

Introduction: The project was appraised in March of 2001 by the Project Team, which included Juan Eduardo Zuluaga (IIC Investment Officer), Carlos Roa (IIC Investment Officer), Angela Miller (IIC Environmental Officer), and Allen West (consultant in plastics). This is a category III project according to the IIC's environmental review procedure because specific impacts may result which can be avoided or mitigated by adhering to generally recognized performance standards, guidelines and design criteria. The principal environmental and social issues related to this project include: liquid effluent treatment, solid waste recycling, fire safety, and worker health and safety.

Environmental Compliance: The project appears to be in compliance with local and international environmental regulations and guidelines, respectively. An Environmental Management Plan (EMP) was prepared by the Company in 1998, and a modification to the EMP was prepared in January 2000 detailing additional environmental measures to be implemented to address potential impacts related to the expansion of the project. Both plans were approved by Cartagena's local environmental authority, CARDIQUE (Corporación Autónoma Regional del Canal del Dique). In addition, CARDIQUE granted the company a solid waste disposal and wastewater discharge permit, and the Ministry of Mines and Energy, INGEOMINAS (Ministerio de Minas y Energía - Instituto de Investigaciones en Geociencia, Minería y Química) granted the company the permits to import and export a small quantity of radioactive material used in the process (to measure the thickness of the film).

Wastewater: The plant does not generate industrial wastewater, since no water or other liquids are used as primary raw materials in the process, but rather the transformation of polypropylene solid pellets to plastic is a dry process. The plant has two wastewater discharge points, those for the treated sewage and the chiller water. The plant's sewage is treated in an aerobic biological treatment plant, installed in July of 2000. The plant has sufficient capacity to treat the sewage generated by the additional staff (approximately 50 persons) to be employed to work on the new production line. The capacity of the treatment plant is 36 m³/day and currently the flow generated by the current employees (208 persons) is only of about 16 m³/day. Samples of the treated wastewater indicate that the treated wastewater discharged (to the canal that connects to the Cartagena Bay) is in compliance with both national and international standards, such as those of the World Bank. Due to the quality of the water purged from the cooling tower system, no treatment is necessary prior to discharge.

Solid Waste: The majority (99.6%) of the solid waste generated at the company's facility is either recycled internally, or it is sold to external companies that recycle the waste. The main waste generated (3400 kg/day) is polypropylene in the form of pellets or film, which is sold to companies that recycle the materials to make plastic chairs, plugs used to hold film, and other items. In addition, the equipment to be used in the new production line will further reduce the amount of solid waste generated due to its increased efficiency. The main waste material requiring appropriate disposal is a small radioactive source that emits gamma rays in order to determine the thickness of the film. The source as handled in the operation poses no risk to the workers or the local communities and emits a level of radiation that is lower than that of an x-ray machine used in hospitals. The source has a life of seven years before it must be replaced. The company currently has a source that can no longer be used; it is currently stored on a temporary basis in a lead box that is marked appropriately, and will be shipped to the manufacturer in Germany by a company authorized to handle radioactive material. In addition, the company employees who handle the material are appropriately trained and certified by government authorities to do so.

Fire Safety: The plant is equipped with a network of fire hydrants, extinguishers and smoke detectors. In addition, an automatic sprinkler system is located in the aging area where plastic is stored temporarily. An occupational health and safety specialist has recently been contracted to

assist the company with the upgrade of its emergency procedures. Improvements include increased signage indicating evacuation routes and emergency exits, and an increase in the number of fire/emergency evacuation drills.

Occupational Health and Safety: Workers are provided with the appropriate protective equipment, health insurance (with a company called Colseguros) and first aid. All work related accidents are recorded and analyzed continuously. The machinery in the new production line boasts state-of-the-art safety features, particularly devices to avoid the risk of entrapment in moving parts. In addition, the plant has a clinic with a medical doctor, two trained assistants, and an ambulance. The company has also additional staff trained in first aid, distributed throughout the plant. Noise levels, indoor air quality in certain areas, and the health of workers (i.e. vision, hearing, stress) are monitored. The company is currently working with a firm specializing in industrial hygiene to update the plant's emergency response plans and other occupational health and safety-related aspects.

Labor: The Company has a policy that persons under 18 years of age are not permitted to work. Workers at the plant are not members of any unions, but they are free to do so if they wish.

Miscellaneous Social Aspects: The plant's clinic also serves family members of employees. The company organizes periodic lectures on various health issues, has an ecological awareness week, and an on-site sports club and soccer field where competitions are held regularly. During school summer vacations, the company organizes field trips twice a week for the children of plant employees, including trips to museums, parks, etc. The company also assists in paying for staff and children of staff who wish to continue their formal education (some 24 plant workers have obtained college degrees thanks to the company's assistance). The company also has a program to provide housing loans to its employees.

Monitoring and Annual Reporting: The company's monitoring procedures are described in the Environmental Management Plan. The company will submit an annual report summarizing the monitoring data related to wastewater discharge, solid waste disposal, fire safety, occupational health and safety, accident reports, and labor related issues.