AQUATIC CONSULTING & TESTING, INC.

1525 W. University Drive, Suite 106
P.O. Box 1510
Tempe, Arizona 85281
Phone: (480) 921-8044 • Fax: (480) 921-0049

Lic. No. AZ0003

07 May 2024

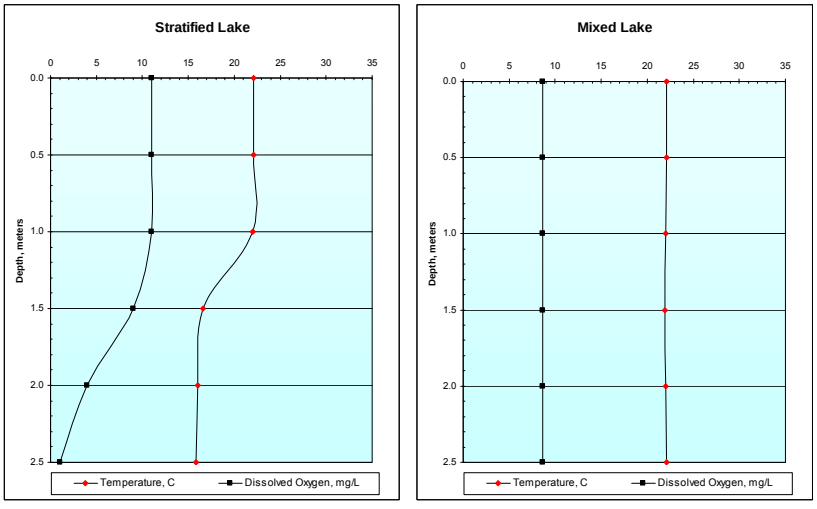
Ms. Fran Pawlak, Executive Director
Dobson Ranch HOA
2719 South Reyes
Mesa, Arizona 85202

The following report presents the results of field inspections on the Dobson Ranch lakes for the month of May 2024. This report summarizes data collected under the updated program started in 2019 and expanded in 2020 that includes comprehensive testing of one-half of the lakes on a monthly basis from March through October and bi-weekly field inspections twice per month throughout the year. Comprehensive testing on Lakes 1-4 was completed during the month and laboratory reports are provided. Comparison to the last comprehensive test (March 2024) are provided for those lakes. Field sheets for the inspection weeks are also included. Additional data requested for Lake 8 are provided at the end of the narrative report.

A number of tools have been used to evaluate and quantify the water quality of each lake. These include: Arizona Department of Environmental Quality Numeric Targets for Urban Lakes, the Carlson Trophic Status Index (TSI), and a Lake Report Card based on that used by Arizona Game and Fish Department that was developed by Aquatic Consulting & Testing, Inc.

The following provides brief descriptions of some of the more important parameters.

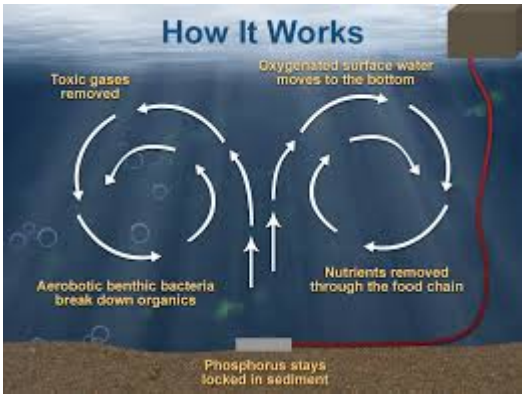
Temperature and Oxygen



Density differences in water caused by temperature produce a physical barrier to the exchange of gases and nutrients between water layers. Typically warmer (less dense) water rests above deeper, cooler (more dense) water. Deep waters can become anoxic (oxygen poor) and cause the formation and release of toxic gases as hydrogen sulfide and ammonia, and

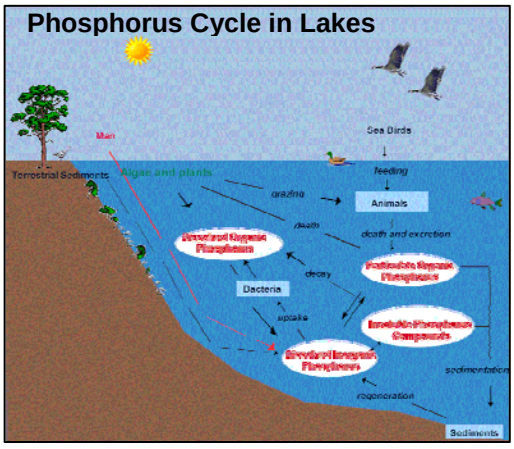
the release of plant nutrients as phosphates. A vertically mixed lake rarely suffers from such issues.

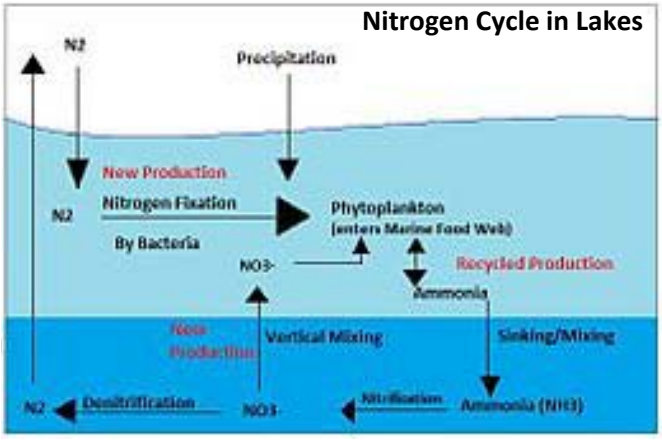
Aeration systems are designed to circulate and distribute oxygen vertically in the water column. Circulation is necessary for two primary purposes: (1) to deliver oxygen to the deeper waters for fish survival and (2) to maintain an aerobic environment throughout the lake to prevent the release and distribution of phosphates, ammonia, and sulfide from the anaerobic sediment.



Nutrients

Algae are plants and require nitrogen and phosphorus for growth. In the desert southwest, large growths of planktonic algae typically form in the summer when total phosphorus concentrations are above 0.030 mg/L. Nitrogen values usually need to be at least 10 times that of phosphorus and in a soluble, usable (nitrate or ammonia) form to stimulate algae growth. Phosphorus and nitrogen cycles in the aquatic environment are illustrated below.





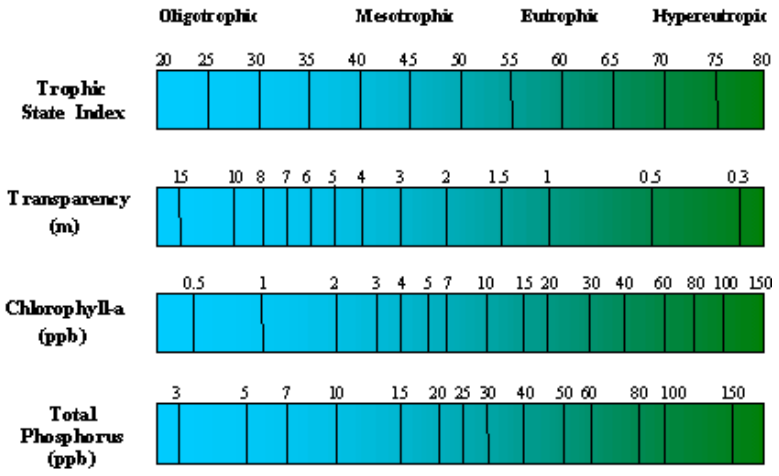
Algae and Aquatic Weeds

Algae are beneficial to a lake as they provide food for aquatic organisms and produce oxygen. However, some algae are undesirable and an overabundance of algae reduces aesthetic appeal and interferes with the ecological balance of the environment. Large die offs of algae can deplete dissolved oxygen in the water via bacterial utilization of the gas during decomposition of the plant biomass. Blue-green (Cyanophyta) algae are least desirable because some forms can form stringers (long filaments) and large colonies (masses) and are difficult to chemically manage because of their mucilaginous coatings.

Submerged weeds can be beneficial because they also produce oxygen and provide habitat and shelter for aquatic animals. However, an overabundance of weeds reduces aesthetic appeal, interferes with fishing and boating activities, interferes with the ecological balance of the environment, and can also deplete dissolved oxygen if a rapid die-off occurs.

Trophic Status Index

The Carlson Trophic Status Index (TSI) is a series of calculations that attempt to put a numerical value on water quality. The more algae and greener a lake is, the more nutrients a lake has, and the less transparent the water becomes, the higher the trophic status and the greater the TSI value. Three values are calculated using the Secchi disk depth, total phosphorus concentration, and chlorophyll measurement to obtain an average TSI. Those lakes with relatively low TSI values are unproductive and termed oligotrophic. Those lakes with very high TSI values are classified as productive (eutrophic). Those lakes with TSI values falling in between are considered mesotrophic.



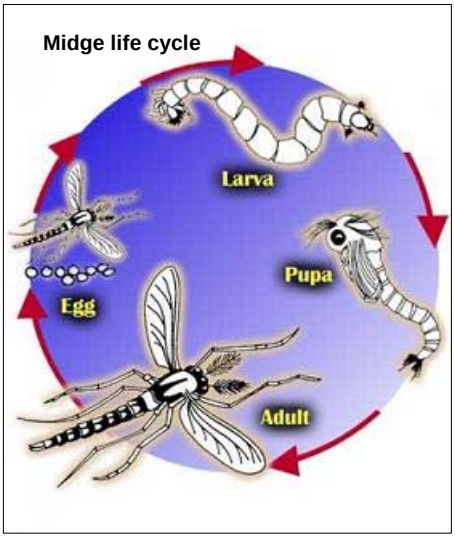
The Trophic Status report addendum provides each of these values for the sampling sites. For southern Arizona, a TSI of less than 60 is the target for reasonable aesthetic quality. Fisheries often flourish when TSI values are in the 55 to 65 range. Severe aesthetic and recreational problems occur when conditions result in TSI values of 80 or higher.

General Characteristics of Oligotrophic and Eutrophic Lakes

Condition	Oligotrophic	Eutrophic
Productivity	Low	High
Algae density	Low	High
Nutrient concentrations	Low	High
Hypolimnion oxygen content	High	Low
Sediment nutrient release	Low to none	High
Organic matter	Low	High
Light transparency	Deep	Shallow
Macrophyte (weed) density	Low	High

Midge flies

Midge flies are common inhabitants of most lakes. Adult females lay hundreds of eggs on the water surface. The eggs settle to the lake bottom and hatch in a few days. Larvae develop and grow in the superficial sediments over a three to four week period. In about 30 days the insect larvae become pupae, rise in the water column, and emerge as adult flies. The adults tend to swarm at dusk and dawn and become a nuisance. They fly into residents' eyes and mouths, congregate under eaves of houses, and leave a sticky messy residue when they die. Management techniques may include stocking of bottom-feeding fishes and application of bacterial or chemical larvicides. The primary control of midge flies has been stocking of fish that eat the larvae living in the lake sediment.




Adult midge

Waterfowl

The adverse impacts of excessive waterfowl include fecal matter deposition and public health issues, turf destruction, aesthetic detraction, and fish consumption. The Arizona Game and Fish Department has recently adopted the following classification for ducks counts (per acre) in urban fishing lakes: <3 (excellent), 3-4 (good), 5-6 (fair), and >6 (poor; relocate non-migratory).

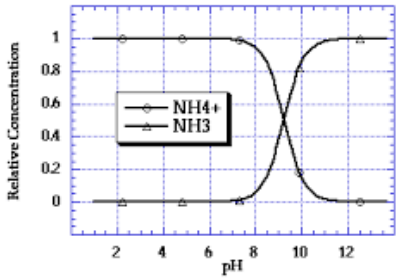
May 2024 Report Narrative Summary

The following pages provide a summary of the monthly survey results. Comprehensive analyses were conducted on Lakes 1-4 on 02 May 2024. A brief narrative description is provided for each lake. Data are additionally qualified in the Lake Report Card (See Supporting Documentation). Lakes 1-8 received visual examination and basic water quality testing on 02 and 15 May 2024.

Lakes 1-4:

Lake 1

Lake 1 exhibited no thermal stratification and no significant loss of oxygen in the deep waters (see attached profiles). The surface dissolved oxygen concentration (7.8-8.3 mg/L) was above the target 6.0 mg/L concentration desired to protect the fishery and no fish stress was observed. Water pH was moderate at 8.1-8.3 SU and indicated a low to moderate suspended algae density. Low pH is advantageous because it prevents conversion of ammonium ions (NH_4^+) to toxic (to aquatic animals) ammonia (NH_3) gas (see chart below). Transparency (Secchi disk depth) was stable 2.44 m (8.0 ft) and turbidity remained low at 3.9-19.2 NTU.

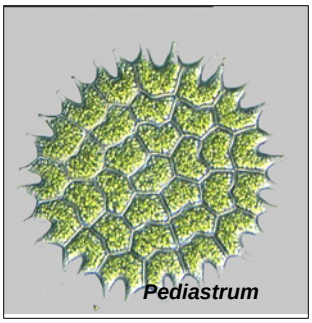


Alkalinity (166 mg/L as $CaCO_3$) and hardness (173 mg/L as $CaCO_3$) were fairly stable. Values are typical and expected from most waters in central Arizona. The total dissolved solids (mineral) concentration of the lake was good at 480 mg/L.

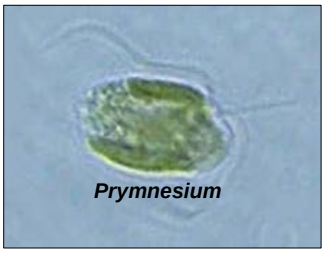
Waterfowl density was one (1) bird per acre which is considered in the range of excellent (Arizona Game & Fish Department rating system). No cormorants were observed.

Midge fly density was quite low (<40/m^2) and should produce no issues to lakeside residents or visitors.

Bio-available nitrogen and total nitrogen decreased to 0.2 mg/L and 0.43 mg/L, respectively. Phosphorus concentration decreased to 0.025 mg/L. Ammonia was elevated at 0.23 mg/L. At ambient temperature and pH, no toxicity issues would result. Chlorophyll concentration, indicative of algal biomass, decreased to 0.70 ug/L. Algae density was correspondingly low



(6.29 x 10^2 cells/mL). The dominant alga was *Pediastrum* (Chlorophyta colony). It is rarely problematic. The golden alga, *Prymnesium parvum*, was not observed. *P. parvum* can produce a toxin that destroys exposed cells in the gill tissue of fish, causing asphyxiation and death. No submerged weeds were observed.


Prymnesium

The mean TSI value decreased from 49 to 42, with the lake remaining in the mesotrophic category. Decreased biomass was the main factor for the TSI decrease. The lake may have improved clarity and become aesthetically more pleasing, but may have anoxia in the deep waters during the summer.

The *E. coli* concentration was 2 MPN/100 mL. The maximum bacteria level for full body contact (FBC=swimming) and partial body contact (PBC=fishing and boating) recreation, is 126/100 mL (30-day geometric mean). The updated single sample maxima are 235 and 575 for FBC and PBC recreation.

The Lake Report Card value for May 2024 was 52; up two (2) units from March, and remaining in the "excellent" category. Low chlorophyll and phosphorus concentrations were primary factors for the increased score.

Lake 2

Lake 2 was vertically mixed. No substantial loss of oxygen in the deep waters occurred. (see attached profiles). The surface dissolved oxygen concentrations (7.7-8.5 mg/L) were above the target 6.0 mg/L concentration desired to protect the fishery and no fish stress was observed. Water pH was stable at 8.2 SU, and indicated slight change in suspended (planktonic) algae density. Low pH is advantageous because it prevents conversion of ammonium ions (NH_4^+) to toxic (to aquatic animals) ammonia (NH_3) gas. Transparency (Secchi disk depth) increased to 2.29 m (7.5 ft) and turbidity correspondingly increased to 2.9 to 4.6 NTU.

Alkalinity (166 mg/L as $CaCO_3$) and hardness (181 mg/L as $CaCO_3$) increased and were still elevated, as would be expected from most waters in central Arizona. The total dissolved solids (mineral) concentration increased to 492 mg/L.

Midge fly density was quite low (<40/m^2) and should produce no issues to lakeside residents or visitors. Maximum waterfowl density was 4 to 6 birds per acre which is considered in the range of good to fair (Arizona Game & Fish Department rating system). No cormorants were noted.

Bio-available nitrogen concentration increased to 0.20 mg/L. Total nitrogen increased slightly to 0.42 mg/L. Phosphorus concentration increased to 0.020 mg/L; a slightly elevated value. Ammonia concentration was 0.20 mg/L. At ambient temperature and pH, no toxicity issues would result.

Chlorophyll concentration, indicative of algal biomass, decreased to 0.62 ug/L. Algae density increased to 4.91 x 10^2 cells/mL. *Chroomonas,* a diatom (Cryptophyta) unicell was the dominant form. The alga is unlikely to cause problems. No potentially-toxic golden algae (*Prymnesium parvum* or related species) were found. *P. parvum* can produce a toxin that destroys exposed cells in the gill tissue of fish, causing asphyxiation and death. No submerged weeds were observed, including horned pondweed (*Zannichellia palustris*) and brittle naiad (*Najas marina*) that have been problematic in other lakes in the past.

The mean TSI value was 40 (range 26-48), moving the lake into the better Oligotrophic. Oligotrophic lakes are more desirable for an urban lake in terms of aesthetics, and more supportive of a robust fishery.

The *E. coli* concentration was 1 MPN/100 mL and did not meet the full body contact (swimming) and partial body contact (fishing and boating) recreation standards. The number of birds observed on the lake would have been the biggest contributor to this number.

The Lake Report Card value for May 2024 was 55, a 7 point increase compared to March data, and moving the lake into the "excellent" category.

Lake 3

Lake 3 exhibited no thermal stratification (vertically mixed) and had no significant loss of oxygen in the deep waters (see attached profiles). The surface dissolved oxygen concentration (7.5-7.7 mg/L) met the minimum target of 6.0 mg/L desired to protect the fishery. No fish stress was observed. Water pH was ranged 8.2-8.3 and reflected a continuing decrease. Low pH is more advantageous because it prevents conversion of ammonium ions (NH_4^+) to toxic (to aquatic animals) ammonia (NH_3) gas. Transparency (Secchi disk depth) was increased at 1.68 m (5.5 ft). Turbidity was moderate (5.1-5.4 NTU) during the month.

Waterfowl density was less than 1 bird per acre which is considered excellent (Arizona Game & Fish Department rating system). No cormorants were observed.

Midge fly density was low (<40/m^2) and should produce no issues to lakeside residents or visitors.

Alkalinity (166 mg/L as $CaCO_3$) and hardness (209 mg/L as $CaCO_3$) decreased slightly and remained slightly elevated as typical and expected from most waters in central Arizona. The total dissolved solids (mineral) concentration of the lake decreased to 444 mg/L. Bio-available nitrogen concentration increased to 0.40 mg/L, and total nitrogen increased to 0.67 mg/L. Phosphorus concentration increased to 0.041 mg/L. The ammonia concentration was 0.18 mg/L and would not create any toxicity issues at ambient temperature and pH.

Chlorophyll concentration, indicative of algal biomass, increased slightly to 1.63 ug/L. Algae density decreased to 5.19 x 10^2 cells/mL. The dominant algae were *Anabaenopsis,* a blue-green (Cyanophyta) filament form. No significant issues with the alga or other surface algae occurred. Golden algae (*Prymnesium parvum*) was not found during the reporting period.

The mean TSI value remained constant with the previous reporting period at 49 (range 35-58), with the lake improving to the mesotrophic category.

The *E. coli* concentration was 16 MPN/100 mL and met partial and full body contact (swimming) recreation limits.

The Lake Report Card value for May 2024 was 51, the same when compared to March 2024 and remaining in the "excellent" category. Low phosphorus and chlorophyll concentration greatly impacted the score.

Lake 4

Lake 8 was vertically mixed with little loss of oxygen in the deep water (see attached profiles). The dissolved oxygen concentrations improved to 7.6-7.8 mg/L. Concentrations were at the satisfactory level for the fishery and fish activity appeared normal. Oxygen demand is apparently very high in the lake due to organic content and nutrient loading. Water pH ranged from 8.2-8.3 SU and indicated a moderate to high suspended algae density. Water transparency decreased to 1.02 m (3.33 ft). Turbidity was moderate at 4.3 to 5.6 NTU.

Waterfowl density was 1 bird per acre which is considered excellent (Arizona Game & Fish Department rating system). No cormorants were noted. Midge fly density was quite low (<40/m^2) and should produce no issues to lakeside residents or visitors.

Nitrogen concentrations increased to 0.30 mg/L bio-available nitrogen and 0.54 mg/L total nitrogen. Phosphorus concentration decreased significantly to 0.025 mg/L. The ammonia concentration was elevated (0.41 mg/L). At ambient pH and temperature, acute or chronic ammonia toxicity to fish would not occur.

Algae density decreased to 5.15 x 10^2 cells/mL. The dominant alga was *Chlorella*. These algae are unlikely to cause issues in the lake. The chlorophyll-a concentration (biomass indicator) decreased to 2.67 ug/L. Some olive green coloration and surface scum of the water was observed. No *Botryococcus* was found. The potentially toxic golden alga (*Prymnesium parvum*) was not present during the month.

The mean TSI value was 50 (range 40-60), moving the lake to the mesotrophic category. The value indicates the lake should be more desirable in terms of aesthetics, but possibly less supportive of a robust fishery.

The *E. coli* concentration was 20 MPN/100 mL. The measurements met the bacteria maximum for full body contact (swimming) and partial body contact (fishing and boating) recreation.

The Lake Report Card value for May 2024 was 51, a three unit increase, and moves to the “excellent” category.

Lakes 5-8

Lake 5

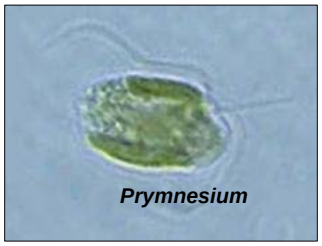
The Lake 5 temperatures were moderate and ranged from a high of 25.4 C to a low of 25.2 C. Water pH was 8.2 SU indicating low to moderate algae density. Dissolved oxygen (7.2-7.3 mg/L) was satisfactory for the fishery and fish activity appeared normal. Increases in dissolved oxygen concentration frequently occur during winter because of reduced respiration and decomposition rates at colder temperatures and the ability of cold water to hold more dissolved oxygen than warm water. Transparency was improved at over one meter and turbidity ranged from 3.2-5.4 NTU. Fountains were in service throughout the reporting period.

Waterfowl mean density was less than two birds per acre (<2/A) which is considered excellent (Arizona Game & Fish Department rating system shown below). No cormorants were noted. Adult midge flies did not appear to produce any nuisance issues to lakeside residents or visitors.

Waterfowl Density Ranking System (AZG&FD)

No. waterfowl per acre	Ranking
<3	Excellent
3-4	Good
5-6	Fair
>6	Poor

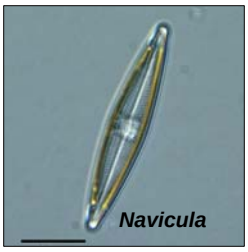
No abnormal algae growth or submerged weeds were observed. The diatom *Cyclotella*, dominated the phytoplankton. Cell density was very low. No golden algae (*Prymnesium parvum* or related species) were detected.



Lake 6

Lake temperature range was 24.6-25.9 C. Water pH was stable at 8.6 SU. Dissolved oxygen concentration ranged from 9.7-10.3 mg/L and remained satisfactory for the fishery. Fish activity appeared normal. Transparency was stable at just under one meter. Turbidity was stable, ranging from 8.7-11.5 NTU.

Waterfowl density ranged from three to four birds per acre (1-2/A); a “good” rating. Minimal cormorants were observed. Decreased numbers of waterfowl was not expected during the migratory season. Adult midge flies did not appear to produce any nuisance issues o lakeside residents or visitors.

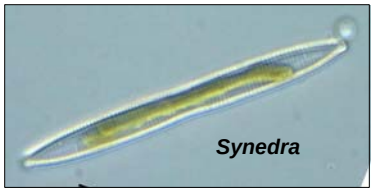


No abnormal algae growth or submerged weeds were observed. *Navicula* was the dominant alga. Very low total phytoplankton density prevented any problems. No golden algae (*Prymnesium parvum* or related species) were detected.

Lake 7

Lake temperature range was 24.8-25.1 C. Water pH ranged from 8.4 to 8.7 SU. Dissolved oxygen concentration ranged from 10.0-11.3 mg/L and remained satisfactory for the fishery. Fish activity appeared normal. Transparency was stable at just under one meter. Turbidity was stable, ranging from 4.5 to 6.0 NTU. Fountains were operating throughout the reporting period.

Waterfowl density ranged from one to two birds per acre (1-2/A); an “excellent” rating. Minimal cormorants were observed. Decreased numbers of waterfowl was not expected during the migratory season. Adult midge flies did not appear to produce any nuisance issues o lakeside residents or visitors.



No abnormal algae growth or submerged weeds were observed. *Synedra* was the dominant alga. Very low total phytoplankton density prevented any problems. No golden algae (*Prymnesium parvum* or related species) were detected.

Lake 8

The temperature of Lake 8 was 24.1-26.1 C. Water pH was moderate at 8.4-8.6 SU and indicated a low to moderate algae density. Dissolved oxygen (6.8-8.4 mg/L) was mostly satisfactory for the fishery and fish activity appeared normal. Transparency was slightly over one meter and turbidity remained low (4.8-6.0 NTU). Aeration was not in operation.

Waterfowl density was four to six per acre (4-6/A) which is considered good-fair. No cormorant issues were reported. Adult midge flies did not appear to produce any nuisance issues to lakeside residents or visitors.

No abnormal algae growth or submerged weeds were observed. The green colony *Chlorella*, was the dominant form. This alga is unlikely to cause any issues. Total phytoplankton density also was relatively low. No golden algae (*Prymnesium parvum* or related species) were detected.

Special Testing

E. coli bacteria and total phosphorus were measured in Lake 8 on two dates during the month. Data are presented below.

Date	*E. coli*, MPN/100 mL)	Phosphorus, mg/L
05-02-24	228	0.044
05-15-24	770	0.043

The measured bacteria concentrations are above the maximum levels established for partial and full body contact recreation by the State.

The table at the conclusion of the report summarizes phosphorus concentrations in Lake 8 during the recent study period. Noting the Phoslock® application occurred on 29 November 2021, no dramatic reduction in phosphorus is shown. However, the impact may be more long-term if it reduces recycling of phosphorus from the sediment. Data collection will be continued.

An application of 325 Kg of SchlixX Plus® was made in early November. The product is designed to degrade organic sludge at the lake bottom, while inactivating and preventing phosphorus recycling. The product was supplied by and application was assisted and supervised by the manufacturer (Oase, Horstel Germany) at no cost to Dobson Association. Sludge depth and phosphorus concentrations will be periodically monitored to track the success of the application.

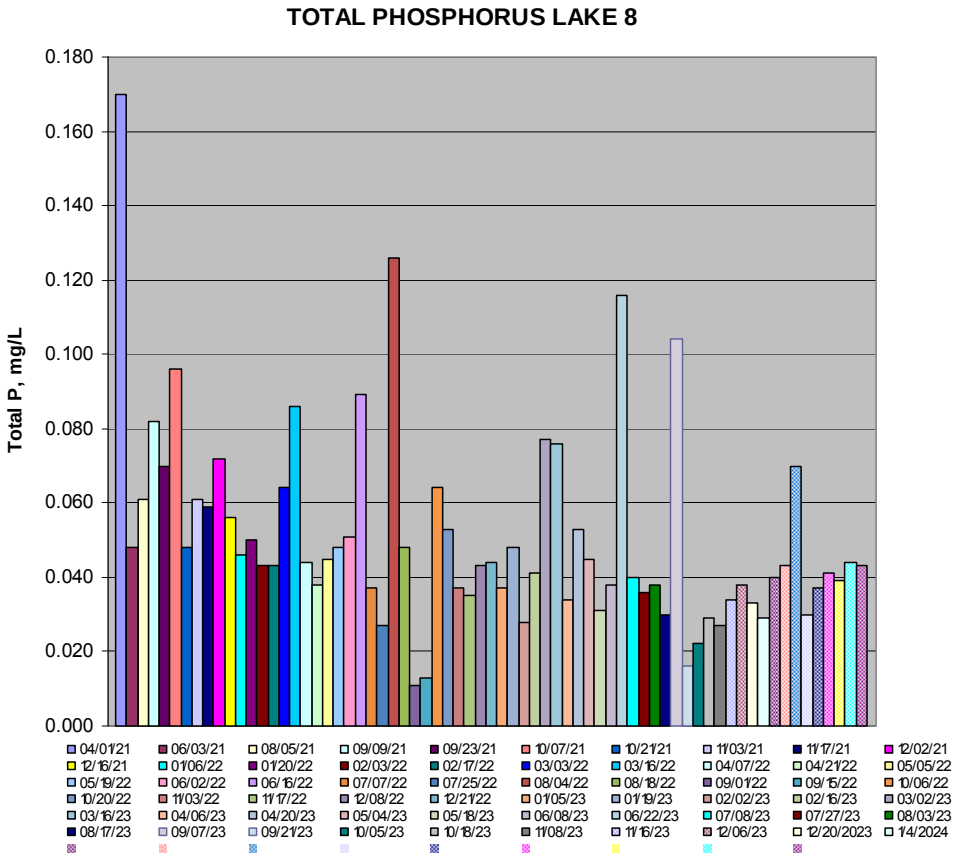
Next Month:

Lakes 5-8 are scheduled for comprehensive monitoring in June. All lakes will be visually inspected and field data collected two times during the month and checked for golden algae weekly during the peak season. Additional monitoring of Lake 8 phosphorus and *E. coli* will continue.

Respectfully:

Aquatic Consulting & Testing, Inc.

Frederick A. Amalfi, Ph.D., C.L.M.



SUPPORTING DOCUMENTATION

- Laboratory reports
- Field Inspection Sheets
- Pesticide application documents

DOBSON RANCH REPORT CARD

DATE OF EVALUATION:		**May-24**	CONDITION	**GOOD**	SCORE	**52**	**55**	**51**	**51**
PREVIOUS EVALUATION:	***Last complete analysis***	**Mar-24**	CONDITION	**GOOD**	SCORE	**52**	**52**	**53**	**48**

		4 pts	3 pts	2 pts	1 pt	SCORE	SCORE	SCORE	SCORE
CONDITION	RATIONALE	EXCELLENT	GOOD	FAIR	POOR	Lake 5	Lake 6	Lake 7	Lake 8
Transparency - SDz (m) avg.	aesthetics	1.5-2.0	1.0-1.4	0.5-0.9	<0.5	**4**	**4**	**4**	**2**
Dissolved oxygen (mg/L) @1m	aquatic life, sediment nutrient release, odors	>7.0	5.6-6.9	4.0-5.5	<4.0	**4**	**4**	**4**	**4**
Nitrogen, total (mg/L)	algae and macrophyte growth	<0.5	0.5-1.0	1.0-2.0	>2.0	**4**	**4**	**3**	**3**
Phosphorus, total (mg/L)	algae and macrophyte growth	<0.03	0.03-0.05	0.06-0.10	>0.10	**4**	**4**	**3**	**4**
Turbidity (NTU) avg.	aesthetics, State std	<5	5-10	11-20	>20	**2**	**4**	**3**	**4**
Chlorophyll-a (ug/L) avg.	aesthetics, oxygen balance	<10	11-20	21-30	>30	**4**	**4**	**4**	**4**
Algae density (no./mL)	aesthetics	$<5 \times 10^4$	$5x10^4$ - $9x10^4$	1×10^5 -$5x\ 10^5$	$>5 \times 10^5$	**4**	**4**	**4**	**4**
Midge larvae (# per sq m)	aesthetics	<200	200-400	500-800	>800	**4**	**4**	**4**	**4**
Algae form (dominant)	aesthetics, treatability	greens; no floating mats	diatoms; no floating mats	blue-greens; no floating mats	blue-greens; floating mats common	**4**	**4**	**3**	**4**
pH (SU) avg.	swimming, fishery, ammonia toxicity	6.5-8.0	8.1-8.5	8.6-9.0	>9.0	**3**	**3**	**3**	**3**
Carlson Trophic Status	eutrophication	<50	50-60	61-70	>70	**4**	**4**	**4**	**3**
Fishery	recreation, aesthetics	no fish piping; no fish kills	some fish piping, gulping; no fish kills	fish piping before dawn; occasional fish kills	fish piping common; fish kills common	**4**	**4**	**4**	**4**
Waterfowl (per acre mean)	Aesthetics, public health	<3	3-4	5-6	>6	**3**	**4**	**4**	**4**
Shoreline/banks	Minimal Filamentous Algae	no evidence of salt crusts or algal scums	some white deposits and scums	numerous patches of salt deposits and algae scums	most of lake shore covered with crusts or scums	**4**	**4**	**4**	**4**

SCORING KEY:	Excellent	Good	Fair	Poor
	50-56	41-49	30-40	<30

Definitions: Ratings

Excellent: Lake aesthetic and operational conditions above level of expectation.
Good: Lake aesthetic and operational conditions at level of expectation.
Fair: Lake aesthetic and operational conditions slightly below level of expectation.

Poor: Lake aesthetic and operational conditions considerably below level of expectation.

Definitions: Terms

Benthos: Bottom dwelling organisms
Carlson Trophic Index: A series of calculations incorporating transparency, chlorophyll and phosphorus data used to provide a quantitative estimate of the degree of eutrophication in a lake.
Chlorophyll: Pigment in green plants involved in photosynthesis used to estimate the density of algae in the water column.
Coliform bacteria: Enteric bacteria used as an indicator of the sanitary condition of the water.
Eutrophication: Process by which lakes age by increasing in nutrient (nitrogen and phosphorus) content and plant life.
Fecal bacteria: Any of the bacteria types provided by the fecal matter of warm-blooded organisms.
Macrophyte: Large plant, observable without the aid of a microscope, that may be floating, submerged or emergent.
Midge: Small, flying, non-biting "gnat-like" insect whose larval stage exists in the lake sediments (bloodworm).
N/A: not applicable; insufficient data or too early in development of lake (an arbitrary 3 rating is provided for these items).
pH: -log hydrogen ion conc.; amount of acid in the water identified on scale 1-14; 1 being most acid, 7 neutral, and 14 being most caustic.
Phytoplankton (algae): Microscopic plant fraction of the plankton community.
Piping: Act of fish coming to surface of water and capturing a bubble of air in their mouth; a sign of low oxygen concentrations.
Plankton: Organisms of relatively small size that have relatively small powers of locomotion or that drift in the water.
Sedimentation: Rate at which solids accumulate on the lake bottom.
Transparency (SDz): Depth to which a standard disk can be observed in the water column.
Turbidity: Degree to which particles and color in the water scatter light; the "cloudiness" of the water.
Zooplankton: Animal fraction of the plankton community

CLIENT: DOBSON RANCH

DATE: 01-May-24

	LAKE	LAKE	LAKE	LAKE			
PARAMETER	1	2	3	4			
Secchi Disk Depth (m)	2.44	2.29	1.68	1.02			
Phosphorus, total (ug/L)	25	20	41	25			
Chlorophyll-a (ug/L)	0.7	0.6	1.6	2.7			

	LAKE	LAKE	LAKE	LAKE			
TSI VALUES	1	2	3	4			
Secchi Disk Depth	47	48	53	60			
Phosphorus, total	51	47	58	51			
Chlorophyll-a	27	26	35	40			
					average		
AVERAGE	**42**	**40**	**49**	**50**	**45**		

SYNOPSIS OF TROPHIC STATUS RESULTS:

Carlson Trophic Status Index (TSI): The classical interpretation of various Index value ranges is provided below:

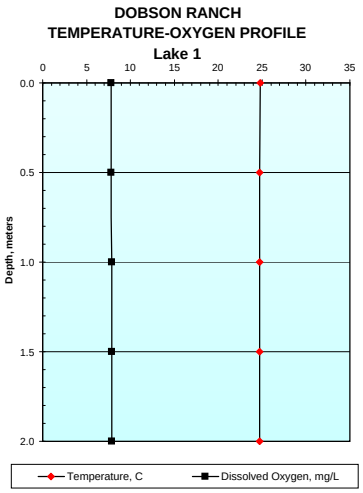
TSI<30	**Classic Oligotrophic**; clear water, oxygenated hypolimnion throughout the year; suitable for cold water fishery in deep lakes.
TSI 30-40	**Oligotrophic**; shallow lakes may exhibit anoxic hypolimnion in summer.
TSI 41-50	**Mesotrophic**; moderately clear water, increasing chance of anoxia in hypolimnion during the summer.
TSI 51-60	**Slightly Eutrophic**; decreased transparency, anoxia in hypolimnion during the summer expected, macrophyte problems possible, warm water fishery only.
TSI 61-70	**Eutrophic**; dominance of blue-green algae and algal scums probable, can have extensive macrophyte problems.
TSI 70-80	**Highly Eutrophic**; heavy algal blooms, dense macrophyte beds possible, limited light penetration.
TSI>80	**Hypereutrophic**; algal scums, summertime fish kills, limited light penetration, few macrophytes.

Field Data for 05-02-24 Sampling Event

Aquatic Consulting & Testing, Inc.

DOBSON RANCH LAKE 1

Depth, m	Temp, C	Oxygen, mg/L
0.0	24.8	7.8
0.5	24.7	7.8
1.0	24.7	7.9
1.5	24.7	7.9
2.0	24.7	7.9

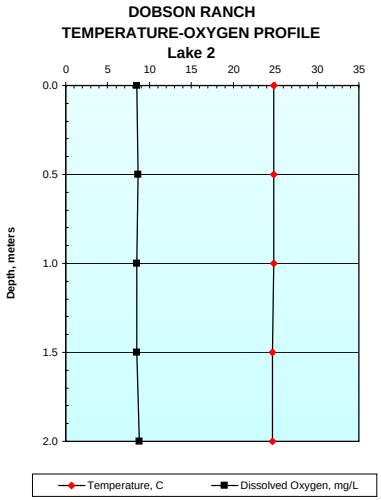


Field Data for 05-02-24 Sampling Event

Aquatic Consulting & Testing, Inc.

DOBSON RANCH LAKE 2

Depth, m	Temp, C	Oxygen, mg/L
0.0	24.8	8.5
0.5	24.8	8.6
1.0	24.8	8.5
1.5	24.7	8.5
2.0	24.7	8.8

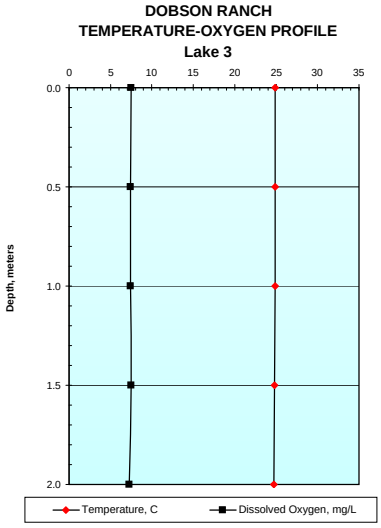


Field Data for 05-02-24 Sampling Event

Aquatic Consulting & Testing, Inc.

DOBSON RANCH LAKE 3

Depth, m	Temp, C	Oxygen, mg/L
0.0	24.9	7.5
0.5	24.9	7.4
1.0	24.9	7.4
1.5	24.8	7.5
2.0	24.7	7.3

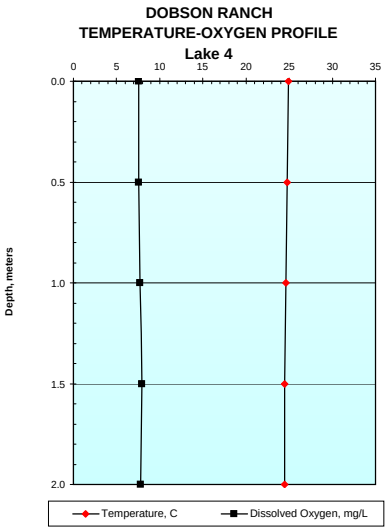


Field Data for 05-02-24 Sampling Event

Aquatic Consulting & Testing, Inc.

DOBSON RANCH LAKE 4

Depth, m	Temp, C	Oxygen, mg/L
0.0	24.9	7.6
0.5	24.8	7.6
1.0	24.6	7.7
1.5	24.5	7.9
2.0	24.5	7.8



AQUATIC CONSULTING & TESTING, INC.

1525 W. University Drive, Suite 106
P.O. Box 1510
Tempe, Arizona 85281
Phone: (480) 921-8044 • Fax: (480) 921-0049 Lic. No. AZ0003

LABORATORY REPORT

Client: Dobson Ranch Association
2719 South Reyes Road
Mesa, AZ 85202

Date Submitted: 05/02/24
Date Reported: 06/10/24

Attn: Fran Pawlak, Executive Director

Project: Monthly Lake 1-4 Monitoring

RESULTS

Client ID: Lake 1
ACT Lab No.: CG03064

Sample Type: Surface Water
Sample Time: 05/02/24 08:00

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Algae Count	05/14/24	05/14/24	SM 10200 F	See Attached	cells/mL
Algae Identification	05/14/24	05/14/24		See Attached	
Chl/Pheo Ratio	06/01/24	06/05/24	SM10200 H	1.4	
Chlorophyll a	06/01/24	06/05/24	SM10200 H	0.70	ug/L
Golden Algae	05/02/24	05/02/24	P/C Microscopy	Absent	Pres/Abs
Midge count	05/02/24	05/02/24	SM10500 C	280	#/sq. meter
Pheophytin a	06/01/24	06/05/24	SM10200 H	0.61	ug/L
Oxygen, Dissolved Field	05/02/24	05/02/24	SM4500 O G	7.8	mg/L as O2
pH, Field	05/02/24	05/02/24	SM4500H+ B	8.1	SU
Secchi Disk Depth	05/02/24	05/02/24	NALMS	2.44	meters
Temperature, Field	05/02/24	05/02/24	SM2550 B	24.8	C
Alkalinity, Total	05/11/24	05/11/24	SM 2320 B	166	mg/L as CaCO3
Ammonia - N	05/04/24	05/04/24	SM4500NH3 D	0.23	mg/L as N
Nitrate + Nitrite - N	05/11/24	05/11/24	SM4500NO3 E	0.24	mg/L as N
Phosphorus, Total	05/25/24	05/26/24	365.3	0.025	mg/L as P
Total Hardness	05/19/24	05/19/24	SM2340C	173	mg/L as CaCO3
Total Kjeldahl Nitrogen	05/17/24	05/19/24	SMNorg C,NH3 C/D	0.2	mg/L as N
E. coli, Colilert	05/02/24	05/03/24	SM 9223 B	2	MPN/100 mL
Total Dissolved Solids	05/06/24	05/09/24	SM2540 C	480	mg/L
Turbidity	05/02/24	05/02/24	180.1	19.2	NTU

RESULTS

Client ID: Lake 2
ACT Lab No.: CG03065

Sample Type: Surface Water
Sample Time: 05/02/24 08:30

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Algae Count	05/14/24	05/14/24	SM 10200 F	See Attached	cells/mL
Algae Identification	05/14/24	05/14/24		See Attached	
Chl/Pheo Ratio	06/01/24	06/05/24	SM10200 H	1.3	
Chlorophyll a	06/01/24	06/05/24	SM10200 H	0.62	ug/L
Golden Algae	05/02/24	05/02/24	P/C Microscopy	Absent	Pres/Abs
Midge count	05/02/24	05/02/24	SM10500 C	<40	#/sq. meter
Pheophytin a	06/01/24	06/05/24	SM10200 H	0.69	ug/L
Oxygen, Dissolved Field	05/02/24	05/02/24	SM4500 O G	8.5	mg/L as O2
pH, Field	05/02/24	05/02/24	SM4500H+ B	8.2	SU
Secchi Disk Depth	05/02/24	05/02/24	NALMS	2.29	meters
Temperature, Field	05/02/24	05/02/24	SM2550 B	24.8	C
Alkalinity, Total	05/11/24	05/11/24	SM 2320 B	166	mg/L as CaCO3
Ammonia - N	05/04/24	05/04/24	SM4500NH3 D	0.20	mg/L as N
Nitrate + Nitrite - N	05/11/24	05/11/24	SM4500NO3 E	0.22	mg/L as N
Phosphorus, Total	05/25/24	05/26/24	365.3	0.020	mg/L as P
Total Hardness	05/19/24	05/19/24	SM2340C	181	mg/L as CaCO3
Total Kjeldahl Nitrogen	05/17/24	05/19/24	SMNorg C,NH3 C/D	0.2	mg/L as N
E. coli, Colilert	05/02/24	05/03/24	SM 9223 B	1	MPN/100 mL
Total Dissolved Solids	05/06/24	05/09/24	SM2540 C	492	mg/L
Turbidity	05/02/24	05/02/24	180.1	2.91	NTU

RESULTS

Client ID: Lake 3
ACT Lab No.: CG03066

Sample Type: Surface Water
Sample Time: 05/02/24 09:00

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Algae Count	05/14/24	05/14/24	SM 10200 F	See Attached	cells/mL
Algae Identification	05/14/24	05/14/24		See Attached	
Chl/Pheo Ratio	06/01/24	06/05/24	SM10200 H	1.6	
Chlorophyll a	06/01/24	06/05/24	SM10200 H	1.63	ug/L
Golden Algae	05/02/24	05/02/24	P/C Microscopy	Absent	Pres/Abs
Midge count	05/02/24	05/02/24	SM10500 C	<40	#/sq. meter
Pheophytin a	06/01/24	06/05/24	SM10200 H	0.20	ug/L
Oxygen, Dissolved Field	05/02/24	05/02/24	SM4500 O G	7.5	mg/L as O2
pH, Field	05/02/24	05/02/24	SM4500H+ B	8.2	SU
Secchi Disk Depth	05/02/24	05/02/24	NALMS	1.68	meters
Temperature, Field	05/02/24	05/02/24	SM2550 B	24.9	C
Alkalinity, Total	05/11/24	05/11/24	SM 2320 B	166	mg/L as CaCO3
Ammonia - N	05/04/24	05/04/24	SM4500NH3 D	0.18	mg/L as N
Nitrate + Nitrite - N	05/11/24	05/11/24	SM4500NO3 E	0.27	mg/L as N
Phosphorus, Total	05/25/24	05/26/24	365.3	0.041	mg/L as P
Total Hardness	05/19/24	05/19/24	SM2340C	209	mg/L as CaCO3
Total Kjeldahl Nitrogen	05/28/24	05/29/24	SMNorg C,NH3 C/D	0.4	mg/L as N
E. coli, Colilert	05/02/24	05/03/24	SM 9223 B	16	MPN/100 mL
Total Dissolved Solids	05/06/24	05/09/24	SM2540 C	444	mg/L
Turbidity	05/02/24	05/02/24	180.1	5.07	NTU

RESULTS

Client ID: Lake 4
ACT Lab No.: CG03067

Sample Type: Surface Water
Sample Time: 05/02/24 09:40

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Algae Count	05/14/24	05/14/24	SM 10200 F	See Attached	cells/mL
Algae Identification	05/14/24	05/14/24		See Attached	
Chl/Pheo Ratio	06/01/24	06/05/24	SM10200 H	1.5	
Chlorophyll a	06/01/24	06/05/24	SM10200 H	2.67	ug/L
Golden Algae	05/02/24	05/02/24	P/C Microscopy	Absent	Pres/Abs
Midge count	05/02/24	05/02/24	SM10500 C	<40	#/sq. meter
Pheophytin a	06/01/24	06/05/24	SM10200 H	0.91	ug/L
Oxygen, Dissolved Field	05/02/24	05/02/24	SM4500 O G	7.6	mg/L as O2
pH, Field	05/02/24	05/02/24	SM4500H+ B	8.3	SU
Secchi Disk Depth	05/02/24	05/02/24	NALMS	1.02	meters
Temperature, Field	05/02/24	05/02/24	SM2550 B	24.9	C
Alkalinity, Total	05/11/24	05/11/24	SM 2320 B	166	mg/L as CaCO3
Ammonia - N	05/04/24	05/04/24	SM4500NH3 D	0.41	mg/L as N
Nitrate + Nitrite - N	05/11/24	05/11/24	SM4500NO3 E	0.24	mg/L as N
Phosphorus, Total	05/25/24	05/26/24	365.3	0.025	mg/L as P
Total Hardness	05/19/24	05/19/24	SM2340C	134	mg/L as CaCO3
Total Kjeldahl Nitrogen	05/28/24	05/29/24	SMNorg C,NH3 C/D	0.3	mg/L as N
E. coli, Colilert	05/02/24	05/03/24	SM 9223 B	20	MPN/100 mL
Total Dissolved Solids	05/06/24	05/09/24	SM2540 C	456	mg/L
Turbidity	05/02/24	05/02/24	180.1	4.27	NTU

Client ID: Lake 5
ACT Lab No.: CG03068

Sample Type: Surface Water
Sample Time: 05/02/24 10:10

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Golden Algae	05/02/24	05/02/24	P/C Microscopy	Absent	Pres/Abs
Oxygen, Dissolved Field	05/02/24	05/02/24	SM4500 O G	7.3	mg/L as O2
pH, Field	05/02/24	05/02/24	SM4500H+ B	8.2	SU
Temperature, Field	05/02/24	05/02/24	SM2550 B	25.3	C
Turbidity	05/02/24	05/02/24	180.1	3.21	NTU

RESULTS

Client ID: Lake 6
ACT Lab No.: CG03069

Sample Type: Surface Water
Sample Time: 05/02/24 07:50

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Golden Algae	05/02/24	05/02/24	P/C Microscopy	Absent	Pres/Abs
Oxygen, Dissolved Field	05/02/24	05/02/24	SM4500 O G	10.3	mg/L as O2
pH, Field	05/02/24	05/02/24	SM4500H+ B	8.6	SU
Temperature, Field	05/02/24	05/02/24	SM2550 B	24.6	C
Turbidity	05/02/24	05/02/24	180.1	8.67	NTU

Client ID: Lake 7
ACT Lab No.: CG03070

Sample Type: Surface Water
Sample Time: 05/02/24 07:45

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Golden Algae	05/02/24	05/02/24	P/C Microscopy	Absent	Pres/Abs
Oxygen, Dissolved Field	05/02/24	05/02/24	SM4500 O G	10.0	mg/L as O2
pH, Field	05/02/24	05/02/24	SM4500H+ B	8.4	SU
Temperature, Field	05/02/24	05/02/24	SM2550 B	24.8	C
Turbidity	05/02/24	05/02/24	180.1	4.47	NTU

Client ID: Lake 8
ACT Lab No.: CG03071

Sample Type: Surface Water
Sample Time: 05/02/24 07:40

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Golden Algae	05/02/24	05/02/24	P/C Microscopy	Absent	Pres/Abs
Oxygen, Dissolved Field	05/02/24	05/02/24	SM4500 O G	6.8	mg/L as O2
pH, Field	05/02/24	05/02/24	SM4500H+ B	8.4	SU
Temperature, Field	05/02/24	05/02/24	SM2550 B	24.1	C
Phosphorus, Total	05/25/24	05/26/24	365.3	0.044	mg/L as P
E. coli, Colilert	05/02/24	05/03/24	SM 9223 B	228	MPN/100 mL
Turbidity	05/02/24	05/02/24	180.1	6.01	NTU

Reviewed by: 

Frederick A. Amalfi, Ph.D.
Laboratory Director

Aquatic Consulting & Testing, Inc.
1525 W. University Drive, Suite 106
Tempe, AZ 85281
480-921-8044 fax: 480-921-0049
lab@aquaticconsulting.com

Chain of Custody

Client Project Info:

Lake 1-4 Monthly Monitoring
Dobson Ranch Association

AC&T Client Reporting Information:

Dobson Ranch Association
2719 South Reyes
Mesa, AZ 85202

Attn: Fran Pawlak, Community Manager
P: 4/80-831-8314
E:

AC&T Sampler: Am

Sample Location ID:	Date:	Time:	Matrix:	P-T	NO3+NO2	TKN-Elec	Ammonia (NH3)	Hardness	Alkalinity	TDS	E. Coli	#Chl/Pheo	Alage - ID + #	Golden algae	Turb	Field Measurements: pH, Temp, O2	Sample Containers # / Preservation: None Preserved	Na2S2O3 (Sterile)	HNO3 (Nitric)	H2SO4 (Sulfuric)	Lugols	Other:	AC&T Laboratory Sample Identification
Lake 1	5/2/24	9:00	SW	X	X	X	X	X	X	X	X	X	X	X	X	X	4	1		1	1		CG03064
Lake 2		830	SW	X	X	X	X	X	X	X	X	X	X	X	X	X	4	1		1	1		3065
Lake 3		900	SW	X	X	X	X	X	X	X	X	X	X	X	X	X	4	1		1	1		3066
Lake 4		940	SW	X	X	X	X	X	X	X	X	X	X	X	X	X	4	1		1	1		3067
Lake 5		1010	SW											X	X	X	2						3068
Lake 6		750	SW											X	X	X	2						3069
Lake 7		745	SW											X	X	X	2						3070
Lake 8		740	SW	X							X			X	X	X	2	1		1			3071

Project Location:	A C & T Sample Receipt:			
Dobson Ranch	Total # Containers:	38		
PO#:	Received Intact:	YES	NO	
Lakes Contract	# Bottles Preserved: 14	# Non:	24	
Notes:	Samples On Ice:	YES	NO	
	Ice Type:	WET	BLUE	
	Sample Receipt Temperature:	24°C		

1. RELINQUISHED BY:
Signature: Andrew Mauvet
Print Name: Andrew Mauvet
Date: 5/2/24 Time: 1250

2. RECEIVED BY:
Signature: MS
Print Name: MS
Date: 5/2/24 Time: 1250

3. RELINQUISHED BY:
Signature:
Print Name:
Date: Time:

4. RECEIVED BY:
Signature:
Print Name:
Date: Time:

AQUATIC CONSULTING & TESTING, INC.

1525 W. University Drive, Suite 106
P.O. Box 1510
Tempe, Arizona 85281
Phone: (480) 921-8044 • Fax: (480) 921-0049

Lic. No. AZ0003

GOLDEN ALGAE REPORT

Client: Dobson Ranch Association
2719 South Reyes Road
Mesa, AZ 85202

Date Submitted: 05/08/24
Date Reported: 05/14/24

Attn: Fran Pawlak, Executive Director

Project: Monthly Lake 1-8 Monitorin

RESULTS

Client ID: Lake 1
ACT Lab No.: CG03222

Sample Type: Surface Water
Sample Time: 05/08/24 06:40

Parameter	Analysis Date Start	End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/08/24	05/08/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

Client ID: Lake 2
ACT Lab No.: CG03223

Sample Type: Surface Water
Sample Time: 05/08/24 06:45

Parameter	Analysis Date Start	End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/08/24	05/08/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

Client ID: Lake 3
ACT Lab No.: CG03224

Sample Type: Surface Water
Sample Time: 05/08/24 06:50

Parameter	Analysis Date Start	End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/08/24	05/08/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

Client ID: Lake 4
ACT Lab No.: CG03225

Sample Type: Surface Water
Sample Time: 05/08/24 07:00

Parameter	Analysis Date Start	End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/08/24	05/08/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

RESULTS

Client ID: Lake 5
ACT Lab No.: CG03226
Sample Type: Surface Water
Sample Time: 05/08/24 07:05

Parameter	Analysis Date Start	End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/08/24	05/08/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

Client ID: Lake 6
ACT Lab No.: CG03227
Sample Type: Surface Water
Sample Time: 05/08/24 07:15

Parameter	Analysis Date Start	End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/08/24	05/08/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

Client ID: Lake 7
ACT Lab No.: CG03228
Sample Type: Surface Water
Sample Time: 05/08/24 07:25

Parameter	Analysis Date Start	End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/08/24	05/08/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

Client ID: Lake 8
ACT Lab No.: CG03229
Sample Type: Surface Water
Sample Time: 05/08/24 07:30

Parameter	Analysis Date Start	End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/08/24	05/08/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

Explanation of Terms:

Absent = No golden algae* were detected in the submitted sample.
Present 1 = Golden algae* were detected, but rarely observed in the submitted sample.
Present 2 = Golden algae* were detected and commonly observed in the submitted sample.
Present 3 = Golden algae* were detected and were the dominant algae in the submitted sample.

**Prymnesium parvum or toxin producing related species.*

Reviewed by: Frederick A. Amalfi

Frederick A. Amalfi, Ph.D.
Laboratory Director

Aquatic Consulting & Testing, Inc.
1525 W. University Drive, Suite 106
Tempe, AZ 85281
480-921-8044 fax: 480-921-0049
lab@aquaticconsulting.com

Chain of Custody

Client Project Info:

Lake 1-8 Monthly Monitoring
Dobson Ranch Association

AC&T Client Reporting Information:

Dobson Ranch Association
2719 South Reyes
Mesa, AZ 85202

Attn: Fran Paqwlak, Community Manager
P: 4/80-831-8314
E:

AC&T Sampler: Ann

Sample Location ID:	Date:	Time:	Matrix:	P-T	NO3+NO2	TKN-Elec	Ammonia (NH3)	E. Coli	#Chl/Pheo	Alage - ID + #	Golden algae	Turb	Field Measurements: pH, Temp, O2	Sample Containers # / Preservation: None Preserved	Na2S2O3 (Sterile)	HNO3 (Nitric)	H2SO4 (Sulfuric)	Lugols	Other:	AC&T Laboratory Sample Identification
Lake 1	5/8/24	640	SW								X			1						CG03222
Lake 2		645	SW								X			1						3223
Lake 3		650	SW								X			1						3224
Lake 4		700	SW								X			1						3225
Lake 5		705	SW								X			1						3226
Lake 6		715	SW								X			1						3227
Lake 7		725	SW								X			1						3228
Lake 8		730	SW								X			1						3229

Page1 of 1

Project Location:	A C & T Sample Receipt:			1. RELINQUISHED BY:	3. RELINQUISHED BY:
Dobson Ranch	Total # Containers:	8		Signature: Andrew Maxwell	Signature:
PO#:	Received Intact:	(YES)	NO	Print Name: Andrew Maxwell	Print Name:
Lakes Contract	# Bottles Preserved:	# Non:	X	Date: 5/8/24 Time: 1230	Date: Time:
Notes:	Samples On Ice:	YES	(NO)	2. RECEIVED BY:	4. RECEIVED BY:
	Ice Type:	WET	BLUE	Signature: MJ	Signature:
	Sample Receipt Temperature:	2.4 °C		Print Name: MJ	Print Name:
				Date: 5/8/24 Time: 12:30	Date: Time:

AQUATIC CONSULTING & TESTING, INC.

1525 W. University Drive, Suite 106
P.O. Box 1510
Tempe, Arizona 85281
Phone: (480) 921-8044 • Fax: (480) 921-0049

Lic. No. AZ0003

LABORATORY REPORT

Client: Dobson Ranch Association
2719 South Reyes Road
Mesa, AZ 85202

Date Submitted: 05/15/24
Date Reported: 05/31/24

Attn: Fran Pawlak, Executive Director

Project: Monthly Lake 1-8 Monitoring

RESULTS

Client ID: Lake 1
ACT Lab No.: CG03418

Sample Type: Surface Water
Sample Time: 05/15/24 07:00

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Golden Algae	05/15/24	05/15/24	P/C Microscopy	Absent	Pres/Abs
Oxygen, Dissolved Field	05/15/24	05/15/24	SM4500 O G	8.3	mg/L as O2
pH, Field	05/15/24	05/15/24	SM4500H+ B	8.3	SU
Temperature, Field	05/15/24	05/15/24	SM2550 B	25.3	C
Turbidity	05/15/24	05/15/24	180.1	3.91	NTU

Client ID: Lake 2
ACT Lab No.: CG03419

Sample Type: Surface Water
Sample Time: 05/15/24 07:05

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Golden Algae	05/15/24	05/15/24	P/C Microscopy	Absent	Pres/Abs
Oxygen, Dissolved Field	05/15/24	05/15/24	SM4500 O G	7.7	mg/L as O2
pH, Field	05/15/24	05/15/24	SM4500H+ B	8.2	SU
Temperature, Field	05/15/24	05/15/24	SM2550 B	25.6	C
Turbidity	05/15/24	05/15/24	180.1	4.62	NTU

RESULTS

Client ID: Lake 3
ACT Lab No.: CG03420

Sample Type: Surface Water
Sample Time: 05/15/24 07:10

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Golden Algae	05/15/24	05/15/24	P/C Microscopy	Absent	Pres/Abs
Oxygen, Dissolved Field	05/15/24	05/15/24	SM4500 O G	7.7	mg/L as O2
pH, Field	05/15/24	05/15/24	SM4500H+ B	8.3	SU
Temperature, Field	05/15/24	05/15/24	SM2550 B	25.1	C
Turbidity	05/15/24	05/15/24	180.1	5.41	NTU

Client ID: Lake 4
ACT Lab No.: CG03421

Sample Type: Surface Water
Sample Time: 05/15/24 07:15

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Golden Algae	05/15/24	05/15/24	P/C Microscopy	Absent	Pres/Abs
Oxygen, Dissolved Field	05/15/24	05/15/24	SM4500 O G	7.8	mg/L as O2
pH, Field	05/15/24	05/15/24	SM4500H+ B	8.2	SU
Temperature, Field	05/15/24	05/15/24	SM2550 B	25.1	C
Turbidity	05/15/24	05/15/24	180.1	5.57	NTU

Client ID: Lake 5
ACT Lab No.: CG03422

Sample Type: Surface Water
Sample Time: 05/15/24 07:20

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Golden Algae	05/15/24	05/15/24	P/C Microscopy	Absent	Pres/Abs
Oxygen, Dissolved Field	05/15/24	05/15/24	SM4500 O G	7.2	mg/L as O2
pH, Field	05/15/24	05/15/24	SM4500H+ B	8.2	SU
Temperature, Field	05/15/24	05/15/24	SM2550 B	25.9	C
Turbidity	05/15/24	05/15/24	180.1	5.37	NTU

RESULTS

Client ID: Lake 6
ACT Lab No.: CG03423

Sample Type: Surface Water
Sample Time: 05/15/24 07:25

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Golden Algae	05/15/24	05/15/24	P/C Microscopy	Absent	Pres/Abs
Oxygen, Dissolved Field	05/15/24	05/15/24	SM4500 O G	9.7	mg/L as O2
pH, Field	05/15/24	05/15/24	SM4500H+ B	8.6	SU
Temperature, Field	05/15/24	05/15/24	SM2550 B	25.9	C
Turbidity	05/15/24	05/15/24	180.1	11.5	NTU

Client ID: Lake 7
ACT Lab No.: CG03424

Sample Type: Surface Water
Sample Time: 05/15/24 07:30

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Golden Algae	05/15/24	05/15/24	P/C Microscopy	Absent	Pres/Abs
Oxygen, Dissolved Field	05/15/24	05/15/24	SM4500 O G	11.3	mg/L as O2
pH, Field	05/15/24	05/15/24	SM4500H+ B	8.7	SU
Temperature, Field	05/15/24	05/15/24	SM2550 B	25.1	C
Turbidity	05/15/24	05/15/24	180.1	6.	NTU

Client ID: Lake 8
ACT Lab No.: CG03425

Sample Type: Surface Water
Sample Time: 05/15/24 07:35

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Golden Algae	05/15/24	05/15/24	P/C Microscopy	Absent	Pres/Abs
Oxygen, Dissolved Field	05/15/24	05/15/24	SM4500 O G	8.4	mg/L as O2
pH, Field	05/15/24	05/15/24	SM4500H+ B	8.6	SU
Temperature, Field	05/15/24	05/15/24	SM2550 B	26.1	C
Phosphorus, Total	05/28/24	05/29/24	365.3	0.043	mg/L as P
E. coli, Colilert	05/15/24	05/16/24	SM 9223 B	770	MPN/100 mL
Turbidity	05/15/24	05/15/24	180.1	4.68	NTU

Reviewed by: Frederick A. Amalfi

Frederick A. Amalfi, Ph.D.
Laboratory Director

Aquatic Consulting & Testing, Inc.
1525 W. University Drive, Suite 106
Tempe, AZ 85281
480-921-8044 fax: 480-921-0049
lab@aquaticconsulting.com

Chain of Custody

Client Project Info:

Monitoring
Dobson Ranch Association

AC&T Client Reporting Information:

Dobson Ranch Association
2719 South Reyes
Mesa, AZ 85202

Attn: Fran Pawlak, Community Manager
P: 4/80-831-8314
E:

AC&T Sampler: AM

Sample Location ID:	Date:	Time:	Matrix:	P-T	NO3+NO2	TKN-Elec	Ammonia (NH3)	Hardness	Alkalinity	TDS	E. Coli	#Chl/Pheo	Alage - ID + #	Golden algae	Turb	Field Measurements: pH, Temp, O2	None Preserved	Na2S2O3 (Sterile)	HNO3 (Nitric)	H2SO4 (Sulfuric)	Lugols	Other:	AC&T Laboratory Sample Identification
Lake 1	5/15/24	7:00	SW											X	X	X	3	1		1	1		CG-03418
Lake 2		7:05	SW											X	X	X	3	1		1	1		3419
Lake 3		7:10	SW											X	X	X	3	1		1	1		3420
Lake 4		7:15	SW											X	X	X	3	1		1	1		3421
Lake 5		7:20	SW											X	X	X	2						3422
Lake 6		7:25	SW											X	X	X	2						3423
Lake 7		7:30	SW											X	X	X	2						3424
Lake 8	↓	7:35	SW	X							X			X	X	X	2			1			3425

Sample Containers # / Preservation:

Page1 of 1

Project Location:	A C & T Sample Receipt:			1. RELINQUISHED BY:	3. RELINQUISHED BY:
Dobson Ranch	Total # Containers:	18		Signature: Andrew Murrett	Signature:
PO#:	Received Intact:	YES	NO	Print Name: Andrew Murrett	Print Name:
Lakes Contract	# Bottles Preserved: 2	# Non:	16	Date: 5/15/24 Time: 1245	Date: Time:
Notes:	Samples On Ice:	YES	NO	2. RECEIVED BY:	4. RECEIVED BY:
	Ice Type:	WET	BLUE	Signature:	Signature:
	Sample Receipt Temperature:	25 °C		Print Name:	Print Name:
				Date: 5/15/24 Time: 1245	Date: Time:

-010

AQUATIC CONSULTING & TESTING, INC.

1525 W. University Drive, Suite 106
P.O. Box 1510
Tempe, Arizona 85281
Phone: (480) 921-8044 • Fax: (480) 921-0049

Lic. No. AZ0003

GOLDEN ALGAE REPORT

Client: Dobson Ranch Association
2719 South Reyes Road
Mesa, AZ 85202

Date Submitted: 05/22/24
Date Reported: 05/31/24

Attn: Fran Pawlak, Executive Director

Project: Monthly Lake 1-8 Monitoring

RESULTS

Client ID: Lake 1
ACT Lab No.: CG03598
Sample Type: Surface Water
Sample Time: 05/22/24 12:05

Parameter	Analysis Date Start	Analysis Date End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/23/24	05/23/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

Client ID: Lake 2
ACT Lab No.: CG03599
Sample Type: Surface Water
Sample Time: 05/22/24 12:00

Parameter	Analysis Date Start	Analysis Date End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/23/24	05/23/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

Client ID: Lake 3
ACT Lab No.: CG03600
Sample Type: Surface Water
Sample Time: 05/22/24 11:50

Parameter	Analysis Date Start	Analysis Date End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/23/24	05/23/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

Client ID: Lake 4
ACT Lab No.: CG03601
Sample Type: Surface Water
Sample Time: 05/22/24 11:45

Parameter	Analysis Date Start	Analysis Date End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/23/24	05/23/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

RESULTS

Client ID: Lake 5
ACT Lab No.: CG03602
Sample Type: Surface Water
Sample Time: 05/22/24 11:40

Parameter	Analysis Date Start	End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/23/24	05/23/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

Client ID: Lake 6
ACT Lab No.: CG03603
Sample Type: Surface Water
Sample Time: 05/22/24 11:30

Parameter	Analysis Date Start	End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/23/24	05/23/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

Client ID: Lake 7
ACT Lab No.: CG03604
Sample Type: Surface Water
Sample Time: 05/22/24 11:20

Parameter	Analysis Date Start	End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/23/24	05/23/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

Client ID: Lake 8
ACT Lab No.: CG03605
Sample Type: Surface Water
Sample Time: 05/22/24 11:10

Parameter	Analysis Date Start	End	Method No.	MRL	Result	Unit	Analyst
Golden Algae	05/23/24	05/23/24	P/C Microscopy	1	Absent	Pres/Abs	FAA

Explanation of Terms:

Absent = No golden algae* were detected in the submitted sample.
Present 1 = Golden algae* were detected, but rarely observed in the submitted sample.
Present 2 = Golden algae* were detected and commonly observed in the submitted sample.
Present 3 = Golden algae* were detected and were the dominant algae in the submitted sample.

**Prymnesium parvum or toxin producing related species.*

Reviewed by: Frederick A. Amalfi

Frederick A. Amalfi, Ph.D.
Laboratory Director

Aquatic Consulting & Testing, Inc.
1525 W. University Drive, Suite 106
Tempe, AZ 85281
480-921-8044 fax: 480-921-0049
lab@aquaticconsulting.com

Chain of Custody

Client Project Info:

Lake 1-8 Monthly Monitoring
Dobson Ranch Association

AC&T Client Reporting Information:

Dobson Ranch Association
2719 South Reyes
Mesa, AZ 85202

Attn: Fran Paqwlak, Community Manager
P: 4/80-831-8314
E:

AC&T Sampler: AM

Sample Location ID:	Date:	Time:	Matrix:	P-T	NO3+NO2	TKN-Elec	Ammonia (NH3)	E. Coli	#Chl/Pheo	Alage - ID + #	Golden algae	Turb	Field Measurements: pH, Temp, O2	Sample Containers # / Preservation: None Preserved	Na2S2O3 (Sterile)	HNO3 (Nitric)	H2SO4 (Sulfuric)	Lugols	Other:	AC&T Laboratory Sample Identification
Lake 1	5/22/24	1205	SW								X			1						CG03598
Lake 2		1200	SW								X			1						3599
Lake 3		1150	SW								X			1						3600
Lake 4		1145	SW								X			1						3601
Lake 5		1140	SW								X			1						3602
Lake 6		1130	SW								X			1						3603
Lake 7		1120	SW								X			1						3604
Lake 8		1110	SW								X			1						3605
																			—	

Project Location:	A C & T Sample Receipt:			1. RELINQUISHED BY:	3. RELINQUISHED BY:
Dobson Ranch	Total # Containers:	8		Signature: Andrew Murvett	Signature:
PO#:	Received Intact:	YES	NO	Print Name: Andrew Murvett	Print Name:
Lakes Contract	# Bottles Preserved: 0	# Non:	8	Date: 5/22/24 Time: 1225	Date: Time:
Notes:	Samples On Ice:	YES	NO	2. RECEIVED BY:	4. RECEIVED BY:
	Ice Type:	WET	BLUE	Signature:	Signature:
	Sample Receipt Temperature:	26°C		Print Name:	Print Name:
				Date: 5/22/24 Time: 1225	Date: Time:

3064

DOBSON RANCH LAKES
Bi-Monthly Lake Inspection

Date: 5/2/24
By: Ann

Lake	Temp	Dis. oxygen	pH	Clarity	Algae	Submerged weeds	Fish behavior	Waterfowl density	Insect activity	Mechanical issues
1	24.8 C	7.8 mg/L	8.1 SU	96" SDz 19.2 NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 8 No/A ___	☑ Normal ☐ Infestation	Fountain ☑ Operating ☐ No service
2	24.8 C	8.5 mg/L	8.7 SU	90" SDz 2.9 NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 11 No/A ___	☑ Normal ☐ Infestation	Fountain ☑ Operating ☐ No service
3	24.9 C	7.5 mg/L	8.7 SU	SDz 5.1 NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 4 No/A ___	☑ Normal ☐ Infestation	Fountain ☑ Operating ☐ No service
4	24.9 C	7.6 mg/L	8.3 SU	SDz 4.3 NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 4 No/A ___	☑ Normal ☐ Infestation	Fountain ☑ Operating ☐ No service
5	25.3	7.3 mg/L	8.2 SU	SDz 3.8 NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 11 No/A ___	☑ Normal ☐ Infestation	
6	24.6 C	10.3 mg/L	8.6 SU	SDz 8.7 NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 19 No/A ___	☑ Normal ☐ Infestation	
7	24.8 C	10.0 mg/L	8.4 SU	SDz 4.5 NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 32 No/A ___	☑ Normal ☐ Infestation	Fountain ☑ Operating ☐ No service
8	24.1 C	6.8 mg/L	8.4 SU	SDz 6.0 NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 16 No/A ___	☑ Normal ☐ Infestation	Aerators ☐ Operating ☑ No service

Notes and recommendations for treatment/operation:

8 No Aeration

DOBSON RANCH LAKES
Bi-Monthly Lake Inspection

Date: 5/15/25

By: [signature]

Lake	Temp	Dis. oxygen	pH	Clarity	Algae	Submerged weeds	Fish behavior	Waterfowl density	Insect activity	Mechanical issues
1	25.3 C	8.3 mg/L	8.3 SU	3.4 SDz NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 19 No/A ___	☑ Normal ☐ Infestation	Fountain ☑ Operating ☐ No service
2	25.6 C	7.7 mg/L	8.2 SU	4.6 SDz NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☑ Present ☐ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 9 No/A ___	☑ Normal ☐ Infestation	Fountain ☑ Operating ☐ No service
3	25.5 C	7.7 mg/L	8.3 SU	5.4 SDz NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 6 No/A ___	☑ Normal ☐ Infestation	Fountain ☑ Operating ☐ No service
4	25.1 C	7.8 mg/L	8.2 SU	5.6 SDz NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 4 No/A ___	☑ Normal ☐ Infestation	Fountain ☑ Operating ☐ No service
5	25.9 C	7.7 mg/L	8.7 SU	5.4 SDz NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 14 No/A ___	☑ Normal ☐ Infestation	
6	25.9 C	9.7 mg/L	8.6 SU	11.5 SDz NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 26 No/A ___	☑ Normal ☐ Infestation	
7	25.1 C	11.3 mg/L	8.7 SU	6.0 SDz NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 21 No/A ___	☑ Normal ☐ Infestation	Fountain ☑ Operating ☐ No service
8	26.1 C	8.4 mg/L	8.6 SU	4.68 SDz NTU	☐ Suspended ☐ Floating ☐ Bottom ☐ Attached	☐ Present ☑ Absent	☑ Normal ☐ Distress ☐ Dead ___	No. 11 No/A ___	☑ Normal ☐ Infestation	Aerators ☐ Operating ☐ No service

Notes and recommendations for treatment/operation:

8) No aeration