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From: Amy Marshall  
Environmental Engineering Department

Date of Contact: 8/7/96

Contacted by: Amy Marshall

Company/Agency: Midwest Research Institute

Telephone Number: 919-677-0249, ext.5135

Person(s) Contacted/Title(s)

Mr. Frank Rutland, Environmental Consultant  
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CONTACT SUMMARY:

Mr. Rutland was contacted for information on air emissions from the leather tanning and finishing industry. He is the trade association's (Leather Industries of America) environmental consultant. He estimated that there are about 120 leather tanneries in the U.S., but that not all of the facilities performed the complete leather manufacturing process. He estimated that 95 percent of the facilities in the U.S. are members of the trade association. He indicated that developing general emission factors would be difficult because the leather manufacturing process varies greatly by product, and also that there had not been a real focus on air emissions, since it is the effluent that is currently regulated. He recommended referring to the development document for the leather tanning and finishing effluent guidelines for a good process description.

He indicated that the main sources of air emissions from leather manufacturing facilities are finishing; solvent degreasing; and liming/dehairing. Coatings used by the industry are sources of VOC emissions during finishing steps (flow, spray, or curtain coating). He indicated that many facilities were moving to waterbased coatings to reduce VOC emissions. Solvent degreasing is used with sheep, goat, and pigskins to remove the natural fats and oils in the skins and is a source of VOC emissions. The dehairing process is a source of sulfide emissions because of the chemicals used.

Mr. Rutland also indicated ammonia emissions were possible due to amides on the hide protein released during unhairing and from the deliming step. If the hide is treated with ammonium sulfate, some release of ammonia from the effluent can occur, depending on the pH. In addition, some coloring steps may use "aqua-ammonia" to aid in dye penetration.

Mr. Rutland, in a later communication by e-mail, indicated that formaldehyde tanning was no longer practiced in the U.S., due to health and safety concerns.

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From: FHRutland@aol.com  
Date: Fri, 4 Oct 1996 08:34:57 -0400  
Message-ID: <961004083456\_324860234@emout11.mail.aol.com>  
To: mri@ipass.net  
Subject: Re:Attention: Amy Marshall  
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To the very best of my knowledge, formaldehyde tanning is no longer used in this country, either as a primary tannage or as a retannage, and has not been for a number of years. It was used primarily for gloving/garment leathers on small skins (e.g. sheepskins), but has been discontinued due to health and safety concerns working with formaldehyde. Also, this segment of the industry has declined almost to the point of non-existence. Glutaraldehyde is in limited use as a retanning agent for the production of perspiration resistant leathers. Formaldehyde tanning was done with an aqueous solution in a closed drum, not with formaldehyde vapor. Frank Rutland