

M E M O R A N D U M

December 18, 1975

To: Ron Pine

From: Douglas Houck

Subject: Chewelah STP Class II Inspection

On November 12, Howard Bunten, Rhys Sterling and I met with Mayor Larry Richmond, Public Waters Director Jack Huffman and Gary Skok and Fred Nussbaum of Chewelah to discuss their NPDES permit. The city had yet to comply with the testing schedule stipulated within their permit.

After an hour of discussing the NPDES permit it was agreed upon that the City of Chewelah would start a monitoring program by December 15, 1975. This initial monitoring program would not include BOD, suspended solids or fecal coliforms. The first monthly EPA Summary Report and DOE Monthly Report is to be submitted by January 15, 1976. It was also agreed upon that city personnel acting as the sewage treatment plant operators would take the necessary certification examinations on February 2, 1976 for eventual certification as Class IV operators.

Composite samplers were installed to sample the influent and effluent. The location of the influent sampler was in front of the parshall flume. The location of the effluent sampler was at the end of the chlorine contact chamber. A 250 ml sample was taken every 30 minutes by both samplers. Two fecal coliform samples were taken on the 13th and analyzed at the Eastern Regional Laboratory. The chlorine residual and pH were determined and the construction of the parshall flume was checked.

The city uses a 12 inch, well constructed, parshall flume to measure the flow at the head works. At the time of the inspection the city was shown the proper location to measure the head which they had been doing incorrectly. At approximately 1400 hours the flow was 0.62 MGD. The pH and chlorine residual meet the permit requirements with the chlorine residual being approximately 2.0 ppm.

On the 13th I returned to pick up the composites. The samples were not split as the city of Chewelah did not have the capability to perform any type of analyses. Due to a sampler malfunction the effluent sample was only a seven hour composite. The results are given in the following table along with the weekly average effluent limitations.

	DOE		NPDES Permit
	Influent	Effluent	
BOD <sub>5</sub> (mg/l)	76	<8	75
T.S.S. (mg/l)	86	14	75
Fecal Coliforms (colonies/100 ml)		<200	--

The composites were also analyzed for COD's with the influent being 137 mg/l and the effluent being 43 mg/l. The results show that at the time of the survey Chewelah's three cell lagoon not only meets their present permit limitations but also secondary treatment.

DH:ee

STP Survey Report Form

Efficiency Study

City Chewelah Plant Type 3 cell lagoon Pop. Served \_\_\_\_\_ Design \_\_\_\_\_  
 Receiving Water Colville River Perennial X Intermittent \_\_\_\_\_ Capacity \_\_\_\_\_  
 Date 11-12/13-75 Survey Period 24 hrs. Survey Personnel Houck, Buntin, Sterling  
 Comp. Sampling Frequency 30 min. Sampling Alequot 250 ml  
 Weather Conditions (24 hr) clear, cold Are facilities provided for complete by-  
 pass of raw sewage? \_\_\_\_\_ Yes \_\_\_\_\_ No/Frequency of bypass \_\_\_\_\_  
 Reason for bypass \_\_\_\_\_ Is bypass chlorinated? \_\_\_\_\_ Yes \_\_\_\_\_ No  
 Was DOE Notified? \_\_\_\_\_ Discharge - Intermittent \_\_\_\_\_ Continuous \_\_\_\_\_

Plant Operation

Total flow \_\_\_\_\_ How measured \_\_\_\_\_  
 Maximum flow \_\_\_\_\_ Time of Max. \_\_\_\_\_  
 Minimum flow \_\_\_\_\_ Time of Min. \_\_\_\_\_  
 Pre Cl<sub>2</sub> none #/day \_\_\_\_\_ Post Cl<sub>2</sub> \_\_\_\_\_ #/day \_\_\_\_\_

Field Results

Influent

Effluent

Determinations	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp °C								
pH (Units)								
Conductivity (µmhos/cm <sup>2</sup> )								
Settleable Solids (mls/l)								

Laboratory Results on Composites

	Influent	Effluent	% Reduction	lbs/day
Laboratory No.	_____	_____		
5-Day BOD ppm	<u>76</u>	<u>&lt;8</u>	<u>89%</u>	
COD ppm	<u>137</u>	<u>43</u>	<u>69%</u>	
T.S. ppm	_____	_____		
T.N.V.S. ppm	_____	_____		
T.S.S. ppm	<u>86</u>	<u>14</u>	<u>84%</u>	
N.V.S.S. ppm	_____	_____		
pH (Units)	_____	_____		
Conductivity (µmhos/cm <sup>2</sup> )	_____	_____		
Turbidity (JTU's)	_____	_____		

Laboratory Bacteriological Results

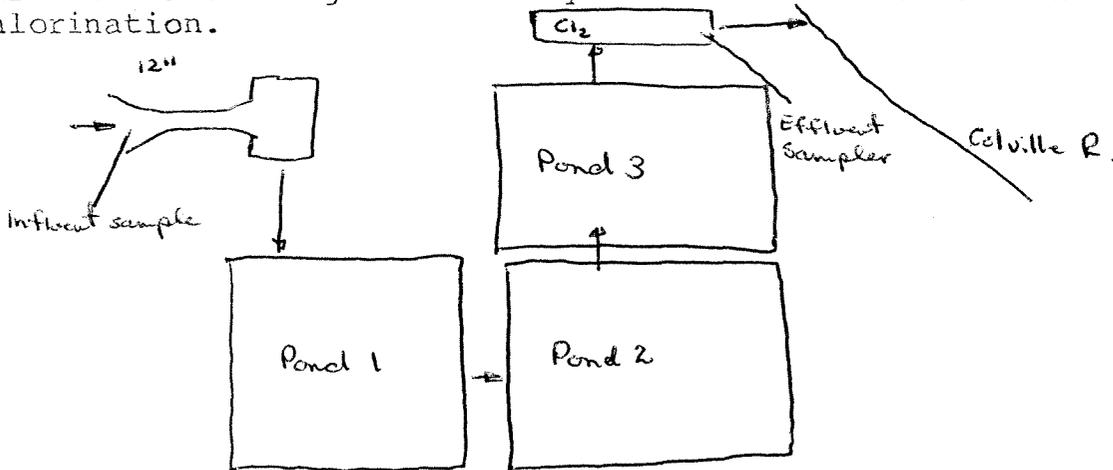
Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl <sub>2</sub> Residual	
		Total Coliform	Fecal Coliform	Fecal Strep		
			<200		> 0.5 mg/l	2.0

Additional Laboratory Results

NO <sub>3</sub> -N ppm	-
NO <sub>2</sub> -N ppm	-
NH <sub>3</sub> -N ppm	-
T. Kjeldahl-N ppm	-
O-PO <sub>4</sub> -P ppm	-
T-PO <sub>4</sub> -P ppm	-

Operator's Name \_\_\_\_\_ Phone No. \_\_\_\_\_

Furnish a flow diagram with sequence and relative size and points of chlorination.



Type of Collection System

Combined     Separate     Both

Estimate flow contributed by surface or ground water (infiltration)

\_\_\_\_\_ MGD

Plant Loading Information

Annual average daily flow rate (mgd)

Peak flow rate (mgd)

Dry \_\_\_\_\_

Dry \_\_\_\_\_

Wet \_\_\_\_\_

Wet \_\_\_\_\_

COMMENTS: The discharge from the lagoons is fairly constant throughout the day and year.

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

DATA SUMMARY

ORIGINAL TO: .....  
 ...DH.....  
 COPIES TO: .....  
 .....  
 .....  
 LAB FILES .....

Source Chewelah STP

Collected By D. Hoover

Date Collected 11-12-75

Log Number: 75-5222 23

Station:	INF	EFF											
pH													
Turbidity (JTU)													
Conductivity (umhos/cm)@25°C													
COD	137	43											
BOD (5 day)	76	<8											
Total Coliform (Col./100ml)													
Fecal Coliform (Col./100ml)													
NO3-N (Filtered)													
NO2-N (Filtered)													
NH3-N (Unfiltered)													
T. Kjeldahl-N (Unfiltered)													
O-PO4-P (Filtered)													
Total Phos.-P (Unfiltered)													
Total Solids													
Total Non Vol. Solids													
Total Suspended Solids	86	14											
Total Sus. Non Vol. Solids													

Note: All results are in PPM unless otherwise specified. ND is "None Detected"

Summary By Stephen D. Bell Date 11-20-75