Upper Fire LAKE

# MEMORANDUM STATE OF ALASKA

## DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**Anchorage District Office**

**TO:** Eric Decker
Env. Specialist
Central/WQ

**DATE:** January 27, 1995

**FILE #:**

**FROM:** Keven K Kleweno, P.E.
District Engineer

**SUBJECT:** 303(d) L ist

As agreed to in the January 11 and 12, 1995 meeting, I have reviewed my files and provide the following information.

**Upper Fire Lake**

1. Upper Fire Lake is on the proposed TMDL list for fecal coliform and habitat modification. On August 16, 1994, I collected three sets of samples from Upper Fire Lake. Each sample set consisted of Kjeldahl-N, Ammonia-N, Fecal Coliform, Nitrate-N, Turbidity, and Phosphorous, Total. All three Fecal Coliform results returned satisfactory, no fecal coliform present.

2. The photographs that I took during the August investigation show that shore line development is limited to approximately 10 percent of the total shore line. Thus, habitat degradation is not an issue. There are no storm sewers discharging into the lake as was suggested to be a pollutant source. Please contact me if copies of the photographs are necessary for your files.

3. The Anchorage District Office staff is working with Municipality of Anchorage staff and a group of concerned lake shore residents to determine the possible source of nutrients that could be the source of an algae bloom that was present on the lake during the summer of 1994. This working group is behind schedule due to the funding problems the Municipality of Anchorage WaterShed Program is experiencing at this time. However, file review is continuing.

4. I have attached information on my investigation for your use.

**Ship Creek**

1. Ship Creek has been proposed for the listing due to the presence of fecal coliform and biological community alteration.

2. I believe that based on the information provided on January 12, 1995 (verification that coliform bacteria is present in raw water prior to treatment at the Ft. Richardson Water Treatment Plant) and the information that the MOA will provide on the issue that all surface water has bacteria present) Ship Creek should be segmented.

Upper Fire LAKE

# Eco-Logic Ltd.

2614 MATHERS AVENUE, WEST VANCOUVER, B.C. V7V 2J4
TELEPHONE: (604) 926-5383 FAX: (604) 926-1996

FAX MESSAGE

DATE: Sept. 6 '94 FAX TO NO.: 907-349-9836
FOR: Kevin Klemens COMPANY: Dept Enviro. Conserv.
FROM: Ellie Stockner NUMBER OF PAGES FOLLOWING: 2

Kevin:

I hope the following information will be helpful. If the graph is not clear let me know & I will mail a copy to you.

I have not been able to find anything relating to health risks with a bloom of this species.

Ellie

The primary producers in the plankton are called *phytoplankton*, a name coined in the days when one could still think of living things as being classifiable into only two kingdoms, plants and animals. Phytoplankton is composed of several rather diverse groups of microorganisms collectively called *algae*.

There is a complication of modern classification that I must mention to avoid confusion for those who want to read in this field. Since the early 1960s it has been known that the organisms called blue-green algae are structurally different in a basic way from all other groups of algae, in fact are identical with bacteria in cellular organization. The modern practice, established in 1974, is to call them blue-green bacteria (Cyanobacteria). To avoid confusion, I shall call them simply *blue-greens*. This is not just a trivial matter of names. The main thing that they have in common with algae is that they are autotrophic and liberate oxygen as a by-product of photosynthesis. Major differences are that some of the blue-greens can use molecular nitrogen gas as a source of nitrogen and some have gas vacuoles that permit them to float.

The blue-greens will be prominent in this book because of their relation to pollution. Characteristically they dominate the plankton of highly productive lakes, and can become very abundant, as *Oscillatoria rubescens* did in Lake Washington. Many float to the surface in calm weather, forming dense scums of decaying material that move downwind with unpleasant consequences. It is important to realize that blue-greens are a normal part of the flora of unpolluted lakes. They thrive under some kinds of pollution and outgrow the algae. (See the later section on eutrophication.) Most phytoplankters occur as single cells or relatively small groups or colonies, while the blue-greens tend to make larger colonies and are therefore more visible. 1.

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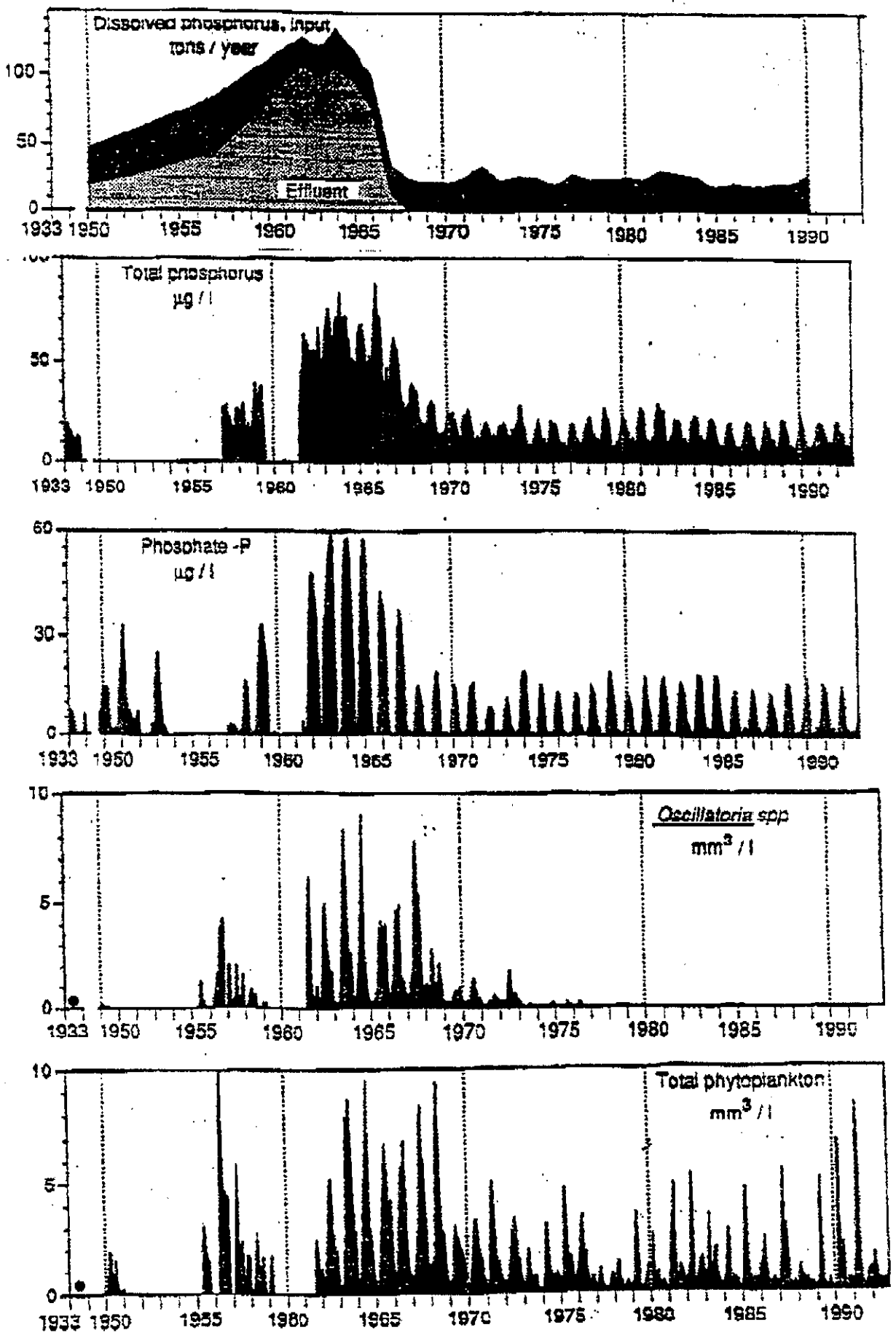
1. From: W.T. Edmondson. 1991. The uses of Ecology: Lake Washington and Beyond. Univ. of Washington Press, Seattle, 329p.

# LAKE WASHINGTON 1933-1993



Kevin

# Eco-Logic Ltd.

2614 MATHERS AVENUE WEST VANCOUVER B.C. V7V 2J4
TELEPHONE: (604) 926-5563 FAX: (604) 926-9996

RECEIVED
AUG 23 1994
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ADO

FAX MESSAGE

DATE: Aug. 22 '94 FAX TO NO.: 907-349-9836

FOR: Kevin Klewero COMPANY: Dept. Environmental Conser.

FROM: Ellie Stockner NUMBER OF PAGES FOLLOWING: 0

re Red Blooming Algae

Kevin:

I have just examined your samples. The dominant bloom organism is Oscillatoria subescans. This is typically found in nutrient rich, eutrophic waters. Has a very high phosphate demand.

Let me know if you need more information and do you need the cooler & icing containers back? It may not be worth paying the postage!

I normally charge a fee of $25.00 to ID plankton. Please forward a PO # if necessary.

Ellie Stockner

# Commercial Testing & Engineering Co.

Environmental Laboratory Services

SINCE 1908

## LABORATORY ANALYSIS REPORT

CT&E Ref.# 94.4201-3
Client Sample ID 9521-KKK-FL01-02
Matrix WATER

Client Name A D E C-ANCH-DIMOND
Ordered By KEVEN K.
Project Name
Project#
PWSID UA

WORK Order 81438
Printed Date 08/24/94 @ 16:03 hrs.
Collected Date 08/16/94 @ hrs.
Received Date 08/16/94 @ 16:20 hrs.

Technical Director STEPHEN C. EDE

Released By: [signature]

Sample Remarks: SAMPLE COLLECTED BY: UA.

| Parameter | Results | QC Qual | Units | Method | Allowable Limits | Ext. Date | Anal Date | Init |
|---|---|---|---|---|---|---|---|---|
| Kjeldahl-N | 1.57 | | mg/L | EPA 351.3 | | 08/18/94 | 08/19/94 | OAA |
| Ammonia-N | 0.11 | | mg/L | EPA 350.2 | | 08/18/94 | 08/18/94 | OAA |
| Fecal Coliform | 0 | | #/100ml | SM17 9222D | | 08/16/94 | 08/17/94 | TAV |
| Nitrate-N | 0.13 | | mg/L | EPA 353.2/300.0 | 10 | | 08/17/94 | DJS |
| Turbidity | 6.0 | | NTU | EPA 180.1 | | | 08/17/94 | OAA |
| Phosphorous, Total | 0.036 | | mg/L | EPA 365.2 | | 08/17/94 | 08/18/94 | OAA |

* See Special Instructions Above
** See Sample Remarks Above
U = Undetected, Reported value is the practical quantification limit.
D = Secondary dilution.

UA = Unavailable
NA = Not Analyzed
LT = Less Than
GT = Greater Than

F-712/06/94

5633 B Street, Anchorage, AK 99518-1600 — Tel: (907) 562-2343 Fax: (907) 561-5301

# Commercial Testing & Engineering Co.

Environmental Laboratory Services

SINCE 1908

## LABORATORY ANALYSIS REPORT

CT&E Ref.# 94.4201-2
Client Sample ID 9521-KKK-FL02-02
Matrix WATER

Client Name A D E C-ANCH-DIMOND
Ordered By KEVEN K.
Project Name
Project#
PWSID UA

WORK Order 81438
Printed Date 08/24/94 @ 16:03 hrs.
Collected Date 08/16/94 @ hrs.
Received Date 08/16/94 @ 16:20 hrs.

Technical Director STEPHEN C. EDE

Released By [signature]

Sample Remarks: SAMPLE COLLECTED BY: UA.

| Parameter | Results | QC Qual | Units | Method | Allowable Limits | Ext. Date | Anal Date | Init |
|---|---|---|---|---|---|---|---|---|
| Kjeldahl-N | 1.07 | | mg/L | EPA 351.3 | | 08/18/94 | 08/19/94 | OAA |
| Ammonia-N | 0.17 | | mg/L | EPA 350.2 | | 08/18/94 | 08/18/94 | OAA |
| Fecal Coliform | 0 | | #/100ml | SM17 9222D | | 08/16/94 | 08/17/94 | TAV |
| Nitrate-N | 0.13 | | mg/L | EPA 353.2/300.0 | 10 | | 08/17/94 | DJS |
| Turbidity | 5.4 | | NTU | EPA 180.1 | | | 08/17/94 | OAA |
| Phosphorous, Total | 0.039 | | mg/L | EPA 365.2 | | 08/17/94 | 08/18/94 | OAA |

* See Special Instructions Above
** See Sample Remarks Above
U = Undetected, Reported value is the practical quantification limit.
D = Secondary dilution.

UA = Unavailable
NA = Not Analyzed
LT = Less Than
GT = Greater Than

F-212046/94

5633 B Street, Anchorage, AK 99518-1600 — Tel: (907) 562-2343 Fax: (907) 561-5301

# Commercial Testing & Engineering Co.

SINCE 1908

**Environmental Laboratory Services**

## LABORATORY ANALYSIS REPORT

CT&E Ref.# 94.4201-1
Client Sample ID 9521-KKK-FL03-02
Matrix WATER

Client Name A D E C-ANCH-DIMOND
Ordered By KEVEN K.
Project Name
Project#
PWSID UA

WORK Order 81438
Printed Date 08/24/94 @ 16:03 hrs.
Collected Date 08/16/94 @ hrs.
Received Date 08/16/94 @ 16:20 hrs.

Technical Director STEPHEN C. EDE

Released By: [signature]

Sample Remarks: SAMPLE COLLECTED BY: UA.

| Parameter | Results | QC Qual | Units | Method | Allowable Limits | Ext. Date | Anal Date | Init |
|---|---|---|---|---|---|---|---|---|
| Kjeldahl-N | 1.13 | | mg/L | EPA 351.3 | | 08/18/94 | 08/19/94 | OAA |
| Ammonia-N | 0.079 | | mg/L | EPA 350.2 | | 08/18/94 | 08/18/94 | OAA |
| Fecal Coliform | 0 | | #/100ml | SM17 9222D | | 08/16/94 | 08/17/94 | TAV |
| Nitrate-N | 0.14 | | mg/L | EPA 353.2/300.0 | 10 | | 08/17/94 | DJS |
| Turbidity | 7.70 | | NTU | EPA 180.1 | | | 08/17/94 | OAA |
| Phosphorous, Total | 0.031 | | mg/L | EPA 365.2 | | 08/17/94 | 08/18/94 | OAA |

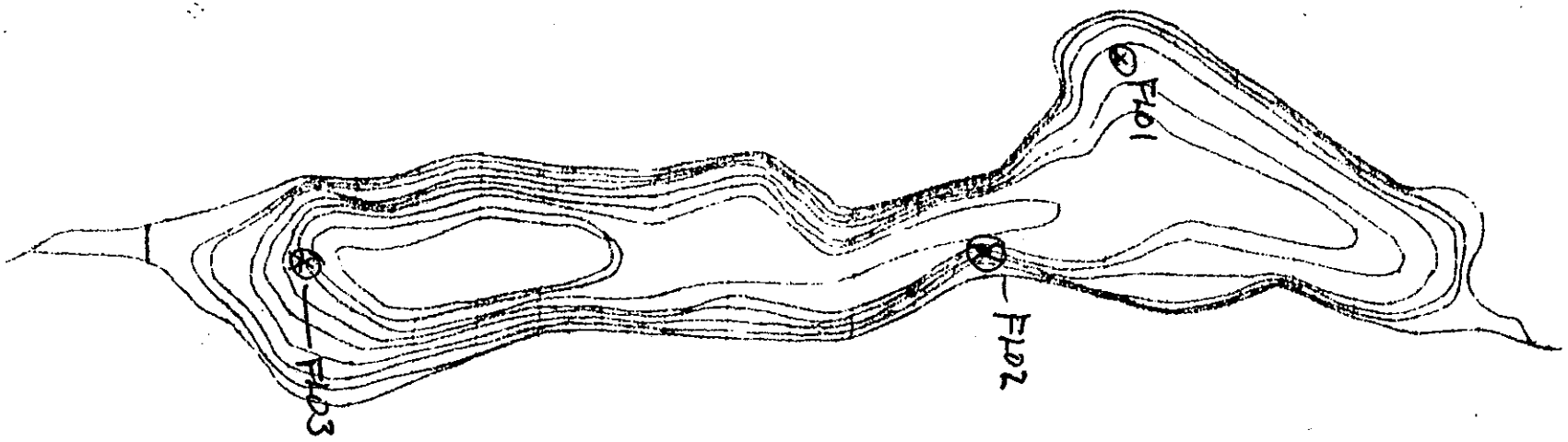
* See Special Instructions Above
** See Sample Remarks Above
U = Undetected, Reported value is the practical quantification limit.
D = Secondary dilution.

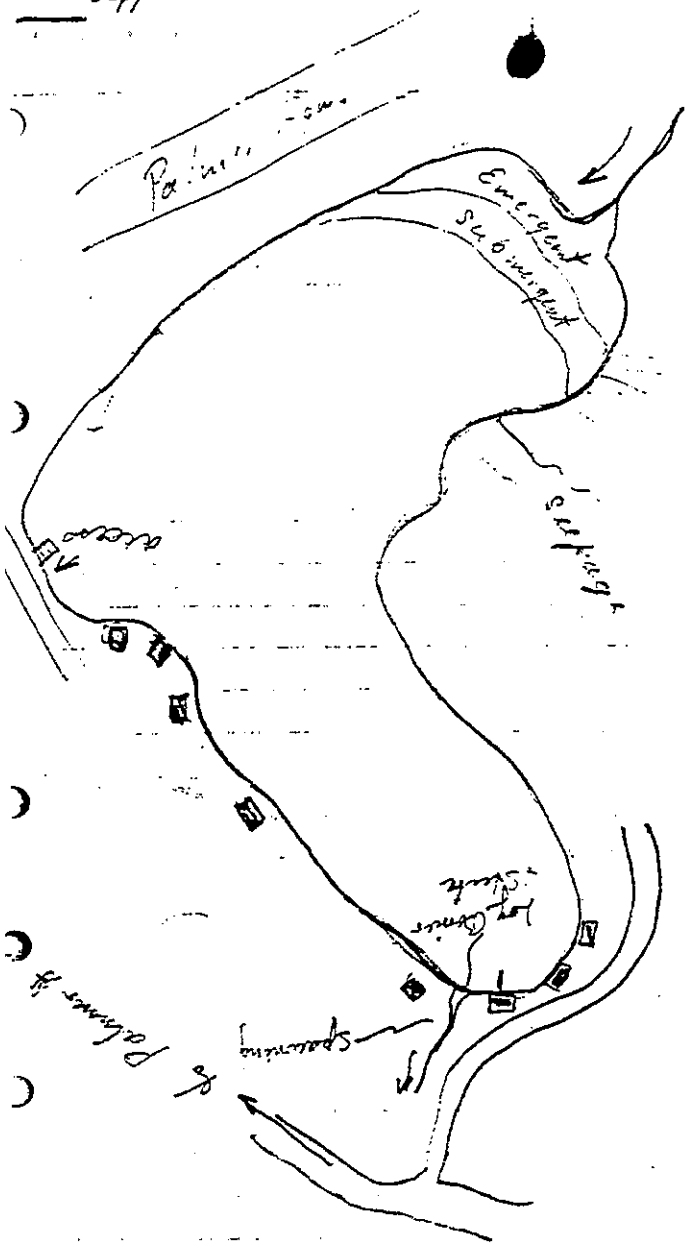
UA = Unavailable
NA = Not Analyzed
LT = Less Than
GT = Greater Than

5633 B Street, Anchorage, AK 99518-1600 — Tel: (907) 562-2343 Fax: (907) 561-5301

# Upper Fire Lake

scale 25






'959

...bly 5.28 cu./ft./sec.

shore = 8

- as yet.

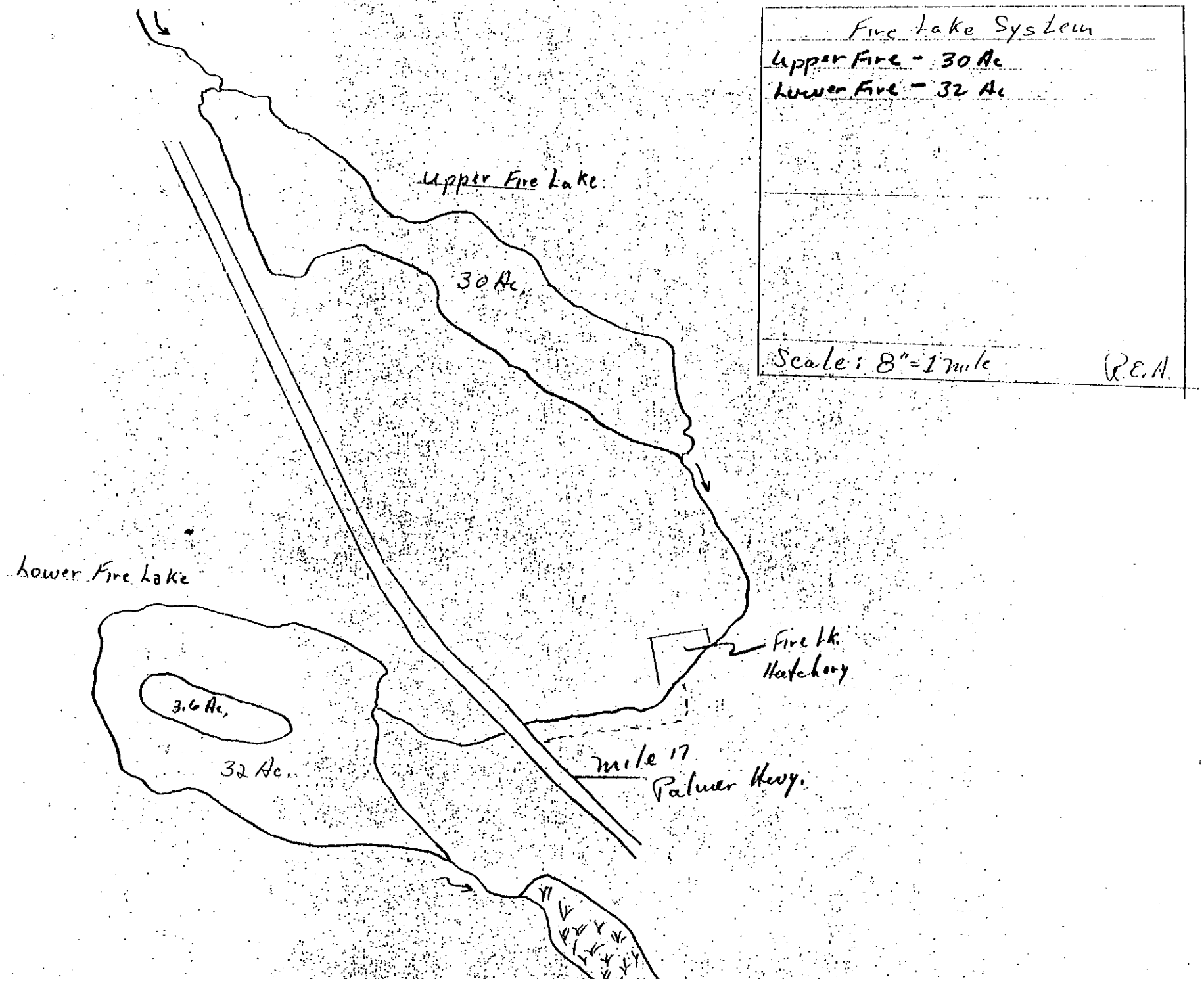
+ stick barrier to possible stream.

in lake.

- spawning - gravel + sand.

Subterranean spring fed in addition to seepage and inlet stream.

Some areas of submerged vegetation and very little emergent near inlet.


Fire Lake System
Upper Fire - 30 Ac
Lower Fire - 32 Ac
Scale: 8" = 1 mile
R.E.A.
Upper Fire Lake
30 Ac.
Lower Fire Lake
3.6 Ac.
32 Ac.
Fire Lk. Hatchery
mile 17
Palmer Hwy.

# WATER ANALYSIS

Location: Upper Pine Lake

Gear Used:

Biologist: W.E. Jones

Weather Conditions: Clear

| Sta. | Date | Time | Water depth | Snow Cover | Ice Cover | Temperature Water | Temperature Air | Bottle No. Sample | Bottle No. Control | D.O. | $CO_2$ | pH | Turb. | Total Alk. | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4/24/65 | 11.00 | 0 | 0 | 8" | 46° | 46° | | | 5.0 | 11.0 | 7.1 | | | |
| | | | 5 | | | 45° | | | | 5.5 | 10.0 | 7.2 | | | |
| | | | 10 | | | 44° | | | | 5.5 | 10.5 | 7.2 | | | |
| | | | 15 | | | 44° | | | | 5.3 | 9.0 | 7.2 | | | |
| | | | 20 | | | 42° | | | | 6.4 | 11.5 | 7.1 | | | |
| Hatchery | | | | | | | | | | | | | | | |
| Head of Trough | | | | | | 42 | | | | 9.0 | 11.0 | 7.1 | | | |
| Foot of Trough | | | | | | 42 | | | | 8.5 | 13.0 | 7.0 | | | |

Notes:

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
DIVISION OF SPORT FISH

AKE AND STREAM SURVEY

WATER ANALYSIS
NOTES AND REFERENCES

ake or Stream.....

T.....R.....Sec.....

.....

(DEFINE STATIONS ON REVERSE SIDE)

Long.....Lat.....

| STATION | DATE | TIME | DEPTH | WATER TEMP | PARTS/M $O_2$ | $CO_2$ | ph-th | MO | pH | STATION | DATE | TIME | DEPTH | WATER TEMP | PARTS/M $O_2$ | $CO_2$ | ph-th | MO | pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vatchery | 3/21/61 | am | | 37 | 4.3 | | | | 6.75 | | | | | | | | | | |
| J | 3/24/61 | pm | trough | 40 | 4.2 | | | | 7.0 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| ower | 3/27/61 | am | 3' | 34 | 7.9 | | | | 7.0 | | | | | | | | | | |
| | | | 6' | 37 | 7.0 | | | | 7.75 | | | | | | | | | | |
| | | | 9' | 39 | 7.3 | | | | 7.0 | | | | | | | | | | |
| | | | 12' | 38 | 7.0 | | | | 7.0 | | | | | | | | | | |
| | | | 15' | 39 | 6.8 | | | | 7.0 | | | | | | | | | | |
| | | | 18' | 39 | 6.3 | | | | 7.0 | | | | | | | | | | |
| | | | 21' | 39 | 4.9 | | | | 7.0 | | | | | | | | | | |
| | | | 24' | 39 | 4.9 | | | | 7.0 | | | | | | | | | | |

Enter Remarks on reverse side -- Analyzer initial entries above wher space permits.

3/27/61
Snow - 6"
Ice - 30"
Water - 26'

Upper Fire Lake

Date - July 23, 1959

Inflow - approximately 5.28 cu. ft./sec.

No. Houses on lake shore = 8
no public access as yet.
Outlet has log + stick barrier to possible spawning area in stream.

No spawning area in lake.
Inlet suitable for spawning - gravel + sand.

Subterranean spring fed in addition to seepage and inlet stream.

Some areas of submerged vegetation and very little emergent near inlet.

ALASKA DEPARTMENT OF HEALTH
Paul L. Winsor Comm., Dept. of Health & Welfare

ADMINISTRATIVE OFFICES
327 EAGLE STREET

SOUTHCENTRAL REGION
ANCHORAGE, ALASKA

PUBLIC HEALTH LABORATORY
945 SIXTH AVENUE

ALASKA DEPARTMENT OF FISH AND GAME
RECEIVED
SEP 2 1959
Anchorage, Alaska

September 1, 1959

Mr. Frank Stefanich
Associate Biologist
Alaska Fish and Game
326 I Street
Anchorage, Alaska

Dear Mr. Stefanich:

Reference is made to your recent request regarding our policies on surface water. We do not consider any surface water to be safe for drinking purposes without treatment.

All sewage entering surface waters must receive a minimum of primary treatment. Any further treatment depends upon the classification of the receiving waters.

If we may be of further assistance please feel free to call upon us.

Sincerely yours,

Calvin Winey, Jr./cs

Calvin Winey, Jr.
Regional Sanitary Engineer
Division of Health

CW:cs

1958

Location: Upper Five Lake  Gear Used:

| tion | Date | Time | Depth | Snow Cover | Ice Cover | Temperature Water | Temperature Air | Bottle Number Sample | Bottle Number Control | DO | pH | Corr. ~~Turb.~~ DO | $CO_2$ | $H_2O$ Evap. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3-12 | | 2' | | | 33.5°F | | 6 | | 8.5 | 6.9 | 8.5 | | |
| | | | 5' | | | 36.5° | | 7 | | 8.3 | 7.0 | 8.3 | | |
| | | | 10' | | | 38.0 | | 2 | | 7.6 | 6.9 | 7.6 | | |
| | | | 15' | | | 38.0 | | 9 | | 7.1 | 6.9 | 7.1 | | |
| | | | 25' | | | 38.0 | | 4 | | 3.4 | 6.7 | 3.4 | | |

REMARKS: Snow on ice

Sample #7 air bubble in jar - extra $MnO_2$ added after KI, KOH added

" " #2 This was the 2nd $H_2O$ sample at 10' taken by sampling bottle.

Upper Fire Lake, Mile 17, PalmerHiway.

Surface Area: 27 acres.

Public Access: No legal public access. A few fishermen go to the lake thru private property.

Fish Stocked: 1956 - 1,000 rainbow, 3,000 steelhead.

Fish Stocked (cont.): 1957 - 1,000 rainbow.

Fishing Sucess: Poor.

Fishing Pressure: Light.

Upper Fire Lake furnishes the water supply for the Fire Lake Hatchery. The lake is used for experimental work in connection with the growth, survival and migratory habits of the various stocks of planted trout. A downstream trap is operated on the hatchery creek in connection with the stocking program. The lack of a suitable access for public fishing and the location of the Fire Lake Hatchery ~~between~~ the lake has prevented any further management.

Upper Fire Lake - 17,000 - Comparatively heavy plant - on assumption that present low native trout population sufficient to control stickleback - some questions about this after years work - 1952

Located at mile 17, Palmer Highway. 28 acres. Max. depth 34 ft. It is spring fed and the outlet furnishes the water supply for the Fire Lake Hatchery. Minimum flow is 1.5 cfs just before the spring breakup. The maximum flow is 25 cfs in late June. Minimum dissolved oxygen found on March 20, 1953 at 3.2 ppm (3 winters check)

The population consists of dolly varden, rainbow, planted rainbow, silver salmon, landlocked silver salmon(?), stickleback and cottids. Adult silver salmon have not gained the lake since 1952.

The planted rainbow are not giving sufficient returns to justify further production plants.

Maximum utilization would entail rehabilitation and a combined barrier and screen. The barrier and screen would pose no great problem. The inability to obtain permanent access, a desire to prevent further trouble with the people resident on the lake and the obvious problem of poisoning above the hatchery intake and lower Fire Lake has prevented serious consideration of rehabilitation to the present time.

It is planned to continue experimental planting in connection with the downstream trap installed last spring.

Aug 8, 1952 - Upper Fire Lk - 1 load ( ) RB fry.
temp at field - 38-40-44-38
" " lake (no ice) 42-48-47-43
Lake temp 63°
Loss - 200.
Pump running at field (family)
new hatchery helped.

Fish Planting
July 31, 1952 - planted one load ( ) RB Fry in Upper Fire Lake. total planting mortality 3-400. planted at 2:15 pm. 2 cans @ 46°, 2 cans @ 49-50°; 2-4° Rise from field to Lk. 1 Can at 49½° had heavier (2-300) mortality.

Upper Fine Lk. — 16 mi post, [illegible] Kinney.

Area: 27.5 acres

James Polyfko - leases Ldge, agrees to public access.
June 10, 1952 - surface temp 58°F, pH 7.7
June 11, 1952 - O'nite Set - Dolly - 10½", 10½, 7, 6, 6½
52 - July 20th Sampling set, Overnite

Dolly: 10", 11", 6, 6, 6½, 7, 7½ 6¾
(Some with ½ developed egg skeins)
Fish in fair shape, but not fat.
Food mostly snails

July 31, 1952 - planted 1 load ( ) RB fry
Aug 8, 1952 - planted 1 load ( ) RB fry.

Aug 29 - surface temp 50° (wet, cloudy day)
Sept. 20 - surface temp 49°, Creek 48°.
Lots of rain, runoff high, but creek is clear.
saw one red sal., 150 yds below Lk.
Oct 2, 1952 - surface temp 50°
Oct. 23 — not frozen over yet —
Oct 28 - O'nite set —
Dolly - 7", 6¾", 9¾"
RB - 6¼", 5¾", 6"
Jan. 26 - outlet, good flow, clear.
Feb. 6 - outlet, flow good - doesn't appear diminished
Feb. 14, 1953 - outline sunny
Feb. 16 - 1953 - outlet, good flow, not diminishing

March 20, 1953 - sample taken in middle of Lake - 30'
Ice 2 ft deep

| Depth | Temp | ph | DO (ppm) |
|---|---|---|---|
| 20' | 38°F | 6.8 | 0.4 |
| 12' | 38° | 6.9 | 2.3 |
| 5' | 36° | 7.0 | 3.2 |

April 8, 1953 - Sample taken in middle of Lake - 30' - Ice 2' deep, Ice clear & solid

| Depth | Temp | ph | DO (ppm) |
|---|---|---|---|
| 5' | 36° | 7.0 | 9.1 |
| 20' | 39° | | 3.2 |

April 7, 1953 - Ice still solid & clear, snow granulating, but not slushy. (Lk. lies in back of mountain, so does not get minimal amount of sun)

Outlet creek (at proposed Hatchery diversion)
1 cfs - flow appears to be at lowest point - no runoff water
Temp. 35°

April 9, 1953 - Outlet creek - at Hatchery diversion point water still clear & low. 100' below, at hatchery site, stream collects considerable runoff water from road way - very muddy

April 9, 1955 -

| Depth | Temp | ph | DO (ppm) |
|---|---|---|---|
| 5' | 36° | 7.0 | 8.4 |
| 20' | 39° | | 3.0 |

Sept 25, 1955 - o'nite Set.

RB - 21½" - 4½# mm - sperm ½ wipe
8" mm, 7" mm

DV - 7, 6.7, 7.3, 7.2, 7

1956 Jan 17 - near outlet - 2' ice

| Depth | temp | pH | $CO_2$ | DO |
|---|---|---|---|---|
| 0' | 34 | 7.0 | 0.5 | 8.8 |
| 5' | 36½ | 6.9 | 0.4 | 8.3 |
| 10' | 37½ | 6.9 | 0.3 | 8.0 |

Jan 10 - 1956

| Depth | temp | pH | $CO_2$ | $O_2$ |
|---|---|---|---|---|
| 1' | 34 | 7.0 | 0.4 | 8.9 |
| 5' | 63½ | 6.9 | 0.4 | 8.3 |
| 10' | 38 | 6.8 | 0.3 | 8.0 |

Feb 2, 1956 - 1' snow, 26" ice

| Depth | temp | $O_2$ (upper th) | $O_2$ (outlet area) |
|---|---|---|---|
| 1 | 33 | 8.0 | 7.2 |
| 5 | 35 | 8.3 | 7.3 |
| 10 | 36 | 7.1 | 7.0 |
| 15 | 38½ | 6.5 | 6.5 |

Feb 16, 1956 -

| Depth | temp | pH | $CO_2$ | DO (outlet) |
|---|---|---|---|---|
| 1' | 34° | 7.0 | 1.0 | 6.7 |
| 5' | 36° | 7.1 | 1.2 | 6.4 |
| 10' | thermo broke | 7.0 | 1.3 | 5.5 |

March 16, 1956 - 26" ice, 6" overflow ice, 5" snow

| Depth | temp | pH | $O_2$ ~~outlet~~ | $O_2$ (outlet) |
|---|---|---|---|---|
| 1' | 33½° | 6.8 | 6.3 | 5.7 |
| 5' | 36 | 6.8 | | 5.1 |
| 10' | 37½ | 6.8 | | 5.0 |
| 15' | 37½ | 6.5 | | 4.5 |

April 26, 1956 - 8" ice & slush, 2' ice, outlet opening. appears lake starting to change from runoff - note pH

| | | | |
|---|---|---|---|
| 1' | 33° | 6.8 | 3.4 |
| 5' | 36° | 6.8 | 2.9 |
| 10' | 37½ | 6.8 | 2.4 |
| 15' | 38° | 6.8 | 2.2 |

Planting Record

| | | | | | |
|---|---|---|---|---|---|
| July 31 - 1952 | - | 10,404 | R.B. @ 2,448 per lb | | |
| Aug. 8 - 1952 | - | 6,375 | R.B. @ 1,700 " " | | |
| June - 25+30 - 1953 | - | 5,472 | R.B. " 2,086 " " | | |
| July - 13 - 1954 | - | 7,272 | R.B. " 2424 " " | | |
| July - 11 | 1955 | 3,716 | R.B " 3304 " " | Lot | 2 |
| Sept. - 7 | 1956 | 634 | R.B " 276 " " | " | 4 |
| | | 500 | R.B. " 256 " " | " | 4 |
| Oct. 2 | 1956 | 2,600 | S.H " 650 " " | " | 6 |
| Sept. 23 | 1957 | 1,000 | R.B " 165 " " | " | 1 |
| | | 1,000 | S.H " 300 " " | " | 2 |