

TO: Dan Neal

FROM: Scott Jeane

SUBJECT: Investigation of Seepage to a Grant County Watercourse  
Adjacent to U & I Sugar Co., Moses Lake

DATE: April 10, 1973

State of  
Washington  
Department  
of Ecology



Howard Bunten and I met on March 2, 1973, and reviewed the area to be sampled. The following morning I collected samples from 3 watercourse stations and a lagoon station (see Figure 1).

Analysis of the samples reveals that the watercourse is being subjected to a high organic loading between Stations 1 and 4 (see Table 1). The dissolved oxygen decreased 50+%, the COD increased 1000%, and the total solids increased 300%. The nutrients decreased slightly, indicating the pollutant is not of a nitrogenous character. The high BOD and COD levels indicate a carbonaceous type material (sugars or starches) is entering the waterway and depleting the oxygen.

The enclosed six slides indicate the conditions observed. Slide #1 is of the control station. Slide #2 shows the clear water coming from upstream and the pollutant bubbling up through the dark holes in the stream bed. Slide #6 reveals the effects of the leachate on the color and clarity of the water.

The source of the leachate is from the lagoons. Survey of the area reveals no other possible sources. The leachate has a drastic effect on the water quality of the waterway in the areas of dissolved oxygen, BOD, COD, and solids. Previous sampling has shown the effect of the leachate to extend south to the freeway. A possible solution is to line the lagoons with an impervious membrane.

Table 1. Water Quality Adjacent to U & I Sugar,  
Moses Lake, Grant County, WA, March 8, 1973.

Station:	1	3	4	2
Location:	Upstream Control	Waterway Opposite Lagoons	Downstream	Lagoon
Temperature °C	7.5	7.1	9.6	--
D.O. mg/l	13.8	11.9	6.3	--
pH	8.1	7.2	7.4	--
COD	20	267	243	9260
BOD <sub>5</sub>	3	166	163	5080
Total Solids	391	678	1200	7300
Total Non Vol Solids	290	436	853	1440

GSJ:bj

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# D.O. SAMPLINGS

2-21-73

- #1 Rd. 2 NE Pronto Drain = 2.0 ppm
- #2 U & I DRAIN
- @ Freeway = 2.0 ppm
  - @ Wheeler Rd.  
Moses Lk. Rd = 8.0 ppm
  - @ outfall = 2.0 ppm
  - above outfall = 1.0 ppm
- 
- #3 North Arm - hind Coulee = 5.0 ppm = 7 or 8 holes
- #4 Rd 3 SE (east of Highway #17) = 8.0 ppm ←  
Pronto Drain

II Readings on 2-3-73 above Warden Lk. outlet  
were 2.0 ppm in the hind Coulee

III Readings on 2-16-73 @ Rd 3 SE (east of Highway #17)  
and where this drain (Pronto) enters hind Coulee  
were 6.0 ppm

← Samples taken and analyzed by Howard Bentin  
East. Reg. D.O.E.



Department of Ecology  
Spokane

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TO: Dan & Files

DATE: February 5, 1973

FROM: Howard Bunten

SUBJECT: Carnation Company - Moses Lake

Regarding the fish kill, there were no counts, and no species or carcasses available when Ray Duff investigated February 3, 1973.

*HWB*

HB:glc 3-5-73

cc: Bob Butler - Warden  
Carnation files  
U & I Files  
Complaint files

Ron Pine - DOE - Olympia ✓

enclosures: 2

*Left file via telecopier 3-5-73 11:15 a.m.*

D.O. Samplings

2-21-73

#1. Rd. 2 SE Pronto Drain = 2.0 ppm

#2. U & I DRAIN @ Truc way = 2.0 ppm

@ Wheeler Rd.  
Moses LK. Rd = 8.0 ppm

@ outfall = 2.0 ppm

above outfall = 1.0 ppm

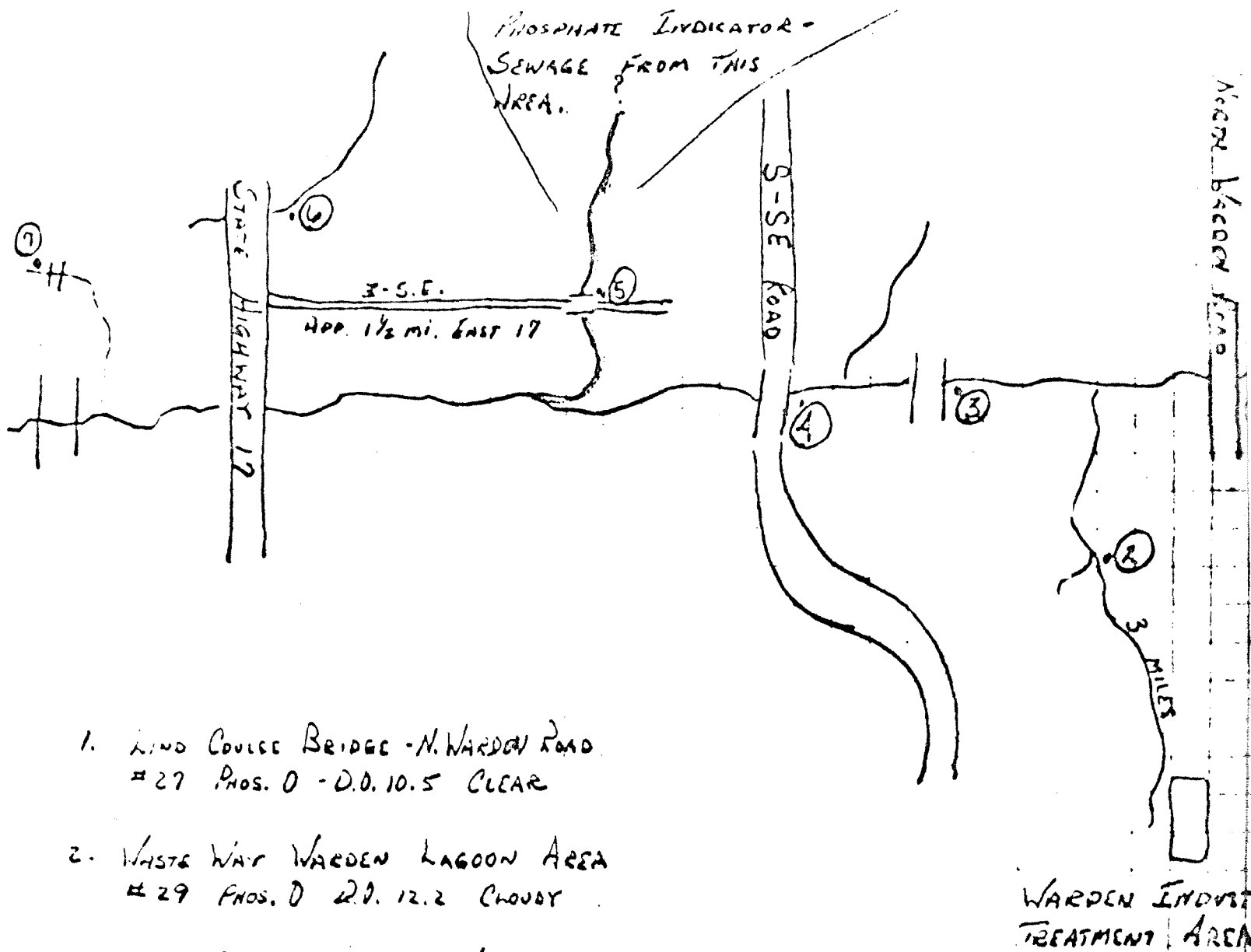
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#3 North Arm - hind Coulee = 5.0 ppm - Portholes

#4 Rd 3 SE (east of Hwy #17) = 8.0 ppm  
Pronto Drain ←

II Readings on 2-3-73 above Warden LK. outlet  
were 2.0 ppm in the hind Coulee

III Readings on 2-16-73 @ Rd 3 SE (east of Highway #17)  
and where this drain (Pronto) enters hind Coulee  
were 6.0 ppm



1. LIND COULCE BRIDGE - N. WARDEN ROAD  
#27 PHOS. 0 - D.O. 10.5 CLEAR
2. WASTE WAY WARDEN LAGOON AREA  
#29 PHOS. 0 D.O. 12.2 CLOUDY
3. LIND COULCE - BELOW WASTEWAY 1 mi  
#23 PHOS. 0 D.O. 11.5 MURKEY
4. S-SE ST BRIDGE ACROSS COULCE  
#24 PHOS. 0 D.O. 12.6 CLEAR
5. 3-5.5 BY BRIDGE WASTEWAY  
#26 MILKY - LARGE FLOW  
PHOS. 3.0 PPM D.O. 9.0
6. HIGHWAY 17 AND WASTEWAY S-SE  
#13 PHOS. 0 D.O. 8.9 MURKEY
7. RC DRAIN, LIND COULCE BRIDGE  
Below HIGHWAY 17 PHOS. 0 - D.O. 13

I AM RUNNING B.O.D. TESTS ON  
AREA # 5 FOR MY OWN  
INFORMATION HOWARD.