

August 13, 1974

WA-22-0010

Memo to: Mike Price and Ron Robinson

From: Dan Glantz

Subject: Ocean Spray Cranberries Inc. at Markham (Westport Area)

State of
WASHINGTON
Department
of Ecology



The plant was surveyed on May 28, 1974. Four samples of influent and effluent were composited at hourly intervals commencing at 1000 and ending at 1400 hours.

The wastewater system consists of two (2) lagoons in series. The first is 135' x 85' (11,475 square feet) and the second is 180' x 54' (9,720 square feet). Each lagoon has an aeration unit. The influent is passed through a wet well and large bar screen (not entirely effective). Another screen arrangement surrounds the pump out area in the second lagoon. This pump lifts into two sets of two 1200 gallon, above ground, septic tanks serving as chlorine detention chambers before discharging through two exposed 4" pipes into the estuary.

The results of our tests show pH readings within the prescribed range. Coliform control is good, with satisfactory Cl₂ residual. However, BOD and solids control will have to improve to comply with the proposed permit, as will submerging of the effluent line. It may be that improving the influent screening will solve most of the problems as considerable processing residue, including whole berries, is entering the first lagoon.

Field and laboratory results are attached for your further reference.

DC:jmh

STP Survey Report Form

Efficiency Study

City Ocean Spray @ Markham Plant Type Cranberry Processing Pop. Served _____ Design Capacity _____
 Receiving Water St. John's Estuary Perennial _____ Intermittent X
 Date 5/28/74 Survey Period 1000 - 1400 hours Survey Personnel D. Glantz
 Comp. Sampling Frequency Hourly Sampling Alequot 1000 ml
 Weather Conditions (24 hr) Cool Are facilities provided for complete by-pass of raw sewage? _____ Yes _____ No/Frequency of bypass None
 Reason for bypass _____ Is bypass chlorinated? _____ Yes _____ No
 Was DOE Notified? _____ Discharge - Intermittent _____ Continuous _____

Plant Operation

Total flow 180,000 GPD How measured Operator estimate
 Maximum flow _____ Time of Max. _____
 Minimum flow _____ Time of Min. _____
 Pre Cl₂ _____ #/day Post Cl₂ _____ #/day

Field Results

Influent

Effluent

<u>4</u> Determinations	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp °C	27.0	25.0		26.5	17.5	16.0		16.5
pH (Units)	7.6	6.4		6.8	7.0	6.7		6.8
Conductivity (µmhos/cm ²)	250	170		213	750	675		713
Settleable Solids (mls/l)	11.0	2.0	7.0	8.0	---	---	---	---

Laboratory Results on Composites

	<u>Influent</u>	<u>Effluent</u>	<u>% Reduction</u>
Laboratory No.	<u>74-2109</u>	<u>74-2110</u>	
5-Day BOD ppm	<u>>810</u>	<u><400</u>	<u>51</u>
COD ppm	<u>2010</u>	<u>68</u>	<u>97</u>
T.S. ppm	<u>2005</u>	<u>394</u>	<u>80</u>
T.N.V.S. ppm			
T.S.S. ppm	<u>199</u>	<u>56</u>	<u>72</u>
N.V.S.S. ppm			
pH (Units)	<u>6.9</u>	<u>7.1</u>	
Conductivity (µmhos/cm ²)	<u>210</u>	<u>620</u>	
Turbidity (JTU's)	<u>33</u>	<u>14</u>	

Laboratory Bacteriological Results

Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl ₂ Residual	
		Total Coliform	Fecal Coliform	Fecal Strep	15"	3 Min
74-2111	1000	Est. 40	<10		.75	1.0
12	1100	< 20	<10		.5	1.0
13	1300	< 20	<10		.5	1.0
14	1400	< 20	<10		0	0 *
15	1430	< 20	<10			

*Chlorinator appeared to be malfunctioning.

Additional Laboratory Results

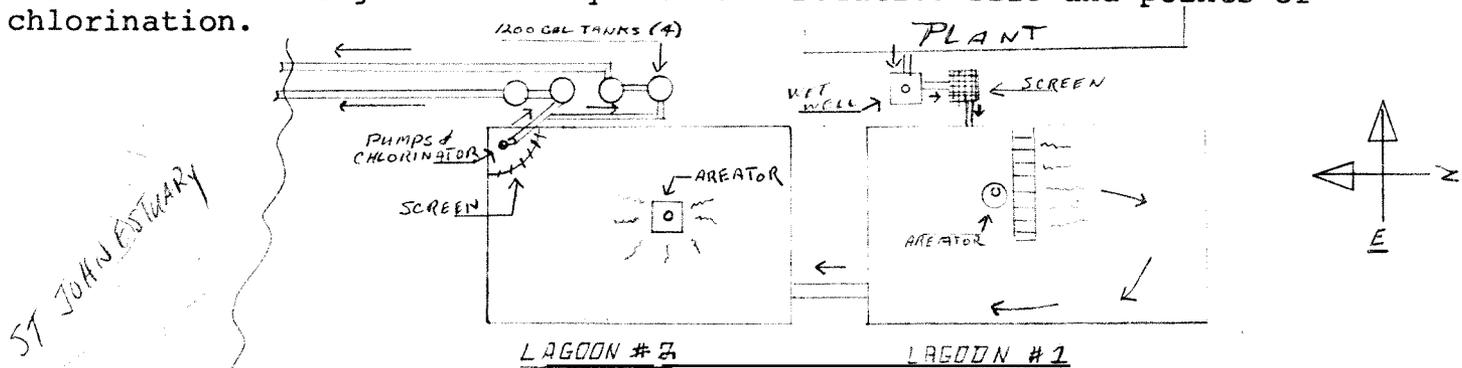
NO ₃ -N ppm	-	.06
NO ₂ -N ppm	-	ND
NH ₃ -N ppm	-	---(1)
T. Kjeldahl-N ppm	-	---(1)
O-PO ₄ -P ppm	-	.65
T-PO ₄ -P ppm	-	1.90

(1) Not analyzed - time expired.

Operator's Name Arnie Lockhardt, Supt.

Phone No. 648-2262

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)

None

MGD

Plant Loading Information

Annual average daily flow rate (mgd)

Peak flow rate (mgd)

Dry _____

Dry _____

Wet _____

Wet _____

COMMENTS: _____

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

ORIGINAL TO:
..D. GLANTZ.....
COPIES TO:
.....
.....
LAB FILES

DATA SUMMARY

Source Ocean Spray @ Markham

Collected By D. GLANTZ

Date Collected 5-28-74

Goal, Pro./Obj. _____

Log Number:	74- 2109	10	11	12	13	14	15				STORET
Station:	INF	EFF	1000	1100	1300	1400	1430				
pH	6.9	7.1									00403
Turbidity (JTU)	33	14									00070
Conductivity (umhos/cm)@25°C	210	620									00095
COD	2010	68									00340
BOD (5 day)	>810	<400									00310
Total Coliform (Col./100ml)	-	-	est 40	<20	<20	<20	<20				31504
Fecal Coliform (Col./100ml)	-	-	<10	<10	<10	<10	<10				31616
NO3-N (Filtered)		.06									00620
NO2-N (Filtered)		ND									00615
NH3-N (Unfiltered)		-*									00610
T. Kjeldahl-N (Unfiltered)		-*									00625
O-PO4-P (Filtered)		.65									00671
Total Phos.-P (Unfiltered)		1.90									00665
Total Solids	2005	394									00500
Total Non Vol. Solids											
Total Suspended Solids	199	56									00530
Total Sus. Non Vol. Solids											

Note: All results are in PPM unless otherwise specified. ND is "None Detected"
Convert those marked with a * to PPB (PPM X 10³) prior to entry into STORET

* Not analysed due to heavy loading

IN THE AREA AND THE HOLDING TIME EXPIRING

Summary By

Stephen D. Roll

Date 7-17-74