



WASHINGTON STATE DEPARTMENT OF ECOLOGY
FACILITY INSPECTION FORM

FACILITY NAME: TREE TOP SELAH

SECTION 1: INSPECTION INFORMATION

START DATE JANUARY 6, 2011

PRIMARY INSPECTOR JIM LEIER

INSPECTION TYPE (CHECK ONE):

COMPLIANCE INSPECTION W/O SAMPLING ☒ X
COMPLIANCE INSPECTION W/ SAMPLING ☐
COVERAGE INSPECTION ☐
COMPLIANCE FOLLOW-UP INSPECTION ☐
TECHNICAL ASSISTANCE VISIT ☐
OPERATION & MAINTENANCE INSPECTION ☐

PERMIT # WA-000243-7
COMPLAINT #
LAB PROJECT #
ENFORCEMENT DOCKET #
SCHEDULED Y/N Y
ANNOUNCED
PART OF A GROUP:

**REASON FOR INSPECTION
(CHECK ONE)**

ROUTINE ☐
COMPLAINT ☐
DRIVE BY ☐
ENFORCEMENT ☐
QA ☐
BIO-MONITORING ☐
OTHER (SPECIFY) ☐

PARTICIPANTS

CHRIS CARY
GLEN SAGDAL
GREG LESNIAK
DON McMILLEN
JOEL
JIM LEIER
DEAN SMITH

AGENCY

ECY
ECY

**FAC. REP
(Y/N)**

Y
Y
Y
Y
Y
N
N

PHONE #

(509) 697-7251
509-697-7251
509-457-7124
509-457-7108

SECTION 2: FACILITY INFORMATION

FACILITY: TREE TOP SELAH
NAME: 220 EAST SECOND AVENUE
ADDRESS: SELAH, WA 98942

	<u>DATE</u>	<u>TIME</u>
ENTRY 1	<u>2011-01-06</u>	<u>9:30AM</u>
EXIT 1	<u>2011-01-06</u>	<u>11:15 PM</u>
ENTRY 2	<u> </u>	<u> </u>
EXIT 2	<u> </u>	<u> </u>
ENTRY 3	<u> </u>	<u> </u>
EXIT 3	<u> </u>	<u> </u>

**ENTRY TYPE
(CHECK ONE)**

DENY ☐
DELAY ☐
WARRANT ☐
REGULAR ☒ X

SECTION 3: AREAS EVALUATED DURING INSPECTION

N = NOT EVALUATED, S = SATISFACTORY
M = MARGINAL, U = UNSATISFACTORY

INSPECT BENCH SHEETS	N
INSPECT PERMIT	
RECORDS/REPORTS	N
FLOW MEASUREMENTS	
LABORATORY	N
EFFLUENT/RECEIVING WATER	N
PRE-TREATMENT	N
COMPLIANCE SCHEDULES	N
SELF MONITORING PROGRAM	Y
OPERATION & MAINTENANCE	N
SLUDGE DISPOSAL	N
FACILITY SITE REVIEW	N
OTHER (SPECIFY)	N
	Inspect new noncontact cooling water pretreatment system

SECTION 4: SUMMARY OF FINDINGS / COMMENTS (ATTACH ADDITIONAL PAGES IF NEEDED)

Ecology's Dean Smith and Jim Leier met in a Selah plant conference room with Don McMillen. (TT Selah plant chief supervisor), Joel, Greg Lesniak (Tree Top electrical engineer), Chris Cary, and Glen Sagdal. The meetings purpose was to be informed about the new non-contact cooling water (NCCW) pretreatment system that Tree Top had just brought online. January 6th was the 1st day the new system was totally operational. NCCW is produced from various processes within the juice plant. The treated NCCW will be discharged to the Selah Ditch via storm-drain. In recent years, this wastewater has been discharged either to the City of Selah or to the lagoon/sprayfield system. Therefore, the new pretreatment system should prevent or lessen hydraulic overloading of the lagoon/sprayfield. Glen Sagdal indicated a Tree Top goal is to reuse as much of this water for cleaning processes as possible, so total volumes discharged may decrease in ensuing years. After the conference room meeting, a tour of the plant was conducted, highlighting the new pretreatment system.

The new pretreatment system is a two tank batch system designed to keep the NCCW's pH, temperature, and organic concentration within permit limits. Anytime the NCCW exceeds given set points, the water will be routed to the lagoon/sprayfield treatment system. [The set points are: pH 6.5 – 8.5, temperature < 23.9 °C, and Total Organic Carbon (TOC) < 10 mg/L] If incoming NCCW TOC concentrations are >10 mg/L, catch tanks upstream from the pretreatment batch tanks can be grab-sampled to determine the source of the contamination.

The new system includes 2-12,000 stainless steel tanks with associated pH neutralization apparatus, 2,000 linear feet of new stainless steel piping, a GE Model 5310 Sievers TOC analyzer, fluid cooler, automated computerized control PLC system (Allen-Bradley), flow meter, numerous valves, level transmitters, and pumps. The PLC includes a "data historian" capability that can track and report system function over time. Tree Top is training all shift supervisors as to the function and necessity of this pretreatment system. Attached to this inspection report is a document provided by Tree Top entitled "Selah Plant Ditch Water System Operation" describing the system and its operation and maintenance.



SECTION 5: FOLLOW-UP (CHECK ALL THAT APPLY)

TYPE	DETAIL	RESP. PERSON	SCHEDULE	DONE
<input type="checkbox"/> RE-INSPECT	_____	_____	_____	_____
<input type="checkbox"/> RE-OPEN PERMIT	_____	_____	_____	_____
<input type="checkbox"/> TECH ASSIST-REGULAR	_____	_____	_____	_____
<input type="checkbox"/> TECH ASSIST-OUTREACH	_____	_____	_____	_____
<input type="checkbox"/> MOD PERMIT AT RENEWAL	_____	_____	_____	_____
<input type="checkbox"/> FACILITY ACTION	_____	_____	_____	_____

SECTION 6: ACTIVITIES (CHECK ALL THAT APPLY)

DESCRIPTION	DATE COMPLETED	TRACKING NUMBER
<input type="checkbox"/> DRAFT INSPECTION REPORT COMPLETED	_____	_____
<input type="checkbox"/> FINAL INSPECTION REPORT COMPLETED	_____	_____
<input type="checkbox"/> INSPECTION REPORT REVIEWED	_____	_____
<input type="checkbox"/> SAMPLES TO LAB	_____	_____
<input type="checkbox"/> OTHER	_____	_____

SECTION 7: SIGNATURES

	NAME (PRINT)	SIGNATURE	DATE	AGENCY/PH#
INSPECTOR 1	JIM LEIER		1-6-2011	509-457-7124
INSPECTOR 2	DEAN SMITH		2-9-2011	509-457-7108
REVIEWER				

Selah Plant Ditch Water System Operation

General Overview

The Ditch water System consists of two 12,000 gallon holding tanks A-1 and a-2, a fluid cooler, a pH adjustment system and system recirculation/discharge pumps. The purpose of the system is to keep the water to be discharged between the Department of Ecology limits of 6 and 9 pH, below 80 F and below 10 ppm TOC.

The system operates in a batch operation that fills, neutralizes and cools the process water, tests for total organic carbon (TOC) content and discharges the water to the floor or Selah ditch. The system operates in the following sequence:

- One or both tanks are enabled from the Main Screen tank Enable buttons
- The tank(s) is then placed into Auto Control Mode by pressing the control auto button from the tank control screen. The first tank to be placed into auto control is the lead tank if both tanks are selected.
- The tank agitator is enabled by selecting the agitator auto button on the tank control screen
- The tank pH control is enabled by selecting the pH auto button on the tank control screen
- The tanks that is first enabled and placed into auto control will receive water from the plant.
- Once the tank level reaches 10% the recirculation pump will begin to run. This setpoint is HMI adjustable from the tank control screen.
- If the temperature of the tank water is above 75 F the water will be routed to the fluid cooler where the cooler fan will be commanded to start and the cooling water pump will run. If the water is below 75 F the water will recirculate in the tank facilitating mixing for pH control. The temperature control setpoint is not adjustable.
- Once the tank reaches 15% the pH control will be enabled and will control pH between 6.5 and 8.5. The pH setpoint is not adjustable.
- Once the tank level reaches 33% the system will perform a mid-level check for TOC. The system purges the sample lines and the TOC analyzer before performing a sample. The system will provide water to the analyzer during the entire analysis cycle of approximately 20 minutes. If the TOC result is below 10 ppm the system continues to receive water from the plant. If the TOC result is greater than or equal to 10 ppm the system switches to discharge mode, dumps the tank water to the floor, sets a high TOC alarm and disables both systems. When this occurs the cause of the high TOC water needs to be identified and corrected before placing the systems back into operation.
- Once the tanks level reaches 85%, the temperature is below 75F and the pH is between 6.5 and 8.5 the system the system will conduct another TOC sample to release the batch for discharge. If the TOC result is below 10 PPM the system will discharge the contents to the Selah Ditch. If the TOC result is equal to or greater than 10 ppm the system will drain the contents to the floor, alarm on HI TOC. Once the system is drained the system will disable both systems and alarm on

TOC failure. When this occurs the cause of the high TOC water needs to be identified and corrected before placing the systems back into operation.

- If the system does not meet the pH or temperature criteria within 15 minutes of reaching 85% the system will alarm on neutralization or cooling failure.
- If the system level reaches 90% the system will divert incoming water to drain and alarm on HHH level. The cause of why the system has not meet pH or conductivity needs to be investigated since this is an abnormal event.
- If the TOC results are less than 10 ppm and the pH and temperature criteria are met the system will drain to the Ditch and at the same time if the alternate tank is enabled and control is set in auto the alternate tank will begin to receive water from the plant.
- If an alternate tank is not available and the TOC result was below 10 ppm the tank will drain to the ditch and when it reaches 2% the system will re-enter the fill/neutralize/cool mode.
- If the system does not perform a TOC sample at least every 18 hours the system will attempt to perform a mid-level check. This function keeps the oxidizer fresh in the TOC analyzer. If the system cannot perform a TOC sample in 24 hours the system will generate an alarm and disable both tanks since the system will not be able to test for TOC.
 - If the system generates this alarm the alarm can be cleared by running a manual grab sample on the TOC analyzer or by manually starting a system recirculation pump, opening the associated tank bottom valve, recirculation valve and TOC sample valve. Then manually open FV-030, TOC sample flush valve, for 2 minutes then manually close. Then open the TOC analyzer sample valve, FV-029, and press the grab sample button from the TOC analyzer screen on the HMI. Wait for the TOC system to display a result or wait from the grab sample button to return from the grey "In Progress" indicator. Once the TOC analyzer completes the system alarm will clear and the system will be ready for operation.

Fluid Cooler Operation

The fluid cooler cools the water from the operating system when the temperature rises above 75 F. When the cooler is called to operate the cooler's fan and cooling water circulation pump are commanded to start.

- When the outside temperature drops below 34 F the outside temperature switch mounted on the fluid cooler control panel commands fluid cooler drain valve, FV-025, to open when the system is not sending water to the cooler.
- When the outside temperature drops below 32 F the fan is commanded to turn on to prevent ice and snow build up.
- The fluid cooler has a sump mounted temperature switch that turns on the sump heater to prevent freezing when the thermostat determines the sump water is too cold.

- The fluid cooler has a level switch this interlocks the sump heater and the circulation pump from running when the sump level is below the switch setpoint. When the sump is low an alarm is generated notifying the operators that the sump is low and requires attention.

Manual Operation

The system allows manual operation of most controlled components with the exception of the discharge valve to the Selah Ditch, FV-006. Manual operation should only be used to assist in clearing alarms and when performing maintenance and troubleshooting.

Control devices can be placed into hand mode by pressing the auto button. The button will turn yellow and display "HAND" this indicates the mode of the device. The device can be turned on and off by pressing the start/stop of open/close button next to the hand/auto button.

Pump speed can be manually controlled from the Maintenance -> Set-points screen. These speeds are for manual operation only and do not affect the automatic speed control of the pumps.

CAUTION: There are no automatic controls when a device in hand operation. It is the operator's responsibility to monitor the system and prevent system damage.

Routine Maintenance

- The TOC analyzer should be checked at least daily for alarms and messages that could affect the units operation.
- Per the TOC operators manual add DI water to the reservoir when it is necessary. The DI level should be checked once per week.
- The reagents, acid and oxidizer, have an installed life of 3 months. The instrument will indicate when the reagents have less than 15 days of useful life. The reagents should be changed before their expiration date to ensure proper operation of the analyzer. If the reagent life timer is not reset the system will cease to operate until new reagents are installed per the TOC user manual.
- TOC sample line filters need to be changed every 6 months or when they become clogged.
- The inline analyzer sample filter should be changed every 3 to 6 months or if the system starts to fail on "flow failure" alarms.
- The TOC meter preventive maintenance procedures must be followed for proper system operation.
- pH meters need to be standardized at least once every month using a two point standardization method and 4.00 and 7.00 pH buffers.
- Level transmitters, conductivity transmitters and the magnetic flow meter need to be calibrated once per year per the manufacture's recommendations for proper operation.