298	7.3	
5/21/2020	SBV-11	1.2	17.6	155.1	381.7	8.12	87.3	8.3	248	21.2	16
5/21/2020	SBV-11	2.1	17.4	157.0	388.3	8.14	88.1	8.4	252	19.4	

Date	Location	Depth (m)	Temp (°C)	ORP (mV)	Sp Cond (µS/cm)	pH	ODO (% Sat)	ODO (mg/L)	TDS (mg/L)	Turbidity (FNU)	Secchi (in)
5/21/2020	SBV-11	3.1	17.2	159.2	389.1	8.15	88.0	8.5	253	19.2	
5/21/2020	SBV-11	4.2	16.9	162.1	386.9	8.11	84.5	8.2	252	20.2	
5/21/2020	SBV-11	5.1	16.7	164.1	391.4	8.1	83.5	8.1	254	19.1	
5/21/2020	SBV-11	6.0	16.4	165.6	402.3	8.12	83.5	8.2	262	17.5	
5/21/2020	SBV-11	7.2	15.9	168.0	407.1	8.07	79.3	7.9	265	17.8	
5/21/2020	SBV-11	8.1	14.7	173.6	412.2	7.84	56.5	5.7	268	20.9	
5/21/2020	SBV-12	0.4	16.7	194.6	380.9	7.75	71.8	7.0	248	60.2	
5/21/2020	SBV-13	0.0	16.5	175.4	343.0	7.58	55.7	5.4	223	70.8	
5/21/2020	SBV-2	1.1	16.7	186.2	452.0	8.72	106.3	10.3	294	7.0	32
5/21/2020	SBV-2	2.2	16.6	187.4	451.8	8.69	102.4	10.0	294	7.1	
5/21/2020	SBV-2	3.1	16.6	187.9	451.8	8.68	101.5	9.9	294	7.4	
5/21/2020	SBV-2	4.1	16.6	188.4	452.0	8.68	101.5	9.9	294	7.3	
5/21/2020	SBV-2	5.1	16.6	189.3	452.1	8.68	101.3	9.9	294	7.5	
5/21/2020	SBV-2	6.1	16.5	190.1	452.8	8.67	100.5	9.8	294	7.4	
5/21/2020	SBV-2	7.1	16.5	191.0	453.1	8.66	99.6	9.7	295	7.7	
5/21/2020	SBV-2	8.1	16.3	192.5	457.4	8.62	94.7	9.3	297	7.6	
5/21/2020	SBV-2	9.0	16.2	193.6	459.3	8.59	91.9	9.0	299	7.8	
5/21/2020	SBV-2	10.1	14.9	197.8	476.8	8.42	73.3	7.4	310	5.3	
5/21/2020	SBV-2	11.1	14.6	199.2	477.5	8.38	69.5	7.1	310	5.2	
5/21/2020	SBV-2	12.2	14.6	200.0	476.9	8.36	66.8	6.8	310	7.3	
5/21/2020	SBV-2	13.2	14.4	200.5	477.4	8.33	63.5	6.5	310	7.5	
5/21/2020	SBV-2	13.8	14.4	201.3	477.6	8.27	58.0	5.9	310	9.6	
5/21/2020	SBV-4	1.2	16.9	145.6	404.1	7.89	75.5	7.3	263	35.5	14
5/21/2020	SBV-4	2.1	16.7	148.1	395.7	7.87	74.2	7.2	257	38.8	
5/21/2020	SBV-4	3.1	16.3	153.8	391.4	7.82	70.3	6.9	254	40.8	
5/21/2020	SBV-4	4.1	16.2	157.4	390.2	7.81	69.3	6.8	254	43.0	
5/21/2020	SBV-FIN	1.8	17.6	170.3	405.0	8.31	99.8	9.5	263	15.2	
5/21/2020	SBV-FIN	7.9	14.8	169.6	421.8	7.92	68.0	6.9	274	80.6	
5/21/2020	SBV-FIN	4.0	16.6	160.9	401.1	8.13	82.3	8.0	261	21.5	

Date	Location	Depth (m)	Temp (°C)	ORP (mV)	Sp Cond (µS/cm)	pH	ODO (% Sat)	ODO (mg/L)	TDS (mg/L)	Turbidity (FNU)	Secchi (in)
5/21/2020	SBV-LS	1.1	17.2	151.7	436.8	8.78	115.5	11.1	284	7.3	
5/21/2020	SBV-LS	12.6	14.6	90.5	474.0	8.27	59.7	6.1	308	11.7	
5/21/2020	SBV-LS	6.2	16.1	100.7	459.8	8.56	86.4	8.5	299	7.2	
7/28/2020	SBV-1	0.8	19.4	104.0	430.2	7.89	98.4	9.1	280	9.1	
7/28/2020	SBV-11	1.1	28.9	112.0	344.5	8.64	120.5	9.3	224	4.1	36
7/28/2020	SBV-11	2.1	28.7	119.5	347.5	8.46	94.9	7.3	226	4.3	
7/28/2020	SBV-11	3.1	28.6	122.7	347.9	8.38	85.6	6.6	226	4.3	
7/28/2020	SBV-11	4.1	28.3	127.5	356.1	7.93	35.3	2.8	231	4.5	
7/28/2020	SBV-11	5.1	27.5	127.9	363.3	7.7	4.7	0.4	236	11.2	
7/28/2020	SBV-11	6.1	26.5	96.4	364.4	7.53	2.3	0.2	237	44.3	
7/28/2020	SBV-11	7.1	26.0	75.4	372.2	7.46	2.2	0.2	242	42.5	
7/28/2020	SBV-12	0.0	31.1	139.3	551.0	8.1	117.1	8.7	358	27.3	
7/28/2020	SBV-13	0.0	30.6	119.8	336.2	8.79	170.1	12.7	218	13.5	
7/28/2020	SBV-2	1.1	28.6	87.1	364.7	8.32	84.1	6.5	237	1.8	108
7/28/2020	SBV-2	2.2	28.0	94.2	365.1	8.3	82.5	6.5	237	2.1	
7/28/2020	SBV-2	3.0	27.7	100.4	366.2	8.22	73.1	5.7	238	2.0	
7/28/2020	SBV-2	4.1	27.6	108.0	368.0	8.04	56.5	4.5	239	1.6	
7/28/2020	SBV-2	5.1	27.4	111.6	369.6	7.95	45.7	3.6	240	1.7	
7/28/2020	SBV-2	6.0	25.4	118.0	384.7	7.65	8.0	0.7	250	2.4	
7/28/2020	SBV-2	7.2	23.5	120.4	395.6	7.54	2.0	0.2	257	3.4	
7/28/2020	SBV-2	8.1	22.6	120.5	400.8	7.52	1.7	0.2	261	3.7	
7/28/2020	SBV-2	9.2	20.4	119.0	419.2	7.52	1.4	0.1	272	8.0	
7/28/2020	SBV-2	10.1	19.7	116.4	427.4	7.52	1.4	0.1	278	6.8	
7/28/2020	SBV-2	11.1	18.1	84.8	439.2	7.52	1.2	0.1	285	22.1	
7/28/2020	SBV-4	1.1	28.9	126.3	432.5	8.08	82.7	6.4	281	7.7	24
7/28/2020	SBV-4	2.1	28.4	131.0	440.1	7.92	61.6	4.8	286	10.1	
7/28/2020	SBV-4	2.9	28.3	103.9	446.4	7.8	44.7	3.5	290	19.6	
7/28/2020	SBV-FIN	1.1	28.9	118.4	348.9	8.53	105.2	8.1	227	4.4	
7/28/2020	SBV-FIN	5.8	27.5	-26.5	372.0	7.72	6.2	0.5	242	17.0	

Date	Location	Depth (m)	Temp (°C)	ORP (mV)	Sp Cond (µS/cm)	pH	ODO (% Sat)	ODO (mg/L)	TDS (mg/L)	Turbidity (FNU)	Secchi (in)
7/28/2020	SBV-FIN	3.0	28.5	31.1	353.6	8.23	69.8	5.4	230	5.8	
7/28/2020	SBV-FIN	1.1	28.9	109.8	344.4	8.63	120.0	9.2	224	4.1	
7/28/2020	SBV-LS	1.1	29.2	95.8	361.0	8.58	102.1	7.8	235	2.6	
7/28/2020	SBV-LS	12.9	15.6	115.7	476.9	7.63	2.6	0.3	310	15.6	
7/28/2020	SBV-LS	6.3	24.6	99.2	387.1	7.62	2.4	0.2	252	3.8	
7/28/2020	SBV-SUL	1.2	28.7	121.7	439.7	8.13	85.6	6.6	286	8.3	
7/28/2020	SBV-SUL	3.0	28.3	127.3	447.0	7.83	50.5	3.9	291	16.5	
10/20/2020	SBV-1	1.1	15.3		349.3	8	95.5	9.6	227	8.9	
10/20/2020	SBV-11	1.1	14.4		342.3	8.01	86.2	8.8	222	11.2	20
10/20/2020	SBV-11	2.4	14.4		342.3	7.98	85.6	8.7	222	11.3	
10/20/2020	SBV-11	3.1	14.4		342.3	7.93	85.4	8.7	223	11.3	
10/20/2020	SBV-11	4.2	14.3		344.0	7.88	78.5	8.0	224	12.8	
10/20/2020	SBV-11	5.0	14.3		344.5	7.83	76.7	7.9	224	81.4	
10/20/2020	SBV-12	0.6	12.5		858.9	7.78	80.7	8.6	558	25.8	
10/20/2020	SBV-13	0.0	11.0		405.3	7.52	64.5	7.1	263	29.7	
10/20/2020	SBV-2	1.0	15.9		350.0	7.64	72.4	7.2	227	10.2	26
10/20/2020	SBV-2	2.1	15.9		350.0	7.65	72.1	7.1	227	11.1	
10/20/2020	SBV-2	3.0	15.9		350.0	7.63	71.9	7.1	228	10.4	
10/20/2020	SBV-2	4.0	15.9		350.0	7.6	71.7	7.1	227	10.3	
10/20/2020	SBV-2	5.3	15.8		350.1	7.57	71.8	7.1	228	10.5	
10/20/2020	SBV-2	6.0	15.8		350.0	7.55	71.8	7.1	227	10.8	
10/20/2020	SBV-2	7.0	15.8		350.0	7.51	72.0	7.1	228	11.2	
10/20/2020	SBV-2	7.0	15.8		350.0	7.49	72.2	7.2	228	10.8	
10/20/2020	SBV-2	8.2	15.8		350.0	7.48	71.9	7.1	228	13.0	
10/20/2020	SBV-2	8.2	15.8		350.0	7.46	71.9	7.1	228	13.7	
10/20/2020	SBV-4	1.0	12.8		509.4	7.77	73.6	7.8	331	18.0	15
10/20/2020	SBV-FIN	3.3	14.3		342.2	7.94	77.7	7.9	222	22.9	
10/20/2020	SBV-FIN	1.0	14.4		341.5	7.92	82.3	8.4	222	12.7	
10/20/2020	SBV-LS	9.1	15.9		350.8	7.57	71.0	7.0	228	17.3	

Date	Location	Depth (m)	Temp (°C)	ORP (mV)	Sp Cond (µS/cm)	pH	ODO (% Sat)	ODO (mg/L)	TDS (mg/L)	Turbidity (FNU)	Secchi (in)
10/20/2020	SBV-LS	4.5	16.0		350.7	7.66	70.0	6.9	228	11.1	
10/20/2020	SBV-LS	1.2	16.0		350.7	7.72	70.5	7.0	228	11.2	
10/20/2020	SBV-SUL	1.1	12.9		465.0	7.81	80.0	8.4	302	17.9	

APPENDIX B: LABORATORY DATA

ARDL Inc.
Environmental | Analytical | Management | Safety

PO Box 1566
400 Aviation Drive
Mt. Vernon, IL 62864
618-244-3235
www.ardlinc.com

Customer Name: SLCOE **Date: 4/2/20**

Project Name: Shelbyville Lake/Kaskaskia River **Lab Name: ARDL, Inc.**

Samples Received at ARDL: 3/11/20 **ARDL Report No.: 8588**

CASE NARRATIVE

Customer Sample No.	Date Collected	Lab ID Number	Analyses Requested
SVL-1	3/11/20	8588-01	NP Pesticides, Metals(1), Inorganics(2)
SVL-2	3/11/20	8588-02	NP Pesticides, Inorganics(2)(3)
SVL-2-10	3/11/20	8588-03	Metals(1), Inorganics(2)
SVL-4	3/11/20	8588-04	NP Pesticides, Inorganics(2)(3)
SVL-12	3/11/20	8588-05	NP Pesticides, Inorganics(2)
SVL-13	3/11/20	8588-06	NP Pesticides, Inorganics(2)
SVL-11	3/11/20	8588-07	NP Pesticides, Inorganics(2)(3)
SVL-15	3/11/20	8588-08	NP Pesticides, Inorganics(2)(3)
LS Marina	3/11/20	8588-09	E. Coli
FIN Marina	3/11/20	8588-10	E. Coli
SUL Marina	3/11/20	8588-11	E. Coli
KAS-3	3/11/20	8588-12	Inorganics(2)(3)(4)

(1) Including iron and manganese.
(2) Including ammonia, nitrate, orthophosphate, total phosphorus, TOC, TSS, and TVSS.
(3) Including chlorophyll-a and pheophytin-a.
(4) Including nitrite and TKN.

The quality control data are summarized as follows:

PESTICIDE FRACTION

HOLDING TIME

Samples were prepared and analyzed within method specified holding times.

INITIAL CALIBRATION

The initial calibration passed criteria.

CONTINUING CALIBRATION

The continuing calibration verification (CCV) passed criteria for all analytes. The closing CCV passed criteria for all analytes.

PREPARATION BLANK

The blank met acceptance criteria.

LABORATORY CONTROL SAMPLE

The LCS analyses met recovery criteria.

CASE NARRATIVE (Continued)

MATRIX SPIKE

The matrix spike and matrix spike duplicate met recovery criteria.

DUPLICATE

Duplicate analyses are reported as MS/MSD. RPD of the duplicate analyses met criteria.

INTERNAL STANDARD

All internal standard criteria were met.

SURROGATE

All surrogate recovery criteria were met.

INORGANIC FRACTION

TOC were analyzed by an accredited outside laboratory due to instrument status.

PREPARATION BLANK

Results of the preparation blanks were within acceptable limits, except for iron which was greater than the LOQ. The data is flagged appropriately with a 'B' qualifier in the associated samples.

LABORATORY CONTROL SAMPLE

Percent recoveries of all LCS analyses were within control limits.

MATRIX SPIKE

The sample result for nitrate was greater than 4 times the spike amount; therefore, percent recovery was not considered. Percent recovery of all other matrix spikes and matrix spike duplicates were within control limits, except 1 of 2 for iron and 2 of 2 for TKN. The parent sample has been flagged appropriately with a 'J' qualifier.

DUPLICATE

All duplicate analyses are reported as MS/MSD except chlorophyll-a, pheophytin-a, TSS, and TVSS. RPD on all duplicate analyses were within control limits.

DATA REPORTING QUALIFIERS

The following data reporting qualifiers are used as required:

ND - Indicates parameter was analyzed for but not detected.

J - Indicates an estimated value. This flag is used either when estimating a concentration or this flag indicates analyte(s) associated with a DOD-QSM specified non-compliance pertaining to matrix QC criteria.

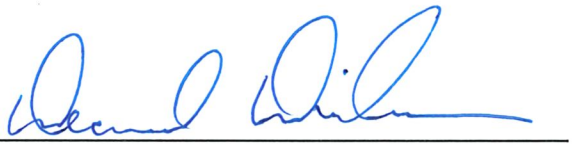
B - This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

CASE NARRATIVE (Continued)

REPORT ORGANIZATION

The data in this report appear by sample type (Field sample, preparation blank, laboratory control sample / spike blank, matrix spike /spike duplicate and sample duplicate). Within each sample type the data appear in the order that the analytical methods were discussed in this case narrative. Sample receipt information follows the analytical data.

Release of the data contained in this package has been authorized by the Technical Services Manager or his designee as verified by the following signature.



Dean S. Dickerson
Technical Services Manager

Sample & QC Results

Including as appropriate:

- Field Sample Results
- Batch QC
  - Prep Blank
  - LCS/Spike Blank
- Matrix QC
  - MS/MSD
  - Sample Duplicate

ARDL Data Package 8588

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008588 Report Date: 03/31/2020

Project Name: SHEBLYVILLE LAKE/KAS Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-1	ARDL Lab No.:	008588-01
Desc/Location:	SHEBLYVILLE LAKE	Lab Filename:	E0330015
Sample Date:	03/11/2020	Received Date:	03/11/2020
Sample Time:	0950	Prep. Date:	03/13/2020
Matrix:	WATER	Analysis Date:	03/30/2020
Amount Used:	900 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11186
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.222	0.222	ND		UG/L	1
Atrazine	0.222	0.222	ND		UG/L	1
Metribuzin	0.222	0.222	ND		UG/L	1
Alachlor	0.222	0.222	ND		UG/L	1
Metolachlor	0.222	0.222	ND		UG/L	1
Chlorpyrifos	0.222	0.222	ND		UG/L	1
Cyanazine	0.222	0.222	ND		UG/L	1
Pendimethalin	0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	67%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

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Mt. Vernon, Illinois 62864

Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER Analysis: Inorganics
Project No: NELAC Certified - IL100308

ARDL No: 008588-01 Sampling Loc'n: SHEBLYVILLE LAKE Matrix: WATER
Field ID: SVL-1 Sampling Date: 03/11/2020 Moisture: NA
Received: 03/11/2020 Sampling Time: 0950

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron	0.0400	0.0500	JB	0.451	MG/L	3010A	6010C	03/16/20	03/23/20	P7347
(a) Manganese	0.00400	0.00500		0.0264	MG/L	3010A	6010C	03/16/20	03/23/20	P7347
Ammonia Nitrogen	0.0200	0.0300		0.189	MG/L	NONE	350.1	NA	03/30/20	03305162
Nitrate as Nitrogen	0.0950	0.100		5.14	MG/L	NONE	GREEN	NA	03/12/20	03195142
Phosphorus	0.00800	0.0100		0.174	MG/L	365.2	365.2	03/18/20	03/20/20	03235154
Phosphorus, -ortho	0.00800	0.0100		0.122	MG/L	NONE	365.2	NA	03/12/20	03165126
Solids, Total Suspended	2.0	2.00		6.0	MG/L	NONE	160.2	NA	03/17/20	03195135
Solids, Volatile Suspen	2.0	2.00		ND	MG/L	NONE	160.4	NA	03/17/20	03195136
Total Organic Carbon	0.500	1.00		2.7	MG/L	NONE	415.1	NA	03/18/20	03235151

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Lab Report No: 008588 Report Date: 03/31/2020

Project Name: SHEBLYVILLE LAKE/KAS Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-2	ARDL Lab No.:	008588-02
Desc/Location:	SHEBLYVILLE LAKE	Lab Filename:	E0330018
Sample Date:	03/11/2020	Received Date:	03/11/2020
Sample Time:	1100	Prep. Date:	03/13/2020
Matrix:	WATER	Analysis Date:	03/30/2020
Amount Used:	900 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11186
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.222	0.222	ND		UG/L	1
Atrazine	0.222	0.222	ND		UG/L	1
Metribuzin	0.222	0.222	ND		UG/L	1
Alachlor	0.222	0.222	ND		UG/L	1
Metolachlor	0.222	0.222	ND		UG/L	1
Chlorpyrifos	0.222	0.222	ND		UG/L	1
Cyanazine	0.222	0.222	ND		UG/L	1
Pendimethalin	0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	92%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

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Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER Analysis: Inorganics
Project No: NELAC Certified - IL100308

ARDL No: 008588-02 Sampling Loc'n: SHEBLYVILLE LAKE Matrix: WATER
Field ID: SVL-2 Sampling Date: 03/11/2020 Moisture: NA
Received: 03/11/2020 Sampling Time: 1100

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.415	MG/L	NONE	350.1	NA	03/30/20	03305162
Chlorophyll-a, Correcte	1.0	1.00		5.9	MG/CU.M.	10200H	10200H	03/12/20	03/27/20	03305164
Nitrate as Nitrogen	0.0950	0.100		5.15	MG/L	NONE	GREEN	NA	03/12/20	03195142
Pheophytin-a	1.0	1.00		1.7	MG/CU.M.	10200H	10200H	03/12/20	03/27/20	03305164
Phosphorus	0.00800	0.0100		0.165	MG/L	365.2	365.2	03/18/20	03/20/20	03235154
Phosphorus, -ortho	0.00800	0.0100		0.122	MG/L	NONE	365.2	NA	03/12/20	03165126
Solids, Total Suspended	2.0	2.00		5.0	MG/L	NONE	160.2	NA	03/17/20	03195135
Solids, Volatile Suspen	2.0	2.00		ND	MG/L	NONE	160.4	NA	03/17/20	03195136
Total Organic Carbon	0.500	1.00		2.6	MG/L	NONE	415.1	NA	03/18/20	03235151

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Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER Analysis: Inorganics
Project No: NELAC Certified - IL100308

ARDL No: 008588-03 Sampling Loc'n: SHEBLYVILLE LAKE Matrix: WATER
Field ID: SVL-2-10 Sampling Date: 03/11/2020 Moisture: NA
Received: 03/11/2020 Sampling Time: 1100

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron	0.0400	0.0500	B	6.76	MG/L	3010A	6010C	03/16/20	03/23/20	P7347
(a) Manganese	0.00400	0.00500		0.301	MG/L	3010A	6010C	03/16/20	03/23/20	P7347
Ammonia Nitrogen	0.0200	0.0300		0.164	MG/L	NONE	350.1	NA	03/30/20	03305162
Nitrate as Nitrogen	0.0950	0.100		5.0	MG/L	NONE	GREEN	NA	03/12/20	03195142
Phosphorus	0.00800	0.0100		0.36	MG/L	365.2	365.2	03/18/20	03/20/20	03235154
Phosphorus, -ortho	0.00800	0.0100		0.125	MG/L	NONE	365.2	NA	03/12/20	03165126
Solids, Total Suspended	6.67	6.67		160	MG/L	NONE	160.2	NA	03/17/20	03195135
Solids, Volatile Suspen	6.67	6.67		44.7	MG/L	NONE	160.4	NA	03/17/20	03195136
Total Organic Carbon	0.500	1.00		2.8	MG/L	NONE	415.1	NA	03/18/20	03235151

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Lab Report No: 008588 Report Date: 03/31/2020

Project Name: SHEBLYVILLE LAKE/KAS Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-4	ARDL Lab No.:	008588-04
Desc/Location:	SHEBLYVILLE LAKE	Lab Filename:	E0330019
Sample Date:	03/11/2020	Received Date:	03/11/2020
Sample Time:	1400	Prep. Date:	03/13/2020
Matrix:	WATER	Analysis Date:	03/30/2020
Amount Used:	900 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11186
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.222	0.222	ND		UG/L	1
Atrazine	0.222	0.222	ND		UG/L	1
Metribuzin	0.222	0.222	ND		UG/L	1
Alachlor	0.222	0.222	ND		UG/L	1
Metolachlor	0.222	0.222	ND		UG/L	1
Chlorpyrifos	0.222	0.222	ND		UG/L	1
Cyanazine	0.222	0.222	ND		UG/L	1
Pendimethalin	0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	76%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

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Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER Analysis: Inorganics
Project No: NELAC Certified - IL100308

ARDL No: 008588-04 Sampling Loc'n: SHEBLYVILLE LAKE Matrix: WATER
Field ID: SVL-4 Sampling Date: 03/11/2020 Moisture: NA
Received: 03/11/2020 Sampling Time: 1400

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.185	MG/L	NONE	350.1	NA	03/30/20	03305162
Chlorophyll-a, Correcte	1.0	1.00		6.4	MG/CU.M.	10200H	10200H	03/12/20	03/27/20	03305164
Nitrate as Nitrogen	0.0950	0.100		5.86	MG/L	NONE	GREEN	NA	03/12/20	03195142
Pheophytin-a	1.0	1.00		7.0	MG/CU.M.	10200H	10200H	03/12/20	03/27/20	03305164
Phosphorus	0.00800	0.0100		0.407	MG/L	365.2	365.2	03/18/20	03/20/20	03235154
Phosphorus, -ortho	0.00800	0.0100		0.0576	MG/L	NONE	365.2	NA	03/12/20	03165126
Solids, Total Suspended	6.67	6.67		92.7	MG/L	NONE	160.2	NA	03/17/20	03195135
Solids, Volatile Suspen	6.67	6.67		9.33	MG/L	NONE	160.4	NA	03/17/20	03195136
Total Organic Carbon	0.500	1.00		2.8	MG/L	NONE	415.1	NA	03/18/20	03235151

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Lab Report No: 008588 Report Date: 03/31/2020

Project Name: SHEBLYVILLE LAKE/KAS Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-12	ARDL Lab No.:	008588-05
Desc/Location:	SHEBLYVILLE LAKE	Lab Filename:	E0330020
Sample Date:	03/11/2020	Received Date:	03/11/2020
Sample Time:	1500	Prep. Date:	03/13/2020
Matrix:	WATER	Analysis Date:	03/30/2020
Amount Used:	900 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11186
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.222	0.222	ND		UG/L	1
Atrazine	0.222	0.222	ND		UG/L	1
Metribuzin	0.222	0.222	ND		UG/L	1
Alachlor	0.222	0.222	ND		UG/L	1
Metolachlor	0.222	0.222	ND		UG/L	1
Chlorpyrifos	0.222	0.222	ND		UG/L	1
Cyanazine	0.222	0.222	ND		UG/L	1
Pendimethalin	0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	80%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

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Mt. Vernon, Illinois 62864

Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008588-05
Field ID: SVL-12
Received: 03/11/2020

Sampling Loc'n: SHEBLYVILLE LAKE
Sampling Date: 03/11/2020
Sampling Time: 1500

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.094	MG/L	NONE	350.1	NA	03/30/20	03305162
Nitrate as Nitrogen	0.0950	0.100		6.25	MG/L	NONE	GREEN	NA	03/12/20	03195142
Phosphorus	0.00800	0.0100		0.157	MG/L	365.2	365.2	03/18/20	03/20/20	03235154
Phosphorus, -ortho	0.00800	0.0100		0.0602	MG/L	NONE	365.2	NA	03/12/20	03165126
Solids, Total Suspended	4.0	4.00		21.6	MG/L	NONE	160.2	NA	03/17/20	03195135
Solids, Volatile Suspen	4.0	4.00		ND	MG/L	NONE	160.4	NA	03/17/20	03195136
Total Organic Carbon	0.500	1.00		2.7	MG/L	NONE	415.1	NA	03/18/20	03235151

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Sample 008588-05, Inorganic Analyses

ARDL, INC.
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Lab Report No: 008588 Report Date: 03/31/2020

Project Name: SHEBLYVILLE LAKE/KAS Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-13	ARDL Lab No.:	008588-06
Desc/Location:	SHEBLYVILLE LAKE	Lab Filename:	E0330021
Sample Date:	03/11/2020	Received Date:	03/11/2020
Sample Time:	1210	Prep. Date:	03/13/2020
Matrix:	WATER	Analysis Date:	03/30/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11186
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.200	0.200	ND		UG/L	1
Atrazine	0.200	0.200	ND		UG/L	1
Metribuzin	0.200	0.200	ND		UG/L	1
Alachlor	0.200	0.200	ND		UG/L	1
Metolachlor	0.200	0.200	ND		UG/L	1
Chlorpyrifos	0.200	0.200	ND		UG/L	1
Cyanazine	0.200	0.200	ND		UG/L	1
Pendimethalin	0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	77%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

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Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008588-06
Field ID: SVL-13
Received: 03/11/2020

Sampling Loc'n: SHEBLYVILLE LAKE
Sampling Date: 03/11/2020
Sampling Time: 1210

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.147	MG/L	NONE	350.1	NA	03/30/20	03305162
Nitrate as Nitrogen	0.0950	0.100		5.67	MG/L	NONE	GREEN	NA	03/12/20	03195142
Phosphorus	0.00800	0.0100		0.321	MG/L	365.2	365.2	03/18/20	03/20/20	03235154
Phosphorus, -ortho	0.00800	0.0100		0.112	MG/L	NONE	365.2	NA	03/12/20	03165126
Solids, Total Suspended	6.67	6.67		40.0	MG/L	NONE	160.2	NA	03/17/20	03195135
Solids, Volatile Suspen	6.67	6.67		ND	MG/L	NONE	160.4	NA	03/17/20	03195136
Total Organic Carbon	0.500	1.00		3.6	MG/L	NONE	415.1	NA	03/18/20	03235151

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Mt. Vernon, Illinois 62864

Lab Report No: 008588 Report Date: 03/31/2020

Project Name: SHEBLYVILLE LAKE/KAS Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-11	ARDL Lab No.:	008588-07
Desc/Location:	SHEBLYVILLE LAKE	Lab Filename:	E0330022
Sample Date:	03/11/2020	Received Date:	03/11/2020
Sample Time:	1330	Prep. Date:	03/13/2020
Matrix:	WATER	Analysis Date:	03/30/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11186
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.200	0.200	ND		UG/L	1
Atrazine	0.200	0.200	ND		UG/L	1
Metribuzin	0.200	0.200	ND		UG/L	1
Alachlor	0.200	0.200	ND		UG/L	1
Metolachlor	0.200	0.200	ND		UG/L	1
Chlorpyrifos	0.200	0.200	ND		UG/L	1
Cyanazine	0.200	0.200	ND		UG/L	1
Pendimethalin	0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	91%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

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Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008588-07 Sampling Loc'n: SHEBLYVILLE LAKE Matrix: WATER
Field ID: SVL-11 Sampling Date: 03/11/2020 Moisture: NA
Received: 03/11/2020 Sampling Time: 1330

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.174	MG/L	NONE	350.1	NA	03/30/20	03305162
Chlorophyll-a, Correcte	1.0	1.00		9.1	MG/CU.M.	10200H	10200H	03/12/20	03/27/20	03305164
Nitrate as Nitrogen	0.0950	0.100		5.58	MG/L	NONE	GREEN	NA	03/12/20	03195142
Pheophytin-a	1.0	1.00		6.8	MG/CU.M.	10200H	10200H	03/12/20	03/27/20	03305164
Phosphorus	0.00800	0.0100		0.252	MG/L	365.2	365.2	03/18/20	03/20/20	03235154
Phosphorus, -ortho	0.00800	0.0100		0.0576	MG/L	NONE	365.2	NA	03/12/20	03165126
Solids, Total Suspended	4.0	4.00		28.4	MG/L	NONE	160.2	NA	03/17/20	03195135
Solids, Volatile Suspen	4.0	4.00		4.0	MG/L	NONE	160.4	NA	03/17/20	03195136
Total Organic Carbon	0.500	1.00		2.3	MG/L	NONE	415.1	NA	03/18/20	03235151

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Lab Report No: 008588 Report Date: 03/31/2020

Project Name: SHEBLYVILLE LAKE/KAS Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-15	ARDL Lab No.:	008588-08
Desc/Location:	SHEBLYVILLE LAKE	Lab Filename:	E0330023
Sample Date:	03/11/2020	Received Date:	03/11/2020
Sample Time:	1600	Prep. Date:	03/13/2020
Matrix:	WATER	Analysis Date:	03/30/2020
Amount Used:	800 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11186
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.250	0.250	ND		UG/L	1
Atrazine	0.250	0.250	ND		UG/L	1
Metribuzin	0.250	0.250	ND		UG/L	1
Alachlor	0.250	0.250	ND		UG/L	1
Metolachlor	0.250	0.250	ND		UG/L	1
Chlorpyrifos	0.250	0.250	ND		UG/L	1
Cyanazine	0.250	0.250	ND		UG/L	1
Pendimethalin	0.250	0.250	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	77%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

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400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008588-08 Sampling Loc'n: SHEBLYVILLE LAKE Matrix: WATER
Field ID: SVL-15 Sampling Date: 03/11/2020 Moisture: NA
Received: 03/11/2020 Sampling Time: 1600

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		ND	MG/L	NONE	350.1	NA	03/30/20	03305162
Chlorophyll-a, Correcte	1.0	1.00		6.1	MG/CU.M.	10200H	10200H	03/12/20	03/27/20	03305164
Nitrate as Nitrogen	0.0950	0.100		5.96	MG/L	NONE	GREEN	NA	03/12/20	03195142
Pheophytin-a	1.0	1.00		5.6	MG/CU.M.	10200H	10200H	03/12/20	03/27/20	03305164
Phosphorus	0.00800	0.0100		0.407	MG/L	365.2	365.2	03/18/20	03/20/20	03235154
Phosphorus, -ortho	0.00800	0.0100		0.055	MG/L	NONE	365.2	NA	03/12/20	03165126
Solids, Total Suspended	6.67	6.67		108	MG/L	NONE	160.2	NA	03/17/20	03195135
Solids, Volatile Suspen	6.67	6.67		8.67	MG/L	NONE	160.4	NA	03/17/20	03195136
Total Organic Carbon	0.500	1.00		2.9	MG/L	NONE	415.1	NA	03/18/20	03235151

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008588-09
Field ID: LS MARINA
Received: 03/11/2020

Sampling Loc'n: SHEBLYVILLE LAKE
Sampling Date: 03/11/2020
Sampling Time: 0915

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
E. Coliform	1.0	1.00		57.0	COL/100 ML	NONE	1604	NA	03/11/20	03165128

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008588-10
Field ID: FIN MARINA
Received: 03/11/2020

Sampling Loc'n: SHEBLYVILLE LAKE
Sampling Date: 03/11/2020
Sampling Time: 1020

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
E. Coliform	1.0	1.00		125	COL/100 ML	NONE	1604	NA	03/11/20	03165128

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER Analysis: Inorganics
Project No: NELAC Certified - IL100308

ARDL No: 008588-11 Sampling Loc'n: SHEBLYVILLE LAKE Matrix: WATER
Field ID: SUL MARINA Sampling Date: 03/11/2020 Moisture: NA
Received: 03/11/2020 Sampling Time: 1310

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
E. Coliform	1.0	1.00		2250	COL/100 ML	NONE	1604	NA	03/11/20	03165128

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER Analysis: Inorganics
Project No: NELAC Certified - IL100308

ARDL No: 008588-12 Sampling Loc'n: KASKASKIA RIVER Matrix: WATER
Field ID: KAS-3 Sampling Date: 03/11/2020 Moisture: NA
Received: 03/11/2020 Sampling Time: 1405

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.049	MG/L	NONE	350.1	NA	03/30/20	03305162
Chlorophyll-a, Correcte	1.0	1.00		7.6	MG/CU.M.	10200H	10200H	03/12/20	03/27/20	03305164
E. Coliform	1.0	1.00		5450	COL/100 ML	NONE	1604	NA	03/11/20	03165128
Kjeldahl Nitrogen	0.190	0.200	J	1.03	MG/L	351.2	351.2	03/16/20	03/17/20	03195139
Nitrate as Nitrogen	0.0950	0.100		3.96	MG/L	NONE	GREEN	NA	03/12/20	03195142
Nitrite as Nitrogen	0.0200	0.0200		0.020	MG/L	NONE	354.1	NA	03/12/20	03165125
Pheophytin-a	1.0	1.00		ND	MG/CU.M.	10200H	10200H	03/12/20	03/27/20	03305164
Phosphorus	0.00800	0.0100		0.52	MG/L	365.2	365.2	03/18/20	03/20/20	03235154
Phosphorus, -ortho	0.00800	0.0100		0.128	MG/L	NONE	365.2	NA	03/12/20	03165126
Solids, Total Suspended	6.67	6.67		78.7	MG/L	NONE	160.2	NA	03/17/20	03195135
Solids, Volatile Suspen	6.67	6.67		8.0	MG/L	NONE	160.4	NA	03/17/20	03195136
Total Organic Carbon	0.500	1.00		4.3	MG/L	NONE	415.1	NA	03/18/20	03235151

(a) DOD and/or NELAC Accredited Analyte.

METHOD BLANK REPORT

ARDL, Inc. 400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008588 Report Date: 03/31/2020

Project Name: SHEBLYVILLE LAKE/KAS	Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.:	Analytical Method: 8270C
NELAC Certified - IL100308	Prep Method: 3510C

Field ID:	NA	ARDL Lab No.:	008588-01B1
Desc/Location:	NA	Lab Filename:	E0330013
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	03/13/2020
Matrix:	QC Material	Analysis Date:	03/30/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11186
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units
Trifluralin	0.200	0.200	ND		UG/L
Atrazine	0.200	0.200	ND		UG/L
Metribuzin	0.200	0.200	ND		UG/L
Alachlor	0.200	0.200	ND		UG/L
Metolachlor	0.200	0.200	ND		UG/L
Chlorpyrifos	0.200	0.200	ND		UG/L
Cyanazine	0.200	0.200	ND		UG/L
Pendimethalin	0.200	0.200	ND		UG/L

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	91%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

BLANK SUMMARY REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER NELAC Certified - IL100308

Analyte	LOD	LOQ	Blank Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run	QC Lab Number
(a) Iron	0.040	0.050	0.083	MG/L	3010A	6010C	03/16/20	03/23/20	P7347	008587-01B1
(a) Manganese	0.004	0.005	ND	MG/L	3010A	6010C	03/16/20	03/23/20	P7347	008587-01B1
Ammonia Nitrogen	0.020	0.030	ND	MG/L	NONE	350.1	NA	03/30/20	03305162	008588-01B1
Chlorophyll-a, Corre	1.0	1.0	ND	MG/CU.M.	10200H	10200H	03/12/20	03/27/20	03305164	008588-07B1
E. Coliform	1.0	1.0	ND	COL/100 ML	NONE	1604	NA	03/11/20	03165128	008588-09B1
Kjeldahl Nitrogen	0.19	0.20	ND	MG/L	351.2	351.2	03/16/20	03/17/20	03195139	008587-12B1
Nitrate as Nitrogen	0.019	0.020	ND	MG/L	NONE	GREEN	NA	03/12/20	03195142	008588-02B1
Nitrite as Nitrogen	0.020	0.020	ND	MG/L	NONE	354.1	NA	03/12/20	03165125	008588-12B1
Pheophytin-a	1.0	1.0	ND	MG/CU.M.	10200H	10200H	03/12/20	03/27/20	03305164	008588-07B1
Phosphorus	0.008	0.010	ND	MG/L	365.2	365.2	03/18/20	03/20/20	03235154	008588-03B1
Phosphorus, -ortho	0.008	0.010	ND	MG/L	NONE	365.2	NA	03/12/20	03165126	008588-01B1
Solids, Total Suspen	1.0	1.0	ND	MG/L	NONE	160.2	NA	03/17/20	03195135	008588-05B1
Solids, Volatile Sus	1.0	1.0	ND	MG/L	NONE	160.4	NA	03/17/20	03195136	008588-05B1
Total Organic Carbon	0.50	1.0	ND	MG/L	NONE	415.1	NA	03/18/20	03235151	008587-01B1

(a) DOD and/or NELAC Accredited Analyte

Inorganic Method Blanks for 008588

BLANK SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008588 Report Date: 03/31/2020

Project Name: SHEBLYVILLE LAKE/KAS Analysis: NP PESTICIDES (8270SIM-MOD) Analytical Method: 8270C
Project No.: Prep Method: 3510C

Matrix: QC Material QC Batch: B11186 Prep. Date: 03/13/2020
Amount Used: 1000 mL Level: LOW Analysis Date: 03/30/2020

Parameter	Spike Result	Spike Level	Spike % Rec	Duplicate Result	Duplicate Level	Duplicate % Rec	Recovery Limits	RPD	RPD Limit
Trifluralin	2.81	4	70	--	--	--	30-130	--	--
Atrazine	3.29	4	82	--	--	--	30-130	--	--
Metribuzin	2.99	4	75	--	--	--	30-130	--	--
Alachlor	3.11	4	78	--	--	--	30-130	--	--
Metolachlor	3.33	4	83	--	--	--	30-130	--	--
Chlorpyrifos	3.36	4	84	--	--	--	30-130	--	--
Cyanazine	3.65	4	91	--	--	--	30-130	--	--
Pendimethalin	3.04	4	76	--	--	--	30-130	--	--

SURROGATE RECOVERIES:	Spike %R	Duplicate %R	%R Limits
Triphenylphosphate	91.8	--	30-130

(a) DOD-QSM Accredited Analyte.
'*' indicates a recovery outside of standard limits.
Spike Blanks for 008588-01, NP PESTICIDES (8270SIM-MOD)

LABORATORY CONTROL SAMPLE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER NELAC Certified - IL100308

Analyte	LCS 1 Result	LCS 1 Level	LCS 1 % Rec	LCS 2 Result	LCS 2 Level	LCS 2 % Rec	% Rec Limits	Mean % Rec	Analytical Run	QC Lab Number
(a) Iron	4.7	5.0	94	--	--	--	87-115	--	P7347	008587-01C1
(a) Manganese	0.74	0.75	99	--	--	--	90-114	--	P7347	008587-01C1
Ammonia Nitrogen	1.0	1.0	100	--	--	--	80-120	--	03305162	008588-01C1
Kjeldahl Nitrogen	1.1	1.0	107	--	--	--	80-120	--	03195139	008587-12C1
Nitrate as Nitrogen	0.99	1.0	99	--	--	--	80-120	--	03195142	008588-02C1
Nitrite as Nitrogen	1.0	1.0	102	--	--	--	80-120	--	03165125	008588-12C1
Phosphorus	0.62	0.67	93	--	--	--	80-120	--	03235154	008588-03C1
Phosphorus, -ortho	0.094	0.10	94	--	--	--	80-120	--	03165126	008588-01C1
Total Organic Carbon	17.4	20.0	87	--	--	--	76-120	--	03235151	008587-01C1

NOTE: Any values tabulated above marked with an asterisk are outside of acceptable limits.

(a) DOD and/or NELAC Accredited Analyte

MATRIX SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008588 Report Date: 03/31/2020

Project Name: SHEBLYVILLE LAKE/KAS Analysis: NP PESTICIDES (8270SIM-MOD) Analytical Method: 8270C
Project No.: Prep Method: 3510C

Field ID:	SVL-1	Prep. Date:	03/13/2020	ARDL Lab No.:	008588-01
Desc/Location:	SHEBLYVILLE LAKE	Amount Used:	900 mL	Lab Filename:	
Sample Date:	03/11/2020	% Moisture:	NA	Received Date:	03/11/2020
Sample Time:	0950	QC Batch:	B11186	Analysis Date:	03/30/2020
Matrix:	WATER	Level:	LOW		

Parameter	Sample Result	MS Result	MS Level	MS % Rec	MSD Result	MSD Level	MSD % Rec	% Rec Limits	RPD	RPD Limit
Trifluralin	ND	3.34	4.44	75.3	3.3	4.44	74.3	30-130	1.3	30
Atrazine	ND	3.53	4.44	79.5	3.42	4.44	77	30-130	3.2	30
Metribuzin	ND	3.24	4.44	73	3.12	4.44	70.3	30-130	3.8	30
Alachlor	ND	3.49	4.44	78.5	3.5	4.44	78.8	30-130	0.3	30
Metolachlor	ND	3.68	4.44	82.8	3.69	4.44	83	30-130	0.3	30
Chlorpyrifos	ND	3.68	4.44	82.8	3.61	4.44	81.3	30-130	1.8	30
Cyanazine	ND	4.02	4.44	90.5	3.89	4.44	87.5	30-130	3.4	30
Pendimethalin	ND	3.19	4.44	71.8	3.21	4.44	72.3	30-130	0.7	30

SURROGATE RECOVERIES:	MS %R	MSD %R	%R Limits
Triphenylphosphate	86	85	30-130

(a) DOD-QSM Accredited Analyte.
'nc' indicates sample >4X spike level.
'*' indicates a recovery outside of standard limits.
Matrix Spikes for 008588-01, NP PESTICIDES (8270SIM-MOD)

MATRIX SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER NELAC Certified - IL100308

Analyte	Sample Matrix	Sample Result	MS Result	MS Level	MS % Rec	MSD Result	MSD Level	MSD % Rec	% Rec Limits	RPD	RPD Limit	Run	QC Lab Number
(a) Iron	WATER	0.45	1.4	1.0	92	1.3	1.0	86 *	87-115	5	20	P7347	008588-01MS
(a) Manganese	WATER	0.026	0.53	0.50	102	0.54	0.50	102	90-114	0	20	P7347	008588-01MS
Ammonia Nitrogen	WATER	0.19	2.2	2.0	102	2.3	2.0	105	75-125	2	20	03305162	008588-01MS
Kjeldahl Nitrogen	WATER	1.0	2.1	0.80	136 *	2.0	0.80	126 *	75-125	4	20	03195139	008588-12MS
Nitrate as Nitrogen	WATER	5.2	5.8	1.0	60 *	5.5	1.0	40 *	75-125	4	20	03195142	008588-02MS
Phosphorus	WATER	0.36	1.2	0.83	100	1.2	0.83	98	75-125	2	20	03235154	008588-03MS
Phosphorus, -ortho	WATER	0.12	0.23	0.10	113	0.23	0.10	113	75-125	0	20	03165126	008588-01MS
Total Organic Carbon	WATER	2.6	7.2	5.0	92	7.3	5.0	94	76-120	1	20	03235151	008588-02MS

NOTE: Values tabulated above marked with an asterisk are explained in the associated narrative.

(a) DOD and/or NELAC Accredited Analyte.

SAMPLE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008588 Report Date: 04/01/2020

Project Name: SHEBLYVILLE LAKE/KASKASKIA RIVER NELAC Certified - IL100308

Analyte	Sample Conc'n	First Duplicate	Second Duplicate	Units	Percent Diff	Mean (Smp,D1,D2)	Analytical Run	QC Lab Number
Chlorophyll-a, Corrected	9.1	8.2	--	MG/CU.M.	10	--	03305164	008588-07D1
Pheophytin-a	6.8	7.7	--	MG/CU.M.	12	--	03305164	008588-07D1
Solids, Total Suspended	21.6	22.4	--	MG/L	4	--	03195135	008588-05D1
Solids, Volatile Suspend	ND	0	--	MG/L	NC	--	03195136	008588-05D1

(a) DOD and/or NELAC Accredited Analyte

Sample Receipt Information

Including as appropriate:

- COCs
- Cooler Receipts
- Airbills
- Email Communication / Instructions from Customer

ARDL Data Package 8588

ARDL, Inc.

P.O. Box 1566, 400 Aviation Drive, Mt. Vernon, IL 62864
(618) 244-3235 Phone (618) 244-1149 Fax

8588

CHAIN OF CUSTODY RECORD

PROJECT: Shelbyville Lake

SAMPLERS: (Signature) Ben Breeling / Travis Schepker

SAMPLE NUMBER	DATE	TIME	COMP	GRAB	NO. OF CONTAINERS	TSS, TVSS	Chloro/Pheo	* TOC, T-PO4	O-PO4	* NO3-N, NH3-N	NP Pest	#T.Fe, T.Mn	E. coli	MS/MSD	*NO2-N	Fecal Coli.	TKN		REMARKS OR SAMPLE LOCATION	PRESERVATION ICED	PRESERVATION SPECIFY CHEMICALS ADDED AND FINAL pH IF KNOWN
SVL-1	3-11	0950		X		X		X	X	X	X	X		X						X	
SVL-2	3-11	1100		X		X	X	X	X	X	X									X	
SVL-2-10	3-11	1100		X		X		X	X	X		X								X	
SVL-4	3-11	1400		X		X	X	X	X	X	X									X	
SVL-12	3-11	1500		X		X		X	X	X	X									X	
SVL-13	3-11	1210		X		X		X	X	X	X									X	
SVL-11	3-11	1330		X		X	X	X	X	X	X									X	
SVL-15	3-11	1600		X		X	X	X	X	X	X								DCB 03/12/2020	X	
KAS-3	3-11	915		X		X	X	X	X	X			X		X		X			X	
LS Marina	3-11	1020		X									X							X	
FIN Marina	3-11	1310		X									X							X	
SUL Marina	3-11	1405		X									X							X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
	3/11/20	1625	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
	3/11/20	1750	
Received for Laboratory by: (Signature)	Date	Time	Shipping Ticket No.
	3/11/20	1750	

REMARKS/SPECIAL INSTRUCTIONS:

*Preserved with H_2SO_4
#Preserved with HNO_3

PURCHASE ORDER NO: _____

COOLER RECEIPT REPORT
ARDL, INC.

ARDL #: 8588 Cooler # 2

Number of Coolers in Shipment: 2

Project: Shelbyville Lake Kaskaskia River

Date Received: 03/12/2020

A. **PRELIMINARY EXAMINATION PHASE:** Date cooler was opened: 03/12/2020 (Signature) DCB

1. Did cooler come with a shipping slip (airbill, etc.)? ..... YES (NO)

   If YES, enter carrier name and airbill number here: ARDL CURRIER

2. Were custody seals on outside of cooler? ..... YES NO (N/A)

   How many and where? _____, Seal Date: _____, Seal Name: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO (NA)
4. Did you screen samples for radioactivity using a Geiger Counter? ..... (YES) NO
5. Were custody papers sealed in a plastic bag? ..... YES (NO)
6. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO N/A
7. Were custody papers signed in appropriate place by ARDL personnel? ..... (YES) NO N/A
8. Was project identifiable from custody papers? If YES, enter project name at the top of this form ..... (YES) NO N/A
9. Was a separate container provided for measuring temperature? YES ____ NO ✓ Observed Cooler Temp. 0.5 C
   Correction factor 0.0 C

B. **LOG-IN PHASE:** Date samples were logged-in: 03/12/2020 (Signature) DCB

10. Describe type of packing in cooler: Loose Ice
11. Were all samples sealed in separate plastic bags? ..... YES (NO) N/A
12. Did all containers arrive unbroken and were labels in good condition? ..... (YES) NO
13. Were sample labels complete? ..... (YES) NO
14. Did all sample labels agree with custody papers? ..... (YES) NO
15. Were correct containers used for the tests indicated? ..... (YES) NO
16. Was pH correct on preserved water samples? ..... (YES) NO N/A
17. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO
18. Were bubbles absent in VOA samples? If NO, list by sample #: _____ YES NO (N/A)
19. Was the ARDL project coordinator notified of any deficiencies? ..... YES NO (N/A)

Comments and/or Corrective Action:
(By: Signature) Date:

Sample Transfer	
Fraction: All	Fraction
Area #: Walk-In	Area #
By: DCB	By
On: 03/12/2020	On

Chain-of-Custody # _____

COOLER RECEIPT REPORT
ARDL, INC.

ARDL #: 8588

Cooler # 1

Number of Coolers in Shipment: 2

Project: Shelbyville Lake
Kaskaskia River

Date Received: 03/12/2020

A. **PRELIMINARY EXAMINATION PHASE:** Date cooler was opened: 03/12/2020 (Signature) DCB

1. Did cooler come with a shipping slip (airbill, etc.)? ..... YES (NO)

   If YES, enter carrier name and airbill number here: ARDL CURRIER

2. Were custody seals on outside of cooler? ..... YES NO (N/A)

   How many and where? _____, Seal Date: _____, Seal Name: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO (NA)

4. Did you screen samples for radioactivity using a Geiger Counter? ..... (YES) NO

5. Were custody papers sealed in a plastic bag? ..... YES (NO)

6. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO N/A

7. Were custody papers signed in appropriate place by ARDL personnel? ..... (YES) NO N/A

8. Was project identifiable from custody papers? If YES, enter project name at the top of this form ..... (YES) NO N/A

9. Was a separate container provided for measuring temperature? YES____ NO✓ Observed Cooler Temp. 2.1 C
   Correction factor 0.0 C

B. **LOG-IN PHASE:** Date samples were logged-in: 03/12/2020 (Signature) DCB

10. Describe type of packing in cooler: Loose Ice

11. Were all samples sealed in separate plastic bags? ..... YES (NO) N/A

12. Did all containers arrive unbroken and were labels in good condition? ..... (YES) NO

13. Were sample labels complete? ..... (YES) NO

14. Did all sample labels agree with custody papers? ..... (YES) NO

15. Were correct containers used for the tests indicated? ..... (YES) NO

16. Was pH correct on preserved water samples? ..... (YES) NO N/A

17. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

18. Were bubbles absent in VOA samples? If NO, list by sample #: _____ YES NO (N/A)

19. Was the ARDL project coordinator notified of any deficiencies? ..... YES NO (N/A)

Comments and/or Corrective Action:
(By: Signature) Date:

Sample Transfer	
Fraction: All	Fraction
Area #: Walk-In	Area #
By: DCB	By
On: 03/12/2020	On

Chain-of-Custody # _____

ARDL Inc.
Environmental | Analytical | Management | Safety

PO Box 1566
400 Aviation Drive
Mt. Vernon, IL 62864
618-244-3235
www.ardlinc.com

Customer Name: SLCOE **Date: 6/16/20**

Project Name: Shelbyville Lake/Kaskaskia River **Lab Name: ARDL, Inc.**

Samples Received at ARDL: 5/21/20 **ARDL Report No.: 8614**

CASE NARRATIVE

Customer Sample No.	Date Collected	Lab ID Number	Analyses Requested
SVL-1	5/21/20	8614-01	NP Pesticides, Metals(1), Inorganics(2)
SVL-2	5/21/20	8614-02	NP Pesticides, Inorganics(2)(3)
SVL-2-10	5/21/20	8614-03	Metals(1), Inorganics(2)
SVL-4	5/21/20	8614-04	NP Pesticides, Inorganics(2)(3)
SVL-12	5/21/20	8614-05	E. Coli , Inorganics(2)(4)
SVL-13	5/21/20	8614-06	NP Pesticides, Inorganics(2)
SVL-11	5/21/20	8614-07	NP Pesticides, Inorganics(2)(3)
SVL-15	5/21/20	8614-08	NP Pesticides, Inorganics(2)(3)
LS Marina	5/21/20	8614-09	E. Coli
FIN Marina	5/21/20	8614-10	E. Coli
SUL Marina	5/21/20	8614-11	E. Coli
KAS-3	5/21/20	8614-12	E. Coli , Inorganics(2)(3)(4)

(1) Including iron and manganese.
(2) Including ammonia, nitrate, orthophosphate, total phosphorus, TOC, TSS, and TVSS.
(3) Including chlorophyll-a and pheophytin-a.
(4) Including Nitrite and TKN.

The quality control data are summarized as follows:

NP PESTICIDE FRACTION – METHOD 8270-SIM

HOLDING TIME
Samples were prepared and analyzed within method specified holding times.

INITIAL CALIBRATION
The initial calibration passed criteria.

CONTINUING CALIBRATION
The continuing calibration verification (CCV) passed criteria for all analytes. The closing CCV passed criteria for all analytes.

PREPARATION BLANK
The blank met acceptance criteria.

LABORATORY CONTROL SAMPLE
The LCS analyses met recovery criteria.

MATRIX SPIKE
The matrix spike and matrix spike duplicate met recovery criteria.

CASE NARRATIVE (Continued)

DUPLICATE
Duplicate analyses are reported as MS/MSD. RPD of the duplicate analyses met criteria.

INTERNAL STANDARD
All internal standard criteria were met.

SURROGATE
All surrogate recovery criteria were met.

INORGANIC FRACTION

TOC were analyzed by an accredited outside laboratory due to instrument status.

Sample 8614-12, was analyzed outside of holding time requirements for E.Coli. The results are flagged appropriately.

PREPARATION BLANK
Results of the preparation blanks were within acceptable limits.

LABORATORY CONTROL SAMPLE
Percent recoveries of all LCS analyses were within control limits.

MATRIX SPIKE
Percent recoveries of all matrix spikes and matrix spike duplicates were within control limits.

DUPLICATE
All duplicate analyses are reported as MS/MSD except chlorophyll-a, pheophytin-a, TSS, and TVSS.
RPD on all duplicate analyses were within control limits, except chlorophyll-a. The parent sample has been flagged appropriately with a 'J' qualifier.

DATA REPORTING QUALIFIERS

The following data reporting qualifiers are used as required:

ND - Indicates parameter was analyzed for but not detected.

J - Indicates an estimated value. This flag is used either when estimating a concentration or this flag indicates analyte(s) associated with a DOD-QSM specified non-compliance pertaining to matrix QC criteria.

X - Sample preparation and/or analysis was performed outside of holding time requirements.

REPORT ORGANIZATION

The data in this report appear by sample type (Field sample, preparation blank, laboratory control sample / spike blank, matrix spike /spike duplicate and sample duplicate). Within each sample type the data appear in the order that the analytical methods were discussed in this case narrative. Sample receipt information follows the analytical data.

Release of the data contained in this package has been authorized by the Technical Services Manager or his designee as verified by the following signature.

Dean S. Dickerson
Technical Services Manager

Sample & QC Results

Including as appropriate:

- Field Sample Results
- Batch QC
  - Prep Blank
  - LCS/Spike Blank
- Matrix QC
  - MS/MSD
  - Sample Duplicate

ARDL Data Package 8614

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/02/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-1	ARDL Lab No.:	008614-01
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E0528015
Sample Date:	05/21/2020	Received Date:	05/21/2020
Sample Time:	1030	Prep. Date:	05/26/2020
Matrix:	WATER	Analysis Date:	05/28/2020
Amount Used:	900 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11219
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.222	0.222	ND		UG/L	1
Atrazine	0.222	0.222	0.978		UG/L	1
Metribuzin	0.222	0.222	ND		UG/L	1
Alachlor	0.222	0.222	ND		UG/L	1
Metolachlor	0.222	0.222	1.47		UG/L	1
Chlorpyrifos	0.222	0.222	ND		UG/L	1
Cyanazine	0.222	0.222	ND		UG/L	1
Pendimethalin	0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	87%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE Analysis: Inorganics
Project No: NELAC Certified - IL100308

ARDL No: 008614-01 Sampling Loc'n: SHELBYVILLE LAKE Matrix: WATER
Field ID: SVL-1 Sampling Date: 05/21/2020 Moisture: NA
Received: 05/21/2020 Sampling Time: 1030

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron	0.0400	0.0500		0.288	MG/L	3010A	6010C	05/27/20	05/28/20	P7371
(a) Manganese	0.00400	0.00500		0.0120	MG/L	3010A	6010C	05/27/20	05/28/20	P7371
Ammonia Nitrogen	0.0200	0.0300		0.0431	MG/L	NONE	350.1	NA	05/28/20	05295324
Nitrate as Nitrogen	0.0950	0.100		5.72	MG/L	NONE	GREEN	NA	05/26/20	05295326
Phosphorus	0.00800	0.0100		0.109	MG/L	365.2	365.2	06/02/20	06/02/20	06035343
Phosphorus, -ortho	0.00800	0.0100		0.0135	MG/L	NONE	365.2	NA	05/22/20	05265303
Solids, Total Suspended	2.86	2.86		ND	MG/L	NONE	160.2	NA	05/26/20	05295322
Solids, Volatile Suspen	2.86	2.86		ND	MG/L	NONE	160.4	NA	05/26/20	05295323
Total Organic Carbon	0.500	1.00		3.6	MG/L	NONE	415.1	NA	05/23/20	06125373

(a) DOD and/or NELAC Accredited Analyte.

Sample 008614-01, Inorganic Analyses

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/02/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-2	ARDL Lab No.:	008614-02
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E0528018
Sample Date:	05/21/2020	Received Date:	05/21/2020
Sample Time:	1130	Prep. Date:	05/26/2020
Matrix:	WATER	Analysis Date:	05/28/2020
Amount Used:	900 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11219
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.222	0.222	ND		UG/L	1
Atrazine	0.222	0.222	0.933		UG/L	1
Metribuzin	0.222	0.222	ND		UG/L	1
Alachlor	0.222	0.222	ND		UG/L	1
Metolachlor	0.222	0.222	1.49		UG/L	1
Chlorpyrifos	0.222	0.222	ND		UG/L	1
Cyanazine	0.222	0.222	ND		UG/L	1
Pendimethalin	0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	81%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

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Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008614-02
Field ID: SVL-2
Received: 05/21/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 05/21/2020
Sampling Time: 1130

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.0303	MG/L	NONE	350.1	NA	05/28/20	05295324
Chlorophyll-a, Correcte	1.0	1.00	J	7.9	MG/CU.M.	10200H	10200H	05/22/20	05/26/20	05275307
Nitrate as Nitrogen	0.0950	0.100		4.12	MG/L	NONE	GREEN	NA	05/26/20	05295326
Pheophytin-a	1.0	1.00		ND	MG/CU.M.	10200H	10200H	05/22/20	05/26/20	05275307
Phosphorus	0.00800	0.0100		0.083	MG/L	365.2	365.2	06/02/20	06/02/20	06035343
Phosphorus, -ortho	0.00800	0.0100		0.0135	MG/L	NONE	365.2	NA	05/22/20	05265303
Solids, Total Suspended	2.50	2.50		ND	MG/L	NONE	160.2	NA	05/26/20	05295322
Solids, Volatile Suspen	2.50	2.50		ND	MG/L	NONE	160.4	NA	05/26/20	05295323
Total Organic Carbon	0.500	1.00		4.0	MG/L	NONE	415.1	NA	05/23/20	06125373

(a) DOD and/or NELAC Accredited Analyte.

Sample 008614-02, Inorganic Analyses

ARDL, INC.
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Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008614-03
Field ID: SVL-2-10
Received: 05/21/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 05/21/2020
Sampling Time: 1145

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron	0.0400	0.0500		0.653	MG/L	3010A	6010C	05/27/20	05/28/20	P7371
(a) Manganese	0.00400	0.00500		0.0281	MG/L	3010A	6010C	05/27/20	05/28/20	P7371
Ammonia Nitrogen	0.0200	0.0300		0.114	MG/L	NONE	350.1	NA	05/28/20	05295324
Nitrate as Nitrogen	0.0950	0.100		4.35	MG/L	NONE	GREEN	NA	05/26/20	05295326
Phosphorus	0.00800	0.0100		0.10	MG/L	365.2	365.2	06/02/20	06/02/20	06035343
Phosphorus, -ortho	0.00800	0.0100		0.0135	MG/L	NONE	365.2	NA	05/22/20	05265303
Solids, Total Suspended	4.0	4.00		6.0	MG/L	NONE	160.2	NA	05/26/20	05295322
Solids, Volatile Suspen	4.0	4.00		ND	MG/L	NONE	160.4	NA	05/26/20	05295323
Total Organic Carbon	0.500	1.00		3.4	MG/L	NONE	415.1	NA	05/23/20	06125373

(a) DOD and/or NELAC Accredited Analyte.

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Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/02/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-4	ARDL Lab No.:	008614-04
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E0528019
Sample Date:	05/21/2020	Received Date:	05/21/2020
Sample Time:	1545	Prep. Date:	05/26/2020
Matrix:	WATER	Analysis Date:	05/28/2020
Amount Used:	900 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11219
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.222	0.222	ND		UG/L	1
Atrazine	0.222	0.222	2.37		UG/L	1
Metribuzin	0.222	0.222	0.900		UG/L	1
Alachlor	0.222	0.222	ND		UG/L	1
Metolachlor	0.222	0.222	4.06		UG/L	1
Chlorpyrifos	0.222	0.222	ND		UG/L	1
Cyanazine	0.222	0.222	ND		UG/L	1
Pendimethalin	0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	74%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

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Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008614-04
Field ID: SVL-4
Received: 05/21/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 05/21/2020
Sampling Time: 1545

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.0914	MG/L	NONE	350.1	NA	05/28/20	05295324
Chlorophyll-a, Correcte	1.0	1.00		4.5	MG/CU.M.	10200H	10200H	05/22/20	05/26/20	05275307
Nitrate as Nitrogen	0.0950	0.100		6.34	MG/L	NONE	GREEN	NA	05/26/20	05295326
Pheophytin-a	1.0	1.00		ND	MG/CU.M.	10200H	10200H	05/22/20	05/26/20	05275307
Phosphorus	0.00800	0.0100		0.23	MG/L	365.2	365.2	06/02/20	06/02/20	06035343
Phosphorus, -ortho	0.00800	0.0100		0.146	MG/L	NONE	365.2	NA	05/22/20	05265303
Solids, Total Suspended	4.0	4.00		19.2	MG/L	NONE	160.2	NA	05/26/20	05295322
Solids, Volatile Suspen	4.0	4.00		ND	MG/L	NONE	160.4	NA	05/26/20	05295323
Total Organic Carbon	0.500	1.00		4.6	MG/L	NONE	415.1	NA	05/23/20	06125373

(a) DOD and/or NELAC Accredited Analyte.

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Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/02/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-12	ARDL Lab No.:	008614-05
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E0528020
Sample Date:	05/21/2020	Received Date:	05/21/2020
Sample Time:	1700	Prep. Date:	05/26/2020
Matrix:	WATER	Analysis Date:	05/28/2020
Amount Used:	800 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11219
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.250	0.250	ND		UG/L	1
Atrazine	0.250	0.250	2.88		UG/L	1
Metribuzin	0.250	0.250	2.34		UG/L	1
Alachlor	0.250	0.250	ND		UG/L	1
Metolachlor	0.250	0.250	3.31		UG/L	1
Chlorpyrifos	0.250	0.250	ND		UG/L	1
Cyanazine	0.250	0.250	ND		UG/L	1
Pendimethalin	0.250	0.250	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	73%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

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Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE Analysis: Inorganics
Project No: NELAC Certified - IL100308

ARDL No: 008614-05 Sampling Loc'n: SHELBYVILLE LAKE Matrix: WATER
Field ID: SVL-12 Sampling Date: 05/21/2020 Moisture: NA
Received: 05/21/2020 Sampling Time: 1700

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.0883	MG/L	NONE	350.1	NA	05/28/20	05295324
E. Coliform	1.0	1.00		825	COL/100 ML	NONE	1604	NA	05/21/20	05265298
Nitrate as Nitrogen	0.0950	0.100		7.13	MG/L	NONE	GREEN	NA	05/26/20	05295326
Phosphorus	0.00800	0.0100		0.399	MG/L	365.2	365.2	06/02/20	06/02/20	06035343
Phosphorus, -ortho	0.00800	0.0100		0.208	MG/L	NONE	365.2	NA	05/22/20	05265303
Solids, Total Suspended	10.0	10.0		35.0	MG/L	NONE	160.2	NA	05/26/20	05295322
Solids, Volatile Suspen	10.0	10.0		ND	MG/L	NONE	160.4	NA	05/26/20	05295323
Total Organic Carbon	0.500	1.00		5.0	MG/L	NONE	415.1	NA	05/23/20	06125373

(a) DOD and/or NELAC Accredited Analyte.

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Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/02/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-13	ARDL Lab No.:	008614-06
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E0528021
Sample Date:	05/21/2020	Received Date:	05/21/2020
Sample Time:	1330	Prep. Date:	05/26/2020
Matrix:	WATER	Analysis Date:	05/28/2020
Amount Used:	800 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11219
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.250	0.250	ND		UG/L	1
Atrazine	0.250	0.250	2.78		UG/L	1
Metribuzin	0.250	0.250	2.21		UG/L	1
Alachlor	0.250	0.250	ND		UG/L	1
Metolachlor	0.250	0.250	5.75		UG/L	1
Chlorpyrifos	0.250	0.250	ND		UG/L	1
Cyanazine	0.250	0.250	ND		UG/L	1
Pendimethalin	0.250	0.250	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	72%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

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400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008614-06
Field ID: SVL-13
Received: 05/21/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 05/21/2020
Sampling Time: 1330

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.0902	MG/L	NONE	350.1	NA	05/28/20	05295324
Nitrate as Nitrogen	0.0950	0.100		6.17	MG/L	NONE	GREEN	NA	05/26/20	05295326
Phosphorus	0.00800	0.0100		0.399	MG/L	365.2	365.2	06/02/20	06/02/20	06035343
Phosphorus, -ortho	0.00800	0.0100		0.231	MG/L	NONE	365.2	NA	05/22/20	05265303
Solids, Total Suspended	10.0	10.0		55.0	MG/L	NONE	160.2	NA	05/26/20	05295322
Solids, Volatile Suspen	10.0	10.0		ND	MG/L	NONE	160.4	NA	05/26/20	05295323
Total Organic Carbon	0.500	1.00		5.1	MG/L	NONE	415.1	NA	05/23/20	06125373

(a) DOD and/or NELAC Accredited Analyte.

Sample 008614-06, Inorganic Analyses

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/02/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-11	ARDL Lab No.:	008614-07
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E0528022
Sample Date:	05/21/2020	Received Date:	05/21/2020
Sample Time:	1530	Prep. Date:	05/26/2020
Matrix:	WATER	Analysis Date:	05/28/2020
Amount Used:	900 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11219
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.222	0.222	ND		UG/L	1
Atrazine	0.222	0.222	3.10		UG/L	1
Metribuzin	0.222	0.222	1.01		UG/L	1
Alachlor	0.222	0.222	ND		UG/L	1
Metolachlor	0.222	0.222	4.37		UG/L	1
Chlorpyrifos	0.222	0.222	ND		UG/L	1
Cyanazine	0.222	0.222	ND		UG/L	1
Pendimethalin	0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	86%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008614-07
Field ID: SVL-11
Received: 05/21/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 05/21/2020
Sampling Time: 1530

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.0658	MG/L	NONE	350.1	NA	05/28/20	05295324
Chlorophyll-a, Correcte	1.0	1.00		5.7	MG/CU.M.	10200H	10200H	05/22/20	05/26/20	05275307
Nitrate as Nitrogen	0.0950	0.100		4.76	MG/L	NONE	GREEN	NA	05/26/20	05295326
Pheophytin-a	1.0	1.00		ND	MG/CU.M.	10200H	10200H	05/22/20	05/26/20	05275307
Phosphorus	0.00800	0.0100		0.247	MG/L	365.2	365.2	06/02/20	06/02/20	06035343
Phosphorus, -ortho	0.00800	0.0100		0.148	MG/L	NONE	365.2	NA	05/22/20	05265303
Solids, Total Suspended	4.0	4.00		12.8	MG/L	NONE	160.2	NA	05/26/20	05295322
Solids, Volatile Suspen	4.0	4.00		ND	MG/L	NONE	160.4	NA	05/26/20	05295323
Total Organic Carbon	0.500	1.00		4.1	MG/L	NONE	415.1	NA	05/23/20	06125373

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/02/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-15	ARDL Lab No.:	008614-08
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E0528023
Sample Date:	05/21/2020	Received Date:	05/21/2020
Sample Time:	1550	Prep. Date:	05/26/2020
Matrix:	WATER	Analysis Date:	05/28/2020
Amount Used:	900 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11219
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.222	0.222	ND		UG/L	1
Atrazine	0.222	0.222	2.51		UG/L	1
Metribuzin	0.222	0.222	0.789		UG/L	1
Alachlor	0.222	0.222	ND		UG/L	1
Metolachlor	0.222	0.222	3.80		UG/L	1
Chlorpyrifos	0.222	0.222	ND		UG/L	1
Cyanazine	0.222	0.222	ND		UG/L	1
Pendimethalin	0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	72%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008614-08
Field ID: SVL-15
Received: 05/21/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 05/21/2020
Sampling Time: 1550

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.104	MG/L	NONE	350.1	NA	05/28/20	05295324
Chlorophyll-a, Correcte	1.0	1.00		ND	MG/CU.M.	10200H	10200H	05/22/20	05/26/20	05275307
Nitrate as Nitrogen	0.0950	0.100		4.93	MG/L	NONE	GREEN	NA	05/26/20	05295326
Pheophytin-a	1.0	1.00		ND	MG/CU.M.	10200H	10200H	05/22/20	05/26/20	05275307
Phosphorus	0.00800	0.0100		0.286	MG/L	365.2	365.2	06/02/20	06/02/20	06035343
Phosphorus, -ortho	0.00800	0.0100		0.154	MG/L	NONE	365.2	NA	05/22/20	05265303
Solids, Total Suspended	4.0	4.00		14.0	MG/L	NONE	160.2	NA	05/26/20	05295322
Solids, Volatile Suspen	4.0	4.00		ND	MG/L	NONE	160.4	NA	05/26/20	05295323
Total Organic Carbon	0.500	1.00		4.0	MG/L	NONE	415.1	NA	05/23/20	06125373

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008614-09
Field ID: LS MARINA
Received: 05/21/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 05/21/2020
Sampling Time: 1205

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
E. Coliform	1.0	1.00		41.0	COL/100 ML	NONE	1604	NA	05/21/20	05265298

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE Analysis: Inorganics
Project No: NELAC Certified - IL100308

ARDL No: 008614-10 Sampling Loc'n: SHELBYVILLE LAKE Matrix: WATER
Field ID: FIN MARINA Sampling Date: 05/21/2020 Moisture: NA
Received: 05/21/2020 Sampling Time: 1510

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
E. Coliform	1.0	1.00		125	COL/100 ML	NONE	1604	NA	05/21/20	05265298

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008614-11
Field ID: SUL MARINA
Received: 05/21/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 05/21/2020
Sampling Time: 1610

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
E. Coliform	1.0	1.00		475	COL/100 ML	NONE	1604	NA	05/21/20	05265298

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008614-12
Field ID: KAS-3
Received: 05/21/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 05/21/2020
Sampling Time: 0930

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.0357	MG/L	NONE	350.1	NA	05/28/20	05295324
Chlorophyll-a, Correcte	1.0	1.00		12.5	MG/CU.M.	10200H	10200H	05/22/20	05/26/20	05275307
E. Coliform	1.0	1.00	X	700	COL/100 ML	NONE	1604	NA	05/22/20	05265299
Kjeldahl Nitrogen	0.190	0.200		0.847	MG/L	351.2	351.2	06/01/20	06/02/20	06035345
Nitrate as Nitrogen	0.0950	0.100		3.74	MG/L	NONE	GREEN	NA	05/26/20	05295326
Nitrite as Nitrogen	0.0200	0.0200		0.050	MG/L	NONE	354.1	NA	05/22/20	05295325
Pheophytin-a	1.0	1.00		ND	MG/CU.M.	10200H	10200H	05/22/20	05/26/20	05275307
Phosphorus	0.00800	0.0100		0.17	MG/L	365.2	365.2	06/02/20	06/02/20	06035343
Phosphorus, -ortho	0.00800	0.0100		0.0498	MG/L	NONE	365.2	NA	05/22/20	05265303
Solids, Total Suspended	4.0	4.00		49.6	MG/L	NONE	160.2	NA	05/26/20	05295322
Solids, Volatile Suspen	4.0	4.00		4.8	MG/L	NONE	160.4	NA	05/26/20	05295323
Total Organic Carbon	0.500	1.00		3.7	MG/L	NONE	415.1	NA	05/23/20	06125373

(a) DOD and/or NELAC Accredited Analyte.

METHOD BLANK REPORT

ARDL, Inc. 400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008614 Report Date: 06/02/2020

Project Name: SHELBYVILLE LAKE	Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.:	Analytical Method: 8270C
NELAC Certified - IL100308	Prep Method: 3510C

Field ID:	NA	ARDL Lab No.:	008614-01B1
Desc/Location:	NA	Lab Filename:	E0528013
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	05/26/2020
Matrix:	QC Material	Analysis Date:	05/28/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11219
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units
Trifluralin	0.200	0.200	ND		UG/L
Atrazine	0.200	0.200	ND		UG/L
Metribuzin	0.200	0.200	ND		UG/L
Alachlor	0.200	0.200	ND		UG/L
Metolachlor	0.200	0.200	ND		UG/L
Chlorpyrifos	0.200	0.200	ND		UG/L
Cyanazine	0.200	0.200	ND		UG/L
Pendimethalin	0.200	0.200	ND		UG/L

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	93%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

BLANK SUMMARY REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE NELAC Certified - IL100308

Analyte	LOD	LOQ	Blank Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run	QC Lab Number
(a) Iron	0.040	0.050	ND	MG/L	3010A	6010C	05/27/20	05/28/20	P7371	008614-01B1
(a) Manganese	0.004	0.005	ND	MG/L	3010A	6010C	05/27/20	05/28/20	P7371	008614-01B1
Ammonia Nitrogen	0.020	0.030	ND	MG/L	NONE	350.1	NA	05/28/20	05295324	008614-01B1
Chlorophyll-a, Corre	1.0	1.0	ND	MG/CU.M.	10200H	10200H	05/22/20	05/26/20	05275307	008614-02B1
E. Coliform	1.0	1.0	ND	COL/100 ML	NONE	1604	NA	05/21/20	05265298	008614-05B1
E. Coliform	1.0	1.0	ND	COL/100 ML	NONE	1604	NA	05/22/20	05265299	008614-12B1
Kjeldahl Nitrogen	0.19	0.20	ND	MG/L	351.2	351.2	06/01/20	06/02/20	06035345	008608-01B1
Nitrate as Nitrogen	0.019	0.020	ND	MG/L	NONE	GREEN	NA	05/26/20	05295326	008614-03B1
Nitrite as Nitrogen	0.020	0.020	ND	MG/L	NONE	354.1	NA	05/22/20	05295325	008614-12B1
Pheophytin-a	1.0	1.0	ND	MG/CU.M.	10200H	10200H	05/22/20	05/26/20	05275307	008614-02B1
Phosphorus	0.008	0.010	ND	MG/L	365.2	365.2	06/02/20	06/02/20	06035343	008613-01B1
Phosphorus, -ortho	0.008	0.010	ND	MG/L	NONE	365.2	NA	05/22/20	05265303	008614-01B1
Solids, Total Suspen	1.0	1.0	ND	MG/L	NONE	160.2	NA	05/26/20	05295322	008614-04B1
Solids, Volatile Sus	1.0	1.0	ND	MG/L	NONE	160.4	NA	05/26/20	05295323	008614-04B1
Total Organic Carbon	0.50	1.0	ND	MG/L	NONE	415.1	NA	05/23/20	06125373	008613-01B1

(a) DOD and/or NELAC Accredited Analyte

Inorganic Method Blanks for 008614

BLANK SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008614 Report Date: 06/02/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD) Analytical Method: 8270C
Project No.: Prep Method: 3510C

Matrix: QC Material QC Batch: B11219 Prep. Date: 05/26/2020
Amount Used: 1000 mL Level: LOW Analysis Date: 05/28/2020

Parameter	Spike Result	Spike Level	Spike % Rec	Duplicate Result	Duplicate Level	Duplicate % Rec	Recovery Limits	RPD	RPD Limit
Trifluralin	2.78	4	70	--	--	--	30-130	--	--
Atrazine	3.52	4	88	--	--	--	30-130	--	--
Metribuzin	3.44	4	86	--	--	--	30-130	--	--
Alachlor	2.15	4	54	--	--	--	30-130	--	--
Metolachlor	3.53	4	88	--	--	--	30-130	--	--
Chlorpyrifos	2.92	4	73	--	--	--	30-130	--	--
Cyanazine	3.98	4	100	--	--	--	30-130	--	--
Pendimethalin	3.37	4	84	--	--	--	30-130	--	--

SURROGATE RECOVERIES:	Spike %R	Duplicate %R	%R Limits
Triphenylphosphate	89.5	--	30-130

(a) DOD-QSM Accredited Analyte.

'*' indicates a recovery outside of standard limits.

Spike Blanks for 008614-01, NP PESTICIDES (8270SIM-MOD)

LABORATORY CONTROL SAMPLE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE NELAC Certified - IL100308

Analyte	LCS 1 Result	LCS 1 Level	LCS 1 % Rec	LCS 2 Result	LCS 2 Level	LCS 2 % Rec	% Rec Limits	Mean % Rec	Analytical Run	QC Lab Number
(a) Iron	4.9	5.0	99	--	--	--	87-115	--	P7371	008614-01C1
(a) Manganese	0.77	0.75	103	--	--	--	90-114	--	P7371	008614-01C1
Ammonia Nitrogen	1.0	1.0	102	--	--	--	80-120	--	05295324	008614-01C1
Kjeldahl Nitrogen	1	1.0	100	--	--	--	80-120	--	06035345	008608-01C1
Nitrate as Nitrogen	1.0	1.0	102	--	--	--	80-120	--	05295326	008614-03C1
Nitrite as Nitrogen	0.98	1.0	98	--	--	--	80-120	--	05295325	008614-12C1
Phosphorus	0.68	0.67	103	--	--	--	80-120	--	06035343	008613-01C1
Phosphorus, -ortho	0.094	0.10	94	--	--	--	80-120	--	05265303	008614-01C1
Total Organic Carbon	18.7	20.0	94	--	--	--	76-120	--	06125373	008613-01C1

NOTE: Any values tabulated above marked with an asterisk are outside of acceptable limits.

(a) DOD and/or NELAC Accredited Analyte

Inorganic LCS Results for 008614

MATRIX SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008614 Report Date: 06/02/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD) Analytical Method: 8270C
Project No.: Prep Method: 3510C

Field ID:	SVL-1	Prep. Date:	05/26/2020	ARDL Lab No.:	008614-01
Desc/Location:	SHELBYVILLE LAKE	Amount Used:	900 mL	Lab Filename:	
Sample Date:	05/21/2020	% Moisture:	NA	Received Date:	05/21/2020
Sample Time:	1030	QC Batch:	B11219	Analysis Date:	05/28/2020
Matrix:	WATER	Level:	LOW		

Parameter	Sample Result	MS Result	MS Level	MS % Rec	MSD Result	MSD Level	MSD % Rec	% Rec Limits	RPD	RPD Limit
Trifluralin	ND	3.7	4.44	83.3	3.33	4.44	75	30-130	10.4	30
Atrazine	0.978	5	4.44	90.5	4.84	4.44	87	30-130	3.2	30
Metribuzin	ND	4.1	4.44	92.3	3.96	4.44	89	30-130	3.6	30
Alachlor	ND	2.42	4.44	54.5	2.32	4.44	52.3	30-130	4.2	30
Metolachlor	1.47	5.56	4.44	92	5.37	4.44	87.8	30-130	3.5	30
Chlorpyrifos	ND	3.31	4.44	74.5	3.03	4.44	68.3	30-130	8.8	30
Cyanazine	ND	4.42	4.44	99.5	4.4	4.44	99	30-130	0.5	30
Pendimethalin	ND	3.84	4.44	86.5	3.49	4.44	78.5	30-130	9.7	30

SURROGATE RECOVERIES:	MS %R	MSD %R	%R Limits
Triphenylphosphate	92	87	30-130

(a) DOD-QSM Accredited Analyte.
'nc' indicates sample >4X spike level.
'*' indicates a recovery outside of standard limits.
Matrix Spikes for 008614-01, NP PESTICIDES (8270SIM-MOD)

MATRIX SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE NELAC Certified - IL100308

Analyte	Sample Matrix	Sample Result	MS Result	MS Level	MS % Rec	MSD Result	MSD Level	MSD % Rec	% Rec Limits	RPD	RPD Limit	Run	QC Lab Number
(a) Iron	WATER	0.29	1.3	1.0	101	1.3	1.0	100	87-115	1	20	P7371	008614-01MS
(a) Manganese	WATER	0.012	0.54	0.50	105	0.53	0.50	104	90-114	0	20	P7371	008614-01MS
Ammonia Nitrogen	WATER	0.043	2.1	2.0	102	2.1	2.0	104	75-125	2	20	05295324	008614-01MS
Kjeldahl Nitrogen	WATER	0.85	1.5	0.80	82	1.7	0.80	109	75-125	14	20	06035345	008614-12MS
Nitrate as Nitrogen	WATER	4.4	5.1	1.0	75	5.1	1.0	77	75-125	1	20	05295326	008614-03MS
Nitrite as Nitrogen	WATER	0.050	1.1	1.0	101	1.1	1.0	103	75-125	2	20	05295325	008614-12MS
Phosphorus	WATER	0.17	1.0	0.83	106	1.0	0.83	103	75-125	2	20	06035343	008614-12MS
Phosphorus, -ortho	WATER	0.014	0.10	0.10	87	0.10	0.10	87	75-125	0	20	05265303	008614-01MS
Total Organic Carbon	WATER	4.0	9.2	5.0	104	9.2	5.0	105	76-120	0	20	06125373	008614-02MS

NOTE: Values tabulated above marked with an asterisk are explained in the associated narrative.

(a) DOD and/or NELAC Accredited Analyte.

Inorganic Matrix Spikes for 008614

SAMPLE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008614 Report Date: 06/12/2020

Project Name: SHELBYVILLE LAKE NELAC Certified - IL100308

Analyte	Sample Conc'n	First Duplicate	Second Duplicate	Units	Percent Diff	Mean (Smp,D1,D2)	Analytical Run	QC Lab Number
Chlorophyll-a, Corrected	7.9	20.4	--	MG/CU.M.	88*	--	05275307	008614-02D1
Pheophytin-a	ND	1.0	--	MG/CU.M.	NC	--	05275307	008614-02D1
Solids, Total Suspended	19.2	17.2	--	MG/L	11	--	05295322	008614-04D1
Solids, Volatile Suspend	ND	0	--	MG/L	NC	--	05295323	008614-04D1

* indicates that agreement between duplicates is greater than 20%. See Case Narrative for exceptions.

(a) DOD and/or NELAC Accredited Analyte

Sample Receipt Information

Including as appropriate:

- COCs
- Cooler Receipts
- Airbills
- Email Communication / Instructions from Customer

ARDL Data Package 8614

ARDL, Inc.

P.O. Box 1566, 400 Aviation Drive, Mt. Vernon, IL 62864
(618) 244-3235 Phone (618) 244-1149 Fax

8614

CHAIN OF CUSTODY RECORD

PROJECT: Shelbyville Lake

SAMPLERS: (Signature) Ben Grading / Andy Patton

	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	NO. OF CONTAINERS	TSS, TVSS	Chloro/Pheo	* TOC, T-PO4	O-PO4	* NO3-N, NH3-N	NP Pest	#T,Fe,T,Mn	E. coli	MS/MSD	NO2-N	TKN			REMARKS OR SAMPLE LOCATION	PRESERVATION ICED	PRESERVATION SPECIFY CHEMICALS ADDED AND FINAL pH IF KNOWN
1	SVL-1	5/21/20	1030		X		X		X	X	X	X	X		X						X	
2	SVL-2		1130		X		X	X	X	X	X	X									X	
3	SVL-2-10		1145		X		X		X	X	X		X								X	
4	SVL-4		1545		X		X	X	X	X	X	X									X	
5	SVL-12		1700		X		X		X	X	X	X		X							X	
6	SVL-13		1330		X		X		X	X	X	X									X	
7	SVL-11		1530		X		X	X	X	X	X	X									X	
8	SVL-15		1550		X		X	X	X	X	X	X									X	
9	LS Marina		1205		X									X							X	
10	FIN Marina		1510		X									X							X	
11	SUL Marina		1610		X									X							X	
12	KAS-3	05/21/20	09:30		X		X	X	X	X	X			X		X	X					

	Date	Time		
Relinquished by: (Signature)	5/21/20	1827	Received by: (Signature) Valerie Jenkins	REMARKS/SPECIAL INSTRUCTIONS:
Relinquished by: (Signature) Valerie Jenkins	5/21/20	1945	Received by: (Signature)	*Preserved with H_2SO_4 #Preserved with HNO_3
Received for Laboratory by: (Signature)	5/21/20	1945	Shipping Ticket No.	

PURCHASE ORDER NO: _____

COOLER RECEIPT REPORT
ARDL, INC.

ARDL #: 8614

Cooler # Blue (1 of 2)

Number of Coolers in Shipment: 2

Project: Shelbyville Lake / Kaskaskia River

Date Received: 05/21/2020

A. **PRELIMINARY EXAMINATION PHASE:** Date cooler was opened: 05/21/2020 (Signature) DCB

1. Did cooler come with a shipping slip (airbill, etc.)? ..... YES (NO)

   If YES, enter carrier name and airbill number here: ARDL Courier

2. Were custody seals on outside of cooler? ..... YES (NO) N/A

   How many and where? ——— ,Seal Date: ——— ,Seal Name: ———

3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO (NA)

4. Did you screen samples for radioactivity using a Geiger Counter? ..... (YES) NO

5. Were custody papers sealed in a plastic bag? Hand delivered ..... YES (NO)

6. Were custody papers filled out properly (ink, signed, etc.)? See Note ..... YES (NO) N/A

7. Were custody papers signed in appropriate place by ARDL personnel? ..... (YES) NO N/A

8. Was project identifiable from custody papers? If YES, enter project name at the top of this form ..... (YES) NO N/A

9. Was a separate container provided for measuring temperature? YES ____ NO ✓ Observed Cooler Temp. 2.2 °C Amb in A
   Correction factor 0.0 °C

B. **LOG-IN PHASE:** Date samples were logged-in: 05/22/2020 (Signature) DCB

10. Describe type of packing in cooler: Loose Ice

11. Were all samples sealed in separate plastic bags? ..... YES (NO) N/A

12. Did all containers arrive unbroken and were labels in good condition? ..... (YES) NO

13. Were sample labels complete? ..... (YES) NO

14. Did all sample labels agree with custody papers? See Note ..... YES (NO)

15. Were correct containers used for the tests indicated? ..... (YES) NO

16. Was pH correct on preserved water samples? ..... (YES) NO N/A

17. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

18. Were bubbles absent in VOA samples? If NO, list by sample #: ——— YES NO (N/A)

19. Was the ARDL project coordinator notified of any deficiencies? ..... (YES) NO N/A

Comments and/or Corrective Action:
*Sample KAS-3 Not listed on the CoC.
(By: Signature) DCB Date: 05/22/2020

Sample Transfer	
Fraction: All	Fraction
Area #: Walk-In	Area #
By: DCB	By
On: 05/22/2020	On

Chain-of-Custody # ———

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COOLER RECEIPT REPORT
ARDL, INC.

ARDL #: 8614

Cooler # Red (2 of 2)

Number of Coolers in Shipment: 2

Project: Shelbyville Lake/ Kaskaskia River

Date Received: 05/21/2020

A. **PRELIMINARY EXAMINATION PHASE:** Date cooler was opened: 05/21/2020 (Signature) DCB

1. Did cooler come with a shipping slip (airbill, etc.)? ..... (YES) NO

   If YES, enter carrier name and airbill number here: ARDL Courier

2. Were custody seals on outside of cooler? ..... YES (NO) N/A

   How many and where? ——— ,Seal Date: ——— ,Seal Name: ———

3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO (NA)

4. Did you screen samples for radioactivity using a Geiger Counter? ..... (YES) NO

5. Were custody papers sealed in a plastic bag? Hand delivered ..... YES (NO)

6. Were custody papers filled out properly (ink, signed, etc.)? See Note 1 ..... YES (NO) N/A

7. Were custody papers signed in appropriate place by ARDL personnel? ..... (YES) NO N/A

8. Was project identifiable from custody papers? If YES, enter project name at the top of this form ..... (YES) NO N/A

9. Was a separate container provided for measuring temperature? YES ____ NO ✓ Observed Cooler Temp. 1.9 °C Ambient
   Correction factor 0.0 °C

B. **LOG-IN PHASE:** Date samples were logged-in: 05/22/2020 (Signature) DCB

10. Describe type of packing in cooler: Loose Ice

11. Were all samples sealed in separate plastic bags? ..... YES (NO) N/A

12. Did all containers arrive unbroken and were labels in good condition? ..... (YES) NO

13. Were sample labels complete? ..... (YES) NO

14. Did all sample labels agree with custody papers? See Note 1 ..... YES (NO)

15. Were correct containers used for the tests indicated? ..... (YES) NO

16. Was pH correct on preserved water samples? ..... (YES) NO N/A

17. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

18. Were bubbles absent in VOA samples? If NO, list by sample #: ——— YES NO (N/A)

19. Was the ARDL project coordinator notified of any deficiencies? ..... (YES) NO N/A

Comments and/or Corrective Action:
1 Sample KAS-3 Not listed on CoC
(By: Signature) DCB Date: 05/22/2020

Sample Transfer	
Fraction: All	Fraction:
Area #: Walk-In	Area #:
By: DCB	By:
On: 05/22/2020	On:

Chain-of-Custody # ———

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ARDL Inc.
Environmental | Analytical | Management | Safety

PO Box 1566
400 Aviation Drive
Mt. Vernon, IL 62864
618-244-3235
www.ardlinc.com

Customer Name: SLCOE **Date: 9/11/20**

Project Name: Shelbyville Lake **Lab Name: ARDL, Inc.**

Samples Received at ARDL: 7/29/20 **ARDL Report No.: 8632**

CASE NARRATIVE

Customer Sample No.	Date Collected	Lab ID Number	Analyses Requested
SVL-1	7/28/20	8632-1	NP Pesticides, Metals(1), Inorganics(2)
SVL-2	7/28/20	8632-2	NP Pesticides, Inorganics(2)(3)
SVL-2-10	7/28/20	8632-3	Metals(1), Inorganics(2)
SVL-4	7/28/20	8632-4	NP Pesticides, Inorganics(2)(3)
SVL-12	7/28/20	8632-5	NP Pesticides, Inorganics(2), E. Coli
SVL-13	7/28/20	8632-6	NP Pesticides, Inorganics(2)
SVL-11	7/28/20	8632-7	NP Pesticides, Inorganics(2)(3)
SVL-15	7/28/20	8632-8	NP Pesticides, Inorganics(2)(3)
KAS-3	7/28/20	8632-9	Inorganics(2)(3)(4), E. Coli
LS MARINA	7/28/20	8632-10	E. Coli
FIN MARINA	7/28/20	8632-11	E. Coli
SUL MARINA	7/28/20	8632-12	E. Coli

(1) Including iron and manganese.
(2) Including ammonia, nitrate, orthophosphate, total phosphorus, TOC, TSS, and TVSS.
(3) Including chlorophyll-a and pheophytin-a.
(4) Including TKN and nitrite.

The quality control data are summarized as follows:

NP PESTICIDE FRACTION – METHOD 8270-SIM

HOLDING TIME
Samples were prepared and analyzed within method specified holding times.

INITIAL CALIBRATION
The initial calibration passed criteria.

CONTINUING CALIBRATION
The continuing calibration verification (CCV) passed criteria for all analytes. The closing CCV passed criteria for all analytes.

PREPARATION BLANK
The blank met acceptance criteria.

LABORATORY CONTROL SAMPLE
The LCS analyses met recovery criteria.

MATRIX SPIKE
The matrix spike and matrix spike duplicate met recovery criteria.

DUPLICATE
Duplicate analyses are reported as MS/MSD. RPD of the duplicate analyses met criteria.

CASE NARRATIVE (Continued)

INTERNAL STANDARD
All internal standard criteria were met.

SURROGATE
All surrogate recovery criteria were met.

INORGANIC FRACTION

TOC were analyzed by an accredited outside laboratory due to instrument status.

PREPARATION BLANK
Results of the preparation blanks were all undetected, except 1 of 2 for TOC. The data is flagged appropriately with a 'B' qualifier for the associated samples.

LABORATORY CONTROL SAMPLE
Percent recoveries of all LCS analyses were within control limits.

MATRIX SPIKE
Percent recoveries of all matrix spikes and matrix spike duplicates were within control limits, except 2 of 2 for nitrate and TKN. The parent sample has been flagged appropriately with a 'J' qualifier.

DUPLICATE
All duplicate analyses are reported as MS/MSD except chlorophyll-a, pheophytin-a, TSS, and TVSS.
RPD on all duplicate analyses were within control limits, except chlorophyll-a and pheophytin-a. The parent sample has been flagged appropriately with a 'J' qualifier.

DATA REPORTING QUALIFIERS

The following data reporting qualifiers are used as required:

ND - Indicates parameter was analyzed for but not detected.

J - Indicates an estimated value. This flag is used either when estimating a concentration or this flag indicates analyte(s) associated with a DOD-QSM specified non-compliance pertaining to matrix QC criteria.

B - This flag is used when the analyte is found in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

REPORT ORGANIZATION

The data in this report appear by sample type (Field sample, preparation blank, laboratory control sample / spike blank, matrix spike /spike duplicate and sample duplicate). Within each sample type the data appear in the order that the analytical methods were discussed in this case narrative. Sample receipt information follows the analytical data.

Release of the data contained in this package has been authorized by the Technical Services Manager or his designee as verified by the following signature.

Dean S. Dickerson
Technical Services Manager

Sample & QC Results

Including as appropriate:

- Field Sample Results
- Batch QC
  - Prep Blank
  - LCS/Spike Blank
- Matrix QC
  - MS/MSD
  - Sample Duplicate

ARDL Data Package 8632

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 08/04/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-1	ARDL Lab No.:	008632-01
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E0803016
Sample Date:	07/28/2020	Received Date:	07/29/2020
Sample Time:	1015	Prep. Date:	07/29/2020
Matrix:	WATER	Analysis Date:	08/03/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11250
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.200	0.200	ND		UG/L	1
Atrazine	0.200	0.200	0.420		UG/L	1
Metribuzin	0.200	0.200	0.350		UG/L	1
Alachlor	0.200	0.200	ND		UG/L	1
Metolachlor	0.200	0.200	2.64		UG/L	1
Chlorpyrifos	0.200	0.200	ND		UG/L	1
Cyanazine	0.200	0.200	ND		UG/L	1
Pendimethalin	0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	67%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008632-01
Field ID: SVL-1
Received: 07/29/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 07/28/2020
Sampling Time: 1015

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron	0.0400	0.0500		0.399	MG/L	3010A	6010C	08/17/20	08/18/20	P7408
(a) Manganese	0.00400	0.00500		0.353	MG/L	3010A	6010C	08/17/20	08/18/20	P7408
Ammonia Nitrogen	0.0200	0.0300		0.377	MG/L	NONE	350.1	NA	08/05/20	08115456
Nitrate as Nitrogen	0.0380	0.0400		2.27	MG/L	NONE	GREEN	NA	08/05/20	08135461
Phosphorus	0.00800	0.0100		0.152	MG/L	365.2	365.2	08/17/20	08/18/20	08195493
Phosphorus, -ortho	0.00800	0.0100		0.0783	MG/L	NONE	365.2	NA	07/29/20	07305428
Solids, Total Suspended	2.50	2.50		9.5	MG/L	NONE	160.2	NA	07/30/20	08045437
Solids, Volatile Suspen	2.50	2.50		ND	MG/L	NONE	160.4	NA	07/30/20	08045438
Total Organic Carbon	0.500	1.00		3.9	MG/L	NONE	415.1	NA	08/05/20	08135480

(a) DOD and/or NELAC Accredited Analyte.

Sample 008632-01, Inorganic Analyses

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 08/04/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-2	ARDL Lab No.:	008632-02
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E0803019
Sample Date:	07/28/2020	Received Date:	07/29/2020
Sample Time:	1218	Prep. Date:	07/29/2020
Matrix:	WATER	Analysis Date:	08/03/2020
Amount Used:	900 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11250
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.222	0.222	ND		UG/L	1
Atrazine	0.222	0.222	0.778		UG/L	1
Metribuzin	0.222	0.222	ND		UG/L	1
Alachlor	0.222	0.222	ND		UG/L	1
Metolachlor	0.222	0.222	1.91		UG/L	1
Chlorpyrifos	0.222	0.222	ND		UG/L	1
Cyanazine	0.222	0.222	ND		UG/L	1
Pendimethalin	0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	76%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008632-02
Field ID: SVL-2
Received: 07/29/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 07/28/2020
Sampling Time: 1218

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.0535	MG/L	NONE	350.1	NA	08/05/20	08115456
Chlorophyll-a, Correcte	1.0	1.00		1.8	MG/CU.M.	10200H	10200H	07/29/20	08/11/20	08135469
Nitrate as Nitrogen	0.0380	0.0400		2.58	MG/L	NONE	GREEN	NA	08/05/20	08135461
Pheophytin-a	1.0	1.00		ND	MG/CU.M.	10200H	10200H	07/29/20	08/11/20	08135469
Phosphorus	0.00800	0.0100		0.0355	MG/L	365.2	365.2	08/17/20	08/18/20	08195493
Phosphorus, -ortho	0.00800	0.0100		ND	MG/L	NONE	365.2	NA	07/29/20	07305428
Solids, Total Suspended	1.33	1.33		1.47	MG/L	NONE	160.2	NA	07/30/20	08045437
Solids, Volatile Suspen	1.33	1.33		ND	MG/L	NONE	160.4	NA	07/30/20	08045438
Total Organic Carbon	0.500	1.00	B	4.2	MG/L	NONE	415.1	NA	08/05/20	08135481

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008632-03
Field ID: SVL-2-10
Received: 07/29/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 07/28/2020
Sampling Time: 1235

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron	0.0400	0.0500		0.395	MG/L	3010A	6010C	08/17/20	08/18/20	P7408
(a) Manganese	0.00400	0.00500		0.369	MG/L	3010A	6010C	08/17/20	08/18/20	P7408
Ammonia Nitrogen	0.0200	0.0300		0.462	MG/L	NONE	350.1	NA	08/05/20	08115456
Nitrate as Nitrogen	0.0380	0.0400		2.3	MG/L	NONE	GREEN	NA	08/05/20	08135461
Phosphorus	0.00800	0.0100		0.118	MG/L	365.2	365.2	08/17/20	08/18/20	08195493
Phosphorus, -ortho	0.00800	0.0100		0.104	MG/L	NONE	365.2	NA	07/29/20	07305428
Solids, Total Suspended	2.0	2.00		9.2	MG/L	NONE	160.2	NA	07/30/20	08045437
Solids, Volatile Suspen	2.0	2.00		ND	MG/L	NONE	160.4	NA	07/30/20	08045438
Total Organic Carbon	0.500	1.00	B	4.0	MG/L	NONE	415.1	NA	08/05/20	08135481

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 08/04/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-4	ARDL Lab No.:	008632-04
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E0803020
Sample Date:	07/28/2020	Received Date:	07/29/2020
Sample Time:	1410	Prep. Date:	07/29/2020
Matrix:	WATER	Analysis Date:	08/03/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11250
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.200	0.200	ND		UG/L	1
Atrazine	0.200	0.200	1.24		UG/L	1
Metribuzin	0.200	0.200	ND		UG/L	1
Alachlor	0.200	0.200	ND		UG/L	1
Metolachlor	0.200	0.200	0.830		UG/L	1
Chlorpyrifos	0.200	0.200	ND		UG/L	1
Cyanazine	0.200	0.200	ND		UG/L	1
Pendimethalin	0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	67%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008632-04
Field ID: SVL-4
Received: 07/29/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 07/28/2020
Sampling Time: 1410

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		ND	MG/L	NONE	350.1	NA	08/05/20	08115456
Chlorophyll-a, Correcte	1.0	1.00	J	16.9	MG/CU.M.	10200H	10200H	07/29/20	08/11/20	08135469
Nitrate as Nitrogen	0.0190	0.0200		0.892	MG/L	NONE	GREEN	NA	08/05/20	08135461
Pheophytin-a	1.0	1.00	J	21.3	MG/CU.M.	10200H	10200H	07/29/20	08/11/20	08135469
Phosphorus	0.00800	0.0100		0.113	MG/L	365.2	365.2	08/17/20	08/18/20	08195493
Phosphorus, -ortho	0.00800	0.0100		ND	MG/L	NONE	365.2	NA	07/29/20	07305428
Solids, Total Suspended	2.0	2.00		9.2	MG/L	NONE	160.2	NA	07/30/20	08045437
Solids, Volatile Suspen	2.0	2.00		5.4	MG/L	NONE	160.4	NA	07/30/20	08045438
Total Organic Carbon	0.500	1.00	B	4.7	MG/L	NONE	415.1	NA	08/06/20	08135481

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 08/04/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-12	ARDL Lab No.:	008632-05
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E0803021
Sample Date:	07/28/2020	Received Date:	07/29/2020
Sample Time:	1450	Prep. Date:	07/29/2020
Matrix:	WATER	Analysis Date:	08/03/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11250
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.200	0.200	ND		UG/L	1
Atrazine	0.200	0.200	2.07		UG/L	1
Metribuzin	0.200	0.200	ND		UG/L	1
Alachlor	0.200	0.200	ND		UG/L	1
Metolachlor	0.200	0.200	2.07		UG/L	1
Chlorpyrifos	0.200	0.200	ND		UG/L	1
Cyanazine	0.200	0.200	ND		UG/L	1
Pendimethalin	0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	75%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008632-05
Field ID: SVL-12
Received: 07/29/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 07/28/2020
Sampling Time: 1450

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		ND	MG/L	NONE	350.1	NA	08/05/20	08115456
E. Coliform	1.0	1.00		250	COL/100 ML	NONE	1604	NA	07/28/20	07305427
Nitrate as Nitrogen	0.0190	0.0200		1.25	MG/L	NONE	GREEN	NA	08/05/20	08135461
Phosphorus	0.00800	0.0100		0.282	MG/L	365.2	365.2	08/17/20	08/18/20	08195493
Phosphorus, -ortho	0.00800	0.0100		0.156	MG/L	NONE	365.2	NA	07/29/20	07305428
Solids, Total Suspended	2.0	2.00		14.8	MG/L	NONE	160.2	NA	07/30/20	08045437
Solids, Volatile Suspen	2.0	2.00		3.6	MG/L	NONE	160.4	NA	07/30/20	08045438
Total Organic Carbon	0.500	1.00	B	4.3	MG/L	NONE	415.1	NA	08/06/20	08135481

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 08/04/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-13	ARDL Lab No.:	008632-06
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E0803022
Sample Date:	07/28/2020	Received Date:	07/29/2020
Sample Time:	1600	Prep. Date:	07/29/2020
Matrix:	WATER	Analysis Date:	08/03/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11250
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.200	0.200	ND		UG/L	1
Atrazine	0.200	0.200	0.910		UG/L	1
Metribuzin	0.200	0.200	ND		UG/L	1
Alachlor	0.200	0.200	ND		UG/L	1
Metolachlor	0.200	0.200	0.970		UG/L	1
Chlorpyrifos	0.200	0.200	ND		UG/L	1
Cyanazine	0.200	0.200	ND		UG/L	1
Pendimethalin	0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	77%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008632-06
Field ID: SVL-13
Received: 07/29/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 07/28/2020
Sampling Time: 1600

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300	J	0.0261	MG/L	NONE	350.1	NA	08/05/20	08115456
Nitrate as Nitrogen	0.0190	0.0200	J	0.374	MG/L	NONE	GREEN	NA	08/05/20	08135461
Phosphorus	0.00800	0.0100		0.187	MG/L	365.2	365.2	08/17/20	08/18/20	08195493
Phosphorus, -ortho	0.00800	0.0100		0.0265	MG/L	NONE	365.2	NA	07/29/20	07305428
Solids, Total Suspended	2.0	2.00		13.4	MG/L	NONE	160.2	NA	07/30/20	08045437
Solids, Volatile Suspen	2.0	2.00		5.8	MG/L	NONE	160.4	NA	07/30/20	08045438
Total Organic Carbon	0.500	1.00	B	5.8	MG/L	NONE	415.1	NA	08/06/20	08135481

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 08/04/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-11	ARDL Lab No.:	008632-07
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E0803023
Sample Date:	07/28/2020	Received Date:	07/29/2020
Sample Time:	1345	Prep. Date:	07/29/2020
Matrix:	WATER	Analysis Date:	08/03/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11250
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.200	0.200	ND		UG/L	1
Atrazine	0.200	0.200	0.900		UG/L	1
Metribuzin	0.200	0.200	ND		UG/L	1
Alachlor	0.200	0.200	ND		UG/L	1
Metolachlor	0.200	0.200	1.31		UG/L	1
Chlorpyrifos	0.200	0.200	ND		UG/L	1
Cyanazine	0.200	0.200	ND		UG/L	1
Pendimethalin	0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	71%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE Analysis: Inorganics
Project No: NELAC Certified - IL100308

ARDL No: 008632-07 Sampling Loc'n: SHELBYVILLE LAKE Matrix: WATER
Field ID: SVL-11 Sampling Date: 07/28/2020 Moisture: NA
Received: 07/29/2020 Sampling Time: 1345

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		ND	MG/L	NONE	350.1	NA	08/05/20	08115456
Chlorophyll-a, Correcte	1.0	1.00		7.0	MG/CU.M.	10200H	10200H	07/29/20	08/11/20	08135469
Nitrate as Nitrogen	0.0190	0.0200		1.68	MG/L	NONE	GREEN	NA	08/05/20	08135461
Pheophytin-a	1.0	1.00		8.7	MG/CU.M.	10200H	10200H	07/29/20	08/11/20	08135469
Phosphorus	0.00800	0.0100		0.0571	MG/L	365.2	365.2	08/17/20	08/18/20	08195493
Phosphorus, -ortho	0.00800	0.0100		ND	MG/L	NONE	365.2	NA	07/29/20	07305428
Solids, Total Suspended	2.0	2.00		5.6	MG/L	NONE	160.2	NA	07/30/20	08045437
Solids, Volatile Suspen	2.0	2.00		3.0	MG/L	NONE	160.4	NA	07/30/20	08045438
Total Organic Carbon	0.500	1.00	B	4.3	MG/L	NONE	415.1	NA	08/06/20	08135481

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 08/04/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-15	ARDL Lab No.:	008632-08
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E0803024
Sample Date:	07/28/2020	Received Date:	07/29/2020
Sample Time:	1320	Prep. Date:	07/29/2020
Matrix:	WATER	Analysis Date:	08/03/2020
Amount Used:	800 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11250
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.250	0.250	ND		UG/L	1
Atrazine	0.250	0.250	1.19		UG/L	1
Metribuzin	0.250	0.250	ND		UG/L	1
Alachlor	0.250	0.250	ND		UG/L	1
Metolachlor	0.250	0.250	1.73		UG/L	1
Chlorpyrifos	0.250	0.250	ND		UG/L	1
Cyanazine	0.250	0.250	ND		UG/L	1
Pendimethalin	0.250	0.250	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	81%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008632-08
Field ID: SVL-15
Received: 07/29/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 07/28/2020
Sampling Time: 1320

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		ND	MG/L	NONE	350.1	NA	08/05/20	08115456
Chlorophyll-a, Correcte	1.0	1.00		ND	MG/CU.M.	10200H	10200H	07/29/20	08/11/20	08135469
Nitrate as Nitrogen	0.0190	0.0200		1.69	MG/L	NONE	GREEN	NA	08/05/20	08135461
Pheophytin-a	1.0	1.00		22.3	MG/CU.M.	10200H	10200H	07/29/20	08/11/20	08135469
Phosphorus	0.00800	0.0100		0.0441	MG/L	365.2	365.2	08/17/20	08/18/20	08195493
Phosphorus, -ortho	0.00800	0.0100		ND	MG/L	NONE	365.2	NA	07/29/20	07305428
Solids, Total Suspended	1.33	1.33		4.0	MG/L	NONE	160.2	NA	07/30/20	08045437
Solids, Volatile Suspen	1.33	1.33		2.27	MG/L	NONE	160.4	NA	07/30/20	08045438
Total Organic Carbon	0.500	1.00	B	4.0	MG/L	NONE	415.1	NA	08/06/20	08135481

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008632-09
Field ID: KAS-3
Received: 07/29/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 07/28/2020
Sampling Time: 0915

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.192	MG/L	NONE	350.1	NA	08/05/20	08115456
Chlorophyll-a, Correcte	1.0	1.00		ND	MG/CU.M.	10200H	10200H	07/29/20	08/11/20	08135469
E. Coliform	1.0	1.00		425	COL/100 ML	NONE	1604	NA	07/28/20	07305427
Kjeldahl Nitrogen	0.190	0.200	J	0.78	MG/L	351.2	351.2	08/17/20	08/20/20	08215498
Nitrate as Nitrogen	0.0380	0.0400		2.26	MG/L	NONE	GREEN	NA	08/05/20	08135461
Nitrite as Nitrogen	0.0200	0.0200		0.086	MG/L	NONE	354.1	NA	07/29/20	08045439
Pheophytin-a	1.0	1.00		3.1	MG/CU.M.	10200H	10200H	07/29/20	08/11/20	08135469
Phosphorus	0.00800	0.0100		0.174	MG/L	365.2	365.2	08/17/20	08/18/20	08195493
Phosphorus, -ortho	0.00800	0.0100		0.0783	MG/L	NONE	365.2	NA	07/29/20	07305428
Solids, Total Suspended	2.0	2.00		24.6	MG/L	NONE	160.2	NA	07/30/20	08045437
Solids, Volatile Suspen	2.0	2.00		2.4	MG/L	NONE	160.4	NA	07/30/20	08045438
Total Organic Carbon	0.500	1.00	B	4.0	MG/L	NONE	415.1	NA	08/06/20	08135481

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE Analysis: Inorganics
Project No: NELAC Certified - IL100308

ARDL No: 008632-10 Sampling Loc'n: SHELBYVILLE LAKE Matrix: WATER
Field ID: LS MARINA Sampling Date: 07/28/2020 Moisture: NA
Received: 07/29/2020 Sampling Time: 1250

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
E. Coliform	1.0	1.00		2.0	COL/100 ML	NONE	1604	NA	07/28/20	07305427

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008632-11
Field ID: FIN MARINA
Received: 07/29/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 07/28/2020
Sampling Time: 1320

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
E. Coliform	1.0	1.00		17.0	COL/100 ML	NONE	1604	NA	07/28/20	07305427

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008632-12
Field ID: SUL MARINA
Received: 07/29/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 07/28/2020
Sampling Time: 1415

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
E. Coliform	1.0	1.00		117	COL/100 ML	NONE	1604	NA	07/28/20	07305427

(a) DOD and/or NELAC Accredited Analyte.

METHOD BLANK REPORT

ARDL, Inc. 400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008632 Report Date: 08/04/2020

Project Name:	SHELBYVILLE LAKE	Analysis:	NP PESTICIDES (8270SIM-MOD)
Project No.:		Analytical Method:	8270C
NELAC Certified - IL100308		Prep Method:	3510C

Field ID:	NA	ARDL Lab No.:	008632-01B1
Desc/Location:	NA	Lab Filename:	E0803014
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	07/29/2020
Matrix:	QC Material	Analysis Date:	08/03/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11250
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units
Trifluralin	0.200	0.200	ND		UG/L
Atrazine	0.200	0.200	ND		UG/L
Metribuzin	0.200	0.200	ND		UG/L
Alachlor	0.200	0.200	ND		UG/L
Metolachlor	0.200	0.200	ND		UG/L
Chlorpyrifos	0.200	0.200	ND		UG/L
Cyanazine	0.200	0.200	ND		UG/L
Pendimethalin	0.200	0.200	ND		UG/L

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	77%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

BLANK SUMMARY REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE NELAC Certified - IL100308

Analyte	LOD	LOQ	Blank Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run	QC Lab Number
(a) Iron	0.040	0.050	ND	MG/L	3010A	6010C	08/17/20	08/18/20	P7408	008632-01B1
(a) Manganese	0.004	0.005	ND	MG/L	3010A	6010C	08/17/20	08/18/20	P7408	008632-01B1
Ammonia Nitrogen	0.020	0.030	ND	MG/L	NONE	350.1	NA	08/05/20	08115456	008632-01B1
Chlorophyll-a, Corre	1.0	1.0	ND	MG/CU.M.	10200H	10200H	07/29/20	08/11/20	08135469	008632-04B1
E. Coliform	1.0	1.0	ND	COL/100 ML	NONE	1604	NA	07/28/20	07305427	008632-05B1
Kjeldahl Nitrogen	0.19	0.20	ND	MG/L	351.2	351.2	08/17/20	08/20/20	08215498	008632-09B1
Nitrate as Nitrogen	0.019	0.020	ND	MG/L	NONE	GREEN	NA	08/05/20	08135461	008632-06B1
Nitrite as Nitrogen	0.020	0.020	ND	MG/L	NONE	354.1	NA	07/29/20	08045439	008632-09B1
Pheophytin-a	1.0	1.0	ND	MG/CU.M.	10200H	10200H	07/29/20	08/11/20	08135469	008632-04B1
Phosphorus	0.008	0.010	ND	MG/L	365.2	365.2	08/17/20	08/18/20	08195493	008632-01B1
Phosphorus, -ortho	0.008	0.010	ND	MG/L	NONE	365.2	NA	07/29/20	07305428	008632-03B1
Solids, Total Suspen	1.0	1.0	ND	MG/L	NONE	160.2	NA	07/30/20	08045437	008632-01B1
Solids, Volatile Sus	1.0	1.0	ND	MG/L	NONE	160.4	NA	07/30/20	08045438	008632-01B1
Total Organic Carbon	0.50	1.0	ND	MG/L	NONE	415.1	NA	08/05/20	08135480	008632-01B1
Total Organic Carbon	0.50	1.0	0.84	MG/L	NONE	415.1	NA	08/05/20	08135481	008632-02B1

(a) DOD and/or NELAC Accredited Analyte

Inorganic Method Blanks for 008632

BLANK SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008632 Report Date: 08/04/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD) Analytical Method: 8270C
Project No.: Prep Method: 3510C

Matrix: QC Material QC Batch: B11250 Prep. Date: 07/29/2020
Amount Used: 1000 mL Level: LOW Analysis Date: 08/03/2020

Parameter	Spike Result	Spike Level	Spike % Rec	Duplicate Result	Duplicate Level	Duplicate % Rec	Recovery Limits	RPD	RPD Limit
Trifluralin	2.81	4	70	--	--	--	30-130	--	--
Atrazine	2.82	4	71	--	--	--	30-130	--	--
Metribuzin	2.82	4	71	--	--	--	30-130	--	--
Alachlor	2.91	4	73	--	--	--	30-130	--	--
Metolachlor	2.92	4	73	--	--	--	30-130	--	--
Chlorpyrifos	2.95	4	74	--	--	--	30-130	--	--
Cyanazine	2.99	4	75	--	--	--	30-130	--	--
Pendimethalin	3.02	4	76	--	--	--	30-130	--	--

SURROGATE RECOVERIES:	Spike %R	Duplicate %R	%R Limits
Triphenylphosphate	69.8	--	30-130

(a) DOD-QSM Accredited Analyte.

'*' indicates a recovery outside of standard limits.

Spike Blanks for 008632-01, NP PESTICIDES (8270SIM-MOD)

LABORATORY CONTROL SAMPLE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE NELAC Certified - IL100308

Analyte	LCS 1 Result	LCS 1 Level	LCS 1 % Rec	LCS 2 Result	LCS 2 Level	LCS 2 % Rec	% Rec Limits	Mean % Rec	Analytical Run	QC Lab Number
(a) Iron	4.9	5.0	99	--	--	--	87-115	--	P7408	008632-01C1
(a) Manganese	0.77	0.75	103	--	--	--	90-114	--	P7408	008632-01C1
Ammonia Nitrogen	1.0	1.0	101	--	--	--	80-120	--	08115456	008632-01C1
Kjeldahl Nitrogen	1.2	1.0	118	--	--	--	80-120	--	08215498	008632-09C1
Nitrate as Nitrogen	0.93	1.0	93	--	--	--	80-120	--	08135461	008632-06C1
Nitrite as Nitrogen	1.1	1.0	110	--	--	--	80-120	--	08045439	008632-09C1
Phosphorus	0.67	0.67	101	--	--	--	80-120	--	08195493	008632-01C1
Phosphorus, -ortho	0.10	0.10	102	--	--	--	80-120	--	07305428	008632-03C1
Total Organic Carbon	19.9	20.0	100	--	--	--	76-120	--	08135480	008632-01C1
Total Organic Carbon	20.0	20.0	100	--	--	--	76-120	--	08135481	008632-02C1

NOTE: Any values tabulated above marked with an asterisk are outside of acceptable limits.

(a) DOD and/or NELAC Accredited Analyte

Inorganic LCS Results for 008632

MATRIX SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008632 Report Date: 08/04/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD) Analytical Method: 8270C
Project No.: Prep Method: 3510C

Field ID:	SVL-1	Prep. Date:	07/29/2020	ARDL Lab No.:	008632-01
Desc/Location:	SHELBYVILLE LAKE	Amount Used:	1000 mL	Lab Filename:	
Sample Date:	07/28/2020	% Moisture:	NA	Received Date:	07/29/2020
Sample Time:	1015	QC Batch:	B11250	Analysis Date:	08/03/2020
Matrix:	WATER	Level:	LOW		

Parameter	Sample Result	MS Result	MS Level	MS % Rec	MSD Result	MSD Level	MSD % Rec	% Rec Limits	RPD	RPD Limit
Trifluralin	ND	2.69	4	67.3	2.83	4	70.8	30-130	5.1	30
Atrazine	0.420	3.31	4	72.3	3.35	4	73.3	30-130	1.2	30
Metribuzin	0.350	3.34	4	74.8	3.37	4	75.5	30-130	0.9	30
Alachlor	ND	2.99	4	74.8	2.88	4	72	30-130	3.7	30
Metolachlor	2.64	5.41	4	69.3	5.31	4	66.8	30-130	1.9	30
Chlorpyrifos	ND	2.87	4	71.8	2.83	4	70.8	30-130	1.4	30
Cyanazine	ND	3.03	4	75.8	3.03	4	75.8	30-130	0	30
Pendimethalin	ND	3.1	4	77.5	3.15	4	78.8	30-130	1.6	30

SURROGATE RECOVERIES:	MS %R	MSD %R	%R Limits
Triphenylphosphate	69	70	30-130

(a) DOD-QSM Accredited Analyte.
'nc' indicates sample >4X spike level.
'*' indicates a recovery outside of standard limits.
Matrix Spikes for 008632-01, NP PESTICIDES (8270SIM-MOD)

MATRIX SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE NELAC Certified - IL100308

Analyte	Sample Matrix	Sample Result	MS Result	MS Level	MS % Rec	MSD Result	MSD Level	MSD % Rec	% Rec Limits	RPD	RPD Limit	Run	QC Lab Number
(a) Iron	WATER	0.40	1.4	1.0	96	1.3	1.0	92	87-115	3	20	P7408	008632-01MS
(a) Manganese	WATER	0.35	0.85	0.50	99	0.82	0.50	94	90-114	3	20	P7408	008632-01MS
Ammonia Nitrogen	WATER	0.38	2.5	2.0	108	2.6	2.0	111	75-125	3	20	08115456	008632-01MS
Kjeldahl Nitrogen	WATER	0.78	2.0	0.80	154 *	2.1	0.80	170 *	75-125	6	20	08215498	008632-09MS
Nitrate as Nitrogen	WATER	0.37	1.1	1.0	73 *	1.1	1.0	72 *	75-125	1	20	08135461	008632-06MS
Phosphorus	WATER	0.15	0.98	0.83	100	1.0	0.83	105	75-125	5	20	08195493	008632-01MS
Phosphorus, -ortho	WATER	0.10	0.21	0.10	111	0.21	0.10	111	75-125	0	20	07305428	008632-03MS
Total Organic Carbon	WATER	3.9	8.9	5.0	100	9.0	5.0	103	76-120	1	20	08135480	008632-01MS
Total Organic Carbon	WATER	4.2	9.3	5.0	101	9.4	5.0	103	76-120	1	20	08135481	008632-02MS
Total Organic Carbon	WATER	4.3	9.2	5.0	98	8.9	5.0	92	76-120	3	20	08135481	008632-07MS

NOTE: Values tabulated above marked with an asterisk are explained in the associated narrative.

(a) DOD and/or NELAC Accredited Analyte.

SAMPLE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008632 Report Date: 09/03/2020

Project Name: SHELBYVILLE LAKE NELAC Certified - IL100308

Analyte	Sample Conc'n	First Duplicate	Second Duplicate	Units	Percent Diff	Mean (Smp,D1,D2)	Analytical Run	QC Lab Number
Chlorophyll-a, Corrected	16.9	27.9	--	MG/CU.M.	49*	--	08135469	008632-04D1
Pheophytin-a	21.3	3.9	--	MG/CU.M.	138*	--	08135469	008632-04D1
Solids, Total Suspended	9.5	10.0	--	MG/L	5	--	08045437	008632-01D1
Solids, Volatile Suspend	ND	0	--	MG/L	NC	--	08045438	008632-01D1

* indicates that agreement between duplicates is greater than 20%. See Case Narrative for exceptions.

(a) DOD and/or NELAC Accredited Analyte

Sample Receipt Information

Including as appropriate:

- COCs
- Cooler Receipts
- Airbills
- Email Communication / Instructions from Customer

ARDL Data Package 8632

ARDL, Inc.

P.O. Box 1566, 400 Aviation Drive, Mt. Vernon, IL 62864
(618) 244-3235 Phone (618) 244-1149 Fax

8632

CHAIN OF CUSTODY RECORD

PROJECT: Shelbyville Lake

SAMPLERS: (Signature) B. Greeling / A. Holder

	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	NO. OF CONTAINERS	TSS, TVSS	Chloro/Pheo	* TOC, T-PO4	O-PO4	* NO3-N, NH3-N	NP Pest	#T.Fe; T.Mn	E. coli	MS/MSD	%NO2-N	Fecal Coli.	TKN			REMARKS OR SAMPLE LOCATION	PRESERVATION: ICED	PRESERVATION: SPECIFY CHEMICALS ADDED AND FINAL pH IF KNOWN
1	SVL-1	7/28/20	1015		X		X		X	X	X	X	X		X							X	
2	SVL-2		1218		X		X	X	X	X	X	X										X	
3	SVL-2-10		1235		X		X		X	X	X		X									X	
4	SVL-4		1410		X		X	X	X	X	X	X										X	
5	SVL-12		1450		X		X		X	X	X	X		X								X	
6	SVL-13		1600		X		X		X	X	X	X										X	
7	SVL-11		1345		X		X	X	X	X	X	X										X	
8	SVL-15		1320		X		X	X	X	X	X	X										X	
9	KAS-3		0915		X		X	X	X	X	X			X		X		X				X	
10	LS Marina		1250		X									X								X	
11	FIN Marina		1320		X									X								X	
12	SUL Marina		1415		X									X								X	

	Date	Time		
Relinquished by: (Signature)	7/28/20	1827	Received by: (Signature)	REMARKS/SPECIAL INSTRUCTIONS:
Relinquished by: (Signature)	7/28/20	1940	Received by: (Signature)	*Preserved with H_2SO_4 #Preserved with HNO_3
Received for Laboratory by: (Signature)	7/28/20	1940	Shipping Ticket No.	

PURCHASE ORDER NO: _____

COOLER RECEIPT REPORT
ARDL, INC.

ARDL #: 8632

Cooler # Red (1 of 2)

Number of Coolers in Shipment: 2

Project: Shelbyville Lake Kaskaskia River

Date Received: 07/29/2020

A. **PRELIMINARY EXAMINATION PHASE:** Date cooler was opened 07/29/2020 (Signature) DCB

1. Did cooler come with a shipping slip (airbill, etc.)? ..... YES (NO)

   If YES, enter carrier name and airbill number here: ARDL Courier - Valerie

2. Were custody seals on outside of cooler? ..... YES (NO) N/A

   How many and where? _____, Seal Date: _____, Seal Name: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO (NA)

4. Did you screen samples for radioactivity using a Geiger Counter? ..... (YES) NO

5. Were custody papers sealed in a plastic bag? Hand delivered ..... YES (NO)

6. Were custody papers filled out properly (ink, signed, etc.)? See Note' ..... YES (NO) N/A

7. Were custody papers signed in appropriate place by ARDL personnel? ..... (YES) NO N/A

8. Was project identifiable from custody papers? If YES, enter project name at the top of this form. ..... (YES) NO N/A

9. Was a separate container provided for measuring temperature? YES ✓ NO ____ Observed Cooler Temp. 2.2 C
   Correction factor 0.0 C

B. **LOG-IN PHASE:** Date samples were logged-in: 07/29/2020 (Signature) DCB

10. Describe type of packing in cooler: B Loose Ice / Melted Ice
    DCB 07/29/2020

11. Were all samples sealed in separate plastic bags? ..... YES (NO) N/A

12. Did all containers arrive unbroken and were labels in good condition? ..... (YES) NO

13. Were sample labels complete? ..... (YES) NO

14. Did all sample labels agree with custody papers? See Note' ..... (YES) NO

15. Were correct containers used for the tests indicated? ..... (YES) NO

16. Was pH correct on preserved water samples? ..... (YES) NO N/A

17. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

18. Were bubbles absent in VOA samples? If NO, list by sample #: _____ YES NO (N/A)

19. Was the ARDL project coordinator notified of any deficiencies? ..... YES NO (N/A)

Comments and/or Corrective Action:
1 E-Coli sample for KAS-3 was not marked on the CoC
(By: Signature) DCB Date: 07/29/2020

Sample Transfer	
Fraction: All	Fraction:
Area #: Walk-In	Area #:
By: DCB	By:
On: 07/29/2020	On:

Chain-of-Custody # _____

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COOLER RECEIPT REPORT
ARDL, INC.

ARDL #: 8632

Cooler # Green (2 of 2)

Number of Coolers in Shipment: 2

Project: Shelbyville Lake Kaskaskia River

Date Received: 07/29/2020

A. **PRELIMINARY EXAMINATION PHASE:** Date cooler was opened: 07/29/2020 (Signature) DCB

1. Did cooler come with a shipping slip (airbill, etc.)? ..... YES (NO)
   If YES, enter carrier name and airbill number here: ARDL Courier - Valerie
2. Were custody seals on outside of cooler? ..... YES NO (N/A)
   How many and where? ____, Seal Date: ____, Seal Name: ____
3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO (NA)
4. Did you screen samples for radioactivity using a Geiger Counter? ..... (YES) NO
5. Were custody papers sealed in a plastic bag? Hand delivered ..... YES (NO)
6. Were custody papers filled out properly (ink, signed, etc.)? See Note ..... YES (NO) N/A
7. Were custody papers signed in appropriate place by ARDL personnel? ..... (YES) NO N/A
8. Was project identifiable from custody papers? If YES, enter project name at the top of this form ..... (YES) NO N/A
9. Was a separate container provided for measuring temperature? YES ✓ NO ____ Observed Cooler Temp. 2.0 C
   Correction factor 0.0 C

B. **LOG-IN PHASE:** Date samples were logged-in: 07/29/2020 (Signature) DCB

10. Describe type of packing in cooler: Loose Ice
11. Were all samples sealed in separate plastic bags? ..... YES (NO) N/A
12. Did all containers arrive unbroken and were labels in good condition? ..... (YES) NO
13. Were sample labels complete? ..... (YES) NO
14. Did all sample labels agree with custody papers? ..... (YES) NO
15. Were correct containers used for the tests indicated? ..... (YES) NO
16. Was pH correct on preserved water samples? ..... (YES) NO N/A
17. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO
18. Were bubbles absent in VOA samples? If NO, list by sample #: ____ YES NO (N/A)
19. Was the ARDL project coordinator notified of any deficiencies? ..... YES NO (N/A)

Comments and/or Corrective Action:
1 TKN sample for KAS-3 was not marked on the CoC
(By: Signature) DCB Date: 07/29/2020

Sample Transfer	
Fraction: All	Fraction:
Area #: Walk-In	Area #:
By: DCB	By:
On: 07/29/2020	On:

Chain-of-Custody # ____

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ARDL Inc.
Environmental | Analytical | Management | Safety

PO Box 1566
400 Aviation Drive
Mt. Vernon, IL 62864
618-244-3235
www.ardlinc.com

Customer Name: SLCOE **Date: 11/24/20**

Project Name: Shelbyville Lake/Kaskaskia River **Lab Name: ARDL, Inc.**

Samples Received at ARDL: 10/20/20 **ARDL Report No.: 8669**

CASE NARRATIVE

Customer Sample No.	Date Collected	Lab ID Number	Analyses Requested
SVL-1	10/20/20	8669-01	NP Pesticides, Metals(1), Inorganics(2)
SVL-2	10/20/20	8669-02	NP Pesticides, Inorganics(2)(3)
SVL-2-10	10/20/20	8669-03	Metals(1), Inorganics(2)
SVL-4	10/20/20	8669-04	NP Pesticides, Inorganics(2)(3)
SVL-12	10/20/20	8669-05	NP Pesticides, Inorganics(2)
SVL-13	10/20/20	8669-06	NP Pesticides, Inorganics(2)
SVL-11	10/20/20	8669-07	NP Pesticides, Inorganics(2)(3)
SVL-15	10/20/20	8669-08	NP Pesticides, Inorganics(2)(3)
LS Marina	10/20/20	8669-09	E Coli
FIN Marina	10/20/20	8669-10	E Coli
SUL Marina	10/20/20	8669-11	E Coli
KAS-3	10/20/20	8669-12	E. Coli, Inorganics(2)(3)(4)

(1) Including iron and manganese.
(2) Including ammonia, nitrate, orthophosphate, total phosphorus, TOC, TSS and TVSS.
(3) Including chlorophyll-a and pheophytin-a.
(4) Including nitrite and TKN.

The quality control data are summarized as follows:

NP PESTICIDE FRACTION – METHOD 8270-SIM

HOLDING TIME
Samples were prepared and analyzed within method specified holding times.

INITIAL CALIBRATION
The initial calibration passed criteria.

CONTINUING CALIBRATION
Trifluralin was 22.4% high and pendamethalin was 22.2% high in the CCV. The closing CCV passed criteria for all analytes. No trifluralin or pendamethalin was detected in any field sample.

PREPARATION BLANK
Results of the preparation blanks were undetected.

LABORATORY CONTROL SAMPLE
The LCS analyses met recovery criteria.

MATRIX SPIKE
The matrix spike and matrix spike duplicate met recovery criteria.

CASE NARRATIVE (Continued)

DUPLICATE
Duplicate analyses are reported as MS/MSD. RPD of the duplicate analyses met criteria.

INTERNAL STANDARD
All internal standard criteria were met.

SURROGATE
All surrogate recovery criteria were met.

INORGANIC FRACTION

TOC and TKN were analyzed by an accredited outside laboratory due to instrument status.

PREPARATION BLANK
Results of the preparation blanks were undetected.

LABORATORY CONTROL SAMPLE
Percent recoveries of all LCS analyses were within control limits.

MATRIX SPIKE
Percent recoveries of all matrix spikes and matrix spike duplicates were within control limits, except 2 of 2 for iron and TOC. The parent sample has been flagged appropriately with a 'J' qualifier.

DUPLICATE
All duplicate analyses are reported as MS/MSD except chlorophyll-a, pheophytin-a, TSS and TVSS.
RPD on all duplicate analyses were within control limits, except pheophytin-a. The parent sample has been flagged appropriately with a 'J' qualifier.

DATA REPORTING QUALIFIERS

The following data reporting qualifiers are used as required:

ND - Indicates parameter was analyzed for but not detected.

J - Indicates an estimated value. This flag is used either when estimating a concentration or this flag indicates analyte(s) associated with a DOD-QSM specified non-compliance pertaining to matrix QC criteria.

REPORT ORGANIZATION

The data in this report appear by sample type (Field sample, preparation blank, laboratory control sample / spike blank, matrix spike /spike duplicate and sample duplicate). Within each sample type the data appear in the order that the analytical methods were discussed in this case narrative. Sample receipt information follows the analytical data.

Release of the data contained in this package has been authorized by the Technical Services Manager or his designee as verified by the following signature.

Dean S. Dickerson
Technical Services Manager

Sample & QC Results

Including as appropriate:

- Field Sample Results
- Batch QC
  - Prep Blank
  - LCS/Spike Blank
- Matrix QC
  - MS/MSD
  - Sample Duplicate

ARDL Data Package 8669

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 10/30/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-1	ARDL Lab No.:	008669-01
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E1028005
Sample Date:	10/20/2020	Received Date:	10/20/2020
Sample Time:	1045	Prep. Date:	10/22/2020
Matrix:	WATER	Analysis Date:	10/28/2020
Amount Used:	900 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11281
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.222	0.222	ND		UG/L	1
Atrazine	0.222	0.222	0.800		UG/L	1
Metribuzin	0.222	0.222	ND		UG/L	1
Alachlor	0.222	0.222	ND		UG/L	1
Metolachlor	0.222	0.222	0.900		UG/L	1
Chlorpyrifos	0.222	0.222	ND		UG/L	1
Cyanazine	0.222	0.222	ND		UG/L	1
Pendimethalin	0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	72%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008669-01
Field ID: SVL-1
Received: 10/20/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 10/20/2020
Sampling Time: 1045

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron	0.0400	0.0500	J	0.886	MG/L	3010A	6010C	10/27/20	11/04/20	P7447
(a) Manganese	0.00400	0.00500		0.0397	MG/L	3010A	6010C	10/27/20	11/04/20	P7447
Ammonia Nitrogen	0.0200	0.0300		ND	MG/L	NONE	350.1	NA	10/26/20	10275659
Nitrate as Nitrogen	0.0190	0.0200		0.665	MG/L	NONE	GREEN	NA	10/22/20	10265654
Phosphorus	0.00800	0.0100		0.0744	MG/L	365.2	365.2	10/26/20	10/27/20	10285665
Phosphorus, -ortho	0.0080	0.010		0.0083	MG/L	NONE	365.2	NA	10/21/20	10225653
Solids, Total Suspended	2.0	2.00		10.2	MG/L	NONE	160.2	NA	10/26/20	10285661
Solids, Volatile Suspen	2.0	2.00		3.6	MG/L	NONE	160.4	NA	10/26/20	10285662
Total Organic Carbon	0.500	1.00	J	16.0	MG/L	NONE	415.1	NA	11/06/20	11235716

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 10/30/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-2	ARDL Lab No.:	008669-02
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E1028008
Sample Date:	10/20/2020	Received Date:	10/20/2020
Sample Time:	1115	Prep. Date:	10/22/2020
Matrix:	WATER	Analysis Date:	10/28/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11281
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.200	0.200	ND		UG/L	1
Atrazine	0.200	0.200	0.760		UG/L	1
Metribuzin	0.200	0.200	ND		UG/L	1
Alachlor	0.200	0.200	ND		UG/L	1
Metolachlor	0.200	0.200	0.860		UG/L	1
Chlorpyrifos	0.200	0.200	ND		UG/L	1
Cyanazine	0.200	0.200	ND		UG/L	1
Pendimethalin	0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	81%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008669-02
Field ID: SVL-2
Received: 10/20/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 10/20/2020
Sampling Time: 1115

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.0421	MG/L	NONE	350.1	NA	10/26/20	10275659
Chlorophyll-a, Correcte	1.0	1.00		15.4	MG/CU.M.	10200H	10200H	10/21/20	10/28/20	10295667
Nitrate as Nitrogen	0.0190	0.0200		0.698	MG/L	NONE	GREEN	NA	10/22/20	10265654
Pheophytin-a	1.0	1.00	J	2.4	MG/CU.M.	10200H	10200H	10/21/20	10/28/20	10295667
Phosphorus	0.00800	0.0100		0.083	MG/L	365.2	365.2	10/26/20	10/27/20	10285665
Phosphorus, -ortho	0.0080	0.010		0.014	MG/L	NONE	365.2	NA	10/21/20	10225653
Solids, Total Suspended	1.0	1.0		12.0	MG/L	NONE	160.2	NA	10/26/20	10285661
Solids, Volatile Suspen	2.0	2.00		3.6	MG/L	NONE	160.4	NA	10/26/20	10285662
Total Organic Carbon	0.500	1.00		15.0	MG/L	NONE	415.1	NA	11/06/20	11235716

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008669-03
Field ID: SVL-2-10
Received: 10/20/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 10/20/2020
Sampling Time: 1130

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
(a) Iron	0.0400	0.0500		0.523	MG/L	3010A	6010C	10/27/20	11/04/20	P7447
(a) Manganese	0.00400	0.00500		0.0603	MG/L	3010A	6010C	10/27/20	11/04/20	P7447
Ammonia Nitrogen	0.0200	0.0300		ND	MG/L	NONE	350.1	NA	10/26/20	10275659
Nitrate as Nitrogen	0.0190	0.0200		0.612	MG/L	NONE	GREEN	NA	10/22/20	10265654
Phosphorus	0.00800	0.0100		0.109	MG/L	365.2	365.2	10/26/20	10/27/20	10285665
Phosphorus, -ortho	0.0080	0.010		0.014	MG/L	NONE	365.2	NA	10/21/20	10225653
Solids, Total Suspended	1.0	1.0		16.0	MG/L	NONE	160.2	NA	10/26/20	10285661
Solids, Volatile Suspen	2.50	2.50		4.0	MG/L	NONE	160.4	NA	10/26/20	10285662
Total Organic Carbon	0.500	1.00		16.0	MG/L	NONE	415.1	NA	11/06/20	11235716

(a) DOD and/or NELAC Accredited Analyte.

Sample 008669-03, Inorganic Analyses

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 10/30/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-4	ARDL Lab No.:	008669-04
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E1028009
Sample Date:	10/20/2020	Received Date:	10/20/2020
Sample Time:	1440	Prep. Date:	10/22/2020
Matrix:	WATER	Analysis Date:	10/28/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11281
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.200	0.200	ND		UG/L	1
Atrazine	0.200	0.200	0.340		UG/L	1
Metribuzin	0.200	0.200	ND		UG/L	1
Alachlor	0.200	0.200	ND		UG/L	1
Metolachlor	0.200	0.200	ND		UG/L	1
Chlorpyrifos	0.200	0.200	ND		UG/L	1
Cyanazine	0.200	0.200	ND		UG/L	1
Pendimethalin	0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	74%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE Analysis: Inorganics
Project No: NELAC Certified - IL100308

ARDL No: 008669-04 Sampling Loc'n: SHELBYVILLE LAKE Matrix: WATER
Field ID: SVL-4 Sampling Date: 10/20/2020 Moisture: NA
Received: 10/20/2020 Sampling Time: 1440

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.369	MG/L	NONE	350.1	NA	10/26/20	10275659
Chlorophyll-a, Correcte	1.0	1.00		31.8	MG/CU.M.	10200H	10200H	10/21/20	10/28/20	10295667
Nitrate as Nitrogen	0.0190	0.0200		0.15	MG/L	NONE	GREEN	NA	10/22/20	10265654
Pheophytin-a	1.0	1.00		10.2	MG/CU.M.	10200H	10200H	10/21/20	10/28/20	10295667
Phosphorus	0.00800	0.0100		0.213	MG/L	365.2	365.2	10/26/20	10/27/20	10285665
Phosphorus, -ortho	0.0080	0.010		0.045	MG/L	NONE	365.2	NA	10/21/20	10225653
Solids, Total Suspended	1.0	1.0		26.4	MG/L	NONE	160.2	NA	10/26/20	10285661
Solids, Volatile Suspen	4.0	4.00		6.8	MG/L	NONE	160.4	NA	10/26/20	10285662
Total Organic Carbon	0.500	1.00		24.0	MG/L	NONE	415.1	NA	11/06/20	11235716

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 10/30/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-12	ARDL Lab No.:	008669-05
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E1028010
Sample Date:	10/20/2020	Received Date:	10/20/2020
Sample Time:	1540	Prep. Date:	10/22/2020
Matrix:	WATER	Analysis Date:	10/28/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11281
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.200	0.200	ND		UG/L	1
Atrazine	0.200	0.200	ND		UG/L	1
Metribuzin	0.200	0.200	ND		UG/L	1
Alachlor	0.200	0.200	ND		UG/L	1
Metolachlor	0.200	0.200	ND		UG/L	1
Chlorpyrifos	0.200	0.200	ND		UG/L	1
Cyanazine	0.200	0.200	ND		UG/L	1
Pendimethalin	0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	77%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE Analysis: Inorganics
Project No: NELAC Certified - IL100308

ARDL No: 008669-05 Sampling Loc'n: SHELBYVILLE LAKE Matrix: WATER
Field ID: SVL-12 Sampling Date: 10/20/2020 Moisture: NA
Received: 10/20/2020 Sampling Time: 1540

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.0483	MG/L	NONE	350.1	NA	10/26/20	10275659
Nitrate as Nitrogen	0.0190	0.0200		0.026	MG/L	NONE	GREEN	NA	10/22/20	10265654
Phosphorus	0.00800	0.0100		ND	MG/L	365.2	365.2	10/26/20	10/27/20	10285665
Phosphorus, -ortho	0.0080	0.010		0.12	MG/L	NONE	365.2	NA	10/21/20	10225653
Solids, Total Suspended	1.0	1.0		41.3	MG/L	NONE	160.2	NA	10/26/20	10285661
Solids, Volatile Suspen	6.67	6.67		6.67	MG/L	NONE	160.4	NA	10/26/20	10285662
Total Organic Carbon	0.500	1.00		26.0	MG/L	NONE	415.1	NA	11/06/20	11235716

(a) DOD and/or NELAC Accredited Analyte.

Sample 008669-05, Inorganic Analyses

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 10/30/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-13	ARDL Lab No.:	008669-06
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E1028011
Sample Date:	10/20/2020	Received Date:	10/20/2020
Sample Time:	1245	Prep. Date:	10/22/2020
Matrix:	WATER	Analysis Date:	10/28/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11281
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.200	0.200	ND		UG/L	1
Atrazine	0.200	0.200	0.510		UG/L	1
Metribuzin	0.200	0.200	ND		UG/L	1
Alachlor	0.200	0.200	ND		UG/L	1
Metolachlor	0.200	0.200	ND		UG/L	1
Chlorpyrifos	0.200	0.200	ND		UG/L	1
Cyanazine	0.200	0.200	ND		UG/L	1
Pendimethalin	0.200	0.200	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	76%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008669-06
Field ID: SVL-13
Received: 10/20/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 10/20/2020
Sampling Time: 1245

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.41	MG/L	NONE	350.1	NA	10/26/20	10275659
Nitrate as Nitrogen	0.0190	0.0200		0.322	MG/L	NONE	GREEN	NA	10/22/20	10265654
Phosphorus	0.00800	0.0100		0.291	MG/L	365.2	365.2	10/26/20	10/27/20	10285665
Phosphorus, -ortho	0.0080	0.010		0.055	MG/L	NONE	365.2	NA	10/21/20	10225653
Solids, Total Suspended	1.0	1.0		43.3	MG/L	NONE	160.2	NA	10/26/20	10285661
Solids, Volatile Suspen	6.67	6.67		8.67	MG/L	NONE	160.4	NA	10/26/20	10285662
Total Organic Carbon	0.500	1.00		25.0	MG/L	NONE	415.1	NA	11/06/20	11235716

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 10/30/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-11	ARDL Lab No.:	008669-07
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E1028012
Sample Date:	10/20/2020	Received Date:	10/20/2020
Sample Time:	1400	Prep. Date:	10/22/2020
Matrix:	WATER	Analysis Date:	10/28/2020
Amount Used:	900 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11281
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.222	0.222	ND		UG/L	1
Atrazine	0.222	0.222	0.778		UG/L	1
Metribuzin	0.222	0.222	ND		UG/L	1
Alachlor	0.222	0.222	ND		UG/L	1
Metolachlor	0.222	0.222	0.522		UG/L	1
Chlorpyrifos	0.222	0.222	ND		UG/L	1
Cyanazine	0.222	0.222	ND		UG/L	1
Pendimethalin	0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	77%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008669-07
Field ID: SVL-11
Received: 10/20/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 10/20/2020
Sampling Time: 1400

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.0835	MG/L	NONE	350.1	NA	10/26/20	10275659
Chlorophyll-a, Correcte	1.0	1.00		36.3	MG/CU.M.	10200H	10200H	10/21/20	10/28/20	10295667
Nitrate as Nitrogen	0.0190	0.0200		0.18	MG/L	NONE	GREEN	NA	10/22/20	10265654
Pheophytin-a	1.0	1.00		9.4	MG/CU.M.	10200H	10200H	10/21/20	10/28/20	10295667
Phosphorus	0.00800	0.0100		0.122	MG/L	365.2	365.2	10/26/20	10/27/20	10285665
Phosphorus, -ortho	0.0080	0.010		0.019	MG/L	NONE	365.2	NA	10/21/20	10225653
Solids, Total Suspended	1.0	1.0		16.0	MG/L	NONE	160.2	NA	10/26/20	10285661
Solids, Volatile Suspen	4.0	4.00		6.0	MG/L	NONE	160.4	NA	10/26/20	10285662
Total Organic Carbon	0.500	1.00		18.0	MG/L	NONE	415.1	NA	11/06/20	11235716

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 10/30/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	SVL-15	ARDL Lab No.:	008669-08
Desc/Location:	SHELBYVILLE LAKE	Lab Filename:	E1028013
Sample Date:	10/20/2020	Received Date:	10/20/2020
Sample Time:	1430	Prep. Date:	10/22/2020
Matrix:	WATER	Analysis Date:	10/28/2020
Amount Used:	900 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11281
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units	Dilution Factor
Trifluralin	0.222	0.222	ND		UG/L	1
Atrazine	0.222	0.222	0.778		UG/L	1
Metribuzin	0.222	0.222	ND		UG/L	1
Alachlor	0.222	0.222	ND		UG/L	1
Metolachlor	0.222	0.222	0.511		UG/L	1
Chlorpyrifos	0.222	0.222	ND		UG/L	1
Cyanazine	0.222	0.222	ND		UG/L	1
Pendimethalin	0.222	0.222	ND		UG/L	1

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	77%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008669-08
Field ID: SVL-15
Received: 10/20/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 10/20/2020
Sampling Time: 1430

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		0.0896	MG/L	NONE	350.1	NA	10/26/20	10275659
Chlorophyll-a, Correcte	1.0	1.00		36.3	MG/CU.M.	10200H	10200H	10/21/20	10/28/20	10295667
Nitrate as Nitrogen	0.0190	0.0200		0.178	MG/L	NONE	GREEN	NA	10/22/20	10265654
Pheophytin-a	1.0	1.00		10.7	MG/CU.M.	10200H	10200H	10/21/20	10/28/20	10295667
Phosphorus	0.00800	0.0100		0.126	MG/L	365.2	365.2	10/26/20	10/27/20	10285665
Phosphorus, -ortho	0.0080	0.010		0.019	MG/L	NONE	365.2	NA	10/21/20	10225653
Solids, Total Suspended	1.0	1.0		16.0	MG/L	NONE	160.2	NA	10/26/20	10285661
Solids, Volatile Suspen	4.0	4.00		5.2	MG/L	NONE	160.4	NA	10/26/20	10285662
Total Organic Carbon	0.500	1.00		16.0	MG/L	NONE	415.1	NA	11/06/20	11235716

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008669-09
Field ID: LS MARINA
Received: 10/20/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 10/20/2020
Sampling Time: 1144

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
E. Coliform	1.0	1.0		57.0	COL/100 ML	NONE	1604	NA	10/20/20	10225651

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008669-10
Field ID: FIN MARINA
Received: 10/20/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 10/20/2020
Sampling Time: 1345

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
E. Coliform	1.0	1.00		162	COL/100 ML	NONE	1604	NA	10/20/20	10225651

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008669-11
Field ID: SUL MARINA
Received: 10/20/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 10/20/2020
Sampling Time: 1445

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
E. Coliform	1.0	1.00		175	COL/100 ML	NONE	1604	NA	10/20/20	10225651

(a) DOD and/or NELAC Accredited Analyte.

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE
Project No:

Analysis: Inorganics
NELAC Certified - IL100308

ARDL No: 008669-12
Field ID: KAS-3
Received: 10/20/2020

Sampling Loc'n: SHELBYVILLE LAKE
Sampling Date: 10/20/2020
Sampling Time: 0915

Matrix: WATER
Moisture: NA

Analyte	LOD	LOQ	Flag	Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run Number
Ammonia Nitrogen	0.0200	0.0300		ND	MG/L	NONE	350.1	NA	10/26/20	10275659
Chlorophyll-a, Correcte	1.0	1.00		15.4	MG/CU.M.	10200H	10200H	10/21/20	10/28/20	10295667
E. Coliform	1.0	1.00		75.0	COL/100 ML	NONE	1604	NA	10/20/20	10225651
Kjeldahl Nitrogen	0.190	0.200		ND	MG/L	351.2	351.2	11/10/20	11/11/20	11185698
Nitrate as Nitrogen	0.0190	0.0200		0.663	MG/L	NONE	GREEN	NA	10/22/20	10265654
Nitrite as Nitrogen	0.0200	0.0200		ND	MG/L	NONE	354.1	NA	10/21/20	10225652
Pheophytin-a	1.0	1.00		1.7	MG/CU.M.	10200H	10200H	10/21/20	10/28/20	10295667
Phosphorus	0.00800	0.0100		0.070	MG/L	365.2	365.2	10/26/20	10/27/20	10285665
Phosphorus, -ortho	0.0080	0.010		0.0083	MG/L	NONE	365.2	NA	10/21/20	10225653
Solids, Total Suspended	1.0	1.0		9.8	MG/L	NONE	160.2	NA	10/26/20	10285661
Solids, Volatile Suspen	2.50	2.50		ND	MG/L	NONE	160.4	NA	10/26/20	10285662
Total Organic Carbon	0.500	1.00		27.0	MG/L	NONE	415.1	NA	11/06/20	11235716

(a) DOD and/or NELAC Accredited Analyte.

METHOD BLANK REPORT

ARDL, Inc. 400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 008669 Report Date: 10/30/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3510C

Field ID:	NA	ARDL Lab No.:	008669-01B1
Desc/Location:	NA	Lab Filename:	E1028003
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	10/22/2020
Matrix:	QC Material	Analysis Date:	10/28/2020
Amount Used:	1000 mL	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B11281
% Moisture:	NA	Level:	LOW

Parameter	LOD	LOQ	Result	Data Flag	Units
Trifluralin	0.200	0.200	ND		UG/L
Atrazine	0.200	0.200	ND		UG/L
Metribuzin	0.200	0.200	ND		UG/L
Alachlor	0.200	0.200	ND		UG/L
Metolachlor	0.200	0.200	ND		UG/L
Chlorpyrifos	0.200	0.200	ND		UG/L
Cyanazine	0.200	0.200	ND		UG/L
Pendimethalin	0.200	0.200	ND		UG/L

SURROGATE RECOVERIES:	Limits	Results
Triphenylphosphate	30-130	85%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

(a) DOD-QSM Accredited Analyte.

BLANK SUMMARY REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE NELAC Certified - IL100308

Analyte	LOD	LOQ	Blank Result	Units	Prep Method	Analysis Method	Prep Date	Analysis Date	Run	QC Lab Number
(a) Iron	0.040	0.050	ND	MG/L	3010A	6010C	10/27/20	11/04/20	P7447	008669-01B1
(a) Manganese	0.004	0.005	ND	MG/L	3010A	6010C	10/27/20	11/04/20	P7447	008669-01B1
Ammonia Nitrogen	0.020	0.030	ND	MG/L	NONE	350.1	NA	10/26/20	10275659	008669-01B1
Chlorophyll-a, Corre	1.0	1.0	ND	MG/CU.M.	10200H	10200H	10/21/20	10/28/20	10295667	008669-02B1
E. Coliform	1.0	1.0	ND	COL/100 ML	NONE	1604	NA	10/20/20	10225651	008669-09B1
Kjeldahl Nitrogen	0.19	0.20	ND	MG/L	351.2	351.2	11/10/20	11/11/20	11185698	008669-12B1
Nitrate as Nitrogen	0.019	0.020	ND	MG/L	NONE	GREEN	NA	10/22/20	10265654	008669-01B1
Nitrite as Nitrogen	0.020	0.020	ND	MG/L	NONE	354.1	NA	10/21/20	10225652	008669-12B1
Pheophytin-a	1.0	1.0	ND	MG/CU.M.	10200H	10200H	10/21/20	10/28/20	10295667	008669-02B1
Phosphorus	0.008	0.010	ND	MG/L	365.2	365.2	10/26/20	10/27/20	10285665	008669-02B1
Phosphorus, -ortho	0.008	0.010	ND	MG/L	NONE	365.2	NA	10/21/20	10225653	008669-01B1
Solids, Total Suspen	1.0	1.0	ND	MG/L	NONE	160.2	NA	10/26/20	10285661	008669-04B1
Solids, Volatile Sus	1.0	1.0	ND	MG/L	NONE	160.4	NA	10/26/20	10285662	008669-04B1
Total Organic Carbon	0.50	1.0	ND	MG/L	NONE	415.1	NA	11/06/20	11235716	008669-01B1

(a) DOD and/or NELAC Accredited Analyte

Inorganic Method Blanks for 008669

BLANK SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008669 Report Date: 10/30/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD) Analytical Method: 8270C
Project No.: Prep Method: 3510C

Matrix: QC Material QC Batch: B11281 Prep. Date: 10/22/2020
Amount Used: 1000 mL Level: LOW Analysis Date: 10/28/2020

Parameter	Spike Result	Spike Level	Spike % Rec	Duplicate Result	Duplicate Level	Duplicate % Rec	Recovery Limits	RPD	RPD Limit
Trifluralin	3.75	4	94	--	--	--	30-130	--	--
Atrazine	3.61	4	90	--	--	--	30-130	--	--
Metribuzin	3.46	4	87	--	--	--	30-130	--	--
Alachlor	3.39	4	85	--	--	--	30-130	--	--
Metolachlor	3.65	4	91	--	--	--	30-130	--	--
Chlorpyrifos	3.49	4	87	--	--	--	30-130	--	--
Cyanazine	3.69	4	92	--	--	--	30-130	--	--
Pendimethalin	3.78	4	95	--	--	--	30-130	--	--

SURROGATE RECOVERIES:	Spike %R	Duplicate %R	%R Limits
Triphenylphosphate	86.5	--	30-130

(a) DOD-QSM Accredited Analyte.
'*' indicates a recovery outside of standard limits.
Spike Blanks for 008669-01, NP PESTICIDES (8270SIM-MOD)

LABORATORY CONTROL SAMPLE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE NELAC Certified - IL100308

Analyte	LCS 1 Result	LCS 1 Level	LCS 1 % Rec	LCS 2 Result	LCS 2 Level	LCS 2 % Rec	% Rec Limits	Mean % Rec	Analytical Run	QC Lab Number
(a) Iron	4.7	5.0	95	--	--	--	87-115	--	P7447	008669-01C1
(a) Manganese	0.72	0.75	97	--	--	--	90-114	--	P7447	008669-01C1
Ammonia Nitrogen	0.99	1.0	99	--	--	--	80-120	--	10275659	008669-01C1
Kjeldahl Nitrogen	10.0	10.0	100	--	--	--	80-120	--	11185698	008669-12C1
Nitrate as Nitrogen	1.0	1.0	100	--	--	--	80-120	--	10265654	008669-01C1
Nitrite as Nitrogen	0.97	1.0	97	--	--	--	80-120	--	10225652	008669-12C1
Phosphorus	0.65	0.67	97	--	--	--	80-120	--	10285665	008669-02C1
Phosphorus, -ortho	0.094	0.10	94	--	--	--	80-120	--	10225653	008669-01C1
Total Organic Carbon	18.7	20.0	94	--	--	--	76-120	--	11235716	008669-01C1

NOTE: Any values tabulated above marked with an asterisk are outside of acceptable limits.

(a) DOD and/or NELAC Accredited Analyte

MATRIX SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008669 Report Date: 10/30/2020

Project Name: SHELBYVILLE LAKE Analysis: NP PESTICIDES (8270SIM-MOD) Analytical Method: 8270C
Project No.: Prep Method: 3510C

Field ID:	SVL-1	Prep. Date:	10/22/2020	ARDL Lab No.:	008669-01
Desc/Location:	SHELBYVILLE LAKE	Amount Used:	900 mL	Lab Filename:	
Sample Date:	10/20/2020	% Moisture:	NA	Received Date:	10/20/2020
Sample Time:	1045	QC Batch:	B11281	Analysis Date:	10/28/2020
Matrix:	WATER	Level:	LOW		

Parameter	Sample Result	MS Result	MS Level	MS % Rec	MSD Result	MSD Level	MSD % Rec	% Rec Limits	RPD	RPD Limit
Trifluralin	ND	3.97	4.44	89.3	3.82	4.44	86	30-130	3.7	30
Atrazine	0.800	4.67	4.44	87	4.46	4.44	82.3	30-130	4.6	30
Metribuzin	ND	3.74	4.44	84.3	3.52	4.44	79.3	30-130	6.1	30
Alachlor	ND	3.62	4.44	81.5	3.42	4.44	77	30-130	5.7	30
Metolachlor	0.900	4.71	4.44	85.8	4.59	4.44	83	30-130	2.6	30
Chlorpyrifos	ND	3.71	4.44	83.5	3.54	4.44	79.8	30-130	4.6	30
Cyanazine	ND	3.94	4.44	88.8	3.71	4.44	83.5	30-130	6.1	30
Pendimethalin	ND	3.99	4.44	89.8	3.84	4.44	86.5	30-130	3.7	30

SURROGATE RECOVERIES:	MS %R	MSD %R	%R Limits
Triphenylphosphate	84	80	30-130

(a) DOD-QSM Accredited Analyte.
'nc' indicates sample >4X spike level.
'*' indicates a recovery outside of standard limits.
Matrix Spikes for 008669-01, NP PESTICIDES (8270SIM-MOD)

MATRIX SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE NELAC Certified - IL100308

Analyte	Sample Matrix	Sample Result	MS Result	MS Level	MS % Rec	MSD Result	MSD Level	MSD % Rec	% Rec Limits	RPD	RPD Limit	Run	QC Lab Number
(a) Iron	WATER	0.89	1.2	1.0	34 *	1.2	1.0	34 *	87-115	0	20	P7447	008669-01MS
(a) Manganese	WATER	0.040	0.50	0.50	92	0.50	0.50	92	90-114	1	20	P7447	008669-01MS
Ammonia Nitrogen	WATER	ND	1.8	2.0	89	2.0	2.0	99	75-125	11	20	10275659	008669-01MS
Nitrate as Nitrogen	WATER	0.67	1.5	1.0	84	1.5	1.0	86	75-125	1	20	10265654	008669-01MS
Phosphorus	WATER	0.083	0.93	0.83	102	0.95	0.83	105	75-125	2	20	10285665	008669-02MS
Phosphorus, -ortho	WATER	0.0083	0.11	0.10	98	0.11	0.10	101	75-125	3	20	10225653	008669-01MS
Total Organic Carbon	WATER	16.0	15.2	5.0	0 *	15.5	5.0	0 *	76-120	2	20	11235716	008669-01MS

NOTE: Values tabulated above marked with an asterisk are explained in the associated narrative.

(a) DOD and/or NELAC Accredited Analyte.

SAMPLE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 008669 Report Date: 11/23/2020

Project Name: SHELBYVILLE LAKE NELAC Certified - IL100308

Analyte	Sample Conc'n	First Duplicate	Second Duplicate	Units	Percent Diff	Mean (Smp,D1,D2)	Analytical Run	QC Lab Number
Chlorophyll-a, Corrected	15.4	15.4	--	MG/CU.M.	0	--	10295667	008669-02D1
Pheophytin-a	2.4	3.0	--	MG/CU.M.	22*	--	10295667	008669-02D1
Solids, Total Suspended	26.4	27.2	--	MG/L	3	--	10285661	008669-04D1
Solids, Volatile Suspend	6.8	6.8	--	MG/L	0	--	10285662	008669-04D1

* indicates that agreement between duplicates is greater than 20%. See Case Narrative for exceptions.

(a) DOD and/or NELAC Accredited Analyte

Sample Receipt Information

Including as appropriate:

- COCs
- Cooler Receipts
- Airbills
- Email Communication / Instructions from Customer

ARDL Data Package 8669

ARDL, Inc.

P.O. Box 1566, 400 Aviation Drive, Mt. Vernon, IL 62864
(618) 244-3235 Phone (618) 244-1149 Fax

8669

CHAIN OF CUSTODY RECORD

PROJECT: Shelbyville Lake

SAMPLERS: (Signature) Ben Gruding / Travis Schepker

	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	NO. OF CONTAINERS	TSS, TVSS	Chloro/Pheo	* TOC, T-PO4	O-PO4	* NO3-N, NH3-N	NP Pest	# T.Fe, T.Mn	E. coli	MS/MSD	TKN	REMARKS OR SAMPLE LOCATION	PRESERVATION ICED	PRESERVATION SPECIFY CHEMICALS ADDED AND FINAL pH IF KNOWN
1	SVL-1	10/20/20	1045		X		X		X	X	X	X	X		X			X	
2	SVL-2		1115		X		X	X	X	X	X	X						X	
3	SVL-2-10		1130		X		X		X	X	X		X					X	
4	SVL-4		1440		X		X	X	X	X	X	X						X	
5	SVL-12		1540		X		X		X	X	X	X		X			ecoli 10/21/2020 DCB No ~~fecal~~ on this sample DCB 10/21/2020	X	
6	SVL-13		1245		X		X		X	X	X	X						X	
7	SVL-11		1400		X		X	X	X	X	X	X						X	
8	SVL-15		1430		X		X	X	X	X	X	X						X	
9	LS Marina ✓		1144		X									X				X	
10	FIN Marina ✓		1545		X									X				X	
11	SUL Marina ✓		1445		X									X			broken custody seal	X	
12	KAS-3 ✓		0915		X		X	X	X	X	X			X		X		X	

	Date	Time		
Relinquished by: (Signature)	10/20/20	1715	Received by: (Signature)	
Relinquished by: (Signature)	1830	10/20/20	Received by: (Signature)	
Received for Laboratory by: (Signature)	10/20/20	1830	Shipping Ticket No.	

REMARKS/SPECIAL INSTRUCTIONS:

*Preserved with H_2SO_4
#Preserved with HNO_3

PURCHASE ORDER NO: _____

COOLER RECEIPT REPORT
ARDL, INC.

ARDL #: 86069 Cooler # Blue 2

Number of Coolers in Shipment: 2

Project: Shelbyville Lake Date Received: 10/20/2020

A. **PRELIMINARY EXAMINATION PHASE:** Date cooler was opened: 10/21/2020 (Signature) DCB

1. Did cooler come with a shipping slip (airbill, etc.)? ..... YES (NO)

   If YES, enter carrier name and airbill number here: ARDL Courier - Valerie

2. Were custody seals on outside of cooler? ..... YES (NO) N/A

   How many and where? _____, Seal Date: _____, Seal Name: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO (NA)
4. Did you screen samples for radioactivity using a Geiger Counter? ..... (YES) NO
5. Were custody papers sealed in a plastic bag? Hand delivered ..... YES (NO)
6. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO N/A
7. Were custody papers signed in appropriate place by ARDL personnel? ..... (YES) NO N/A
8. Was project identifiable from custody papers? If YES, enter project name at the top of this form ..... (YES) NO N/A
9. Was a separate container provided for measuring temperature? YES ____ NO ✓ Observed Cooler Temp. 0.4 °C (Cooler temp sample)
   Correction factor 0.0 °C

B. **LOG-IN PHASE:** Date samples were logged-in: 10/21/2020 (Signature) DCB

10. Describe type of packing in cooler: Loose Ice
11. Were all samples sealed in separate plastic bags? ..... YES (NO) N/A
12. Did all containers arrive unbroken and were labels in good condition? ..... (YES) NO
13. Were sample labels complete? ..... (YES) NO
14. Did all sample labels agree with custody papers? ..... (YES) NO
15. Were correct containers used for the tests indicated? ..... (YES) NO
16. Was pH correct on preserved water samples? ..... (YES) NO N/A
17. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO
18. Were bubbles absent in VOA samples? If NO, list by sample #: _____ YES NO (N/A)
19. Was the ARDL project coordinator notified of any deficiencies? ..... YES NO (N/A)

Comments and/or Corrective Action:
(By: Signature) Date:

Sample Transfer	
Fraction: All	Fraction:
Area #: Walk-in	Area #:
By: DCB	By:
On: 10/21/2020	On:

Chain-of-Custody # _____

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COOLER RECEIPT REPORT
ARDL, INC.

ARDL #: 86669

Cooler # Blue 1

Number of Coolers in Shipment: 2

Project: Shelbyville Lake

Date Received: 10/20/2020

A. **PRELIMINARY EXAMINATION PHASE:** Date cooler was opened: _____ (Signature) DCB

1. Did cooler come with a shipping slip (airbill, etc.)? ..... YES (NO)

   If YES, enter carrier name and airbill number here: ARDL Courier - Valerie

2. Were custody seals on outside of cooler? ..... YES (NO) N/A

   How many and where? _____, Seal Date: _____, Seal Name: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO (NA)

4. Did you screen samples for radioactivity using a Geiger Counter? ..... (YES) NO

5. Were custody papers sealed in a plastic bag? Hand delivered ..... YES (NO)

6. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO N/A

7. Were custody papers signed in appropriate place by ARDL personnel? ..... (YES) NO N/A

8. Was project identifiable from custody papers? If YES, enter project name at the top of this form ..... (YES) NO N/A

9. Was a separate container provided for measuring temperature? YES ____ NO ✓ Observed Cooler Temp. 2.7 °C from Sample
   Correction factor 0.0 °C

B. **LOG-IN PHASE:** Date samples were logged-in: 10/20/2020 (Signature) DCB

10. Describe type of packing in cooler: Loose Ice

11. Were all samples sealed in separate plastic bags? ..... YES (NO) N/A

12. Did all containers arrive unbroken and were labels in good condition? ..... (YES) NO

13. Were sample labels complete? ..... (YES) NO

14. Did all sample labels agree with custody papers? ..... (YES) NO

15. Were correct containers used for the tests indicated? ..... (YES) NO

16. Was pH correct on preserved water samples? ..... (YES) NO N/A

17. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

18. Were bubbles absent in VOA samples? If NO, list by sample #: _____ YES NO (N/A)

19. Was the ARDL project coordinator notified of any deficiencies? ..... YES NO (N/A)

Comments and/or Corrective Action:
Fecal sample missing on sample SVL-12.
(By: Signature) DCB Date: 10/21/2020

Sample Transfer	
Fraction: All	Fraction:
Area #: Walk-In	Area #:
By: DCB	By:
On: 10/21/2020	On:

Chain-of-Custody # _____

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