



Joint Venture: Ion Exchange Waterleau Ltd.

Integrated
Environmental
Solutions from



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The formation of Ion Exchange Waterleau Ltd., a 50:50 joint venture of Ion Exchange (India) Ltd. (IEI) and Waterleau, Belgium, marks our entry into the entire gamut of environment management while strengthening our key position in water management.

Greater water demands, increasing water scarcity, rising environmental pollution, problems of industrial and municipal waste disposal, the need for clean, renewable energy – all call for an integrated approach to environment management. An approach that Ion Exchange Waterleau Ltd. is ideally suited to offer, with its complete portfolio of advanced environmental solutions for industrial, infrastructure and municipal applications. The new company will provide single-responsibility, integrated environmental management encompassing industrial effluent and sewage treatment & recycle; bio-solid, solid & hazardous waste treatment; air protection; and renewable energy generation. Comprehensive technical and process assistance services include consultancy, design, detailed engineering, turnkey contracting, O&M and BO(O)T.

Mr. Rajesh Sharma, Managing Director, IEI (centre left), and Mr. Luc Vriens, President of Waterleau, seal their companies' partnership in a 50:50 joint venture for environment management. Extreme left is Mr. Ajay Papat, CEO of the joint venture, and, extreme right, Mr. Willy Gils, Commercial Director of Waterleau.

Thrust areas of the new company will be India and the ASEAN region.

Adding a New Dimension

Fire, air, earth and water are the fundamental elements that form the basis of life and need safeguarding for future generations. With the vast experience of the partner



companies in water and environment manage-

ment, the joint venture brings a new dimension of special responsibility and sensitivity that balances progress with preservation.

Integrated Environmental Solutions from



Synergising Strengths

Waterleau, a leading global company with strong presence in Europe, the Middle East, Africa, Asia and Russia, provides environmental solutions and services with proprietary

technologies, encompassing air, water & waste water, bio-solids & waste, soil remediation and renewable energy, in the municipal and industrial segments. With more than 800 reference plants worldwide, Waterleau has an impressive track record in municipal waste treatment and industries like petrochemicals, breweries & distilleries, plastics, industrial chemicals, dairy and food & beverages.

IEI brings its premier position in Asia for total water management to





industry, homes and communities, its strong technology base, large marketing network and countrywide infrastructure, built assiduously over four decades of operations, along with an in-depth knowledge of the Indian and other Asian markets. The joint venture will thus derive synergy from and leverage the strengths of both organisations to provide state-of-the-art turnkey environmental solutions and services to the growing markets for these.

It will also benefit both companies as it will provide engineering, services and manufactured equipment of IEL for the global markets served by Waterleau.

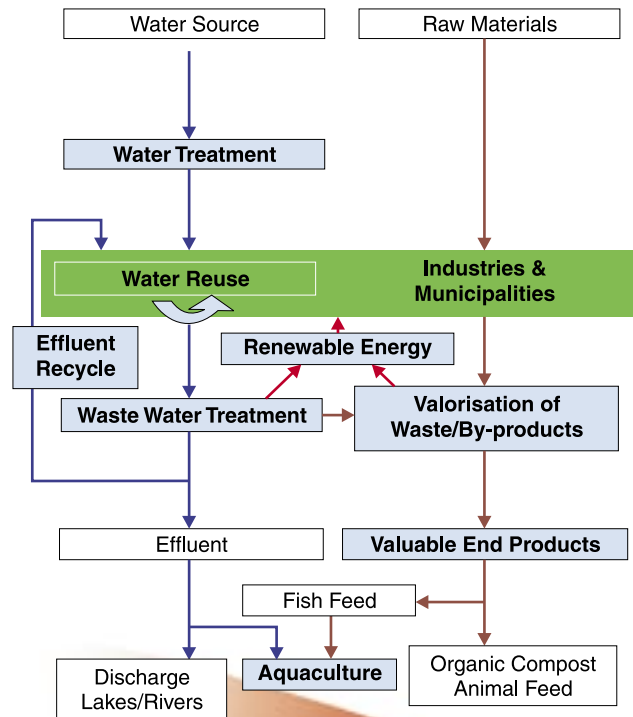


Inaugurating the corporate office at Vashi, Navi Mumbai.

Partners for the Future

The partnership comes at a time when the market for environmental management is poised for rapid growth. The estimated market in India alone for sewage, industrial waste water and solid waste treatment is Rs.45,000 million. It is growing annually at the rate of 10-12% with Governmental incentives and aid to private sector projects, especially in infrastructure. Huge potential areas in particular are industrial and municipal waste water treatment, solid waste management and air pollution control.

Integrated Approach



Both IEL and Waterleau share a deep environmental commitment, a forward looking approach and a proven ability to manage technology. With their reputation for professional management and global experience in application of state-of-the-art technologies, the joint venture will help meet the needs of a cleaner environment, water security and green energy. For a sustainable tomorrow.

First Order Received

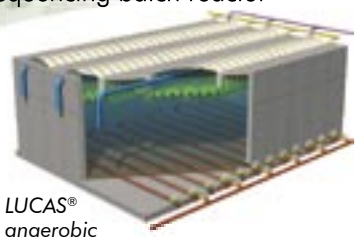
Our joint venture is off to a good start, with an order from GPT Steel for effluent treatment at their project located at Mithirohar, near Gandhidham town in Kutch, Gujarat. Treatment will consist of physico-chemical and biological systems to treat the acid and alkali waste apart from chrome waste generated in the plant. The contract is part of GPT Steel's total management requirement – the water treatment and waste water recycle component has been awarded to IEL.

While this is the joint venture's first order, the large reference base of the Waterleau Group includes many clients from India – EID Parry, Jubilant Organosys, Amit Alcohol and Mohan Breweries, to name just a few.

Full Spectrum of Solutions

Waste Water Treatment & Recycle:

Advanced aerobic technology combines advantages of conventional and sequencing batch reactor systems and, with an autonomous monitoring and controlling system, treated water is continuously of highest quality, allowing for safe effluent discharge and stable process performance. No external clarifiers, sludge rakers, recycle pumps/screws/piping are needed and reactor volume is always used for 100%.



LUCAS[®] anaerobic



LUCAS[®] anaerobic-aerobic with nutrient removal

Additionally, the system can be easily controlled and treatment efficiency is very high (80-95%).

Anaerobic technologies include UASB (upflow anaerobic sludge blanket), with high removal efficiency (70-90%) of organic matter, particularly suited to treat highly concentrated waste waters such as from brewery, distillery, tannery, paper and pharma industries. The advantage lies in high COD removal efficiencies with concomitant production of energy-rich gas which can be converted into heat and/or electricity, while producing very limited amounts of excess sludge.



X-TRACTOR[®] Cross Flow MBR

Waste water recycle technologies include advanced membrane processes such as the membrane bio-reactor (MBR) which produces an effluent that is extremely pure and appropriate for immediate reuse; also the fluidised media reactor and packaged sewage treatment systems.



INDIUM[®] Submerged MBR

Gaseous Treatment for Air Protection:

Flue gas treatment plants are offered in combination

with drying and/or combustion technologies. Comprehensive process knowhow combined with selected flue gas cleaning technologies enable compliance with stringent emission limits. Gaseous treatment using advanced thermal and catalytic oxidation processes enables control of odour from municipal/effluent treatment plants, NO_x and dioxin abatement, and removal of VOCs generated by solvent using/producing processes.



BEL-AIR[®] biofilter



DYNACYCLE[®]



BEL-GAS[®]

Waste & Bio-Solid Treatment:

Indirect convective drying technology is the safest way to dry bio-solids due to the very low oxygen vapour atmosphere in the dryer. Evaporation capacities range from 300 kg/h to 14,000 kg/h. Integrated treatment of the vapour stream is included. It can produce partial or complete drying with dry solid content between 25-90%, and conversion into hard, dust-free granules for safe disposal as non-hazardous solid waste or for use as fuel. A complete range of combustion technologies are offered for the ultimate valorisation of solid, liquid and pasty wastes of industrial sludges and slurries.



HYDROGONE[®] drying

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PUTT-ART[®] dryer-granulator

Renewable Energy:

Bio-gas generated from waste treatment processes can be used in bio-gas engines to produce electricity, in brewery boiler systems (steam production) and hot water producing boilers.



DIAGEO Uganda



PARRY India



CITY OF ANTWERP, Belgium

Engineering Hi-Lites

From Heavy Water Board, Manuguru, for their boron enrichment plant, four PLC based cascades of ion exchange columns with complete mechanical, electrical and instrumentation work, for this prestigious project of the Department of Atomic Energy. Another order from this client, for enhancement of their existing 6 x 300 m³/h demineralisation (DM) plant (supplied by us in 1987) with addition of a strong base anion unit.



Effluent recycle at Chemplast Sanmar Limited, Mettur, Tamil Nadu. The plant, capacity 300 m³/day, treats cooling tower blow-down and DM effluent for reuse. The treatment scheme comprises high rate solids contact clarifier, ultra filtration and reverse osmosis.



For NTPC, Sipat, for their Stage II (2 x 500 MW) unit, condensate polishing plant of 1350 m³/h with PLC based operation. The scope includes civil, mechanical, electrical and instrumentation work.

For Jindal Power Limited, Chhatisgarh, for their 4 x 250 MW unit at Tamnar, a total water treatment plant consisting of 3 x 1750 m³/h pretreatment plant, 3 x 100 m³/h PLC based DM plant, 20 x 175 m³/h auto valveless gravity filter, 3 x 11 kg/h and 6 x 200 kg/h chlorination system and 3 x 100 m³/h PLC based ultra filtration system.

Third order from Gas Authority of India Limited (GAIL), Assam, for a 25 m³/h iron specific resin (ISR) based iron removal filter, activated carbon filter and a MIOX mixed oxidant disinfection system. This is for disinfection of drinking water for the Central Industrial Security Force (CISF) colony at Lakwa, Assam.

INDION® MBR for Sewage Recycle at Delhi Jal Board

The Delhi Jal Board (DJB) installed our indigenously designed and constructed INDION Membrane Bio-reactor (MBR) to conduct a feasibility study at its Okhla sewage treatment plant. The pilot



project, to treat all the sewage the plant gets, was to evaluate the process in treating and recycling sewage for multiple non-potable applications such as flushing, vehicle washing and gardening, as well as in cooling towers at AC plants of malls,

restaurants, hotels and factories. During her visit to the Okhla plant to check its performance, Delhi Chief Minister Ms. Sheila



Dikshit tasted the water treated by the MBR technology.

"The MBR plant at Okhla is working well. The decision to utilise it in other plants will be taken in due time after exploring its viability. If found feasible it will be incorporated in all the sewage treatment plants in Delhi. The process not only helps in resource conservation but also in power conservation," said the then DJB Chief, Mr. Rakesh Mohan. He added that a version of the technology would be installed in colonies as well so that residents use potable water only for drinking, cooking and bathing.



The demonstration of consistent performance and excellent quality of treated sewage (BOD < 2 ppm, COD < 10 ppm, TSS < 1 ppm, SDI < 4 ppm) has received a great response from DJB as well as from major builders and consultants.

A 60 m³/h filtration & softening system and 28 reverse osmosis units for drinking water application from IIM Kolkata, for their campus.

From Indian Overseas Bank, Kolkata, an 8 m³/h filtration and softening system for their officers' housing quarters. The order also includes a 200 LPH reverse osmosis system along with full pre-treatment for drinking water application.

A 70 m³/h filtration and chemical dosing system from premier builder Bengal Scratchi Housing Development Ltd., Kolkata, for their Greenwood Park project at New Town Rajarhat, Kolkata.

A 6 m³/h filtration and softening system from construction company DLF Ltd., Kolkata for their site office at Nav Town, Rajarhat, Kolkata.

Record SWRO Contract

The Chennai Petroleum Corporation Limited (CPCL), Chennai, awarded a contract for a 5.8 million gallons per day sea water desalination project, *the largest order in the history of Indian industrial water treatment industry for sea water desalination using reverse osmosis*. The sea water reverse osmosis (SWRO) plant is of

1100 m³/h capacity and the scope of the turnkey project includes civil work and high tension electrical system, mechanical & electrical work, and automation of the plant. This will be our fifth SWRO plant – the others being for Gujarat Electricity Board (GEB) Sikka, Gujarat Heavy Chemicals Ltd., Indian Rayon and Chemplast Sanmar.

Zero Discharge Plant for CPCL

Pioneering Success in Water Conservation

We had earlier executed a contract for CPCL, Manali for a zero discharge effluent recycle plant.

The capacity of CPCL's 3 mtpa refinery at Manali was doubled in 2002, increasing the refinery's requirement of process water. Although CPCL was treating raw sewage from municipal supplies

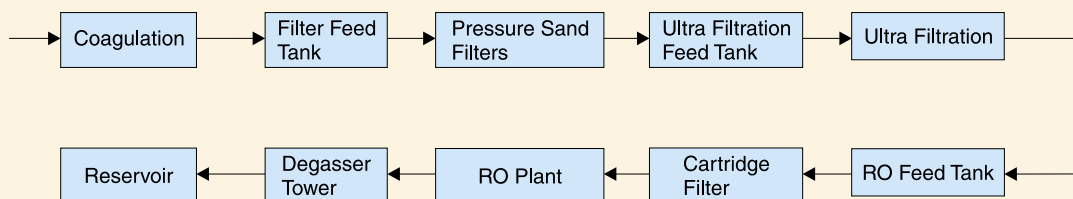


in their tertiary treatment plant, this was proving costly for process requirements; moreover, not only was the quality and quantity of sewage inconsistent but also insufficient to meet the demands of the expanded refinery.

Hence the concept of a new zero discharge plant was mooted and the contract awarded to IEI. The plant, feed capacity 200 m³/h, incorporates pretreatment, coagulation and filtration, ultra filtration and reverse osmosis, and degassification. It treats water from the existing effluent treatment plants of CPCL, for process use in the refinery. The process waste water is led back to the effluent treatment plants and thus the waste is recycled again. The water used for cleaning and backwashing is also generated at various stages of the treatment plant.



The zero discharge plant amply demonstrates that recycle of waste water not only protects the environment but makes good business sense with water becoming increasingly scarce and costly.





From Uttam Sugar Mills, Roorkee, Uttaranchal, a 45 m³/h DM plant.

From Rai Bahadur Narain Singh Sugar Mills Ltd., Haridwar, Uttaranchal, a 25 m³/h DM plant for their upcoming power plant.

25 m³/h DM plant order from Nanglamal Sugar Ltd., a SIEL company, for their upcoming project at Meerut, Uttar Pradesh.

45 m³/h demineralisation plant from Mawana Sugar Works, a SIEL company, for the expansion of their unit at Mawana, Uttar Pradesh.

Repeat order, our third, for cooling water treatment chemicals from Balrampur Chini Mills, Balrampur, for the bagasse/bio-mass based cogen power projects at their units in Balrampur and Hydergarh, Uttar Pradesh.

Repeat order, our fourth, from Dhampur Sugar Mills, Dhampur, for sugar refining chemicals for their units at Rauzagaon and Mansoorpur in Uttar Pradesh.



From Sree Narasimha Textiles, Suler, for a 180 m³/day softener.

For Angeripalayam CETP, Tirupur, 500 m³/day effluent recycle plant to treat the textile dyeing



effluent. The scheme comprises ultra filtration followed by 2 stages of reverse osmosis (RO) to reduce the reject. Brine from RO will be used in the dyeing process.



From Jindal Vijaynagar Steel Limited (JVSL), Tornagallu, Bellary District, Karnataka, for supply of three 75 m³/h auto valveless gravity filters (AVGF), of which one has already been successfully commissioned. And a sixth

consecutive order from Jindal Steel Limited for their Raigarh unit for pretreatment and DM plants.

Handed over to Bhushan Limited, Rengali, Dist. Sambalpur, Orissa, DM & softening plants.

The scheme for Phases I & II is:

- Pretreatment plant, 1200 m³/h, consisting of cascade aerator, flash mixer, flocculation tank, lamella clarifier and pressure sand filters.



- DM plant (semi auto), 2 x 22 m³/h, consisting of multigrade sand filter, activated carbon filter, strong acid cation unit, degasser, strong base anion unit, mixed bed and DM water tank.



- Two softening plants (auto), 3 x 180 m³/h and 2 x 200 m³/h.

We have received a repeat order from this client for their expansion project – a pretreatment plant of 6000 m³/h, softener of 1000 m³/h and mill scale filtration plant of 8500 m³/h, all PLC based.

From Eastern Steels Ltd., Jharsugudha, Orissa, plant comprising 250 m³/h lamella clarifier, 50 m³/h softener and a 10 m³/h DM plant for their power project.

A total water management contract from GPT Steel Industries Ltd., for their project at Mithirohar, near Gandhidham in Kutch, Gujarat. The water treatment and waste water recycle was awarded to IEI, and the waste water treatment order to Ion Exchange Waterleau.

The water treatment plant treats a mixture of Narmada river water and borewell water for process use and boiler & cooling water make up. Chemical dosing systems, high rate solids contact clarification, multigrade filtration and ultra filtration form treatment to the reverse osmosis plant (200 m³/h permeate capacity). A part of the RO permeate will be treated by demineralisation (2 x45 m³/h), a part by base exchange softening (75 m³/h) and the balance will be taken for potable and other purposes.

Effluent treatment comprising physico-chemical and biological systems will treat the acid and alkali waste apart from chrome waste generated in the plant. This treated effluent along with the reject from the water treatment RO plant and the regeneration effluent of the DM plant will then be treated by a physico-chemical process for silica reduction and further treated by ultra filtration and reverse osmosis (100 m³/h). The treated water will be recycled thus reducing the fresh water intake to the plant.

The boiler water treatment programme will also be carried out by us and side stream filtration with auto valveless gravity filters for cooling towers is being supplied by us.

The plant is slated for commissioning by end May 2006.

Received an order from Indian Oil Corporation Limited (IOCL), Haldia, for an oil coalescer system to treat condensate water. IOCL will be using the oil coalescer process for the first time in their refineries in India, starting with the installation at their Haldia works.

At INDAL Hirakud, 550 m³/h pretreatment plant consisting of high rate solids contact clarifier and a 20 m³/h DM plant with pressure sand and activated carbon filters, strong acid cation, strong base anion and mixed bed units.



Planning for Water Security – Emerging Trends & Technologies was the theme of the interactive symposia we organised for customers in Hyderabad, Kolkata and Ankleshwar.



Successfully Commissioned

For Birla Copper, Dahej,

- 1000 m³/h pretreatment plant consisting of lamella clarifier, dosing system, sludge handling system, multigrade sand filter, softener, activated carbon filter, softener regeneration system and neutralisation system.
- 2 x 140 m³/h PLC based DM plant – strong acid cation unit, degasser, strong base anion unit and mixed bed unit.

For Torrent Pharmaceuticals Limited, Baddi 270 m³/d effluent treatment plant consisting of equalisation tank, flash mixer, clariflocculator, aeration system, clarifier, filter press, chlorination and filtration.

For NPC, Tarapur 3 x 30 m³/h PLC based semi-auto DM plant consisting of pressure sand filter, activated carbon filter, strong acid cation unit, degasser, strong base anion unit and mixed bed.

Jindal Saw Ltd., Mundra, Gujarat, RO plant of 2 x 50 m³/h, pretreatment plant of 125 m³/h and mixed bed, 8 m³/h.

For Chemplast Sanmar, Karaikal, Pondicherry, sea water reverse osmosis plant (SWRO) of 2 x 25 m³/h consisting of lamella clarifier, multigrade and pressure sand filters, RO system, degasser and storage tank.



cooling water storage tank and multigrade sand filter.

The scheme:
WTP-1:
Ultra high rate solids contact clarifier, dosing system, sludge handling system,

At Hindustan Electro Graphite, Bhopal, pretreatment with flash mixer, lamella clarifier (below), chlorination system and DM plant (far below) with pressure sand and activated carbon filters, strong acid cation, degasser, strong base anion and mixed bed units.



WTP-2: Dosing system, multigrade sand filter, pressure sand filter, filtered water tank, cartridge filter, high pressure pump, RO, degasser tower, mixed bed, DM water tank.



Satisfaction Certificates

From Government of Nagaland on the performance of our 45m³/h INDION ISR (iron specific resin) based iron removal filter installed a year ago at the Nagaland State Transport Corporation bus terminal at Dimapur. The iron load which is around 9 ppm in the raw water, is reduced <0.3 ppm after treatment.

From Government of India, North Eastern Council (NEC)

Secretariat, Ministry of Development for North East Region, Shillong in Meghalaya – an INDION ISR based unit was installed at the housing colony and office complex where the iron load in inlet water is around 8 ppm. In fact, the order from Government of Nagaland was under recommendation from NEC.



Overseas Orders

Out of Africa

From London Distillers (K) Ltd., Kenya, reverse osmosis and demineralisation plants.

From Menengai Oil Refineries Ltd., Kenya, reverse osmosis plant.

From a paper mill in Swaziland, a total water management consultancy contract for utility as well as process upgradation.

Successfully commissioned, a contract from Alstom Power, Italy, for the Okpai Power Plant of the Nigeria AGIP Oil Company – for fully automatic PLC based pretreatment and water treatment plants consisting of 930 m³/h filtration, 2 x 140 m³/h demineralisation,



chemical dosing and potable water treatment. Conductivity of demineralised water at the mixed bed outlet is 0.06 – 0.13 µs-cm, and SiO₂ is 2 – 10 ppb.

In the Middle East



For a leading contracting company in Oman, 2 x 150 m³/day RO plant and 150 m³/day sewage treatment plant (fluidised media reactor).

Fully automated DM plant, 2 x 85 m³/h, for Abu Dhabi Gas Company (GASCO).



From TISCO, for O&M of water & waste water treatment plants and cooling tower treatment at their cold rolling mill in Jamshedpur, since 2000.

FAREWELL

Dr. T.V. Arden – In Memoriam

Dr. T.V. Arden was among the Directors of Permutit, UK, in charge of Technology. He was also on the original Board of IEI, when it was formed as a subsidiary of Permutit, in 1964, and took a keen interest in the company, particularly our factory operations. His association with IEI was of great value to us.

Dr. Arden joined Permutit in 1953 as Head of Development about the time I went to London to train with them. He had been Head of the Uranium Ore Treatment Section at the Chemical Physical Laboratories, DSIR at Teddington and Permutit took him for his expertise in using ion exchange for the extraction of uranium from its ore. This enabled Permutit to win several large contracts in Canada, South Africa, Australia and later in India where we installed a plant at Jadugoda.

Dr. Arden took over as Technical Director at Permutit when Dr. Akeroyd, who had occupied the position earlier, succeeded Mr. Pemberton as Managing Director. He was also Director of Permutit's subsidiary companies in Canada, Australia and South Africa as well as on the Board of Ion Exchange India when the erstwhile J.Stone Agency was converted to a subsidiary company of Permutit. Dr. Arden visited India several times in connection with our resin manufacturing facility at Ambernath and during these visits I arranged and accompanied him to meetings at various institutions like the National Chemical Laboratory, Pune, Central Salt & Marine Research Institute, Bhavnagar, BARC, Mumbai, as well as with important customers in Mumbai, Delhi, Kolkata and Chennai. He retired along with Dr. Akeroyd and Mr. Owen Martin in 1970 or soon after when Permutit was acquired by Portals. He was Director of Administration at the Water Research Centre, 1978-1982, and later set up a consultancy partnership, T.V. Arden Associates, specialising in the treatment of water and aqueous solutions by ion exchange and membrane processes. He wrote more than 80 research and technical papers, published two books and contributed many chapters to publications, on these subjects.

During World War II, Dr. Arden was a Navigator in the Royal Air Force (RAF), specialising in radar. His plane was shot down in North Africa and he was sent to Bangalore to recuperate. He met his wife Helene in France. They lived in Cobham near London where they lived in an attractive house with a garden. They had a son and a daughter.

Dr. Arden contracted Parkinson's disease about ten years ago and bore his illness with great courage and cheerfulness. He was 86 when he died.

On behalf of Ion Exchange India I have expressed our condolences to Mrs. Arden and her family and my personal sorrow at the death of a good friend.

G.S. Ranganathan
Chairman, IEI



I am saddened to hear about the passing away of Tom Arden. This brings to mind memories of a warm, affable and supportive person and of my first visit to Permutit in the early 1960s for training.

My training with Permutit was supposed to be limited to visits to plant sites along with their Field Chemists and to training in their Water Testing Laboratory. But I was lucky to gain access to their Chemical Division which appeared to me to have an identity of its own, quite distinct from their Engineering Division. I gratefully remember Tom as the man who helped me to have some interaction with the Chemical Division. I met him by sheer chance in the Water Testing Laboratory when I was having an argument with one of the chemists who insisted that I must blow out the full contents of the pipette into the conical flask for titration. Tom, whom I did not know, happened to be at the other end of the lab and got interested and intervened and declared me right, much to the chagrin of the dissenting chemist. I did not know who he was till he sent for me the following day. We had several interesting and informative discussions on ion exchange resins and their behaviour. He even gave me a small assignment and an opportunity to work in the application lab and, during a later visit, took me with him to the resin factory in South Wales.

As a Director on the original Board of IEI, Tom took a keen interest in the Indian operations. His association with IEI has been of great value to it. My last contact with him was in the early 1980s when I spoke to him over the phone while passing through the UK. As in the 1960s, he could not remember or pronounce my name but recognised my voice well before I announced who I was.

D.G. Rao
Director, IEI

Associate Service Companies Merge Single Identity under Ion Exchange Services Ltd.

With the merger of our associate regional service companies into a single company headquartered at Bangalore, Ion Exchange Services Ltd. (IESL), has become the largest service network in the Indian water treatment industry with over 700 service personnel operating through 4 regional offices, 17 branches and 75 territory offices spread across the country as well as in neighbouring Dhaka and Kathmandu.

The consolidation of the service network is expected to bring considerable advantages of economy of scale, more efficient resource utilisation and distribution, and a single uniform identity.

IESL has set up a testing and calibration laboratory in Bangalore which is certified by the National Accreditation Board (NABL).

Strategic Service Alliance for Amusement Park

Ion Exchange Services Ltd. (IESL) is providing state-of-the-art water treatment equipment to Nicco Parks and Resorts Ltd. for their water theme park 'Wet-o-Wild Beach Tropicana' in Kolkata. The agreement was signed between Mr. Dinesh Sadasivan, Chief Operating Officer of IESL, and Mr. Arijit Sengupta, Director and CEO of Nicco Parks.

Accordingly, Nicco has procured high quality water treatment facilities from IESL for treating the entire 3,000 cu.m volume at this water park, which is India's largest artificial sea beach. Nicco has also signed an annual maintenance contract with IESL which will ensure highest standards of water quality and will maintain suspended impurities, dissolved objectionable gases, iron content, hardness, alkalinity, dissolved solids, colour and odour of water in accordance with international standards. A full fledged lab at the park will test water twice a day – before opening and again around mid-day. Test results are displayed prominently so visitors are assured about the water quality. IESL and Nicco Parks have also agreed to jointly market these water purification services to water parks both in India and abroad.

"The quality of water is very important to ward off infections and diseases. WHO has set down definite standards regarding water

in amusement parks and we are going to maintain those standards," said Mr. Rajesh Sharma, IEL's Managing Director. "Our USP is the quality of the water. Good water quality is imperative so that families

can enjoy themselves with a free

mind. IESL will install not only the best equipment but also work towards its upkeep," emphasised Mr. Rajive Kaul, Chairman, Nicco Group. "The findings of the laboratory will be put up on a display board, so that people know about the quality of water," added Mr. Sengupta.

IESL has been awarded ISO 9001 quality system certification. Nicco Parks has the distinction of being the first and only amusement park with ISO 9001, ISO 14001

(environment management) and ISO 18001 (occupational health & safety management) system certifications. Together, they are committed to maintaining the highest standards for the enjoyment and safety of visitors

to the park. "This strategic alliance will help Nicco Parks to increase its water park business in the current rapidly growing economic environment of India and other parts of the world," said Mr. Kaul.

"Our USP is the quality of the water. IESL will install not only the best equipment but also work towards its upkeep."



Handshaking the alliance: Mr. Arijit Sengupta, Director and CEO of Nicco Parks (left), and Mr. Dinesh Sadasivan, COO of IESL. Looking on, Mr. Rajive Kaul, Chairman, Nicco Group (left), and Mr. Rajesh Sharma, Managing Director, IEL.

A Service Spread

IESL serves customers with all types and makes of water and waste water treatment equipment. With two decades of experience in offering single window solutions for water and waste water treatment, IESL has already built up a client base of more than 12,000, with around 150 O&M contracts and 2,000 service contracts in hand. The company recently expanded its range to include a number of innovative services such as:

- **Reverse Osmosis Monitoring Services** – comprehensive, specialised services and troubleshooting to ensure smooth, consistent performance of RO plants.
- **Envirocare Services** – a specialist approach to effluent and sewage treatment systems.
- **Economy Club Services** package which provides flexibility and choice with discounts, privileges and free services for total water management, at economical price.
- **Rainwater Harvesting Services.**
- **Value Added Services (VAS)** such as calibration and servicing of online and offline instruments, laboratory services such as analysis of water, waste water & activated carbon, training and lab setup, servicing for high pressure, dosing & centrifugal pumps and UV systems.
- **Water Audits:** Complete and comprehensive water circuit study for customers, aimed at enhancing the quality and quantity of their water usage.
- **Instant Institutional (INSTAA) Services** – focusing on hotels, hospitals, embassies, apartments and corporate houses.
- **SERCON polymers and biologicals**, a range of instruments and sanitisation chemicals have also been launched.

Customer Contact Programme



'With You, Right Through' was the theme of the meets organised by IESL for leading industrial and institutional organisations in Jamshedpur (above) and other cities. They provided the gatherings with an insight into the total water and waste water management solutions, O&M services and other specialised service packages offered. A series of knowledge forum workshops were also organised.



The free service campaign organised in Tirupur drew an enthusiastic response.



At Johnson & Johnson, Mumbai modification of competitor-supplied RO-polisher unit from 200 to 600 LPH, including addition of six SS pressure vessels and twelve HSRO membranes.

Worldover including India, industry is moving towards outsourcing of services. In line with this trend, Operation & Maintenance (O&M) business particularly is expected to grow rapidly. Anticipating the increased requirement for services, IEI had done backward integration – way back in 1998 we had associated with the Dr. Babasaheb Ambedkar Technological University for a one year advanced diploma in water quality management – the first of its kind to be offered in India by an accredited university. Absorption of the successful students makes available personnel trained in water treatment engineering practices as well as having hands-on site experience, and thus facilitates expansion of services and service network.

The demand for our O&M services keeps growing, with a number of new contracts as well as contract renewals, from:

Renewals

- Associated Cement Cos. – Jamshedpur, Jharkhand
- Bakreshwar Thermal Power Plant – Kolkata
- Indian Railway Catering & Tourism Corporation (Rail Neer) – Danapur, Bihar.

New Contracts

- Vasavadutta Cements – Sedam, Gulbarga
- Satyam Computers – Hyderabad
- HT Media – Mumbai
- Rajshree Sugars – Villupuram, Tamil Nadu
- Indian Overseas Bank – Chennai
- Ashok Leyland – Chennai
- Motherson Automotive – Chennai
- Le Royal Meridien – Chennai
- Aqua Pure Enterprises – Chennai
- Safdarjung Hospital – New Delhi
- Karmachari Sehkari Awa Samiti – Noida, UP
- Danzong Breweries – Bhubaneshwar, Orissa
- Reserve Bank of India – Chennai (10 year O&M)



At Hotel Marine Plaza, Mumbai modification of 15,000 LPH UV system with GI pipeline.



Simbhaoli Sugar Mills Group, Uttar Pradesh

The Simbhaoli Sugar Mills Group has two sugar mills in Uttar Pradesh, one at Simbhaoli and the other at Chilwaria, with a combined crushing capacity of 11,000 TCD; it also has a 40 KLPD distillery at Simbhaoli. The Group's speciality sugar product range, marketed under the brand TRUST, includes cubes, sachets (white & brown), icing sugar, table sugar and pharma sugar, besides refined sugar in packing of 1, 5 and 50 kgs.

The sugar mill at Simbhaoli, one of the modern sugar mills in India with refined sugar production of 750 TPD, commands a major share of the institutional market. It decided to go in for sugar decolourisation in crushing season 2003-2004 and selected our INDION ion exchange process for the project. Our system, designed for sugar melt flow rate of 48 m³/h and comprising two resin columns, enables production of refined sugar of <45 ICUMSA.



Dr. G.S.C. Rao (GSCR), Executive Director (right), and Mr. A.K. Srivastava (AKS), General Manager (Projects), of the Simbhaoli Sugar Mills Group, talk about their experience with our sugar decolourisation process as well as with the company, as we have also serviced a number of contracts for water treatment equipment and sugar process chemicals over the years.

What triggered the decision to go in for the sugar decolourisation?

GSCR: The globalisation of the Indian economy has opened new markets and opportunities for the sugar industry. Sugar decolourisation, we were convinced, would help us to encash this opportunity, adding value to our existing business – through economy of scale, product cycle, and change in the entire manufacturing process, thereby delivering quality products.

How exactly will this project be of benefit?

GSCR: I believe that by producing quality refined sugar (< 45 ICUMSA) as compared to conventional sugar (100 – 150 ICUMSA), we will be able to carve a

niche into the speciality sugar market. We would also be able to reach institutional buyers with our product – the institutional market is 50 – 55%, and yet to be tapped. Also, this project will help in running the plant for the entire year with processing of raw sugar.

What made you select our ion exchange process over others?

AKS: Worldover two processes are adopted for decolourisation of sugar remelt i.e. carbonation followed by activated carbon, and phosflotation followed by ion exchange process. Based on our extensive research, we concluded that the ion exchange technology is the best suited for Indian conditions, as the plant and resins used in this process are manufactured indigenously, thereby offering the advantage of low recurring cost.

Does your experience with the performance of our system validate its selection?

GSCR: We are indeed happy and very satisfied with its performance; the technology is quite adaptable; we are also satisfied with the system engineering. Commissioning, after sales service and support from Ion Exchange India have been very good.

What is the company's current production of refined sugar using our sugar decolourisation process?

AKS: We have had a total production of 750 tons per day of refined sugar for 300 days during the crushing season 2004-2005.



What other products of our company does Simbhaoli Sugar use?

GSCR: We use several of your sugar refining chemicals, including the INDION 1951 colour precipitant and INDFLOAT 100 Floatation Polymer. We have your demineralisation plant supplied along with annual maintenance contract, and we are also procuring resins and spares from you.

What do you look for in a vendor? How would you rate Ion Exchange India?

GSCR: Qualities that we look for in a good vendor include:

- Transparency in working
- Commitment to execute and deliver
- Good reputation and technological backup

(Contd. on pg. 15)

Introducing ...

INDION® Jalshudhi

INDION Jalshudhi is a revolutionary product developed by our R&D to make safe drinking water available to the masses. Available in sachets, the simple, convenient and ready-to-use product purifies water, giving 100% bacteria-free water and even eliminating E-coli. The residual purifying effect lasts several hours. Moreover, it is able to settle suspended impurities and is therefore ideal for purifying muddy, turbid water.

Priced so it is affordable by low income sectors, a 5 mg sachet can purify 20 litres of contaminated water with respect to bacteria and turbidity.

Specially developed for semi-urban and rural areas in developing countries, INDION Jalshudhi is also ideal for use by military and police forces during wartime action/exercises in remote areas. It is also excellent for use during natural calamities such as floods and earthquakes when water supplies get polluted with suspended solids, dirt and pathogenic bacteria as well as with faecal contamination. Its use during such disasters can help prevent the outbreak of waterborne diseases and epidemics. Indeed it proved a boon during the torrential rains in Maharashtra last year, when it was widely distributed through around 50 NGOs to communities affected by flooding.

CUSTOMERS SPEAK (Contd.)

- Long term relationship
We give weightage to quality more than merely price.
Being a professional organisation, Ion Exchange India meets our expectations well and we enjoy a good relationship with your company. If ever a problem does crop up, it is solved promptly.



INDION® Borofree Unit

Boron based corrosion inhibitors are used for locomotive diesel engines. However, when the coolant is discharged, boron is let out into the environment in concentrations exceeding the 2 ppm WHO limit. To overcome this and protect the environment, our R&D has developed an economical system, the INDION Borofree Unit, which adsorbs boron using our own resin. An added advantage is that the treated waste can be reused for the same application with addition of required chemicals. R&D demonstrated the efficacy of boron removal and achieved the set discharge limits – inlet boron content of 150-220 ppm was reduced to <2 ppm.

The INDION Borofree Unit comprises three pressure vessels made of corrosion resistant material, containing resin. It is mounted on a four wheel trolley for easy movement.

Our R&D will be looking at other applications where boron based chemicals are handled in large volumes like glass processing, pesticides, components for nuclear reactors, refractory compounds, etc.

Patent Granted

IEI has been granted the design patent for semi-automatic valves for a filter application and for demineralising application. Both these valves can be used for flows upto 2.5 m³/h.

If you had to zero in on one point about IEI that makes a favourable impression, what would that be?

GCSR: The fact that Ion Exchange India is very professional, customer commitment runs high through the organisation and people at all levels deliver.

What status does Simbhaoli enjoy in the sugar industry? What are the company's plans?

GCSR: The sugar industry can be classified into two categories, based on the number of factories. There are those that have more than than four factories like Birla Sugar, Bajaj Hindustan, Balrampur Chini Mills, Triveni Engineering. The second category comprises those with two factories such as the DSCL Group and SIEL. We are comfortably positioned in this second group.

What are your expansion plans?

Currently we have two sugar mills, one at Simbhaoli and the other at Chilwaria, in Uttar Pradesh, with a combined capacity of 11,000 TCD. We are planning to expand to 15,500 TCD for the next crushing season. We are also thinking of sugar decolourisation for Chilwaria.

HAPPENINGS

On Display



IEI was in Tashkent, Uzbekistan, at the 2nd Indian Trade Exhibition 2005 organized by the India CIS Chamber of Commerce & Industry, the Embassy of India in Tashkent and the Chamber of Commerce and Industry, Uzbekistan. The exhibition was inaugurated jointly by Mr. E.V.A.S. Elangovan, Minister of State of Commerce and Industry, Government of India, and Mr. Akmal S. Kamalov, Deputy Minister of Foreign Economic Relation Investment and Trade, Uzbekistan. Both spent a considerable amount of time during the inauguration at our prominently located stall which drew more than 70 visitors; our product presentation to the Ministers was covered on the local television of Uzbekistan and received wide publicity. The Ministers were accompanied by high level government officials from the Indian Chambers of Commerce and Industry from both countries.

IEI participated in the 16th Annual CPHI World Wide event at Madrid. This event took place together with IFEMA, another prestigious exhibition for pharmaceutical machinery manufacture companies. Together there were above 1,000 stalls at the venue Feria de Madrid. Our stall attracted more than a 1,000 visitors.



Our capabilities, on display at Water Asia, New Delhi, attracted large numbers. Of particular interest were the demonstration model of our INDION membrane bio-reactor – features of which are being explained to a senior government official (left, photo above) by Mr. Ajay Popat, IEI's Vice President – Corporate Marketing. Our INDION new generation packaged sewage treatment system and fluidised media reactor also drew keen attention.



In Singapore, at the Interpex Asia Exhibition – Pharmaceutical Manufacturing, Processing & Technology.

The 3rd Made in India Show organised by CII in Johannesburg, was inaugurated by the High Commissioner of India for South Africa, Mr. Satyabrata Pal. The show was well attended and we received a large number of enquiries, as well as an order for consultancy on total water management from a prestigious paper mill. We also got an opportunity to present our company on their local FM channel, where our representative was interviewed.

HAPPENINGS



Mr. R.S. Rajan, IEI's Vice President – Consumer Products, at our prize-winning stall: Consumer Products Division, Direct Sales won the Silver Medal for excellence in presentation of special display on good living at the India International Trade Fair, at Pragati Maidan, New Delhi.



High purity water generation and distribution was the focal point of our stall at the Pharma Exhibition, in Mumbai.

For Pristine Health



An innovative ad campaign on the flagship product Zero B Pristine ROP highlights the USP of health through pristine pure water by associating the benefits of Zero B Pristine ROP with those of an apple. It received an overwhelming response and has worked well for the brand.



The inauguration of the brownfield expansion at our resin manufacturing facility at Ankleshwar, Gujarat.



Our Consumer Products Division (Retail) was awarded the 3rd Best Stall in C category at the Inside Outside Mega Show, at Science City, Kolkata. Products on display were the Ultimate RO 10 LPH, Ultimate RO 5 LPH (UTC), and Ultimate Water Softener.



Mr. Deepak Vohra, India's Ambassador to Sudan, visits our stall in the India Pavilion of the 23rd International Fair, Khartoum, Sudan.



Mr. Ajay Popat, Vice President – Corporate Marketing, IEI, makes a point during his presentation of the Water Summit in Delhi, organised by the Federation of Indian Chambers of Commerce and Industry.



Jal Tarang

on 28th January saw the IEI family get together – it was a time to get to know each other better, a time to felicitate those who have served the company for many years, a time to renew team spirit, a time to showcase talents, a time to celebrate, with pride, our belonging to IEI, and to renew our commitment to our vision “To be the leader in our business, which is so vital to people’s lives and the environment”.



Long Service Awards

Sixteen employees were felicitated at the 2006 Long Service Award Ceremony at Jal Tarang; most have steadily risen up to more responsible positions – speaking for their dedication and hard work as well as for the company’s recognition of good performance.

25 Year Awardees



Mr. V. V. Thampy (left) receives his award from Mr. Rajesh Sharma, IEI's Managing Director.

Mr. K. Laxmanan and Mr. V. V. Thampy, of Projects Division, Field Department, Rabale, both joined IEI on February 1, 1980, as Site Storekeepers and are today Erectors.

15 Year Awardees

Mr. S.W. Sawarkar, from Projects Division, Rabale, joined as Quality Control Officer in April 1990. Today, Mr. Sawarkar is Manager-Quality Control.

Mr. Ajay Bhatia from Consumer Products Division, Delhi, joined in May 1990 as Sales Officer, and rose to the level of Sr. Regional Manager.

Mr. Mohammed Julfikar Sheikh from International Division, who joined in July 1990 as Field Service Officer is Country Manager today, based at Bangladesh.

Mr. A.K. Bharati, Customer Service Division, Delhi, joined IEI as Field Service Officer in August 1990 and is currently Manager – Field Sales.



"Jal Tarang is like a family gathering and therefore an appropriate occasion to honour those who have served our company for many years with dedication. On behalf of all in IEI, I express my gratitude to the awardees for their loyal service. Our environmental vision is what the world needs very much today. All of our business meets this vision of protecting the environment – to benefit society, the communities we live in. You have contributed valuably to our foundation making it possible for our company to be the best in India for water management. Let us now make it the world's best."

– Mr. G.S. Ranganathan, Chairman

Mr. Shrikant Kulkarni from Customer Service Division, Vashi, started as a Field Service Officer in July 1990. He is Dy. Manager – Project Engineering, today.

Mr. Rajneesh Chopra of Consumer Products Division, Vashi, joined IEI in September 1990 as Sales Officer, rising to the position of General Manager – Trade, Consumer Products.

Ms. Snatika Donde, of HR Department, is Customer Relations Officer, Rabale. She joined us in October 1990 as Office Assistant.

Mr. Brij Mohan Sethi, Customer Relations Officer, Delhi, joined IEI in October 1990 as Stenographer.

Mr. S. Sundar, Customer Service Division, Chennai, joined IEI in November 1990 as Sales Officer and is today Manager – Sales.

Mr. Gourish Chakravorty, International Division, who joined us in December 1990 as Sales Officer is currently Sr. Manager – International.

Mr. Pradeep Grover joined in December 1990 as Sales Officer, and rose to the position of Divisional Manager, Corporate Marketing Group, Delhi.

Mr. A. Murugesan joined IEI as Service Engineer in September 1990 and is today Dy. Manager-Inspection, Standard Systems, Hosur.

Ms. C. Sukanya who joined as Operator in April 1990 is currently Production Assistant, Standard Systems, Hosur.

Ms. A. Leelakumari joined us as Operator in April 1990. She is Production Assistant, Standard Systems, Hosur.

Award for HR Leadership

HRD plays a strategic role in an organisation and IEL is proud that Mr. Asit Mohapatra, Vice President – HR (photo, extreme right), was conferred the prestigious *Recruiting & Staffing Best in Class Award*, in recognition of best practices in workforce management and planning in the areas of Staffing and Recruiting. Instituted by the Bharati Vidyapeet Institute of Management Studies & Research and the



DNA Newspaper, the award ceremony was held at the Taj Lands End Hotel, Mumbai, on 19th January. Awardees were evaluated by a panel of leading experts and practitioners in the area of Human Resource Management.

Cricket – Name of the Game

In December, cricket fever hit IEL with a series of round robin matches, an exhibition match between MD's XI and the Rest of IEL, and the final match, between our Head Office and Rabale teams.

A lot of time and effort went into organising and practising for the matches, and the spirit of team work and togetherness made the entire event an experience in itself – which will undoubtedly strengthen team spirit in the workplace.



The winning team from Head Office.

Children's Day Out



It was a field day for 19 children of our personnel – packed

with a visit to the zoo, the museum, the Gateway of India and the Sky Show at the Nehru Planetarium, Mumbai. A thoroughly

enjoyable experience of learning and fun, and being part of the larger IEL family.

