



EXECUTIVE SUMMARY

Testing of the Orenco Systems Advantex AX20N, rated at 500 gpd, was conducted under the provisions of ANSI/NSF Standard 40 for Residential Wastewater Treatment Systems (July 2000 revision). ANSI/NSF Standard 40 was developed by the NSF Joint Committee on Wastewater Technology.

The performance evaluation was conducted at the Mamquam Wastewater Technology Test Facility located in Squamish, British Columbia, using wastewater diverted from the Mamquam municipal wastewater treatment plant, which serves a predominantly residential neighborhood. The Mamquam Wastewater Technology Test Facility is a Standard 40 subcontractor for NSF. The evaluation consisted of six days of dosing prior to the start of sampling, followed by sixteen weeks of dosing at design flow, seven weeks of stress test and three weeks of dosing at design flow. Sampling started in the spring and continued into the fall, covering a range of operating temperatures. Over the course of the evaluation, the average effluent CBOD₅ was 5 mg/L, ranging between <2 and 25 mg/L, and the average effluent suspended solids was 4 mg/L, ranging between <2 mg/L and 42 mg/L. The Advantex AX20N produced an effluent that successfully met the performance requirements established by ANSI/NSF Standard 40 for Class I effluent:

The maximum 7-day arithmetic mean was 14 mg/L for CBOD₅ and 11 mg/L for suspended solids, both below the allowed maximums of 40 and 45 mg/L respectively. The maximum 30-day arithmetic mean was 8 mg/L for CBOD₅ and 6 mg/L for suspended solids, both below the allowed maximums of 25 and 30 mg/L respectively. The effluent pH during the entire evaluation ranged between, 6.0 and 7.2, within the required range of 6.0 to 9.0. The plant met the requirements for noise levels (less than 60 dbA at a distance of 20 feet) and color, threshold odor, oily film and foam.

SUMMARY OF ANALYTICAL RESULTS

	Average	Std. Dev.	Minimum	Maximum	Median	Interquartile Range
CBOD ₅ (mg/L)						
<i>Influent</i>	162	100	40	550	130	100-180
<i>Effluent</i>	5	4	<2	25	3	2-6
Suspended Solids (mg/L)						
<i>Influent</i>	291	267	34	1600	200	130-340
<i>Effluent</i>	4	5	<2	42	3	2-4
Turbidity (NTU)						
<i>Effluent</i>	3.8	1.1	2.0	7.8	3.6	3.0-4.4
pH						
<i>Influent</i>	-	-	6.5	7.6	7.0	6.8-7.1
<i>Effluent</i>	-	-	6.0	7.2	6.4	6.3-6.6
Temperature (C)						
<i>Influent</i>	16	2	13	20	17	15-18
<i>Effluent</i>	17	3	11	22	18	15-19