Environment Report 2005

Greetings from the President

The year 2004 was a tough year for Niigata prefecture, where our biggest manufacturing plant exists, with series of major natural disasters, such as torrential rain in July or Great Niigata Chuetsu Earthquake. I would like to send my deepest sympathy to those who have been suffering from damages caused by these major natural disasters.
Fortunately, the damage of Nagaoka Factory remained small with minor damages of some products and machines fallen from the shelves. However, it was such a painful experience as many of our staffs suffer from damages caused by this region-wide disaster. There were staffs whose premises were completely destroyed. It was, indeed, the biggest crisis in our company history. Under such circumstances, however, the whole company tackled the situation not to stop supply of our products to the customers. Therefore, we could restore our production line to the original state with minimum period of time. I would like to show my sincere gratitude to warm supports and encouragements that we received during this period of time from so many people.

Since the foundation of the company, we have been pursuing the development of eco-friendly manufacturing system activities under the mission "to love nature, people and work." However, with the development of science and technology, we have seen so many developments against the natural order on a global scale. Consequently, desertification spreads in various areas of the world and natural disasters such as record rain or snow which seem to be caused by global warming happen so frequently. Looking at the tremendous power of natural disasters, I keenly feel that the global environment is in a critical condition and we need to take actions as soon as possible. We will further pursue harmony between business operation and environment by reducing environmental burdens as our priority objective as well as by strengthening our environmental preservation activities.

In conclusion, we could enjoy significant growth in production and sales last year as a result of reinforcement of extremely ultra small diameter drill production line as well as development of a new model for quality improvement and stable supply. I would like to show my sincere gratitude to all of your support and to show our further commitment to fulfill our customer needs. I hope this "Environment Report" will help you understanding our corporate efforts and we will highly appreciate any feedback/input from you.

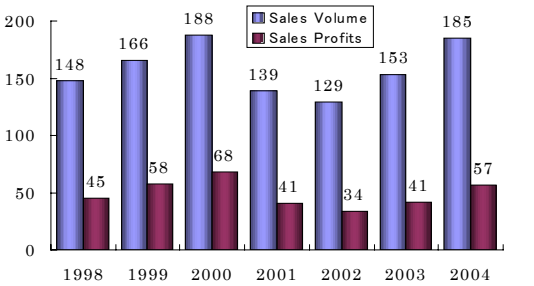
March 2005
Union Tool Co., Ltd.
President & COO
Takao Katayama

Company Profile

Name: : Union Tool Co., Ltd.
Establishment: : December 14, 1960
Head Office:4-15-8 Minami Ohi, Shinagawa-ku
Tokyo 140-0013
TEL 03-5493-1001
FAX 03-5493-1002
Capital : 2998.5 million yen
Fiscal term : November 30
Number of Employee : 621(as of November 2004)
Average Age : 35.6 (Male 36.1, Female 34.3)
Factory: Nagaoka Factory (Niigata)
Aug. 1997 ISO 9001 Certificate
Mar. 2000 ISO 14001 Certificate

■Cutting Tool Division
Production and Sales of Carbide Drills, Carbide End Mills, etc.
■Linear Motion Guides Division
Production and Sales of Roller Guide, Roller Table, etc.
■Other Divisions
Production and Sales of Precise Measuring Instruments, Drill Pointer, etc.

Trend of Sales and Working Profit



Subsidiaries
With advancement of information society, the market absolutely expands on a world scale. Union Tool has rapidly started the organization development to cope with this trend and starting from the affiliate company in California, we are further establishing global network with overseas production sites and sales offices.

Greetings from　Nagaoka Factory Director

As you know, we have experienced series of major natural disasters in 2004. In Niigata, we suffered from flood on July 13 and Niigata Chuetsu Earthquake on October 23, followed by the heavy snow. The memories at the time of the earthquake are still clear and the City of Nagaoka where our factory exists has been suffering extensive damages from the earthquake. I would like to express sincere sympathy to the victims of the earthquake.


表彰状

ユニオンツール㈱長岡工場

田口秀雄様

あなたのレーザ加工を応用するPCB極小径ドリルの開発に関する研究は本県産業の振興及び県民福祉の向上にいちじるしく貢献されましたよってここに表彰します

平成十六年十一月三日

新潟県知事　泉田裕彦

2004Nigata Technological Award

Awards Ceremony

There were some damages in our factory from the earthquake; fall of products or damage of manufacturing machines, etc. However, all the staff whose premise or family did not affected much got together and dedicated all their strength to the recovery. As a result of these efforts, we could restore the operation of our factory within few days so that we can fulfill our duties for our customers as a leading company of PCB drills. I appreciate not only all the devotion of our staff but also all the sympathy and encouragement from the people who support our staff. I would like to take this opportunity to send my sincere thanks to all of your supports .

As we have explained in 2004 Environment Report, we changed the Kerosene Preservation Tank from underground to ground-based one in June 2003 to reduce the risk of soil contamination accident. The earthquake happened after the change so that it was not affected at all. If we had postponed this change, there might have been significant damages. We will continue improvement activities with the pursuit of sufficient effect as well as speed.

We also conduct a cleaning activity in the factory neighborhood last year, as one of the neighborhood contribution programs. It is a program promoted by an employee circle. We will extend this program to outside of the factory and would like to develop environment activity in collaboration with the neighbor community.

Furthermore, we received 2004 Niigata Technology Award which is given to the significant invention and its developer contributing to the development of the industry and the improvement of welfare of Niigata prefecture. This is due to the recognition to the development of ultra small diameter drills and that of materials for drill production. We are very honored to receive this glorious award and we are encouraged to make more efforts on the development of new products.

This report will present various activities we are conducting in our factory. We would appreciate if you could read it and give us any comments for mutual communication as well as for our future environmental activities.

April 2004
Union Tool Co.
Executive Director & Nagaoka Factory Director
Tadashi Okudera

Products

Printed Circuits Board's Drill bits (hereinafter described as PCB Drill), a main product of Union Tool, is used for making holes for Printed Wiring Board. We developed carbide endmils “UNIMAX Series,” applying manufacturing technology of smaller diameter PCB drills. They are tools to process various molds for parts used in cars, mobile phones or machineries. =Their features are high speed and hard metal milling, we have extensive line of small diameter endmils. We provide variety of products, such as, "UT Dry" for ecology-conscious dry processing, "UT Coat", suitable for machining with water-soluble coolant, "UT Hard", suitable for machining hardened steels up to the hardness of 65HRC as well as for high speed machining of other steel materials.

Endmils Runout Measuring Machine

We also have product-related machines, such as Non-contact Drill Diameter/Measuring equipment ,OPTECH-EDR-S 10/D10, which can measure diameter or runout of a tool/in an actual rotateing state. Comparing with the measurement of stable object’s runout, it can measure dynamic runout(runout of rotateing object), such troubles can be avoided as regarding processing shape, processing face accuracy, or life of tool.

On top of them, we have wide range of products, such as linear motion guide products or high accuracy measuring instrument for semiconductor manufacturing facilities.

Carbide Endmils “UNIMAX series” catalogue

Union Tool　Nagaoka Factory
Environmental Policy

Basic

To Contribute to the rich global environment through the corporate activities of loving nature and human beings.

Basic Policy

This factory will maintain a harmony with corporate activity and neighborhood and global environment by developing Environment Management System based ISO 14001 Standard and conducting ecological activities based on following policies.

1. Accurately grasp the impacts of activities of this factory, products or services and conduct environment protection activities by developing purposes and goals within our technical and economical capabilities.
2. Continue to improve Environment Management System and Ecological Performance with the periodic review of their environmental purposes and goals.
3. Comply with environmental laws, regulations, rules and further develop our own criteria within our capabilities and prevent pollution.
4. Following will be the main theme in activities of this factory as well as in impacts of our products and service toward environment.
   1) Promote energy saving
   2) Promote waste reduction
   3) Promote Green procurement
   4) Promote Recycling
5. Environment Policy will be conducted and maintained by Environment Management System and also will be notified to all employees by the Corporate Management.
6. Environment Policy will be open to public.

February, 20, 2004
Union Tool Co., Ltd, Nagaoka Factory
Executive Director, Tadashi Okudera

＊At our factory, we created “Basic Philosophy” and “Basic Policy” as Environmental Policy in August 1999 based on the corporate culture of “to love nature, people and work.”　After the review of management system in December 2003, we added “Green product procurement” into the list of main theme.

2004 Target and Achievements

Based on the prioritized theme of the Environment Policy of 2004(Save Energy, Waste Reduction, Green Procurement, Recycling) and the significant environmental factors of our company, we set environmental target and have implemented and promoted various programs.

Theme	Actions	2004 Target	2004 Achievements	Evaluation	Ref. Page
Energy Saving	Promote reduction of electricity use •Raise production efficiency •Introduce energy saving facility •Reduce leak of air	Cut 1% of electrical power consumption rate from that of 2003	Cut 6.1% of electrical power consumption rate from that of 2003	A	5
	Design & remodeling of designated machine to energy saving model •Use energy saving parts •Improvement of behavioralflow and operating rate	Reduceelectricity consumptionby 10000kwh with energy saving design or modification.	Reduce electricity consumption by 4000kwh with energy saving design or modification.	D	5
Waste Reduction	Reduction of Specially Controlled Industrial Waste •Substitute washing fluid to non-specially controlled one.	Discharge of Specially Controlled Industrial Waste Less than 33t a year	Discharge of Specially Controlled Industrial Waste 35t per year Completion of substitution of the washing fluid	C	6
Green Procurement	Substitution of items with hexavalent chromium •Investigation of items with hexavalent chromium •Test of alternatives	Study hexavalent chromium free coating outsourced	Complete abolishment of hexavalent chromiumcoating	B	6
	Study of toxic substance •Study cutting tool, material for linear motion products, packaging material	Study of toxic substance of selected objects Completion by June	Study of selected objects Completion rate 92%	D	6
Recycling	Collection & Recycling of Drill Cases •Request collection to our customers, PR •Research of issue, on collection and its solution	10P Case: Domestic Collection Rate:44%	10P Case: Domestic Collection Rate: 39%	D	7
		50P Case: Domestic Collection Rate:88%	50P Case: Domestic Collection Rate:88%	B	7
	Raise recycling rate of drill cases •Request to the customers to raise recycling rate •Raise case recycling capacity	Recycling rate of Drill Case against domestic shipment amount 66%	Recycling rate of Drill Case against domestic shipment amount 68%	A	7
	Establish collection system from overseas •Initialization of full operation of collecting cases from Korea	Collection rate of DC 50P case from Korea First half 20% Second half 30%	Collection rate of DC 50P case from Korea First half 18% Second half 32%	B	7
Resource Saving	Stock Form Reduction of fanfold paper •Computerize Forms •Review Forms •Substitute Green Procurement Law on speck product	Reduce 54% of Stock Form usage compared from that of 1999	Reduce 53% of Stock Form usage compared from that of 1999	C	—
	Reduce purchase of printed matter •Change layout of printed matter •Abolish printed matter	Reduce 5% of new pulp usage amount against that of 2003	Reduce 18% of new pulp usage amount against that of 2003	A	—
	Study expansion of application of short blank •Develop a lost of relevant model list •Unify model number	Arrange technical information for integration of drill model number Completion by October	Arrnage technical information For integration of drill model number Completion by October	B	—

A : Excess the Target B:Achieve the Target C:Not satisfactory D:Totally Failed

Please refer to relevant pages for details.

Chuetsu Earthquake

Inside of the factory right after

On October 23, 2004, 17:56pm, there was a magnitude of 7, intensity 6 upper, principal earthquake followed by after quakes as were reported in TV and newspapers. Our factory is in Nagaoka city, which is right in the middle of Niigata Chuetsu area. In an ordinary life, we can see slow flow of Shinano River in Echigo Plain as well as Shinkansen and Highways which are very close to the factory. Our staffs commute from the area within 30km distance including Yamakoshi Village, Uonuma City, or Ojiya City. Right after the principal earthquake, the staff living in the neighborhood of the factory got together to make sure that there were no fire or leaks of oil or waste fluid, and went home in the series of after quakes. On the next day (Sunday), staffs who were not affected much to their family or premise came to the factory to gather information about the condition of each staff. Then our electricity team started up the lifeline, electric facility. Next our machine manufacturing team and field team worked on the recovery of machine facilities. For the prompt recovery of manufacturing facilities and operations, it was unexpectedly a great advantage that we develop and produce manufacturing machine by ourselves. While rearranging fallen things and products in series of after quakes, we also took many actions to protect our factory from further damage caused by strong after quake like the first one. We put slip stopper or fall prevention on the shelves, safety arrangement on PC monitors, steel cylinder and onto some machines. Then after going back to the stable operation, we reviewed washing processing machine, chilling unit, Kerosene Tank etc. We could prevent soil contamination as we put a tank on the ground before the earthquake. We also did risk assessment and set earthquake monitoring bulb to prevent salt bath fire or leak from the pipes. We did all we can do against the earthquake. Lastly, we want to show our sincere gratitude for warm support from our customer or business partners.

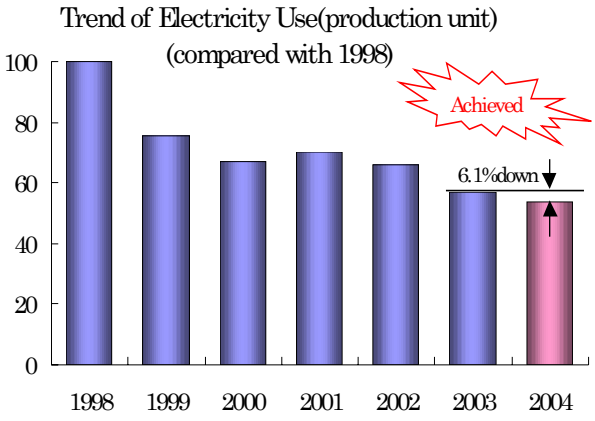
Aid supply from the head office and relevant people

Seismic sensor of Kerosene

PC Monitor fall stopper

Efforts for Energy Saving

Based on the mid-term objectives to reduce 5% from 2003 by the year 2008, we set an objective of cutting 1% of electricity use in the production unit from that of 2003. As a result, we could achieve 6.1% reduction compared to that of 2003. Compared to the cool summer in 2003, it was so hot in the summer of 2004 so that use of electricity increased. However, it was even more affected by the expansion of cutting tool production, a criteria of production unit. As a specific action plan, we allocate a target(absolute amount) of electricity reduction of the factory to each section so that the efforts of each section become clear. As a result of this program, we save energy by changing sign lighting to the energy saving type or putting inverter controlled circuit to detect, with pressure sensor, increase/decrease of amount of water in air conditioning or washing fluid water delivery pump and maintain consistent output pressure



Energy saving sign

Inverter-control with pressure sensor

Green Procurement

To provide products contributing environment protection and the reduction of environmental burden, we need to actively use eco-friendly materials or parts. We studied and clarify the information on the toxic ingredients within all materials, parts and packaging materials of cutting tools and linear motion guide so that we could provide products which our customers can use without anxiety. We will extend the study to other lines and will promote the reduction of toxic ingredients.

Products whose toxic ingredients study has been completed

PCB Drill

Carbide Endmil

Linear Motion Guide

Roller Guide End Piece

left : black chromate coating(before substitution)

right : Nickel coating (after substitution)

In the past, we have promoted programs for reducing environmental burden, such as to change 10P drill case packaging material into non-chloroethene, or to substitute silver brazing to cadmium-less type material. In 2004, we have achieved complete abolishment of hexavalent chromium and chloroethene from our cutting tools and linear motion guides.
We used to do black chromate coating using hexavalent chromium for small screw part called end-piece to prevent rusting, however, we changed it to nickel coating. We also substitute chloroethene packaging partly used for special drills into that of polyethylene, which is easily recycled and does not produce toxic gas at the time of incineration. As a result of these efforts, we could completely abolish hexavalent chromium and chloroethene from our cutting tools and linear motion guides.
We will further contribute to recycling society by promoting green procurement. At the same time, we will promote more programs in cooperation with our technical design department, purchase department or out business partners so that we could provide products which our customers can buy without anxiety. We would like to ask for cooperation of our customers or business partners.

Reduction of Wastes

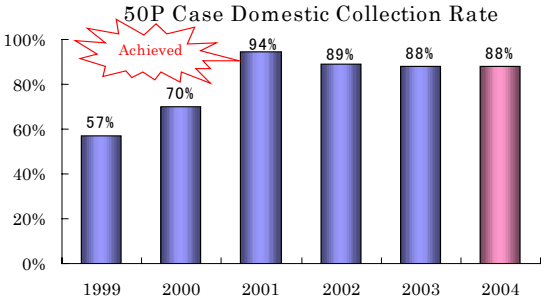
In 2003, we set an objective of reducing discharge of Specially Controlled Industrial Waste less than 50t and have achieved it. In 2004, we made efforts to achieve the target of less than 33t of discharge amount. Most of Specially Controlled Industrial Waste discharging amount was the washing fluid for PCB drill washing process. As washing fluid is absolute necessity in the production process, we reviewed the types of washing fluids.
To select the most appropriate washing fluid, it is essential to develop most appropriate technical data, but at the same time, we also select the one which is safe for operators and can contribute to reduce environmental burden. Because of increase in production amount, the amount of discharge became more than we had expected and excess our target amount of 33t. However, as was planned at the beginning, we could select new washing fluid with which we can avoid to be registered as massive discharging company of Specially Controlled Industrial Waste. We will actively try to reduce industrial waste by challenging extension of washing fluid changing cycle.

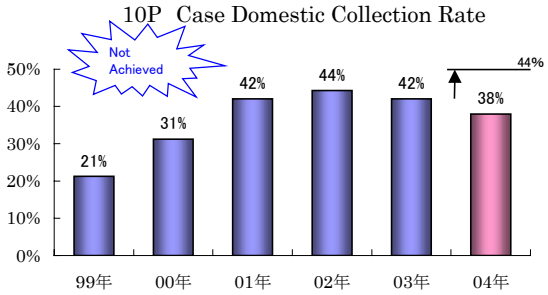
Trend in dischange amount of Specially Controlled Industrial Waste

Collection & Recycling of Drill Cases

Domestic Collection/recycling of Drill Cases

We actively collect used drill case as a producer. To further raise collection rate, we communicate with customers through our sales offices. The 2004 collection rate remains 87% for 10P cases but 100% for 50P cases against the target.
With Collected drill cases, we take off labels, wash them, and examine and reuse them. However, we do thermal recycling of dirty cases which are not recyclable. As the collection has become almost fully implemented, we have set new objective, which was 66% of recycling rate and conducted activities to increase number of cases which can be recycled. Thanks to these efforts, recycling rate became 68%. and cases are returned in recyclable condition.
We would like to ask for your cooperation on this collection/recycling activities.






Collection at Korean

Collection of Drill Case in Korea

In 2004 Environment Report, we introduced test collection and recycling of used drill cases from Korea. In 2004, we continued these activities every months.
As our drills are used in world famous Korean PCB major companies, significant amount of drills are used in these companies. At first we could not let Korean customers understand about our recycling program. Therefore, we cannot collect much and there were many cases with writing or repointing control stickers which were time consuming and costly. However, they gradually understand our recycling activity and recycling rate became equivalent to that of Japan. Annual collection rate is 32.3% against the target of 30%, which is 107% achievement rate. From the P/L point of view, we can reduce cost of raw price compared with that of purchasing new cases. In light of this achievement, we fully owe to the cooperation of SUNWOO TRADING, our Korean distributor, as well as to understanding of our customers. In 2005, we are planning to solve the problems happened in the previous year and increase the number of collection.
In the future, we would like to start recycling activity in Taiwan and China, mass consumers of PCB Drills. However, the recognition level of recycling is still law and there are still many problems to be solved. We will continue our environment enlightenment activity to our subsidiaries.

Contribution to the Local Community, Community-Based Activities

Ikuyo Nakamichi Piano Recital

Since 2002, our company organize piano recital in cooperation with “Nagaoka-City Foundation for Promoting Art & Culture” to support promotion of artistic/cultural activities in the local area. We hope to return a favor to our neighbors who support us by inviting Ikuyo Nakamichi, one of the leading Japanese pianist and holding “Union Tool Classic Program” periodically.
On July 26, 2004, we held a chatting with piano concert for little children titled “Animals of Stars” followed by “Children of the Light” concert with piano and slide, which we held for little children in 2003. As there are very few concert where children under 6 can enter, the concert , where adults and children can have fun, was very appreciated by many neighbors.

“Children of the Light” Recital Poster

Although we had planned to have “Union Tool Classic Program: Ikuyo Nakamichi Piano Recital Vol. 6” on December 3, 2004, we had to cancel it because of Niigata Chuetsu Earthquake.
To provide more opportunities to listen to good music, we are planning piano recitals at Nagaoka City Lylic Hall in July and December 2005.

「Fight ! Niigata」 Illumination

When all the neighborhood is working for recovery from damages of Chuetsu earthquake, we lighted illumination of the letters “Fight! Niigata” on the factory wall to somewhat encourage our staff and neighbors. These are the lights which we use for Christmas illumination every year.

Nagaoka Festival

Nationwide famous Nagaoka Firework festival is held every year at Shinano-River, the biggest river in Japan,. About 20,000 powerful fireworks including Real Sanjakudama, which is presented only here in Japan, Naiagara Great Star mine, Giant Star mine etc are shot up into the sky for 2 days.
We co-sponsored and presented big fireworks as our main factory is in Nagaoka City.

Stamp Volunteer
Cooperation with collection of Old Stamps or Used Phone Cards

Collected old stamps or phone

We collect and send used phone cards, stamps or postcards to Green Earth Protection Fund which works for protection, recovery of green, protection of desertification and promotion of environment protection against the expansion of deforestation or desertification in all over the world. Every year, at the beginning of spring season, the sky becomes yellow and slightly cloudy with yellow sand from the continent of China. Seeing the sand on white snow or on the car, we feel that human activities give influence on destruction of nature or on our health. We try our best to collect as much as possible, however, it becomes difficult as phone cards are substituted by mobile phones, stamps are substituted by Express delivery service , and postcards are substituted by e-mails. We feel somewhat relieved in our busy life whenever we receive envelopes with commemorative stamps from trading companies or vendors. We will urge our research center and branches to cooperate with this program.

Future Efforts

In 2005, we will actively work on control/non-use of toxic substance under “Promotion of Green Procurement,” which is one of the most important themes of environment policy.
On top of it, in light of overseas drill case collection and recycling, we will raise collection rate of drill case in Korea and we will newly start case recycling in Taiwan.

2005 Nagaoka Factory Environment Purpose, Objective

	Item	Purpose	2005 Objective
1	Energy Saving	Cut 5% of electricity use in the production unit from that of 2004 year by 2008	Cut 1% of electricity use in the production unit from that off 2004
		Reduction of leaking air	Air leaking rate less than 20% at each factory
		Energy Saving Design of Machines	Energy Saving Design for new ones 100%
		System development	Prepare class 1 Energy Control Factory
2	Waste Reduction	Recycle of waste plastics	Waste plastic recycling rate more than40%
3	Green Procurement	Develop green procurement system by 2007	Prepare Green Procurement Criteria
			Complete toxic ingredients of peripheral equipment
4	Recycling	By the end of 2005, achieve the domestic collection rate of drill cases 10P Drill Case 44%, 50P Drill Case 89%	10P Drill Case domestic collection rate 44% 50P Drill Case domestic collection rate 89%
		Raise recycling rate of Drill Cases	Recycling Rate of domestic market 68%
		Complete recycling investigation of all overseas plant and sales offices by 2007	Number of collection of DC50p case in Korea over 100thousand.
			Start 10p case recycling within Taiwan
5	Resource Saving	Reduce copying paper	Reduce purchase of copy paper by 10% from 44 period

＊”Electricity Use per Production Unit(kwh/1000)”=”Electricity Use(kwh)”/”Cutting Tool Production No.(1000)”

Environmental Accounting

Introduction of Environmental Accounting

Environmental Accounting is "one of the frameworks for quantitatively evaluate activities for environment protection conducted by the company etc.

Based on the "Guideline for implementation of Environmental Account System (2002 version)" issued from the Environment Agency, we have reviewed the environmental cost and its effect at Nagaoka Factory in the year 2004

Environmental Accounting in the year 2004

Environment Prevention Cost (million yen)

Category	Investment *1	Cost *2	Major Activities & Effects
Cost within Business area			
Prevention of Pollution Cost	6.6	5.7	Prevention of Water Pollution/Soil Pollution
Protection of Global Environment Cost	8.7	0	Energy Saving Activities(Cut Electricity Consumption)
Resource Recycling Cost	12.4	0	Recycling Processing, Waste Processing, Waste Reduction Programs
Early/Final Process Cost	0	37.9	Collection/Recycling of Drills and Drill Cases
Control Activity Cost	0.3	1.8	Monitor Environmental Burden, ISO14001operation
TOTAL	28.0	45.4	
	73.4		

＊1:Amount of Investment is fully depreciated within the investment year because of its difficulties in calculating period for investment effect to become visible.

＊2:We do not include depreciation cost into the "Environment Protection Cost and we take the period of investment effect as until the end of investment year. Employment cost is not included in the costs.

Economic Effect of Environment Prevention Activities～substantial effect～ (million yen)

Item	Amount	Effect
Profit	3.4	Sales Profit of Assets Produced by Recycling
Cost Saving *3	79.4	Reduction of amount of use of electricity, tap water, copying paper, stock form, etc. Reduction of wastes, Reduction of Buying Cost of New Case by Case Recycling, etc.
Total	82.8	

＊3：We calculate the amount of cost saving among other economic effect of environment prevention activities with the method of business activity adjustment comparison between the year 2003(benchmark period).
Cost Saving Effect＝Cost of Benchmark Period×(Business Activity Amount÷Business Activity Amount during the benchmark period)－Cost of this Period

Period Covered:The year 2003(December 2003 ～ November 2004)
Covered Area of Counting:Nagaoka Factory

Nagaoka Factory

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Issue Date April 2005
Next Issue April 2006

※This report mainly covers data of year 2004(December 2003～November 2004).
Data of "Energy Saving," "Resource Saving" and "Wastes" only covers that of Nagaoka Factory.
Some data may be the ones after December 2004