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January 16, 2006



Department of Ecology
Water Quality Program

JAN 20 2006

Department of Ecology
Water Quality Program
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TREE TOP, INC.

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Attention: Joyce M. Smith, Industrial Stormwater Permit Coordinator

Reference: Industrial Stormwater General Permit No. SO3-000566D (Selah Facilities)
Fourth Quarter of 2005

Dear Ms. Smith:

Enclosed is a quarterly monitoring report for Tree Top's facilities at Selah, for the sampling location identified in the **Storm Water Monitoring Plan** as Catch Basin D10, located in Railroad Avenue between the Technical Center and the Corporate Office.

Also enclosed is a Level 3 Response Report.

Sincerely,

Jeff W. Davis
Civil Projects Engineer

Copy: Dan Mathison, Carol Hyatt, file



SO3-000566D

INDUSTRIAL STORMWATER GENERAL PERMIT DISCHARGE MONITORING REPORT

*Entered
22 Feb 06*

 MONITORING PERIOD (year/quarter): 2005 Jan/Feb/Mar Apr/May/Jun Jul/Aug/Sep Oct/Nov/Dec
Facility / Site Information
 Tree Top, Inc. – Selah Facilities
 Location: 205 S. Railroad Avenue
 & 101 South Railroad Avenue
 County: Yakima
Mailing Information
 TREE TOP, INC.
 220 E. 2ND AVE
 SELAH, WA 98942-0248
 Primary SIC Code: 2086

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A Discharge Monitoring Report (DMR) must be sent to Ecology every quarter. If there was no discharge or you have suspended testing for a parameter because of consistent attainment of benchmark values, mark the appropriate boxes and send the DMR to Ecology. Please read the instructions before completing the DMR. This form must be signed and dated on the second page before submittal to Ecology.

Discharge Point <u>Catch Basin D10</u>		Sampled <u>11 01 2005</u>				
Quarterly Monitoring		Average	Maximum	Units	Sample Type	Events Sampled
Turbidity	Consistent Attainment? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		189	NTU	Grab	1
pH	Consistent Attainment? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		7.30	Standard Units	Grab	1
Zinc (total)	Consistent Attainment? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		181	µg/L	Grab	1
Oil & Grease	Consistent Attainment? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		5.6	mg/L	Grab	1
Nitrate/Nitrite as N	Consistent Attainment? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		0.35	mg/L	Grab	1
Lead, total	Consistent Attainment? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		6.4	µg/L	Grab	1
Copper, total	Consistent Attainment? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		7.9	µg/L	Grab	1
Hardness, as CaCO ₃	Consistent Attainment? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		22	mg/L	Grab	1
Phosphorus (TP)	Consistent Attainment? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		0.20	mg/L	Grab	1
BOD ₅	Consistent Attainment? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		18	mg/L	Grab	1

COMMENTS/ EXPLANATIONS See attached information.

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See 18 USC § 1001 and 33 USC § 1319 (Penalties under these statutes may include fines up to \$10,000.00 and or maximum imprisonment of between six months and five years.)

 Jeff W. Davis, Civil Projects Engineer
 509 697.7251 x1613 jdavis@treetop.com

 Signed: Month January Day 16 Year 2006



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SELAH FACILITIES STORM WATER
FOURTH QUARTER 2005
LEVEL 3 RESPONSE REPORT

January 16, 2006

1. MONITORING RESULTS

A storm water sample was obtained on November 1, 2005. Table 1 summarizes analysis results. Two benchmark values were exceeded; a **Level 1 Response** is required.

Table 1 – Fourth Quarter Sample versus Benchmark Values

Parameter	Benchmark Values	11/01/2005 Sample	Benchmark Exceeded?
BOD ₅	30 mg/liter	18 mg/liter	No
Copper, total	63.6 µg/liter	7.9 µg/liter	No
Hardness, as CaCO ₃	not in permit	22 mg/liter	not applicable
Lead, total	81.6 µg/liter	6.4 µg/liter	No
Nitrate/Nitrite, as N	0.68 mg/liter	0.35 mg/liter	No
Oil & Grease	15 mg/liter	5.6 mg/liter	No
pH	from 6 to 9 SU	7.3 SU	No
Phosphorus, total	2.0 mg/liter	0.20 mg/liter	No
Turbidity	25 NTU	189 NTU	Yes
Zinc (total)	117 µg/liter	181 µg/liter ⁽¹⁾	Yes

⁽¹⁾ Dissolved zinc was 85.0 µg/liter.

2. MONITORING HISTORY

Table 2 summarizes the last five quarterly analyses and compares them to benchmark concentrations. Total phosphorous and pH have qualified for *Consistent Attainment* and are shown in blue text. Values exceeding benchmark levels are shown in red text.

Table 2 – Monitoring History

Parameter	Benchmark	09/13/2004	01/18/2005	05/05/2005	07/22/2005	11/01/2005
BOD ₅	30 mg/L	27.5	43.5	30.0	153	18
Copper, total	63.6 µg/L	--	--	--	28	7.9
Lead, total	81.6 µg/L	--	--	--	59	6.4
NO ₃ /NO ₂ N	0.68 mg/L	0.52	0.71	0.74	2.4	0.35
Oil & Grease	15 mg/L	3.8	19.1	8.3	6.4	5.6
pH	6 → 9	6.1	7.75	7.4	7.4	7.3
Phosphorous, total	2.0 mg/L	0.34	1.05	0.47	0.90	0.20
Turbidity	25 NTU	28	2,300	182	88	189
Zinc, total	117 µg/L	77.6	1,020	361	1,470	181

3. LEVEL 1 RESPONSE

3.1 REQUIREMENTS

Tree Top must take the following actions each time that a quarterly sampling result exceeds a benchmark value or falls outside the benchmark range for pH.

- a. Conduct an inspection of the facilities as promptly as possible but no later than two weeks after receipt of sampling results; the inspection shall:
 - evaluate possible sources of the pollutant,
 - identify source / operational control methods by which Tree Top can further reduce stormwater contamination,
 - evaluate whether any improvements or changes to the **SWPPP** are warranted to control the benchmark parameter,
- b. summarize the results of the inspection, including remedial actions taken, if any, and place them in the **SWPPP**,
- c. evaluate the need for a **Level 2** or **Level 3 Response**, and
- d. submit to WDOE a brief summary of inspection results and remedial actions with the quarterly discharge monitoring report for the quarter for which sample results were above benchmark values.

3.2 LEVEL 1 RESPONSE

An inspection was conducted on the same day as sampling. There were no changes from the conditions evaluated in the **SWPPP**.

Based on the results of previous monitoring it was anticipated that zinc and turbidity would exceed benchmark concentrations. Zinc and turbidity both appear to be attributable to tire wear on paved areas. Turbidity is further discussed in the Level 3 section of this report.

4. EVALUATION OF NEED FOR RESPONSE LEVELS 2 AND 3

The Storm Water Permit establishes Action Levels (threshold concentrations) for a variety of parameters. If these levels are exceeded, specific responses are required:

- if any two of the four previous quarterly results for a parameter are above the Action Levels identified below, then a **Level 2** response is required,
- if any four quarterly results for a particular parameter are above the Action Levels, then a **Level 3** response is required.

The following table summarizes the last four quarterly results and associated Action Levels. Results above action levels are shown in red text. A **Level 3 Response** is required by turbidity.

Parameter	Action Level	01/18/2005	05/05/2005	07/22/2005	11/01/2005
BOD ₅	60 mg/L	43.5	30.0	153	18
Copper, total	149 µg/L	--	--	28	7.9
Lead, total	159 µg/L	--	--	59	6.4
NO ₃ /NO ₂ N	1.36 mg/L	0.71	0.74	2.4	0.35
Oil & Grease	30 mg/L	19.1	8.3	6.4	5.6
P, total	4.0 mg/L	1.05	0.47	0.90	0.20
pH	outside 5-10	7.75	7.4	7.4	7.3
Turbidity	50 NTU	2,300	182	88	189
Zinc, total	372 µg/L	1,020	361	1,470	181

If a **Level 3** response is triggered, Tree Top must:

- 1) promptly identify the potential sources of stormwater contamination that are causing or contributing to the presence of the offending parameter,
- 2) investigate all available options of source control, operational control, and stormwater treatment BMPs to reduce levels to or below benchmark values,
- 3) implement additional source control, operational control and stormwater treatment BMPs identified as part of this investigation within twelve months of initiating the **Level 3** response,
- 4) prepare a **Level 3** source control report outlining actions taken, planned and scheduled to reduce stormwater contaminant levels including stormwater treatment BMPs,
- 5) submit the **Level 3** source control report to WDOE within twelve months of initiating a **Level 3** response.

Tree Top may request a waiver from employing stormwater treatment BMPs. The waiver request must be submitted to WDOE within 3 months of initiating the Level 3 response and must include

an explanation why the implementation of stormwater treatment BMPs are infeasible, and are not necessary for compliance with water quality standards due to unique site conditions. The stormwater treatment waiver request must be reviewed and approved by Ecology as a modification of permit coverage in accordance with condition S1.D of the Permit before the stormwater treatment waiver becomes effective.

5. LEVEL 3 RESPONSE FOR TURBIDITY

5.1 SOURCES OF TURBIDITY

Tree Top's Selah campus depends upon intense vehicular activity at all times. Fruit is brought onto the site in bins that are carried by flatbed trucks and is then transported from storage to processing areas by forklifts. Turbidity is created by the mud that falls off of trucks, especially in winter, and by tire wear.

Much of the turbidity appears to be related to tire wear. During dry weather trucks are generally mud-free and tire wear is the primary source of turbidity. This is apparent from the definite black color of runoff that has been observed in dry weather samples.

Maneuvering trucks in tight quarters results in dragging tires sideways. The steering wheels on forklifts are constantly shifted when moving bins. These actions are thought to be the primary sources of tire dust.

As an indicator of the severity of this problem, Tree Top has identified forklift tire wear as the source of black dust that is often accumulates on racking and finished product in warehouses with concentrated forklift activities.

5.2 OPTIONS AVAILABLE FOR TURBIDITY REDUCTION

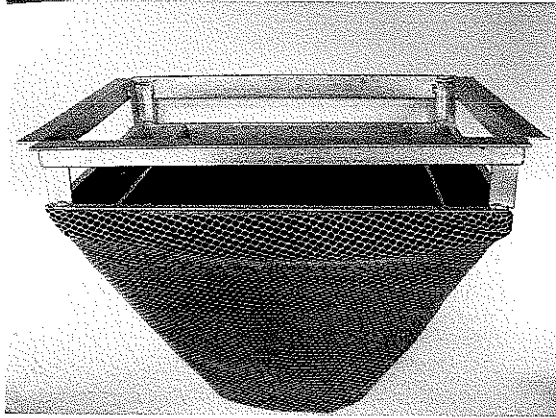
Turbidity could be reduced by:

- sweeping pavement in heavy traffic areas,
- interception and conveyance to wastewater treatment facilities,
- screening at catch basins.

It is not clear that sweeping would effectively remove the fine rubber particles created by tire wear. Also, sweeping would be expensive and difficult to carry out during the peak of the processing season when bin storage areas are used constantly. Finally, sweeping is not effective in wet or snowy conditions. Sweeping will not be considered, at least at the present time. Interception for treatment would have high capital costs and would reduce the capacity of Tree Top's wastewater transportation and treatment facilities. Further¹ interception will not be considered, at least at the present time.

¹ Tree Top already intercepts most of the pavement where fruit is handled and where there is a high probability of contamination with fruit solids.

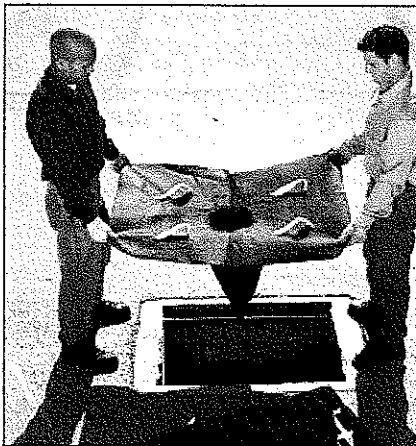
A variety of inlet filters are commercially available for stormwater catch basins. These filters are basket screens that hang from the inlet frame. The screens are cleaned by lifting the basket out of the basin. The baskets will typically overflow directly into the catch basin at very high flows or if the screen is blinded with debris. A typical basket is illustrated below.



Inlet filters will be considered further, as described below.

5.3 IMPLEMENTATION

Tree Top purchased and installed an inexpensive fabric catch basin inlet filter in Catch Basin D10 on January 16, 2006. The fabric filter is as shown below, and will provide the same degree of filtration achieved with the basket-type device shown above.



Stormwater samples will be collected both above and beneath the screen and the results will be summarized in the first quarter report.

Samples collected above the screen represent the stormwater generated by the entire campus and will be analyzed for all parameters. The sample below the screen will be tested only for turbidity, soluble zinc, and total zinc.

If the test indicates that zinc and turbidity are sufficiently reduced and that the device has reasonable maintenance requirements, then Tree Top will install them on all catch basins that discharge directly into the City storm sewer on Railroad Avenue and will maintain them as required.