

Environmental Management

In committing the entire group to the Nikon Basic Environmental Management Policy and engaging in effective environmental preservation through its environmental management systems (EMS), the Nikon Group aims to become an environmentally harmonious enterprise that contributes to the development of a recycling-oriented society in all its business activities.

The Nikon Basic Environmental Management Policy

■ Purpose of the policy

Nikon created the Nikon Basic Environmental Management Policy in 1992, a basic policy on environmental management activities that aims to prevent environmental pollution by using resources efficiently and helping to preserve the global environment so that it would be able to pass on a sustainable

and healthy environment to future generations. In the year ended March 31, 2002, we carried out major revisions to our policy to further our aim of creating a recycling-oriented society. An outline of our action guidelines is presented below.

Action Guidelines

- 1 We will make every effort to promote CO₂ emission reduction, reuse and recycling, while encouraging energy and resource conservation, waste reduction and conscientious waste processing, with the goal of creating an environment-conscious recycling society.
- 2 We will perform environmental and safety reviews at every stage of planning, development and design, in order to provide products that fully comply with environmental protection aims.
- 3 At every stage of production, distribution, use and disposal, we will actively introduce materials and equipment that are effective in protecting the environment, strive to develop and improve technologies in this area, and work to minimize environmental burdens.
- 4 We will meet targets for reduction of environmental burdens and use of harmful substances, and continue to improve our environmental management system through environmental audits and other means.
- 5 We will develop and follow a rigorous code of standards, in addition to observing all environmental conservation treaties, national and regional laws and regulations.
- 6 We will conduct ongoing education programs to further employee knowledge of environmental issues and promote employee involvement in environmental activities.
- 7 We will provide suppliers with guidance and information to promote optimal environmental protection activities.
- 8 We will participate actively in the environmental protection programs of society at large, and implement information disclosure.

Environmental Burden of Business Activities

Nikon Group's principal environmental loading (for year ended March 31, 2009)

INPUT		Nikon Plants	Manufacturing Subsidiaries	Units
Energy	Electricity	174,375	102,367	MWh
	Gas	6,194	2,965	(thousand) m ³
	Heavy oil	322	1,029	kl
	Kerosene	0	40	kl
	Water	1,331	820	(thousand) m ³
PRTR substances	Xylene	0	2.431	t
	Hexavalent-chromium	0	0.506	t
	Dichloropentafluoropropane	0	3.546	t
	Toluene	0	5.618	t
	Nickel compounds	0	0.617	t
	Barium and its water-soluble compounds	0	43.079	t
	Hydrogen fluoride and its water-soluble salts	0	30.727	t
	Boron and its compounds	1.356	17.526	t

OUTPUT		Nikon Plants	Manufacturing Subsidiaries	Units
CO ₂ emissions	Electricity	74,109	45,143	t-CO ₂
	Gas	13,393	13,665	t-CO ₂
	Heavy oil	363	2,787	t-CO ₂
	Kerosene	0	99	t-CO ₂
PRTR substances emissions	Xylene	0	0.972	t
	Hexavalent-chromium	0	0	t
	Dichloropentafluoropropane	0	3.329	t
	Toluene	0	3.860	t
	Nickel compounds	0	0	t
	Barium and its water-soluble compounds	0	0.030	t
	Hydrogen fluoride and its water-soluble salts	0	0.006	t
	Boron and its compounds	0.002	0.024	t
Disposal	Amount of waste generated	3,716	2,438	t
	Amount recycled	3,673	1,644	t
	Amount of landfill	11	685	t

Scope of Data

Nikon Plants: Ohi Plant, Yokohama Plant, Sagamihara Plant, Kumagaya Plant, and Mito Plant

Manufacturing Subsidiaries: Tochigi Nikon, Tochigi Nikon Precision, Mito Nikon Precision, Sendai Nikon, Sendai Nikon Precision, Zao Nikon, Kurobane Nikon, Hikari Glass (In this report, "major manufacturing subsidiaries in Japan" refer to these eight subsidiaries.)

Note: For electricity figures, Nikon Plants include Nikon Corporation head office. For the PRTR substance figures, Manufacturing Subsidiaries include TNI Industry Nagai Factory.

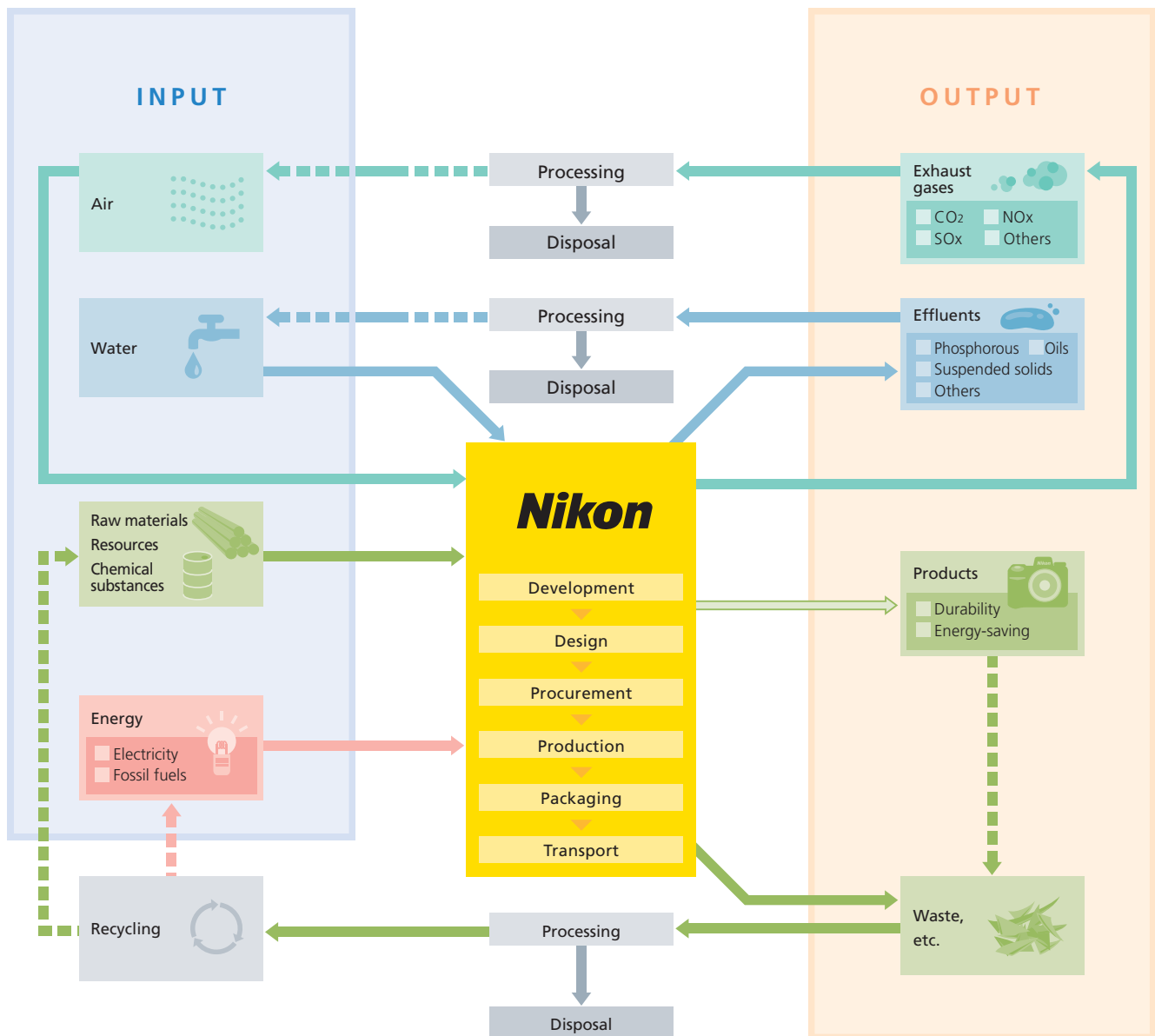
A corporation is like a living organism, functioning within the global environment. As it grows, it provides products and services to society and continues to grow, and during this time it consumes various resources and energy, and generates numerous types of waste.

As society moves towards a recycling-oriented society that promotes energy efficiency, the efficient use of resources and a near-zero level of waste, there is an imminent need for companies to accurately identify their environmental impact and develop a higher level of eco-management.

The Nikon Group has countless ongoing activities that ful-

fill this need, including reducing all types of waste and is also actively implementing proprietary initiatives, like the development of Eco-glass, which has a very low environmental impact. Nikon is currently putting particular focus on reducing CO₂ emissions and combating soil pollution. Nikon is known for "Trustworthiness and Creativity" and it uses the experience and technology gained from its long history in becoming an environmentally harmonious corporation.

Relationship with the Environment in Business Operations



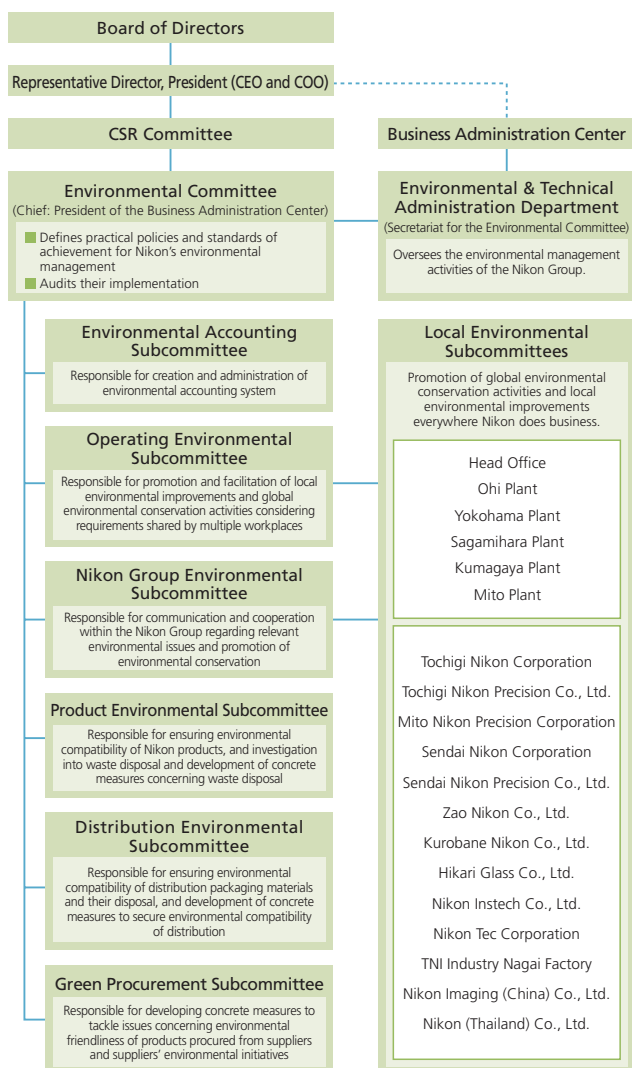
Environmental Management

Environmental Management System

■ Environmental management organization

Nikon Corporation first held the “First Pollution Response Committee” in 1970, then followed efforts with the “Pollution Prevention Committee” in 1971 and the “Environmental Improvement Committee” in 1973. In 1992, we renamed this committee the “Environmental Committee” and introduced more practical environmental preservation activities. In addition, we reorganized our environmental management system when we created the Nikon Basic Environmental Management Policy in 1992, and are currently introducing environmentally friendly activities group-wide led by the Environmental & Technical Administration Department.

Environmental Management Organization (as of April 1, 2009)



As these efforts show, Nikon has responded speedily to social needs as well as to formulated and introduced regulations, treaties and standards both within and outside of Japan, and has built internal structures to respond to such needs.

■ Utilization of ISO 14001 certification

- Main achievements for the year ended March 31, 2009**
- Nikon TEC and Hikari Glass (Changzhou) Optics obtained ISO 14001 integrated certification.
 - Nikon Engineering and Nanjing Nikon introduced the Nikon Environmental Management Simplified System.
- Major target for the year ending March 31, 2010**
- Promote the introduction of the Nikon Environmental Management Simplified System.

The Nikon Group’s environmental management activities follow ISO 14001. Currently, we are obtaining integrated certification with the goal of boosting efficiency of our business operation and spreading our environmental action plan through the entire Group, which is our medium-term goal for environmental activities (see page 59).

In the year ended March 31, 2009, Nikon TEC—a non-manufacturing subsidiary—and Hikari Glass (Changzhou) Optics—an overseas manufacturing base for optical glass—obtained integrated certification. In addition, the Nikon Environmental Management Simplified System, consisting of important elements from ISO 14001, which applies to companies that generate a low environmental burden, was implemented in Nanjing Nikon and Nikon Engineering.

In the year ending March 31, 2010, Nikon plans to gradually implement the Nikon Environmental Management Simplified System in Japan and overseas offices that generate low environmental impact.

Through these activities, Nikon uses the environmental management system group-wide, and has introduced environmental preservation activities such as reducing greenhouse gas emissions through reduced energy consumption, effectively using resources (promotion of the 3Rs) and reducing the use of hazardous chemical substances.

Environmental Education and Awareness Activities

In introducing, maintaining and further developing environmental preservation activities group-wide, Nikon Corporation asks all employees of the Nikon Group and its business partners to take part in relevant activities, and also offers environmental education and raising environmental awareness.

■ Support for obtaining ISO certification

The Nikon Group offers training for and support in obtaining ISO 14001 and ISO 9001 certification.

Nikon TEC organizes educational courses for internal auditors working at six plants nationwide with the goal of obtaining ISO 14001 certification. Twenty-five employees have participated in these courses so far.

■ **Promotion of Environmental Management and Measures**

Nikon Group companies employ training systems designed for each job level, group, plant and department in a bid to boost the level of all employees.

■ **Various Awareness Activities**

Nikon Corporation also conducts educational activities involving employees' families with the goal of providing information to employees, systematically implementing measures, raising awareness and interest, and comprehensively abiding by waste separation standards. One such activity is the hosting of seminars during Environment Month. Employees at all levels—not just those in charge of environmental preservation—were invited to attend these seminars in order to deepen their understanding of global warming, measures to counter global warming, and regulations on chemical substances.



Environment Month seminar

■ **Specialized Environmental Education**

To give each employee the knowledge and skills necessary to individually engage in environment-related tasks, Nikon Group companies in Japan attempt to raise the employees' level of expertise by encouraging employees to take specialized courses within and outside of the Group. At the Mito Plant, employees in charge of construction as well as EMS promoters in each department took part in an industrial waste risk management seminar hosted by intermediary treatment firms. Participants reconfirmed how the actual industrial waste released from the plant is finally disposed of and recycled and re-affirmed the importance of systematically separating industrial waste.



The intermediary processing factory employees visited

■ **Implementing a Campaign to Prevent Global Warming**

The Nikon Group implemented a campaign to prevent global warming throughout the year ended March 31, 2009. As part of the campaign, nine domestic and overseas group companies and all Nikon plants conducted a caravan seminar that offers easy explanations on the problem of global warming and Nikon's efforts including the Global Warming Prevention Project. In addition, Nikon created a pamphlet called "The Happa-chan Story" ("Happa" means "leaf" in Japanese) that offers simple explanations on how global warming is caused and how to combat global warming on a daily basis. Nikon distributed the pamphlet to employees and their families once a month over the intranet. Educational efforts to raise employee awareness were conducted within and outside of Japan. For example, Nikon Imaging (China) translated this pamphlet into Chinese and posted the contents on the company's bulletin board.



Employees reading pamphlets on preventing global warming on the bulletin board



Left: The pamphlet on preventing global warming
 Right: A mascot for Nikon's environmental-awareness activities, Happa-chan

Voice

To Raise Employee Environmental Awareness

We created a mascot for Nikon's environmental-awareness activities, based on a leaf design, Happa-chan, in order to encourage employees to get involved in environmental activities. Just as a pile of small leaves can make a mountain, if all employees work together we can become a huge force for combating global warming. This is how we felt as we created the character. We will continue environmental awareness activities that employees can enjoy and take an interest in.

Masako Maeda
 Environmental Administration Section
 Environmental & Technical
 Administration Department
 Business Administration Center
 Nikon Corporation



Environmental Management

Environmental Action Plan

The Nikon Group evaluates its efforts against its annual Environmental Targets. Issues are then detected, and revisions are made to overcome those issues. In addition, every year the Environmental Committee devises a new three-year plan called the Nikon Environmental Action Plan (consisting of environmental goals) and Environmental Targets, which are both implemented group-wide.

The table below details the Nikon Environmental Action Plan 2008 (three-year plan), listing the Environmental Targets set for the year ended March 31, 2009 (first year of the plan). To the right of each target can be found the achievements for the year and Nikon's self-evaluation.

■ Year ended March 31, 2009 (results)

In the fiscal year ended March 31, 2009, Nikon promoted its Global Warming Prevention Project launched in October 2007, and implemented the measures necessary for the Group (see page 7).

Nikon also strengthened its measures to meet global regulations on chemical substances such as Europe's REACH.

Nikon Environmental Action Plan 2008

	Theme	Environmental targets for the year ended March 31, 2009	Results for the year ended March 31, 2009	Evaluation	See page
Product environment	Energy conservation (prevention of global warming)	[Energy efficiency] • 30% or more improvement in overall energy efficiency of new products, compared to existing products.	More than 42% (57%) improvement in simple average improvement of all new models, 30% or more improvement for 56% (67%) of models	○	P9-11
	Reduction in use of hazardous chemical substances, etc.	[Eco-glass usage] • Maintain 100% use of Eco-glass in new optical designs for consumer products and 98% or more for industrial products; 98% or more of material shipped by optical glass division.	Consumer products: 100% (100%) Industrial products: 97.4% (99.4%) Materials shipped: 99.2% (98.5%)	△	P9-12
		[Lead-free solder] • 100% for all new electronic circuit boards for small products (cameras, microscopes, surveying instruments, etc.), and 90% or more for large products (steppers, scanners, etc.), both targets to be met from year ended March 31, 2008.	Small products: 100% (100%) Large products: 96% (97%)	○	
	Control of chemical substances	[Hexavalent-chromium, lead, cadmium, mercury, PBB, PBDE, PVC] • Continue compliance with RoHS Directive. Maintain and improve management system. • Systematically manage the use of hexavalent-chromium in surface-treatment processes for consumer products. Abolish the use of hexavalent-chromium from newly-designed parts used for industrial products.	Achieved continued compliance, maintained and improved management systems. Established usage standards for the process and abolished its use in newly-designed parts for industrial products.	○	P9-11 P36
		[Ozone layer-depleting substances] • Completely eliminate the use of HCFC as a refrigerant in IC and LCD steppers/scanners shipped.	Abolished in April 2008.	○	
	Green procurement	[Control of chemical substances in products] Determined the policy and prepared a management system.	Progressed in preparations to meet REACH Regulation.	○	P36
Distribution	[Reduction in use of hazardous chemical substances] • Maintain and update green procurement for consumer products and expand green procurement for industrial products. [Application of Nikon Green Procurement Standards] • Maintain and update the application of Nikon Green Procurement Standards. • Investigate and audit environmental conservation systems.	Continued for consumer products; gauged use for major industrial products. Maintained Nikon Green Procurement Standards and created a system for updating to version 3.1. Established the audit method for environmental conservation systems and continued to investigate them.	○	P53-54	
	[Reduction in CO ₂ emissions from physical distribution in Japan] • Reduce CO ₂ emissions per net sales by 8% or more compared to year ended March 31, 2007.	7.1% reduction	△		P38
Workplace environment	Energy conservation (prevention of global warming)	[Reduction in greenhouse gas emissions (energy-based CO ₂)] • Nikon Corporation and its major manufacturing subsidiaries in Japan will reduce their CO ₂ emissions to a total of less than 131,000 tons. • Reduce CO ₂ emissions per net sales by 5% at two Asian manufacturing subsidiaries compared to the year ended March 31, 2006 to a total of less than 67,000 tons.*	Total CO ₂ emission volume : 127,000 tons Reduction of 6% per net sales compared to year ended March 31, 2006 Total CO ₂ emission volume: 66,000 tons	○	P39
	Waste reduction	[Zero-emission system] • Consider creating a system at two Asian manufacturing subsidiaries. [Reduction of mass-volume waste such as paper, sludge, effluent, metal and glass] • Reduction of 10% compared to year ended March 31, 2006 within Nikon Corporation and its manufacturing subsidiaries in Japan.	Established policies for zero-emission system. 11% reduction	○	
Others	Environmental Management System (EMS)	[ISO 14001 integrated certification] • Expand integrated certification.	Added three new districts to the integrated certification. Installed simplified EMS at two sites.	○	P31
	Life Cycle Assessment (LCA)	[Introduction of LCA] • Establish the LCA trial method.	Completed establishment of the LCA trial method.	○	P35

Notes: In the column headed "Results for the year ended March 31, 2009," the data in parentheses are results through the year ended March 31, 2008. The symbol "○" indicates adequate progress; "△" means that some progress was made; and "×" represents a significant gap between the target and actual performance. (Nikon's self-evaluation)

*In the CSR Report 2008, "80,000 tons of CO₂" appears, but this has since been changed due to a change made to estimated net sales.

■ Year ending March 31, 2010 (targets)

In the year ending March 31, 2010, the Nikon Group will introduce more activities related to the Global Warming Prevention Project and work to reduce greenhouse gas emissions group-wide.

In product development, Nikon will promote further energy saving through power-consumption efficiency, and respond

steadily to global regulations on chemical substances by enhancing a system for managing chemical substances. In addition, the Nikon Group will make efforts in other business activities such as expanding green procurement and obtaining additional ISO 14001 integrated certification in an effort to reduce environmental burden.

Nikon Environmental Action Plan 2009

	Theme	Mid-term environmental targets	Targets for the year ending March 31, 2010
Product environment	Energy conservation (prevention of global warming)	[Energy efficiency] • In new products released in the year ending March 31, 2012, boost energy efficiency during use by more than 20% compared with existing products.	30% or more improvement
	Reduction in use of hazardous chemical substances, etc.	[Eco-glass usage] • Maintain 100% use of Eco-glass in new optical designs for consumer products and 98% or more for industrial products; 98% or more (by mass) of material shipped by optical glass division.	Consumer products: 100% Industrial products: 98% or more Materials shipped: 98% or more
		[Hexavalent-chromium, lead, cadmium, mercury, PBB, PBDE, PVC] • Continue compliance with RoHS Directive. Maintain and improve management system.	Continue compliance and maintain and improve the management system.
		[Hexavalent-chromium for surface-treatment] • Systematically manage the process in consumer products. • Abolish the substance for new designs in industrial products.	Systematically manage the process in consumer products. Abolish the substance for new designs in industrial products.
	Control of chemical substances	[Control of chemical substances in products] • Maintain and improve management system.	Enhance management system.
	Green procurement	[Reduction in use of hazardous chemical substances] • Maintain and update green procurement for consumer products. Expand use for industrial products.	Maintain and update green procurement for consumer products. Expand use for industrial products.
[Application of Nikon Green Procurement Standards (procured goods)] • Maintain and update application of Nikon Green Procurement Standards. • Continue to investigate and audit environmental conservation systems.		Maintain and update application of Nikon Green Procurement Standards. Continue to investigate and audit environmental conservation systems.	
Distribution	[Reduction in CO ₂ emissions from physical distribution in Japan] Reduce CO ₂ emissions per net sales by 20% or more compared to year ended March 31, 2007.	Reduction of 15% or more	
Workplace	Energy conservation (prevention of global warming)	[Reduction in greenhouse gas emissions (energy-based CO ₂)] • Reduce total CO ₂ emissions by Nikon Corporation and major manufacturing subsidiaries in Japan to less than 126,000 tons. • Reduce CO ₂ emissions by 20% per net sales (compared to year ended March 31, 2006) at two Asian manufacturing subsidiaries (total CO ₂ emissions: 98,000 tons).	Total CO ₂ emissions of 123,000 tons or less Reduce CO ₂ emissions by 10% per net sales (total CO ₂ emissions: 66,000 tons).
	Waste reduction	[Zero-emission system] • Maintain the system at Nikon Corporation and major manufacturing subsidiaries in Japan, establish the system at two Asian manufacturing subsidiaries. [Waste Reduction] • Reduce waste at Nikon Corporation and manufacturing subsidiaries in Japan by 25% compared to the year ended March 31, 2006.	Prepare to establish systems at two Asian manufacturing subsidiaries. Reduction of 20%
Others	Environmental Management System (EMS)	[ISO 14001 integrated certification] • Expand/maintain integrated certification.	Expand number of integrated certification business establishments.
	Life Cycle Assessment (LCA)	[Gauge environmental burden using LCA] • Use as indicators for reducing environmental burden in various workplace-related activities.	Test the collection of data from workplace-related activities.

Note: Mid-term environmental targets are for the year ending March 31, 2012, unless specified otherwise.

Product-related Activities

To promote environmental friendliness throughout a product's life cycle, Nikon has introduced Nikon Product Assessment for the development and design of all products and is making efforts to reuse and recycle used products and reduce the environmental burden in packaging and physical distribution.

Eco-friendly Product Development

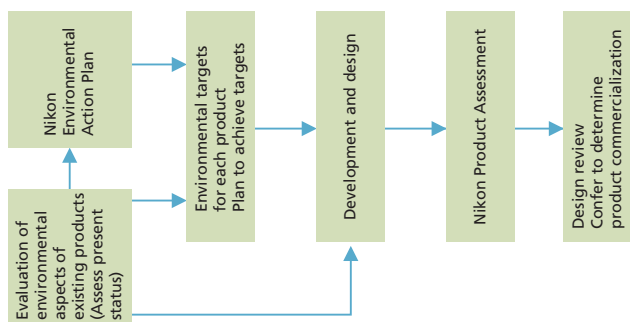
Environmentally friendly Product Development System
The Nikon Group developed an original system for managing environmentally friendly product designs. In operating this system, the Group has continuously strengthened the contents of the Nikon Environmental Action Plan and Nikon Product Assessment (details below).

Under this system, the Nikon Group is significantly improving energy efficiency in various products. In addition, Nikon continues to produce higher levels of environmentally friendly products through a reduction of resources, maximum application of Eco-glass, lead-free solder and plating techniques that are free of hexavalent-chromium and significant reductions in other hazardous substances.

By March 31, 2006, the Nikon Group had completed preparations to comply with EU's RoHS Directive*.

*RoHS Directive: Applies to an extensive range of electrical and electronic products sold in Europe. In principle, the Directive prohibits the sale of products containing hexavalent-chromium, lead, cadmium, mercury, PBB and PBDE in European markets, except in specific cases where there are no feasible alternatives. The Directive has been in force since July 2006.

Management system flow for eco-friendly product design



Nikon Product Assessment System

To minimize the adverse environmental effects of its products throughout their life cycles, Nikon formulated its own product assessment system in 1995. The system quantifies improvements in eco-friendliness for products under development. That same year, Nikon Product Assessment was introduced for all products under development and design in a bid to develop products with significantly less environmental impact.

Nikon has been adding evaluation categories and tightening standards since 1995, and now uses version 8 of the system with reinforced criteria related to hazardous substances as well as the efficient use of resources and energy. As a result, Nikon has further improved assessment points and made significant progress in the development and design departments.

Features of the Nikon Product Assessment System

- In a bid to stay ahead of environmental regulations and deteriorating global environmental problems, Nikon sets its own standards with its products property in mind. The details are determined after ongoing debates between product developers, material engineers and other experts.
- Makes product assessment mandatory in design reviews and related phases of product development, with procedures and standards clearly defined
- Requires continuous improvement in assessment scores from one model to the next
- Supports designers by offering relevant documentation and references, as well as an environmental database of information relating to materials (Eco-glass, plastics, metals, surface-treatment materials, bonding agents, etc.)
- Ongoing reductions in product mass, volume, and part counts
- Assessment and improvement of energy consumption based on Nikon's Energy Efficiency formula (product functionality/power consumed)
- Pursuit of extended product life and simpler repair procedures
- Reduction in the amount of waste generated from consumables; appropriate guidance on waste processing for customers
- Simplified recycling procedures (simpler separation of plastics from metals, content marking/explanation and simpler removal of rechargeable batteries)
- Complete elimination and reduction of hazardous substances (heavy metals, designated brominated flame retardants, PVC and ozone-layer-depleting substances, etc. contained in metals, plastics, cables, electronic parts and other various materials)
- Use of optical glass free of lead and arsenic (see page 12)
- Use of lead-free solder on electronic circuit boards (see page 36)
- Adoption of surface-treatment technologies free of hexavalent-chromium (see page 36)
- Strict observance of environmental laws and regulations (battery regulations, RoHS Directive, etc.)
- Overall assessment (overall assessment score, comments on evaluation, etc.)

Implementation of Nikon Product Assessment

Main achievement for the year ended March 31, 2009

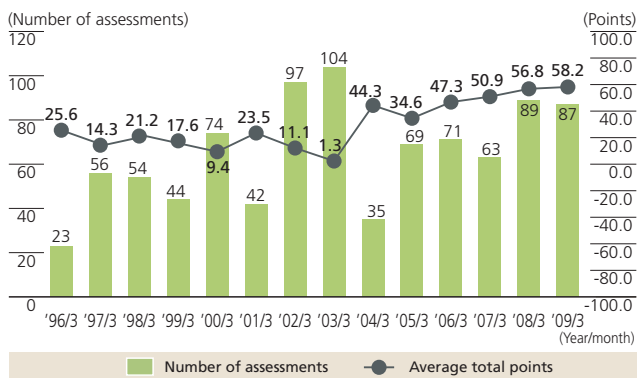
- Conducted 87 product assessments, with an average total score of +58.2 points.

Assessment points are added if the environmental friendliness of a product improves compared with existing products, while points are subtracted if the environmental friendliness of a product deteriorates. The point scale ranges from -100 to +100.

Over the 14 years from the year ended March 31, 1996 to the year ended March 31, 2009, Nikon performed a cumulative 908 assessments under this program. Products received an average total score of +29.5 points. The average score for the past six years, during which the assessment standards have been significantly enhanced, was a high +49.8 points.

This assessment confirms the significant progress Nikon is making in environmental friendliness.

Implementing Product Assessments



Reducing Hazardous Substances in Products

Main achievements for the year ended March 31, 2009

- Maintained 100% lead-free electronic circuit boards in all newly-released consumer products.
- Achieved lead-free assembly in 97% of all newly-designed electronic circuit boards of industrial products.
- Trained a cumulative total of 950 or more instructors and certified workers in lead-free soldering processes.

As part of Nikon's technical efforts to reduce hazardous substances in its products, we make use of lead-free soldering technologies and surface treatment technologies that do not use heavy metals such as hexavalent-chromium. In addition, we are introducing chemical analysis techniques for use by the Quality Assurance Department.

■ Full-scale adoption of lead-free solder

Under the leadership of the Yokohama Plant and Sendai Nikon, the Nikon Group has established a system for employing lead-free solder. The system involves not only Nikon's product development and manufacturing technology departments, but also group companies and business partners.

Nikon's in-house training and technical certification system for the training of staff in the techniques of manual soldering now includes a course on lead-free soldering procedures to help employees master the new technology. By the year ended March 31, 2009, over 950 instructors and certified



Lead-free flow furnace



An example of lead-free items: High speed serial interface board employed for the latest IC steppers and scanners

workers have been trained in lead-free soldering, both in Japan and at overseas production subsidiaries.

Furthermore, the types of lead-free solders have been unified to industry-standard "tin-silver-copper".

Application of lead-free solder to Nikon products

The use of lead-free solder is being implemented under the Environmental Action Plan (see page 33). Progress has been rapid: in the year ended March 31, 2009, Nikon used 100% lead-free solder for the electronic circuit boards in all of its new consumer products, including the D700 digital SLR camera. The use of lead-free solder is also being aggressively promoted for our industrial products (steppers and scanners, microscopes, surveying instruments, etc.), and in the year ended March 31, 2009, 97% of all newly-designed boards were soldered with lead-free materials.

■ Use of hexavalent-chromium-free technology in surface treatment processes

The Yokohama Plant's surface treatment department reviewed its technology and process used for chromate treatment and chrome plating, and abolished the use of the extremely hazardous hexavalent-chromium at the end of 2004.

Using the progressive results and experiences gained through such activities, Nikon is actively employing hexavalent-chromium-free technology in the surface treatment of all Nikon products.

Surface treatment processes pose a wide range of difficult issues due to the many types of surface treatments used, such as painting, plating and chemical conversion, on a wide range of components in a variety of working conditions. Therefore, strict technical standards were also employed for lead, cadmium and mercury, and the company is working to completely eliminate the use of heavy metals. In the year ended March 31, 2009, processes were systematically managed for this reason.

■ Chemical analysis techniques used by the Quality Assurance Department

The Nikon Group plans to abolish the use of hexavalent-chromium, lead, cadmium, mercury, PBB, PBDE, PVC and other hazardous chemical substances in our products as much as technically possible. Nikon products consist of materials and components procured from manufacturers and trading companies located worldwide, which are then processed and assembled by many manufacturers through a complex supply chain. To completely eliminate hazardous substances from such a complex manufacturing process, it is essential to confirm the situation through a green procurement system (see page 54) and a chemical analysis of procured materials. Therefore, Nikon has introduced chemical analysis techniques to be carried out by the Quality Assurance Department at major stages in the production process for all types of products. Nikon also trained a large number of technicians in the use of analytical techniques and related know-how to prevent hazardous chemical substances from leaking into Nikon products.

Product-related Activities

Reuse and Recycling of Used Products

Main achievement for the year ended March 31, 2009
 • Shipped 17 refurbished steppers and scanners (cumulative 224 units)

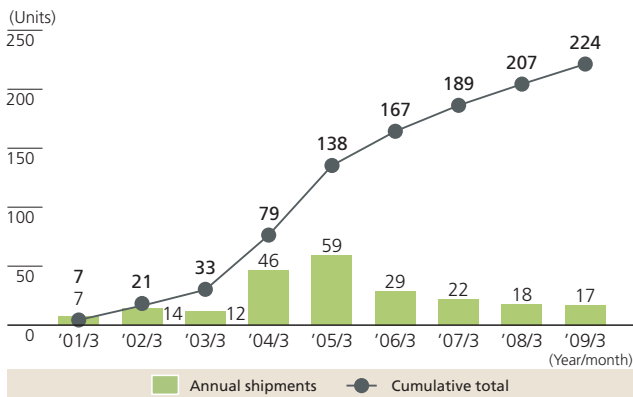
Nikon, which supplies its products worldwide, is working tirelessly to reduce the total environmental impact of its products and services through the reuse and recycling of used products.

■ Sales of refurbished steppers and scanners

In the year ended March 31, 2001, Nikon launched a service for collecting used steppers and scanners from customers, reconditioning them, replacing parts, reconfiguring them, and installing them for new customers in Japan and overseas. This exemplifies Nikon's willingness and capability to reuse its own products and reflects the company's ability to simultaneously contribute to the environment and satisfy customers. Nikon has steadily strengthened this system and expanded business.

As a result, Nikon shipped 17 steppers and scanners in the year ended March 31, 2009, bringing the cumulative total to 224. In order to improve efficiency in the recycling and reconfiguration stages, Nikon has been promoting standardization and boosted efficiency in improving or altering tools, facilities, and processes and has built a system for dealing with technical problems.

Sales volume of Nikon refurbished steppers and scanners



NSR-2205i 12D
 (released in 1996)
 Highly popular in
 secondhand markets

■ Battery recycling

Nikon Corporation has been cooperating with the JBRC* (Japan Battery Recycling Center) and other partner firms to collect and recycle used rechargeable batteries for Nikon digital cameras and other products in Japan.

*JBRC: A general incorporated association that promotes recycling of compact rechargeable batteries in Japan based on the Law for Promotion of Effective Utilization of Resources

■ Recycling of used Nikon products

Under the WEEE Directive*, European countries have been enacting their own laws and establishing systems for the collection and recycling of used electronic products. Following this trend, the Nikon Group—led by a subsidiary in the Netherlands—has been preparing nation-specific measures to meet collection and recycling obligations for digital cameras and other Nikon products.

By the year ended March 31, 2009, Nikon had established a collection and recycling system where subsidiaries are registered with collection organizations in more than 25 countries. Nikon's local sales companies and others shouldered a total of more than 16 million yen in the year ended March 31, 2009, for the collection of Nikon products in European nations. This figure includes only the costs that are officially recognized by Nikon. The Nikon Group is keenly aware of the importance of collecting and recycling used products and plans to continue taking appropriate measures in the future.

*WEEE Directive: A Directive on Waste Electrical and Electronic Equipment established by the EU, requiring manufacturers to collect and recycle used electrical and electronic products from August 2005.



EU recycling mark

Improving Physical Distribution in Japan

Main achievements for the year ended March 31, 2009

- Nikon Group's CO₂ emission volume from physical distribution in Japan fell to 2,389 tons.
- Installed digital tachometer.
- Conducted training on eco-friendly driving.
- Started modal shift.
- Conducted environmental awareness activities for transport companies working for Nikon.

Major target for the year ending March 31, 2010

- Reduced CO₂ emissions per net sale by more than 15% compared to the year ended March 31, 2007.

To combat global warming, there is an immediate need to reduce CO₂ emission volumes associated with physical distribution. The Nikon Group is striving to identify distribution routes for its major manufacturing subsidiaries in Japan to obtain numerical figures for its distribution volume and accurately measure the amount of CO₂ emissions released.

Improving driving by using digital tachometers

Nikon Business Service, which is in charge of the Nikon Group's physical distribution, installed digital tachometers on all large-cargo vehicles it owns. It aims to further improve efficiency as well as drivers' safety awareness by recording, managing and assessing each vehicle's distribution routes, arrival and departure times, maximum speed on ordinary roads and express ways, number of times a vehicle makes a sudden start, sudden stop, and sudden acceleration, and the length of time drivers take for breaks. In addition, Nikon Business Service conducts training on eco-friendly driving methods and environmental awareness activities for outsourcing transportation firms.

Promoting idling stop

When transporting IC steppers and scanners and other devices, strict control of the cargo room temperature is necessary. Conventional vehicles needed to keep their engines running while stopped in order to keep heating, ventilating, and air conditioning (HVAC) equipment running. Nikon has now become able to stop the idling of transport vehicles because of a new system in which the HVAC equipment is powered by an external source from within the Nikon plant compound.



Externally powered vehicle

Implementing modal shifts

The Instruments Company is shifting from truck deliveries to railway transport, which causes lower environmental impact. Currently, we are gradually shifting to environmentally friendly modes of transportation for as many goods as possible. In the future, we plan to actively engage in modal shifts with orders that meet conditions.

Low-pollution vehicles

Three natural-gas-fueled buses were introduced at the Kumagaya Plant as commuter buses in a bid to reduce CO₂ emissions.

Additionally, a phased plan has been established to replace the trucks operated by Nikon Business Services Co., Ltd. with vehicles offering low fuel consumption.



Natural-gas-fueled bus at Kumagaya Plant

Packaging Measures

Nikon Corporation devised its Environmental Policy Regarding Packaging Materials in May 1998 (revised in June 2000) to reduce the amount of packaging for its products. Based on this policy, Nikon has been engaging in various efforts to boost the loading efficiency of physical distribution. Packaging can be further downsized by reviewing the size of product boxes that can be efficiently loaded onto delivery trucks, making user manuals less bulky, and switching from conventional containers to pallets to eliminate the need for outer packaging.

In addition, Nikon strives to use recycled resources efficiently. For example, the company employs a type of insertion packaging that enables the cushioning material and cardboard box to be easily separated, and uses molded pulp for cushioning in the packaging of some products.

Workplace-related Activities

To prevent global warming and move towards a resource-recycling society, the Nikon Group is striving to ensure that each business unit systematically saves energy, recycles waste and protects the local environment.

Energy Saving

Main achievements for the year ended March 31, 2009

- Nikon Corporation and its manufacturing subsidiaries in Japan released a total of 127,000 tons of CO₂, compared with the target of keeping CO₂ emissions to less than 131,000 tons (96% compared with the year ended March 2006).
- Two Asian manufacturing subsidiaries reduced CO₂ emission volumes per net sales by 6% compared with the goal of a 5% reduction over the year ended March 31, 2006. The two subsidiaries released a total of 66,000 tons of CO₂, compared with the target of less than 67,000 tons.

Global warming is mainly caused by the surge in CO₂ emissions resulting from the combustion of fossil fuels. To reduce CO₂ emissions, the Nikon Group has been continuing efforts especially through the promotion of energy-saving methods that scale back volumes of CO₂.

The main measures include boosting the efficiency of HVAC equipment, switching to more efficient lighting equipment, improving production processes, and applying stricter controls for the use of lighting and office equipment. In addition, we are devising measures that make use of natural energy sources.

■ Installing high-efficiency equipment and using natural energy sources (see page 13)

Sendai Nikon installed a cogeneration system and—combined with highly efficient equipment—has achieved significant energy-saving results.

Nikon believes that the use of natural energy sources is an important effort in future energy-saving measures. Since the year ended March 2007, the Yokohama Plant has been taking part in a Yokohama City project to generate electricity using a wind turbine. In addition, the Kumagaya Plant plans to install a solar-energy power generation system in the second half of 2009.



Hama-Wing
(Yokohama City wind power plant)

■ Preventing leakage of compressed air

When compressed air leaks from air guns used to remove dust during the production process, compressors constantly operate to maintain the pressure, and this consumes electricity. According to some estimates, a total of roughly 0.5 tons of CO₂ can be released annually from these often-overlooked small leakages. To avoid this unnecessary release of CO₂, the Kumagaya Plant identifies leaks using a device that detects leaks from their sound, and repairs each leak in a bid to reduce unnecessary energy consumption as much as possible.



Inspection of air leakages

■ Reducing stand-by power of computers

If they are plugged in, computers still consume energy (stand-by power) when powered off. In addition, computers consume power unnecessarily when employees leave their desks for an extended period of time leaving their computers switched on. To reduce the consumption of this stand-by power, the Nikon Group employs various measures such as requiring all employees to unplug their computers after work and adjust the power management settings on their computers.



In-house posters encouraging employees to save energy

Energy-saving measures for the year ending March 31, 2010

- Promote upgrading of old refrigeration equipment.
- Improve compressed air supply systems.
- Improve clean room operation.
- Switch energy sources (heavy oil → gas → electricity).
- Actively introduce high-efficiency equipment (HVAC systems, power systems, etc.).
- Ensure high efficiency of utilities and production facilities.
- Integrate/abolish electrical facilities.
- Improve quality control efficiency (production line improvement activities).
- Make use of natural energy sources.
- Expand a visualization of power consumption.
- Conduct awareness activities.

Toward Zero Emission

Main achievements for the year ended March 31, 2009

- Maintained level 1 zero emission system (Nikon Corporation and its major manufacturing subsidiaries in Japan, excluding Hikari Glass).
- Decided to establish zero emission system (two Asian manufacturing subsidiaries).
- Reduced mass-volume waste by 11%, exceeding the goal of a 10% reduction over the year ended March 31, 2006 (Nikon Corporation and its major manufacturing subsidiaries in Japan, excluding Hikari Glass).

Major targets for the year ending March 31, 2010

- Maintain level 1 zero emission system (Nikon Corporation and its major manufacturing subsidiaries in Japan, excluding Hikari Glass).
- Prepare to establish zero emission system (two Asian manufacturing subsidiaries).
- Reduce waste by 20% compared with the year ended March 31, 2006 (Nikon Corporation and its major manufacturing subsidiaries in Japan, excluding Hikari Glass).

Starting from the year ended March 2009, the Nikon Group has introduced level-specific indicators to further define zero emission. (Until now, the definition was “final (landfill) disposal amounting to less than 1% of the total waste volume.”)

- Level 1: Final (landfill) disposal rate - less than 1%
- Level 2: Final (landfill) disposal rate - less than 5%
- Level 3: Final (landfill) disposal rate - less than 10%
- Level 4: Final (landfill) disposal rate - less than 20%

Based on this definition, 12 business establishments including Nikon Corporation and its manufacturing subsidiaries in Japan (excluding Hikari Glass and TNI Industry) have achieved level 1 zero emission system (see page 61).

■ Progress at Nikon Corporation

The total amount of waste generated by Nikon Corporation increased by 17.9% year-on-year for the year ended March 31, 2009, despite a decline in production. However, the resource-recycling rate stood at 98.8%, while the final (landfill) disposal rate improved to 0.30%, enabling Nikon Corporation to maintain its level 1 zero emission system (see page 61).

The Sagami-hara Plant was able to make the following improvements in cost reductions and resource-recycling.

- After vapor deposition processing of lenses, the plant had been discarding used deposition materials and tools. But it implemented returning the materials and tools to the manufacturers for reuse.
- Instead of discarding used semiconductor parts, the plant switched to selling the parts to recycling companies.

■ Progress at major manufacturing subsidiaries in Japan

Nikon’s major manufacturing subsidiaries in Japan reduced the total amount of waste they generated by 10.9% year-on-year for the year ended March 31, 2009, helped by a decline in production. The resource-recycling rate stood at 67.4%

while the final (landfill) disposal rate improved to 28.1%, meaning that seven major manufacturing subsidiaries in Japan, excluding Hikari Glass, maintained their level 1 zero emission system (see page 61). In addition, the Hikari Glass Akita Plant separates Eco-glass (harmless) from the vast amounts of discarded glass, and outsources the processing to waste service companies that make products (for use as roadbed materials, etc.) out of used glass. This enables Hikari Glass Akita Plant to minimize cost increases while recycling resources.



Before processing: Eco-glass (harmless) (Hikari Glass Akita Plant)



After processing: Roadbed materials (after being outsourced to a waste service company)

Preventing Air/Water Pollution and Protecting Water Resources

■ Preventing pollution of the air and water

To help preserve air and water quality, the Nikon Group not only abides by applicable laws and regulations, but also established its own independent plant standards for management. Specifically, each plant regularly measures pollutants released into the air and water, and inspects equipment such as boilers and waste water processing systems periodically to ensure safety (see pages 62-67).

In addition, the Mito Plant switched the fuel used to power its three existing boilers from heavy oil to liquefied petroleum gas (LPG) in order to reduce CO₂ emissions. This eliminated the release of sulfur oxides (SO_x), which is a pollutant, and also reduced emissions of dust and nitrogen oxides (NO_x).

■ Protecting water resources

Nikon’s manufacturing subsidiaries are expanding their businesses and transforming business structures. Since the year ended March 31, 1999, when the Environmental Management System was introduced, the Nikon Group has been promoting the reuse of water used in production processes, and all employees have been urged to conserve water to hold back increases in water consumption (see page 67). Examples of these measures can be seen at the Nikon Ohi West Building. Stored rainwater is used for flushing toilets. Air cooling has replaced water cooling for HVAC equipment. Smaller dishwashers in the canteen kitchen conserve water compared with existing machines. The waste water processing facilities have been renovated to cut water usage. And water-saving tap plugs have been installed to also cut down on water usage.

Workplace-related Activities

Control and Reduction of Chemical Substances in Manufacturing

The Nikon Group performs chemical substance control at every stage of the product lifecycle, from product purchase through use and disposal, to prevent pollution caused by these chemical substances.

When first purchasing a new chemical substance, Nikon Corporation obtains a Material Safety Data Sheet (MSDS) for the item, and assesses the potential dangers of its use in the workplace. Actions taken based on these assessment results are first reviewed. Nikon's Environment, Safety and Health Section then reconfirms the measures from its expert perspective.

In addition, the Ohi Plant's Data Center centrally manages the registration, updating and storing of MSDS data. This data is also available through the Nikon intranet.

The Nikon Group places especially strict controls on chemical substances with higher environmental loading so as to reduce the use of these substances. By pursuing research on alternative substances, the company continually strives to reduce the risk of chemical contamination to as close to zero as possible.

■ The Nikon Group's PRTR*

The Nikon Group created the Nikon PRTR Guide in March 2000, and each business establishment has been implementing control activities related to targeted chemical substances used at each site. Based on the Guide, the Group manages volumes of chemical substances purchased, used and disposed of as well as safety concerning the handling and disposal of chemical substances based on the MSDS.

In March 2002, the Group established a system for responding to the legal requirement for reporting chemical substances by expanding and renewing the Guide with a section on how to fill out official forms (see page 60).

*PRTR (Pollutant Release and Transfer Register)

A system requiring organizations to record the amount of chemical substances released that are possibly harmful to human health and the environment, and to report them once a year to the government. The government records and compiles such data and discloses it to the public.

Progress Report on Soil Contamination Remediation at the Ohi Plant

In 2007, when some superannuated factory buildings were demolished at Nikon's Ohi Plant to make way for the construction of new ones, a soil contamination survey was conducted in accordance with the Tokyo Metropolitan Ordinance on Environmental Preservation. During this survey conducted between January 10 and April 13, 2007 high levels of a designated hazardous substance were detected on part of the site; specifically, hexavalent-chromium was present at up to 3,600 times the guideline concentration, although the affected area was limited and inside a building. Also, trichloroethylene was detected at a level 1.8 times that of the guideline value; this

was around a groundwater inspection hole that had been bored near the perimeter of the Ohi Plant for the survey.

Shortly after this discovery, Nikon made a report to the Environment Bureau of the Tokyo Metropolitan Government and Shinagawa Ward Office; it also held briefings for local residents in April and July 2007. Since these activities, Nikon has been taking measures to comply with relevant ordinances to prevent negatively impacting the surrounding environment. In late 2007, measures taken at the former No. 2 building site were completed, while measures on the former No. 1 building site are still being implemented.

Underground Water Inspection at Mito Nikon Precision

In order to acknowledge the environmental burden caused by volatile organic compounds used in the past, Mito Nikon Precision conducted an inspection of underground water within the main factory's complex between June and July of 2008. As a result, the company detected trichloroethylene at a level exceeding the guidelines (1.8 times the standard) as well as hexavalent-chromium (4.8 times the standard) at several inspection spots. These substances are believed to have resulted from the cleansing of machine processing parts as well as surface-treatment processing that Mito Nikon Precision had been engaged in while manufacturing cameras since its founding in 1968.

On September 19, 2008, Mito Nikon Precision reported its findings to the Ibaraki Prefectural Government and the Naka

City Government. In addition, the company has been conducting research to determine the exact cause of the chemical substances as well as their effects on the surrounding environment and pollutant elimination methods. On Feb. 19, 2009, the company submitted to the Ibaraki Prefectural Government and the Naka City Government a Contamination Elimination Measures Plan which complies with the Soil Contamination Countermeasures Act. It then conducted a briefing for local residents on Feb. 26 and began working on countermeasures. Nikon plans to continue implementing water purification measures by pumping underground water from the factory compounds, and by implementing measures that follow the relevant ordinances so as to prevent adverse affects on the surrounding environment.