

H<sub>2</sub>O



MEMO

NOTEBOOK NO. 391

H<sub>2</sub>O Data Field Book

1987

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J. L. DARLING CORPORATION  
TACOMA, WASHINGTON 98421 U.S.A.

F. Coliform Samples

870512

1100

Site # 1 (Mill creek / robble's  
Ditch)

Warm & humid light Showers  
in early morning

Site # 2 1221

(Mill creek at  
North boundary.)

Site # 3

1355

Creek along Bill Smith, E  
of Gallagher

Site # 4

1405

Culvert along Rt 4, leading  
into pond N of Bemis hts.  
(W side of Rt 4)

Site # 5

1415

Swend of B.g Culvert  
along hedges. Below arnolds.

Sunny - Clear, warm, low humid.

✓ 870513

1016

Lower Kromakill / RT 4

X Air Temp : 60°F (15.5°C)

X Water Temp : 53°F (52°F / 11°C)

X Salinity : 0‰

X Conductivity : 210  $\mu$ mho/cm

X Salinity : 0‰

X Conductivity : 210  $\mu$ mho/cm

✓ 870513

1040

American Creek / RT 4

X Air Temp : 69°F (20.5°C)

X Water Temp : 14°C

X Salinity : 0‰

X Conductivity : 290  $\mu$ mho/cm

870513

1102

✓ Upper Devil's Hollow

X Air Temp : 64°F (17.8°C)

X Water Temp : 13.5°C

X Salinity : 0‰

X Conductivity : 240  $\mu$ mho/cm

✓

✓

✓

✓

✓

✓

✓

✓

✓

✓ 870513

1130

Lower Devils Hollow

X Air Temp : 70°F (21.1°C)

X Water Temp : 12°C

X Salinity : 0‰

X Conductivity : 290  $\mu$ mho/cm

870513

1336

✓

Mill Creek / Robbies Ditch

(Mill Creek)

X Air Temp : 72°F (22.2°C)

X Water Temp : 15°C

X Salinity : 0‰

X Conductivity : 240  $\mu$ mho/cm

(Robbies Ditch)

1340

✓

X Air Temp : 72°F (22.2°C)

X Water Temp : 14°C

X Salinity : 0‰

X Conductivity : 390  $\mu$ mho/cm

(~ 10 yds up stream)

360  $\mu$ mho/cm

~ 10 yds down from fork

= 230  $\mu$ mho/cm

870513

1431

✓ Upper Mill Creek (Murphy mon.)

✓ Air temp:  $76^{\circ}\text{F}$  ( $24.4^{\circ}\text{C}$ )✓ Water temp:  $13.5^{\circ}\text{C}$ 

x Salinity: 0 ‰

x Conductivity: 300  $\mu\text{mho/cm}$ 

870513

1512

✓ Mill Creek N of Phils

x Air temp:  $67^{\circ}\text{F}$  ( $19.4^{\circ}\text{C}$ )x Water temp:  $17.5^{\circ}\text{C}$ 

x Salinity: 0 ‰

x Conductivity: 300  $\mu\text{mho/cm}$ 

✓ 870513

1543

Krona Klee (N of Culbert)

x Air temp:  $80^{\circ}\text{F}$  ( $26.7^{\circ}\text{C}$ )x Water Temp:  $15.5^{\circ}\text{C}$ 

x Salinity: 0 ‰

x Conductivity: 220  $\mu\text{mho/cm}$ 

✓ 870513

1553

Trib. to Krona

x Air temp:  $69^{\circ}\text{F}$  ( $20.5^{\circ}\text{C}$ )x Water temp:  $15^{\circ}\text{C}$ 

x Salinity: 0 ‰

x Conductivity 260  $\mu\text{mho/cm}$ 

870527

0938

✓ Mill Creek / Robbies

✓ California site #1

humid, cloudy, air temp  $15.5^{\circ}\text{C}$   
showers last night

✓ Mill Creek

Temp:  $14^{\circ}\text{C}$ 

Salinity: 0 ‰

Conductivity 220  $\mu\text{mho/cm}$ 

PA: 7.91

✓ Robbins

Temp:  $13^{\circ}\text{C}$ 

Salinity: 0 ‰

Conductivity 385  $\mu\text{mho/cm}$ 

PH: 7.95

✓ 1048 Site 2

✓ Mill Creek above Phils

N Boundary.

Air Temp:  $14^{\circ}\text{C}$ Water temp:  $14^{\circ}\text{C}$ 

Salinity: 0 ‰

Conductivity 300  $\mu\text{mho/cm}$ 

pH: 7.95

Site # 4 1124

American Creek

Air Temp: 16°C

Water Temp: 15°C

Salinity: 0 ‰

Cond: 305  $\mu\text{mho/cm}$

pH: 7.92

Site # 3 1138

Creek at Rte 5 Rd.

Site # 5 Kroma 1150

✓ 1451

Air Temp: 17.5°C

Water Temp: 16°C

Salinity: 0 ‰

Cond: 255  $\mu\text{mho/cm}$

pH: 8.07

✓ Lower Kroma 1215

Air Temp: 19°C

Water Temp: 17.5°C

Sal: 0 ‰

Cond: 250  $\mu\text{mho/cm}$

pH: 8.15

✓ Upper Devil's Hollow (Great Falls Creek)

Time: 1525

17°C water and air temp.

Salinity: 0 ‰

Conductivity: 295  $\mu\text{mho/cm}$

pH: 8.32

✓ Lower Devil's Hollow

Time: 1554

Water Temp: 14°C

Air Temp: 20°C

Salinity: 0 ‰

Conductivity: 443  $\mu\text{mho/cm}$

pH: 7.94

✓ Mill Creek / Murphy Mon.

1650

Air Temp: 17°C

Water Temp: 15°C

Salinity: 0 ‰

Conductivity: 330  $\mu\text{mho/cm}$

pH: 8.23

870610 0923 Mill Creek (S)

Sunny, clear, low humidity

Air temp: 17°C

Water temp: 14°C

Cond: 220  $\mu\text{mho/cm}$  BOD# 91

Salinity: 0‰

pH: 7.86

DO: 9.45 mg/L 1140

twilio site code

Robbies 0930

Air: 17°C

Water: 14°C

Sal: 0‰

Cond: 320  $\mu\text{mho/cm}$

pH:

DO: conductive water

Upper mill / Murphy Mon 1012

Air: 18°C

Water: 14.5°C BOD# 92

Sal: 0‰

Cond: 400  $\mu\text{mho/cm}$

pH: 7.97

DO: 9.30 mg/L 1145

✓ Mill Creek / Phil's N boundary

Time 1042

Air: 19°C

Water: 15°C

Sal: 0‰

Cond: 310  $\mu\text{mho/cm}$

pH: 7.90

DO: 10.17 mg/L 1145

Upper Kroma 1108

-very turbid - result of  
near by construction.

Air: 20.5°C

Water: 17.5°C

Sal: 0‰

Cond: 250  $\mu\text{mho}$

pH: 7.99

DO: 10.11 mg/L 1148

✓ Kroma Trib. 1118

Air: 22°C

Water: 17°C

Salinity: 0‰

Cond: 290  $\mu\text{mho}$

pH

DO

Upper Devil's Hollow

1359

BOD #91

Air 26°C

Water 21°C

Cod 335  $\mu$ mho

Salinity 0‰

pH 8.33

DO 10.82  $\mu$ g/L 1600

✓ Lower Devil's Hollow 1423

Air 23°C

Water 15.5°C

Salinity 0‰

Conductivity 380  $\mu$ mho

pH 8.06

DO 9.68  $\mu$ g/L 1605

✓ American's Creek 1514

Air 27°C

Water 20°C

Salinity 0‰

Conductivity 310  $\mu$ mho

pH 7.98

DO 9.61  $\mu$ g/L 1608

✓ Lower Kromer 1534

Air 28°C

Water 20°C

Sal 0‰

Cod 250  $\mu$ mho

pH 8.18

DO 8.71  $\mu$ g/L 1611 TURBID

870702

(0942) American Creek

✓ Cloudy, cool, Showers evening before

Air: 22°C

H<sub>2</sub>O: 19°CCond: 285  $\mu$ mho

Sal: 0 ‰

pH: 7.75

DO: (091) 8.80 mg/L <sup>at 19°C in water</sup>  
at (1059)

Turbid

✓ Lower Kroma

Time 1009

Air 20°C

H<sub>2</sub>O 17°CCond 335  $\mu$ mho

Sal 0.7‰

pH 7.96

DO (92) 10.23 mg/L (1105)

less turbid  
than

✓ Upper Kroma

Time 1020

Air 21°C

H<sub>2</sub>O 17.5°CCond 390  $\mu$ mho

Sal 0.7‰

pH 8.06

DO (94) 10.43 mg/L (1107)

Time 1027

Air 21°C

H<sub>2</sub>O 16.5°CCond 405  $\mu$ mho

Sal 0.7‰

pH 8.00

DO (95) 9.86 mg/L (1109)

Low turbidity

✓ cloudy drizzling

1:00 pm air temp 18°

Lower Mill Creek

20°C in stream

temp 18°C DO = 7.11 mg/L

Salinity = 0 PH = 7.75

conductivity 400

BOD = 91

✓ Robine's Ditch

DO: 3.45 mg/L

PH: 7.42

BOD = 92

temp: 17°C

salinity = 0

conductivity: 435

✓ Mill Creek at the Murphy Monument

1:57 pm

drizzling

temp = 18°

salinity = 0

conductivity = 380

air temp 21°C

BOD = 73

DO: 9.37 mg/L

PH: 7.98

1620

✓ Upper Mill Creek

2:33

temp 18°C

air temp = 21

salinity = 0

DO: 8.66

PH: 7.75

conductivity = 400

BOD = 91

100

Upper Devil's Hollow

Lower Devil's Hollow

870708 F. Coliform 5 sites

#1 0930

#2 1020

#3 1055

#4 1045

#5 1106

✓ 870721 E. coli samples  
Hot, humid

#1 0840  
#2 0929  
#3 1003  
#4 1011  
#5 1020 - Krona looks good today.

870722

Sunny, hot humid

✓ Millcreek (Lower) 1130 (~~1130~~)  
BOD # 91

Air T 29°C

Water T 22.5°C

Sal 0.900

Cond: x 260  $\mu$ mho

DO: 8.49 mg/L (1340)

PH: 7.82

✓ Robbies: 1135

Air T: 29°C

H<sub>2</sub>O T: 20°C

Sal: 0

Cond: x380  $\mu$ mho

DO: (Bottle #92) 1.83 (1350)

PH: 7.41

✓ Mill Creek / Marshy Mon 1400

Air T 29.5°C

Hot T: 24°C

Sal: 0

Cond: 100 x 10

DO: (BOD #91)

PH: ~~7.87~~ 7.87

8.90 mg/L

✓ Mill Creek (Step 8) 1430

Air T 25°C

H<sub>2</sub>O T: 23°C

Sal: 0.900

Cond: 550 (10x)

DO: (BOD #92)

PH: 7.83

7.65 mg/L

870722

1520

Upper Kroona

Air T: 28°C

H<sub>2</sub>O T: 25°C

Sal: 0‰

Cond: 300 (x1)

PH: 8.23

# Car

DO: (BOD # 94)

9.83 mg/L

✓ Kroona trib

1515

Air T: 27.5°C

H<sub>2</sub>O T: 23.5°C

Sal: 0‰

Cond: 390 (x1)

DO (BOD # 93)

8.16 mg/L

PH: 7.92

↓ Lower Kroona

1530

Air - 27.0°C

H<sub>2</sub>O - 26.0°C

Sal - 0

Cond - 260 (x1)

DO (BOD # 95)

9.18 mg/L

PH: 8.34

✓ American's Creek

1545

Air T: 28°C

H<sub>2</sub>O: 26°C

Sal: 0‰

Cond: 310 µmho (x1)

PH: ~~8.23~~ 7.95

DO: (BOD # 96)

7.72 mg/L

✓ 870723 Upper Devil's Hollow

Time: 1145

Air T: 30°C

H<sub>2</sub>O T: 24°C

Salinity: 0‰

Cond: x1

340 µmho

DO: (Bottle # 92)

4.43 mg/L

PH: 7.32

✓ ~~870723~~ Lower Devil's Hollow

✓ Time 1200

Air T: 28°C

PH: 7.60

H<sub>2</sub>O T: 28°C

Salinity 0‰

Cond: (x10)

50 µmho

DO (# 93)

6.40 mg/L

870722 1520

Upper Kro ma

✓ Air T: 28°C  
 H<sub>2</sub>O T: 25°C  
 Sal: 0‰  
 Cond: 300 (x1)  
 PH: 8.23  
 DO: (BOD # 94) 9.83 mg/L

✓ Kro ma trib 1515

Air T: 27.5°C  
 H<sub>2</sub>O T: 23.5°C  
 Sal: 0‰  
 Cond: 390 (x1)  
 DO (BOD # 93) 8.16 mg/L  
 PH 7.92

✓ Lower Kro ma 1530

Air -27.0°C  
 H<sub>2</sub>O -26.0°C  
 Sal -0  
 Cond -260 (x1)  
 DO (BOD # 95) 9.18 mg/L  
 PH 8.34

✓ American Creek 1545

Air T: 28°C  
 H<sub>2</sub>O: 26°C  
 Sal: 0‰  
 Cond: 310 µmho (x1)  
 PH: ~~8.23~~ 7.95  
 DO: (BOD # 96) 7.72 mg/L

✓ 870723 Upper Devils Hollow

Time: 1145  
 Air T: 30°C  
 H<sub>2</sub>O T: 24°C  
 Salinity: 0‰  
 Cond: X1 340 µmho  
 DO (Bottle # 92) 4.43 mg/L  
 PH 7.32

✓ ~~1230~~ Lower Devils hollow

Time 1200  
 Air T 28°C PH: 7.60  
 H<sub>2</sub>O T: 28°C  
 Salinity 0‰  
 Cond (x10) 50 µmho  
 DO (\*93) 6.40 mg/L

✓ Clear, warm humid

80805 Lower Mill Creek 930 am

Air T: 19°C

H<sub>2</sub>O T: 20°C

Cond: 190 µmho x1

Sal: 0 ‰

DO: (\*92) 8.01 mg/L

pH: 7.55

✓ Robbies Ditch

Time: 940

Air T: 19°C

H<sub>2</sub>O T: 18°C

Cond: 285 µmho x1

Sal: 0 ‰

DO: (\*93) 1.95 mg/L

pH: 7.40

✓ Mill Creek at Murphy Mon.

Time 1000

Air T: 20.5°C

H<sub>2</sub>O T: 20°C

Cond: 490 µmho x1

Sal: 0 ‰

DO: (\*94) 7.22

pH: 7.69

✓ Mill Creek at Staffers

Time 1100 am (very murky)

Air T: 20°C

H<sub>2</sub>O T: 20°C

Cond: 280 µmho x1

Sal: 0 ‰

DO: (\*95) 4.85 mg/L

pH: 7.66

✓ Americans Creek (Very Murky)

Time 1145 am

Air T: 22°C

H<sub>2</sub>O T: 22°C

Cond: 255 µmho x1

Sal: 0 ‰

DO: (\*96) 10.29 mg/L

pH: 8.20

✓ Lower Kuma 1615

Air T: 22°C

H<sub>2</sub>O T: 21°C

Sal: 0 ‰

Cond: 210 (x1)

DO: 9.10 mg/L

pH: 8.16

✓ Upper Kuona 870805 1625

Air T: 22°C

H<sub>2</sub>O T: 21°C

Sal: 0

Cond 280 µmho x 1

DO 9.72 mg/L

pH 8.21

✓ Kuona tub 1635

Air T 22°C

H<sub>2</sub>O T 20°C

Sal 0

Cond 330 µmho x 1

DO 9.95 mg/L

pH 7.97

✓ 870812 1100

upper Devils Hollow

H<sub>2</sub>O Temp 16°C

Air T: 20°C

Sal 0.900

Cond 50 µmho x 10 = 500

DO (1.92) 8.11 mg/L

pH 7.96

Much algae, water very low.

870812

✓ 1115 / lower Ditch

Air T 20°C

H<sub>2</sub>O T 15°C

Sal: 0.20

Cond 60 µmho x 10

DO 8.18 mg/L

pH 7.81

870818

✓ lower Mill Creek

Time:

Air T:

H<sub>2</sub>O T:

Salinity:

Cond:

DO (Bottle #)

pH:

Robbies Ditch

Time:

Air T:

H<sub>2</sub>O T:

Salinity:

Conductivity:

DO (Bottle #)

pH:

870818

sunny, warm, humid  
Upper Devil's Hollow: much algae,  
water temp 23° water very low

Salinity: 0

conductivity: 415 (x1)

2:09

BOD #92 DO 5.38 mg/L

air temp 31°

PH 7.79

870818

Lower Kroma 3:00 pm

Air T 32°C

H<sub>2</sub>O T 25°C

Sal: 0

Cond: (200 x1)

DO (#94) 10.69 mg/L

PH 8.33

✓ Lower Devil's Hollow 2:24

water temp = 21° (Adult (yr?) Crayfish)

salinity = 0

conductivity 600 (x10)

BOD #96 DO 7.71 mg/L

air temp 29° PH: 8.03

✓ Americans Creek 2:50

Air T: 36°C

H<sub>2</sub>O T: 29°C

Salinity: 0

Conductivity 220 (x10)

DO (#95) 14.59 mg/L

PH 9.28

77

77

77

77

77

77

77

77

77

77

✓ Upper Kroma Kill 3:10

H<sub>2</sub>O temp 26°

salinity 0

conduct 370 x1

BOD #93 DO 9.35 mg/L

air temp 28°

PH: 8.36

870819

Lower Mill Creek

Time

Air T

H<sub>2</sub>O T

Sal

Cond

DO (# )

PH

Robbies Ditch

Time:

Air T

H<sub>2</sub>O T

Sal:

Cond:

DO (# )

pH

Mill Creek at Murphy Mon

Time

Air T

H<sub>2</sub>O T

Sal:

Cond

DO (# )

pH

Mill Creek at Griffens

Time

Air T

H<sub>2</sub>O T

Sal:

Cond

DO (# )

pH

✓ 870827 Cool, Raining since  
leaving 8 AM 0915

Lower Mill Creek

Air T 14°C

H<sub>2</sub>O T 13.5°C

Sal 0‰

Cond

180 x 1 umho

DO (# 93)

8.63 mg/L

pH 7.62

✓ Robbies Ditch 0920

Air T 14°C

H<sub>2</sub>O T 13.5°C

Sal 0.9‰

Cond 290 x 1

DO (# 93)

8.16 mg/L

pH 7.78

✓ Mill Creek at Phil 11.00

Air T 14°C

H<sub>2</sub>O T 14°C

Sal 0.9‰

Cond 250 x 1

DO (# 94)

8.46 mg/L

pH 7.97

✓ upper kroma 1130

Air T 15°C

H<sub>2</sub>O T 14°C

Sal 0 ‰

Cond 285 x 1

DO (#95) 9.46 mg/L

pH 7.96

✓ kroma trib 1140

Air T 15°C

H<sub>2</sub>O T 14.0°C

Sal 0 ‰

Cond 325 x 1

DO (#96) 8.11 mg/L

pH 7.80

✓ Am. Creek 1150

Air T 15°C

H<sub>2</sub>O T 16°C

Sal 0 ‰

Cond 170 x 1

B. S. Rd - California 1200

~~8008~~

~~North Fork of the River~~

~~North Fork of the River~~

~~lower fork of Devils Hole~~

870910

lower Mill Creek

Time 0900

Air T 18.5°C

H<sub>2</sub>O T 17.5°C

Sal 0 ‰

Cond 210 (x 1) 4 mhos/cm

DO (#92) 9.12 mg/L

pH 7.72

✓ Robbies Ditch

Time 0905

Air T 18.5°C

H<sub>2</sub>O T 17°C

Sal 0 ‰

Cond 175 (x 1)

DO (#93) 8.67 mg/L

pH 7.76

870910 Sunny clear  
Cade

Mill Creek at Murphy Man  
0940 showing for  
2 days  
before

Air T 20.5°C

H<sub>2</sub>O T 17°C

Cond 270 (x1) Minkof/cm

Sal. 0

pH 7.62

DO (#94) 9.05 mg/L

✓ Mill Creek at Phil's

1000

Air T 22°C

H<sub>2</sub>O T 17°C

Sal 0.9‰

Cond 210 (x1) Minkof/cm

DO (#95) 8.60 mg/L

pH 7.59

American's Creek

Time 1045

Air T 30°C

H<sub>2</sub>O T 20°C

Sal 0.9‰

Cond 210 (x1) Minkof/cm

DO (#96) 8.23 mg/L

pH 7.65

✓ Upper Devil's Hollow  
Time 1245-

Air T 29°C

H<sub>2</sub>O T 20°C

Sal: 0.9‰

Cond: 210 (x1)

DO (#92) 8.62 mg/L

pH 7.40

✓ Lower D. tl.

Time 1300

Air T 28°C

H<sub>2</sub>O T 23°C

Sal 0.9‰

Cond 310 (x1)

DO (#93) 8.96 mg/L

pH 8.00

✓ Upper Kroma 1350

Air T 25.5°C

H<sub>2</sub>O T 20°C

Sal 0.9‰

Cond 210 (x1)

DO (#94) 8.79 mg/L

pH 7.80

✓ Kroma Trib 1335

Air 25°C

H<sub>2</sub>O 20°C

Sal 0‰

Cond 220 µmho

DO 8.93 mg/L

pH 7.74

870923 over cast, cool

✓ Bull Smith Rd 0915

✓ Upper Devil's Hollow  
0920

Air T 18°C

H<sub>2</sub>O T 14°C

Sal 0‰

Cond 185 µmho (n)

DO (\*92) 9.9 mg/L

pH 7.68 mg/L

✓ Lower Devil's Hollow

Time 0930

Air T 17°C

H<sub>2</sub>O T 13.5°C

Sal 0‰

Cond 200 (x1) µmho

DO (#93) 10.12 mg/L

pH 8.16

✓ Americans Creek

Time 1030

Air T 16°C

H<sub>2</sub>O T 14°C

Sal 0‰

Cond 210 (x1) µmho

DO (\*94) 8.82 mg/L

pH 7.85

✓ Upper Kroma 1000

Air T 16°C

H<sub>2</sub>O T 14°C

Sal 0‰

Cond 185 (x1) µmho

DO (95) 9.66 mg/L

pH 7.98

870923

## Kreoma Trib

Time 10:15

Air T 15.5°C

H<sub>2</sub>O T 13.5°C

Sal. 0‰

Cond 420 x10  $\mu$ mhoDO (#96) ~~9.77~~ 9.77 mg/L

PH 7.98

## Lower Mill Creek

Time 11:15

Air T 15°C

H<sub>2</sub>O T 13.5°C

Sal 0

Cond 210 (x1)  $\mu$ mho

DO (#92) — 9.70 mg/L

PH — 7.77

## Robbie's Ditch

Time 11:20

Air 15°C

H<sub>2</sub>O 13°C

Sal 190

Cond 225 (x1)  $\mu$ mho

DO (#93) 9.84 mg/L

PH: 7.97

## Mill Creek at Murphy Mon

Time 12:15

Air T 15.5°C

H<sub>2</sub>O T 13.5°C

Sal 0.90

Cond 380 (x1)  $\mu$ mho

DO (#94) 9.95 mg/L

PH 7.93

## Mill Creek behind Stp 8

Time 12:45

Air T 15°C

H<sub>2</sub>O T 14°C

Sal 0.70

Cond 100 (x10)  $\mu$ mho

DO (#95) 9.38 mg/L

PH 7.75

## Lower Kreoma

Time 13:30

Air T 18°C

H<sub>2</sub>O T 15°C

Sal 0.900

Cond 290  $\mu$ mho x1

DO (#96) 9.44 mg/L

PH: 7.79

88 test

880507

Time 12:20 PM

Air 25°C

Wat 16°C

SAL. 0%

Cond. 190 umhos x 1

S.V.

DP

PH 8.9522

BOD # 95

Depth: 1.1 ft.