

*A COMMERCIAL APPLICATION OF
VIROFLOW™ TECHNOLOGY*

CASE STUDY TASMAN SHEEPSKIN TANNERY

*“Chromium levels dropped to well below regulatory limits...
and there was substantial odour reduction.”*



PROBLEM

Tasman Sheepskin Tannery is the largest sheepskin tannery in Australia. Wastewater generated from the tanning process was high in chromium, solids, organic matter and sulphates. The existing wastewater treatment system was novel and required substantial improvement in order to minimise pollutant concentrations for discharge water. The sludge generated from the wastewater system was highly unstable and contaminated with chromium.

VIROTEC TOTAL SOLUTION

The use of ViroFlow™ Technology resulted in a vastly improved wastewater quality that meets all local water authority requirements. The sludge produced from the application of ViroFlow™ Technology was dense, stable and bound chromium sufficiently tightly that all leachates met regulatory standards. During the application of ViroFlow™ Technology there were substantial decreases in odour generation from the wastewater system.

The Virotec Technology components included design, engineering, application, monitoring and liaison with regulatory authorities.

BACKGROUND

Tasman Sheepskin Tannery is the northern-most sheepskin tannery production plant in Australia. It is located just north of Brisbane; the tannery was originally established in what was once a rural area but new residential developments are now close by, making odour an increasing issue.

Tasman Sheepskin Tannery specialises in the production of lamb and sheep skins for medical use, decorative floor rugs, universal and tailored car seat covers, baby care rugs, and under blankets, together with skins for boot and coat manufacturing.

Tasman Sheepskin Tannery produces around 6,000 sheep hides per month. The effluent plant produces about 350 kL/week of wastewater from the process. The plant normally operates 16 hours per day, 5 days per week.

TREATMENT METHODS

The pre-existing wastewater system consisted of five settling dams, to which lime and aluminium sulphate were added to precipitate chromium. The ViroFlow™ Technology treatment system involved spraying the primary treatment dam with ViroChrome™ reagents in order to remove chromium, total suspended solids, and sulphates. ViroFlow™ Technology complemented the existing treatment method. There was no significant capital involved with the implementation.



Tasman Sheepskin Tannery produces around 6,000 sheep hides per month.

ViroChrome™ reagents A and B are mixed on site and applied to the primary treatment dam on a daily basis to coincide with tanning operations.

ViroChrome™ reagent is a patented, environmentally safe reagent that is non-toxic and nonhazardous.

RESULTS

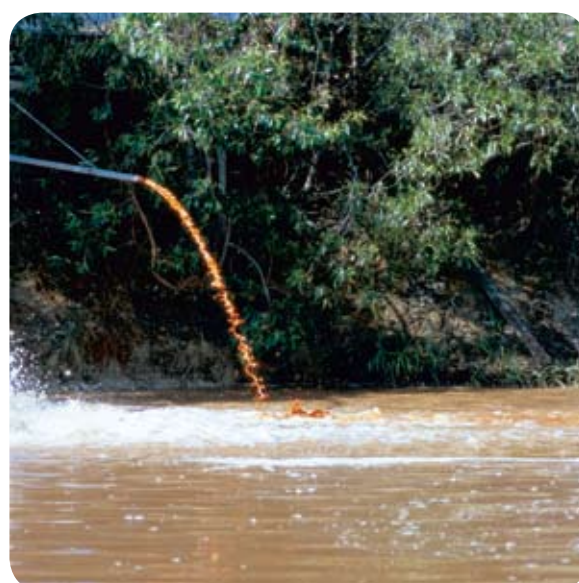
ViroFlow™ Technology ensured that chromium concentrations in the waste liquid were well below the trade waste thresholds. A significant result of the application of ViroFlow™ Technology was the substantial odour reduction. Odour at the tannery treatment plant is now barely noticeable.



One of the treatment ponds prior to treatment.

The Table below summarises the results obtained using ViroFlow™ Technology. Due to variability of raw effluent, some ranges are given.

Analyte	Raw Effluent	Effluent Quality Using Conventional Treatment	Effluent Quality After ViroFlow™ Technology Treatment
pH	4.0 - 5.5	5.76	8.0
Chromium	50 - 100 ppm	10 ppm	0.3 ppm
Sulphate	500 - 1,000 ppm	453 ppm	55 ppm
BOD	1,000 - 2,000 ppm	250 mg/L	222 mg/L
COD	2,000 - 3,000 ppm	405 mg/L	350 mg/L
Total Dissolved Solids	10,000 - 15,000 ppm	7,296 mg/L	5,658 mg/L
Odour Levels	Very High	High	Very Low



The ViroChrome™ reagents being applied to the treatment pond.

CONCLUSION

ViroFlow™ Technology has proven to be successful in the treatment of tannery wastewater at Tasman Sheepskin Tannery. Chromium concentrations dropped to well below regulatory limits the chromium was sufficiently tightly bound in the sludge produced from the treatment that it was classed as a non-hazardous material.

The use of ViroFlow™ Technology to treat tannery effluent is both environmentally sustainable and economically viable.

TESTIMONIAL

“As Tannery Manager, I understand that environmental awareness is very important to business survival. Virotec have offered Tasman Sheepskin Tannery a Total Solution in regards to treatment of wastewater generated from the tanning process and the treatment of solid waste generated from the wastewater system.

I was extremely interested to hear about the new ViroChrome™ reagent product and was keen to undertake an extended trial of ViroFlow™ Technology using ViroChrome™ reagents. During this time, the results achieved were very good, with chromium concentrations being lowered significantly.

During the ViroFlow™ Technology trial, independent testing was carried out by the local wastewater authorities. The results of this testing confirmed the success of ViroFlow™ Technology. I am now enthusiastic and look forward to on-going work with Virotec.

A substantial benefit of ViroFlow™ Technology was odour reduction. I have found that there was substantial odour reduction during application of ViroFlow™ Technology, when compared to our existing system.

Virotec’s Total Solution extended beyond treatment of wastewater. Virotec also liaised with regulatory authorities, operators of our treatment plant and always kept me informed of progress.

The personnel from Virotec were professional, diligent and aware of our needs as a business. The equipment that was used was suitable for the application and all site safety and environmental standards were followed.

Accordingly, I would have no hesitation to recommend Virotec and ViroFlow™ Technology to any tannery operator who wants to improve their overall environmental performance.”

PETER MOFFAT

Manager

Tasman Sheepskin Tannery