Green Choice Apparel Supply Chain Investigation – Draft Report

Cleaning up the Fashion Industry

Friends of Nature

Institute of Public & Environmental Affairs

Green Beagle

Environmental Protection Commonwealth Association

Nanjing Green Stone Environmental Action Network

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Table of Contents

EXECUTIVE SUMMARY

As the global center for manufacturing, China's role as the "apparel workshop to the world" has contributed to its rapid and spectacular economic development in recent years and created a large number of job opportunities. In 2010, China's textile industry processed 41.3 million tons of fiber and accounted for 52-54% of the world's total production. At the same time, in 2010, China exported over 212 billion US dollars of textile and apparel products, accounting for 34% of total global exports.[1]

China's production of cheap and fashionable apparel products has also clothed the world. However, pollution from the textile industry has negatively affected the air, rivers, lakes, oceans, soil, and even the groundwater in China. Water pollution merits special concern, because it is taking place in the context of already severe water scarcity and drought. Water availability per capita in China is only one-fourth of the global average[2], and a significant proportion of discharged wastewater has polluted lakes, rivers, and the groundwater of urban areas, making already limited water resources even scarcer. In China's densely populated eastern regions, it has become very difficult to find clean rivers and lakes. This has gravely impacted the quality of life of millions of people.

The textile industry is a major contributor to water pollution in China. According to the China Environmental Statistical Yearbook 2010, the textile industry ranked fourth in wastewater COD emissions among China's 39 major industries and third for overall wastewater discharge amount at 2.5 billion tons of wastewater per year.[3]

China has put in place environmental regulations to prevent water pollution from the textile and other industries, but resources for effective enforcement are lacking, and protection of local interests means implementation is difficult. This means there is insufficient incentives for textile factories to abide by government laws and regulations. Even if there was adequate enforcement, the fines and punishments that are inflicted are insufficient to prevent factories from accruing repeat violations.

In the *China Pollution Map Database* (www.ipe.org.cn), there are a large number of companies with environmental violations related to wastewater, waste air and solid waste. Of these, violation records for water pollution are the most frequent, and include illegal actions such as discharging wastewater out of secret underground pipes, discharging untreated wastewater directly into rivers, not using wastewater treatment facilities regularly, exceeding total pollutant discharge allowed, not treating directly discharged pollutants, expanding production capacity without certification, and being rated by authorities as having poor environmental performance. Moreover, the database records a large number of factories that are rated as "red" and "black" factories, which mean these factories have committed serious and illegal actions that harm the

[1] China Texnet，http://info.texnet.com.cn/content/2011-08-09/364228.html
[2] Addressing China's Water Scarcity, The World Bank, 2009.
[3] China Environmental Statistical Yearbook 2010, China Environmental Science Press.

environment.[4]

Many of these polluting textile factories are suppliers to multinational apparel retailers and brands. Brands recognize the risks that polluting factories bring to them, and in the face of the reality of resource and energy scarcity, multinational brands have strong corporate social responsibility polices. Unfortunately, these policies are not usually strictly enforced at a local level and the public is not attentive to the impact that the environmental performance of these companies has. Hence, effective implementation is often difficult.

This report cites a number of suspected suppliers to multinational brands and domestic brands that have instances of violating environmental restrictions. We have contacted 48 different brands to remind them of the impact that the apparel industry is having on China's water resources. Of these brands, H&M, Nike, Wal-Mart, Esquel[5], and Levi's have responded pro-actively, while other brands have not yet responded and there are also brands that have refused to give a response.

We thus call on major apparel brands and retailers to immediately determine if their suppliers have violation records, and push suppliers in violation of environmental laws to immediately implement corrective actions. Moving forward, we deeply hope that retailers and brands can create proactive management systems, and can push forward improvements through regular checks of publically available information on environmental violations, while also encouraging factories with violations to provide explanations to the public. We further call upon these brands and factories to put in place green supply chain policies and for brands to push their factories to go beyond compliance and work toward continuous improvement.

We are confident that through government, corporate, and public efforts, and through green procurement from consumers and brands, we can create momentous change and eventually realize green production in the apparel industry.

[4] For more details on related records please see Appendix II.

[5] Esquel has been using the China Pollution Map Database to manage its supply chain for some time now. They have pushed suppliers to make rectifications and disclose information. During this investigation none of Esquel's suppliers were found to have violation records.

I. BACKGROUND

1. The Textile Industry is severely Polluting China's Water Resources

China is facing the simultaneous threats of water scarcity and water pollution. In China's 600 cities, more than two-thirds are suffering from water scarcity, and more than 100 cities are seriously lacking water.[6] Industrial water use and discharge is one of the main causes of worsening water shortages and water pollution problems. Industrial wastewater discharge has not only affected the quality of water, it has also polluted large amounts of foodstuffs and aquatic products. According to official statistics, more than 12 million tons of grain is polluted by heavy metals every year, [7] bringing serious risks to public health.

The textile industry is one of the biggest water polluters in China. It uses more water than almost any other industry and pollutes nearly all the water it uses. China's apparel exports account for 30% of the global market[8], and the environmental impacts of the industry are enormous. Water can be polluted by different points in the manufacturing supply chain, and wastewater from the dyeing and finishing segment accounts for 80% of total wastewater. Wastewater from fiber processing accounts for 12%, and the remaining 8% is from other links in the supply chain. Five provinces, Zhejiang, Jiangsu, Shandong, Guangdong, and Fujian, account for 90% of all the wastewater from the dyeing and finishing industries in China.[9]

2. The Government's Response

The central government in China has a number of environmental laws and regulations designed to reduce the impact of the textile industry. A new edition of *Effluent Standards of Pollutants for Dyeing and Finishing of Textile Industry*[10] was recently issued from the Ministry of Environmental Protection (MEP), in which the discharge standards have been made stricter since the 1992 edition. These focus on environmental standards such as restrictions on suspended solids, COD, and pH values.

Moreover, in the 12th Five-Year plan, the central government has specific technical improvement goals for the textile industry, as written in the *Technical Progress for the Textile Industry as part of the 12th Five Year Plan*[11] by the China Textile Industry Association (CTIA). These goals include targets to phase out inefficient and old equipment, standards for amount of freshwater used to produce each ton of fabric, and new recommendations for technologies that will reduce resource

[6] China's Ministry of Water Resources, "On the strengthening of urban water resources," 2006.
[7] Zhou Shengxian. 12 million tons of food are contaminated every year in China due to heavy metal pollution, The Economic Information Daily, July 19th, 2006.
[8] http://finance.people.com.cn/GB/70846/16475488.html
[9] Textile Dyeing and Finishing Industry Wastewater Discharge Standards, Feedback Request Draft.
[10] China Ministry of Environmental Protection. "Effluent Standards of Pollutants for Dyeing and Finishing of Textile Industry.
http://www.mep.gov.cn/pv_obj_cache/pv_obj_id_21A19D79E3F730049FC85783DE4525EFFA620400/filename/W020080421492770087856.pdf
[11] Textile Industry "12th Five Year Plan" Outline of Science and Technology Progress, found here:
http://www.cnita.org.cn/xingyexinwen/xingyedongtai/zhengcefagui/2011-04-02/6808.html

use in the industry.[12] Also, the Ministry of Industry and Information Technology (MIIT) released a bulletin entitled *Entry Requirements for the Dyeing and Printing Industry*[13] in 2010 giving updated water and energy efficiency standards for the dyeing and printing industry.

Beyond controlling waste discharge, the MIIT also has new standards for energy and water efficiency for both new and existing textile factories. However, as many factories still lack metering, the ability of the MIIT to enforce these new efficiency standards is questionable.

Despite increasingly strict government standards for the textile industry, there is insufficient enforcement from local environmental protection bureaus (EPB's) to ensure that factories uphold these standards. First, weak enforcement and the difficulty of bringing cases of environmental violation to court make the costs of breaking the law low. Second, the artificially low price of water also acts as a disincentive for factories to be water and energy efficient and re-use resources. These are a few of the factors that are preventing well-intentioned regulations from becoming reality in China.

3. The Responsibility of Buyers and Suppliers

More and more people are realizing that China's pollution predicament requires participation from all parties to improve. The government needs to strengthen enforcement of environmental laws and the public needs to be more attentive to environmental problems. Also, as a starting point, buyers and brands who source their goods from Chinese textile factories must take action to ensure that their suppliers are operating in compliance with environmental laws. Further, responsible buyers should take steps to create business incentives for suppliers to go beyond compliance and improve their resource efficiency, reducing water, energy and toxic chemicals use. Multinational buyers should not take advantage of these regulatory loopholes in order to buy cheap but unsustainable products from factories.

It is thus urgently important that retailers and multinational companies identify all of the fabric mills in their supply chains in order to impose basic requirements for compliance in these mills as a condition of doing business. As a further step, MNCs should craft overall supply chain policies that reward suppliers who improve environmental performance above and beyond the minimum, and to provide incentives for the industry to continuously improve as a whole.

The good news is that Chinese society is creating opportunities for solutions to arise. In recent years, the environmental awareness of the Chinese public has grown, environmental NGO's are also becoming more active, and both the public and NGOs are increasingly aware of the environmental performance of companies. Local NGO's joined together to create the Green Choice Alliance in 2007 and currently there are 41 organizations in the alliance.[14] Together, they monitor the environmental performance of corporations. Another step forward is the expansion of publicly available environmental information. Government departments have been releasing

[12] Ibid.
[13] Dyeing and Printing Industry Access Conditions 2010 Revised Edition, from: http://www.gov.cn/zwgk/2010-04/22/content_1589237.htm
[14] Please see Appendix 1 for a list of these organizations.

more information on environmental monitoring. Using this information as a foundation, the *China Pollution Map* has over 97,000 records of environmental violations from corporations that the public and buyers can use as a tool.[15]

Moreover, as China is a major manufacturing center and a main source of emissions, there has been growing international attention on China's environmental predicament. The Natural Resources Defense Council, an American NGO, has been communicating with multinational apparel brands and Chinese suppliers to improve supplier's water and energy efficiency performance through their 10 Best Practices.[16] Another international NGO, Greenpeace, has released a report entitled "Dirty Laundry: Unraveling the corporate connections to toxic water pollution in China" in July 2011 to point to problems that exist with suppliers who are discharging toxic chemicals, while also proving their relationship with major buyers.[17]

As a response to these various groups, some multinational brands have already begun cooperation with environmental organizations, using open information and participation mechanisms to decrease pollution emissions from their suppliers.

[15] The China Pollution Map can be accessed at http://www.ipe.org.cn
[16] Please check Appendix 2 for a list of these 10 Best Practices.
[17] Greenpeace's report and other relevant information can be accessed here: http://www.greenpeace.org/international/en/publications/reports/Dirty-Laundry/.

II. MAJOR FINDINGS

MAJOR FINDINGS 1: The Textile Industry is a Heavy Polluter and has Low Water Efficiency

1. Pollution Discharge from the Textile Industry is both High in Volume and difficult to Treat

Data in the China Environmental Statistical Yearbook from recent years shows that the textile industry is a major polluter amongst China's key surveyed industries.

2006-2010 National Survey of Textile Wastewater Discharge by Year[18]

Year	Industrial Wastewater Discharge		COD Discharge		Ammonia Discharge	
	Billions of Tons	% of national total	Thousands of Tons	% of national total	Thousands of Tons	% of national total
2006	1.979	9.6	315.4	6.8	16.7	4.4
2007	2.252	10.2	344.9	7.6	16.5	5.4
2008	2.304	10.7	314.3	8.0	15.8	6.3
2009	2.391	11.4	313.1	8.3	16.1	6.6
2010	2.455	11.6	300.6	8.2	17.4	7.1

The table above shows that discharge from the textile industry in proportion to the national total has been steadily increasing in the past few years.

In 2010, the textile industry discharged 2.455 billion tons of wastewater, which was the third highest of the 39 major industries in China and accounted for 11.6% of total wastewater discharged in the industrial sector. The textile industry discharges about 300,600 tons of COD and contributes to 8.2% of COD pollution in China. Ammonia emissions from the textile industry total 17,400 tons, accounting for 7.1% of ammonia emissions in China's key industries.

It should also be noted that the number of factories included in the China Statistical Yearbook is far fewer than the actual number of textile factories in China. In 2007, during the first National Pollution Source Survey, the number of textile factories surveyed was 107,673, which only

[18] Data in the table came from the China Environmental Statistical Yearbook 2006, 2007, 2008, 2009 and 2010.

accounts for 6.83% of the total number of factories.[19] The textile industry emits 1.296 million tons of COD (calculated at the discharge outlet from factory areas), which ranks 2nd among the industries and accounts for 18.11% of total COD emissions. The ammonia emissions (calculated at the discharge outlet from factory areas) from the textile industry total 16,000 tons, which ranks 5th among the industries and accounts for 5.27% of total ammonia emissions.[20]

The textile industry includes cotton, dyed yarn, wool, linen, silk, fiber, dyeing and printing, spinning and weaving, and garment factories. Water pollution is the biggest environmental problem in the textile industry as a whole.[21] The following table outlines the pollutants that are present in each link of the textile industry:

Textile Wastewater Sources and Major Pollutants

Type of production	Source of Pollutant	Main Pollutants
Cotton mill	Withering, sizing	Cotton dust, fiber, pulp
Wool mill	Dyeing, shrinking, scouring	Lanolin, dyes, additives, fiber, wax, pectin, ammonia, sulfur compounds, suspended solids, chromium
Blended cotton and synthetic fabric dyeing and printing	De-sizing, scouring, bleaching, mercerizing, dyeing, printing, finishing	Pastes, dyes, additives, fiber, wax, pectin, ammonia, sulfur compounds, suspended solids, chromium
Ramie textile dyeing and printing	Degumming, dyeing, finishing	Lignin, pectin, ramie gum, dyes, additives, sulfide, fluoride, suspended solids, volatile phenol
Silk production	Silk spinning, refining (degumming), dyeing, finishing	Sericin, dyes, additives
Knitted fabric mill	Alkali reduction, scouring, dyeing, post-treatment	Fiber impurities, dyes, additives
Viscose fiber mill	Spinning, post-treatment	Alkali from black liquids and other organic matters, zinc, sulfides
Polyester fiber mill	Liquids, Post-treatment (oil wastewater)	Oils
Nylon mill	Washing, post-treatment	Caprolactam, oils, suspended solids, ammonia, nitrogen
Acrylic mill	Liquids, spinning, post-treatment	Sodium thiocyanate, acrylonitrile
Polyvinyl alcohol mill	Liquids, spinning, post-treatment	Cresol, sulfuric acid, oils, suspended solids, formaldehyde, chloride, zinc

[19] Bulletin on the first national pollution source survey, jointly released by the Ministry of Environmental Protection, Bureau of Statistics and Ministry of Agriculture, February 6th, 2010.
[20] Ibid.
[21] Countermeasures and Problems Facing the 21st Century Textile Industry, China Science & Technology Forum, No.5, 2005.

Wastewater from the dyeing and finishing industry accounts for 80% of all wastewater discharged in the textile industry. The five provinces of Zhejiang, Jiangsu, Shandong, Guangdong and Fujian are responsible for 90% of the wastewater from dyeing and finishing in China. The wastewater discharged from dyeing, printing, and finishing factories has the following characteristics: [22]

- COD content can be extremely high, at its highest COD can reach thousands, and even more than ten thousand mg/L. BOD5 and COD ratio is low, which makes biological degradation very difficult.
- pH is high, for example the pH of the wastewater of sulfur and vat dyes can be above 10.
- There is high saturation; there is a substantial amount of organic compounds; and the wastewater has a large amount of dyes, pastes, and auxiliary agents.
- Water temperature and water volumes can also greatly vary due to changes in production processes and production volumes. Wastewater temperatures can be over 40℃, which can significantly affect the results of wastewater treatment.

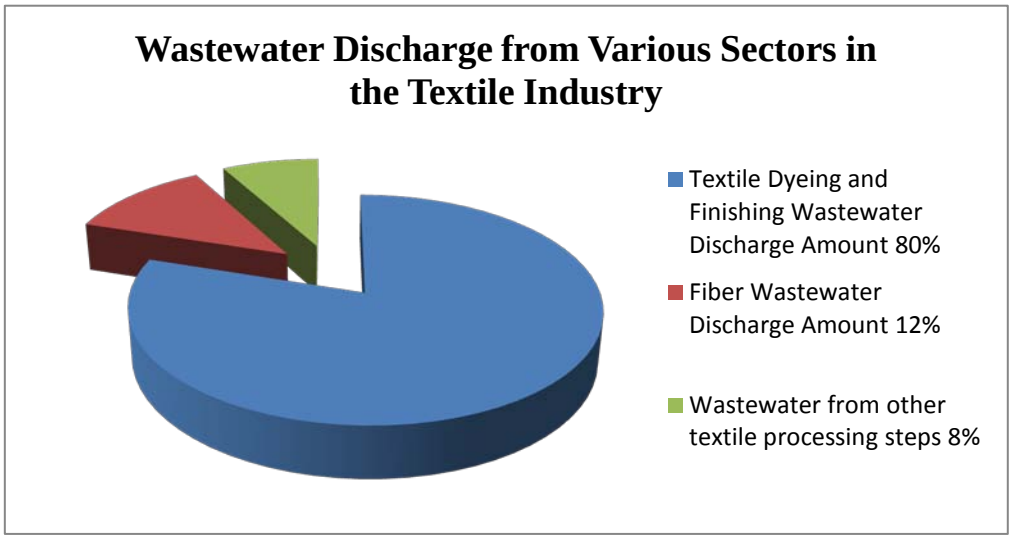


Figure 1. Wastewater Discharge Percentage from Various Sectors in the Textile Industry[23]

In response to the wastewater treatment problems caused by the rapid development of the dyeing and printing industry, the environmental authorities in China offered the following comments in 2007:[24]

> After accession to the WTO, the dyeing and printing industry became a very profitable industry and has had two-digit growth (with some growing more than 30%). However, wastewater and other pollutant discharge have also been increasing, just the amount of caustic soda used has more than doubled in five years and total amount of pollutants discharged have also been going up. A number of developed areas where printing and dyeing are concentrated focus

[22] China Textile Industry Environmental Problems and Countermeasures, "Environmental Pollution and Prevention," No.6, 2004.
[23] "Textile Dyeing and Finishing Industrial Water Pollution Discharge Standards," Call for Feedback Draft Document.
[24] China Texnet, http://www.texindex.com.cn/Articles/2007-10-27/114915.html

on treatment. However, because the printing and dyeing is so concentrated and compliance rates are not stable, there is still a large discrepancy between pollutant discharge and environmental capacity.

New processes, new raw materials, and new dyes are being continuously developed and applied, which makes the wastewater and pollutants that are discharged ever more complex and increasingly difficult to treat. For example, the alkali deweighting and islands-in-sea processes that have become popular in recent years create wastewater with COD content that can reach several tens of thousands mg/liter. These types of dyeing factories account for only 5% of wastewater volume but account for 55% or more of total COD load. The production volume for polyester is the largest out of all fiber production in China and alkali deweighting processes are an important part of polyester production. The terepthalic acid produced by the alkali deweighting process is difficult to treat whether using biochemical or physiochemical methods. This is why areas such as Zhejiang and Jiangsu, where alkali deweighting processes are concentrated, cannot reach stable discharge standards. The problem of what to do with the sludge leftover from treating dyeing wastewater is also a national dilemma still in need of a solution.

At present, areas where dyeing and printing is concentrated such as Zhejiang and Jiangsu used to have COD discharge concentrations that were less than 1000mg/l from dyeing and printing wastewater. However, this has now risen to 2000mg/l and even 2400mg/l in other areas resulting in some processes being unable to reach discharge standards or to stabilize their discharge concentrations.

Moreover, traditional dyeing and printing processes generate large amounts of toxic wastewater. After processing, some of the toxins from the wastewater lingers on the fabric and has a direct impact on human health. For example, azo dyes, formaldehyde, color brighteners and softeners, polyvinyl alcohol, and polypropylene are not easily biodegradable. Any dyes that require heavy chlorine bleaching contain heavy pollutants while aromatic amine dyes are carcinogenic.[25] Certain dyes carry harmful heavy metals and various finishing agents and auxiliaries have formaldehyde, which is harmful to human health. In 2012, Greenpeace released a report entitled "Dirty Laundry 3," pointing out that many international and domestic brand apparel products contained NPE (nonylphenol ethoxylates). After washing, these chemicals are released into rivers, lakes, and oceans and transform into a more toxic endocrine disrupting chemical – NP (nonylphenol).[26] If this kind of wastewater is not treated or treated insufficiently before being discharged, oxygen-depleting chemicals will pollute the water, cause mass deaths of aquatic life, and will cause rivers to degrade into backwaters. Large bodies of water and their ecosystems will become seriously damaged.

[25] Azo Dyes and Their Metabolites: Does the Discharge of the Azo Dye into Water Bodies Represent Human and Ecological Risks? (Advances in Treating Textile Effluent, p. 27 – 48).
[26] Dirty Laundry 3 is available here:
http://www.greenpeace.org/eastasia/publications/reports/toxics/2012/dirty-laundry-3-reloaded/

2. The Textile Industry has Low Water Efficiency

In addition to being a source of significant water pollution, the textile industry in China is an enormous water user, operating far behind the rest of the world in using water efficiently.

During the dyeing and printing process a large volume of water is used and subsequently discharged. The discharged water has the characteristics of having a high concentration of pollutants and also a high chroma. The "2008 Key Industries Industrial Pollution Prevention Report" shows that when producing the same products, Chinese printing and dyeing wastewater contains two to three times more pollutants than wastewater from other countries. Also, Chinese factories use three to four times more water for producing the same amount of product. Wastewater from dyeing and printing is not the only source of pollution in the textile industry, sludge that results from the treatment of wastewater also leads to a number of problems.[27]

With regards to increasing resource use efficiency, China's textile industry has enormous potential to improve. For example, in 2007, for the 12 main industries in Guangzhou, the textile industry used 64,698,000 tons of freshwater, second only to the power industry. Also, the textile industry discharged 53,214,000 tons of wastewater, which was the highest of all the industries and also 2.8 times that of the paper industry, which placed second among the industries. For every ten thousand RMB of production value, 127.4 tons of wastewater was discharged, which is 8.7 times more than the rubber industry, which ranks in 2nd. Water re-use is also incredibly low. For details please see the table below:

2007 Industrial Wastewater Discharge Data for Guangzhou's Major Industries[28]

	Industry	Total industrial product (10,000 RMB)	Freshwater Use (10,000 Tons)	Water re-use (10,000 Tons)	Wastewater Discharge (10,000 Tons)	Wastewater discharged per 10,000 RMB of production (Tons)
1	Total for Guangzhou	32907938	325132.3	247781	21103.3	6.4
2	Textile Industry	418199.3	6469.8	343	5321.4	127.4
3	Ferrous metal smelting and rolling processing industry	1446373	1297.7	6687.7	1039.1	7.2
4	Pulp and paper products industry	1694561	2744.4	3428.2	1926.6	11.4
5	Food, beverages, tobacco manufacturing and agro-foods processing industry	4657735.4	6271.9	14485.1	1018	2.2

[27] "12th Five Year Plan" Report on Reducing Emissions in the Four Big Industries, Controlling Total Amounts by Looking at the Dyeing and Printing Industries, China Environmental News.

[28] Guangzhou Municipal Environmental Protection Bureau
http://www.gzepb.gov.cn/was40/search?channelid=34826

6	Chemical materials and chemical products manufacturing	5211430.7	1945.8	12380	951	1.8
7	Electrical machinery manufacturing, telecommunications equipment, computers, and other electronics equipment manufacturing	3288779.5	2437.8	26017.6	1388.8	4.2
8.	Power and heat production and supply	1077443.3	247768.9	32605.2	1101.1	10.2
9.	Petroleum Processing, coking and nuclear fuel processing	4552166	2391.5	51298.5	535.3	1.2
10.	Fabricated metal products	334910.6	619.5	36.1	423	12.6
11.	Rubber products	178519.1	295.2	682.7	263.3	14.7
12.	Non-metal mineral products	527233.5	1153.1	10760.5	149.9	2.8
13.	Pharmaceutical manufacturing	773230.3	300	1231.4	241.4	3.1
14.	Other industries	8747356.7	51436.7	87825	6744.4	7.7

With regards to China's potential to improve, the environmental authorities commented in 2007[29]:

> A large number of the dyeing and printing factories in China (especially SME's) still use production processes that date from the beginning of the 1980's. Energy and resource consumption per unit of production are still higher by many times than developed countries. For example, in developed countries, dyeing and printing processes for one ton of fiber use up 100 tons of water, but in China it takes 300-400 tons. For every 100 meters of production, Chinese factories use on average 2-4 tons more water than developed countries. Most of the dyeing and printing factories have adopted a single level aerobic treatment process which removes some of the pollutants. However, there are still a large amount of pollutants (such as cyanide) that get discharged into lakes and rivers, cause serious pollution and threaten human health. Since water levies are so low (on average 0.05 RMB per cubic meter), the average water re-use rate is only 7%. There is serious waste of water resources, which exacerbates the shortage of water resources in China and makes the problem of pollution control even more difficult.

[29] China Texnet, http://www.texindex.com.cn/Articles/2007-10-27/114915.html

MAJOR FINDINGS 2: A large proportion of textile factories violate environmental regulations, and some of these factories are part of the supply chains of major apparel brands

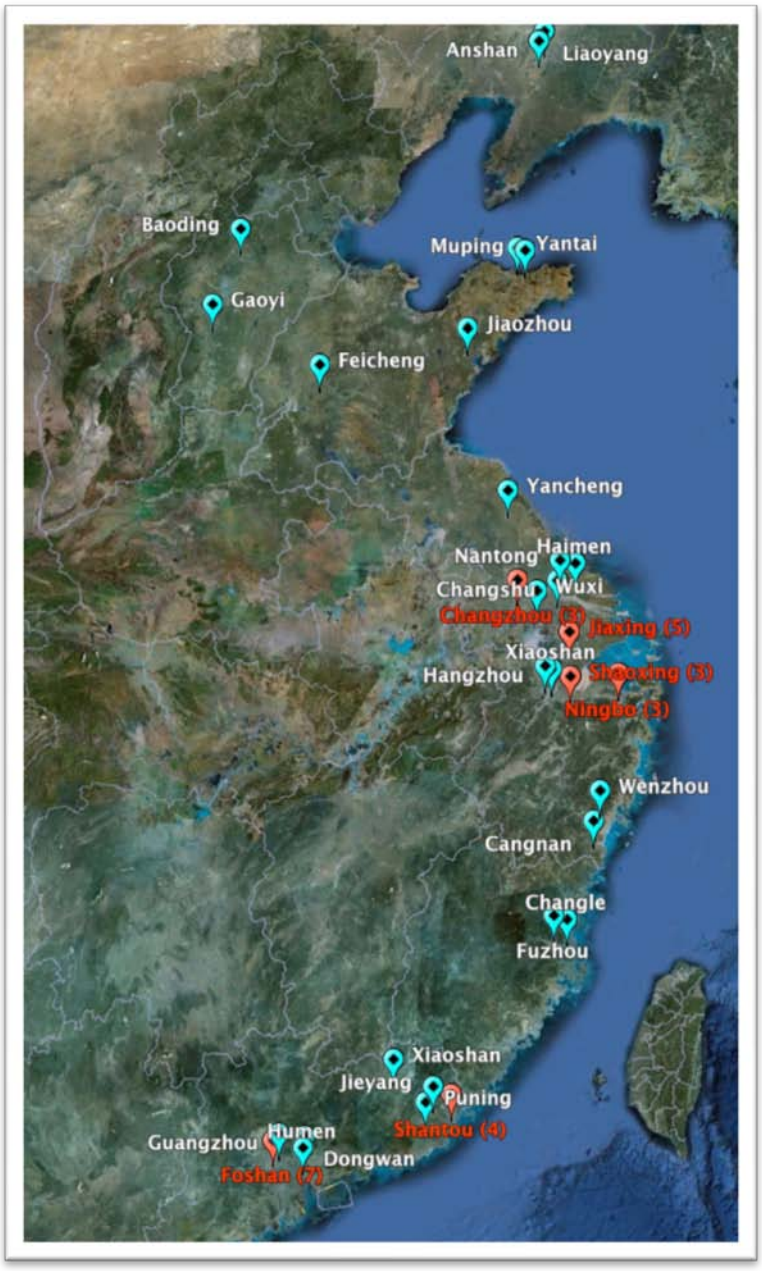
1. A large number of textile factories have discharge violations

The textile industry consumes and discharges a large amount of water. Even if their discharge met standards, it would still cause harm to the environment. In our research we found that many textile factories had environmental violation records, and could not even achieve stable wastewater discharge that meet authorized standards. As of February 20th, 2012, the *China Pollution Map Database* had 6,000 records of textile factories violating environmental regulations.

The dyeing and printing and finishing industries are all highly polluting industries. Together they form the industries hardest hit by discharge violations. Through searching the *China Pollution Map Database* using keywords such as "textile," "dyeing and printing," "dyeing and finishing," "weaving," and "printing," we found over 3500 environmental violation records.

The level of detail available for these environmental violations varies. Some publicly available supervision records include details on the violations. Violation types include: discharging wastewater out of secret pipes, discharging pollutants that have not been treated, improper use of wastewater treatment facilities, exceeding total pollutant discharge allowed, using production facilities that were shut down by the authorities for various reasons, and being rated by authorities as having poor environmental performance.

The map below shows the location and scope of some of the illegal wastewater dumping incidents that have occurred since 2007 and have been reported in the media. The red cities on the map have suffered from more than one serious wastewater dumping incident. For more detailed information, please see Appendix 5.



Even though certain violation records do not include details, it is still possible to clearly see that a company has serious violation problems. For example, in Jiangsu, Zhejiang, and Guangdong provinces, full assessment can be carried out regularly into the environmental performance or environmental trustworthiness of a company, and those who have serious pollution violations are rated as red or black factories. According to the former State Environmental Protection Administration (SEPA) criteria, a “red” rating means that factories have attempted to control pollution to meet standards, but have not yet met local standards; or a relatively major

environmental incident has occurred at the factory. A "black" rating means the factory is performing at a very poor level, and denotes that a factory's discharge has violated standards one or more times, has had a serious impact on local communities, and has committed illegal environmental actions, or caused a major environmental incident.[30] Through our research we have found that many textile factories have been rated locally as red or black factories showing that they have become major local sources of pollution.[31]

2. Suppliers to Major Apparel Brands have Serious Environmental Violations

From our research, we found that a number of textile factories with environmental violations are a part of the supply chains of large international and Chinese brands.

Case Study 1: Panyu Kamhing Bleaching and Dyeing Company

Panyu Kamhing Bleaching and Dyeing Company is a subsidiary of Kamhing International Holdings Limited. Kamhing International is a group of world-class weaving, dyeing, setting, and finishing companies. They are based in Panyu district in the city of Guangzhou and occupy a land area of 226,000 square meters. [32]

This company has the following violation records:

- In 2007, there was an explosion in the setting workshop of this factory. The explosion caused a fire and a large amount of thick poisonous smoke.[33]

- In the Environmental Performance Credit Rating of the 2010 Guangdong Key Pollution Source Environmental Performance Credit Companies list, the company was evaluated to be "red".[34]

Through information on the factory's official website, we found that their buyers include a

[30] Comments on ways to accelerate the Evaluation of Companies' Environmental Conduct, Huanfa [2005] No. 125. The companies on the lists of "Red" and "Black" companies have violations for lots of different reasons. The company names can be searched on the *Pollution Map Database* for more details. Please see www.ipe.org.cn.

[31] For details please see Appendix 2.

[32] http://www.kamhingintl.com/sc/aboutus/index.htm

[33] http://www.ipe.org.cn/pollution/com_detail.aspx?id=67748

[34] http://www.ipe.org.cn/pollution/com_detail.aspx?id=656040

number of major apparel brands.

The text below and the list of buyers (on the screenshot) for this factory come from the company's official website.

> The Group's merchandise is sold to garment manufacturers, many of whom are suppliers to international fashion apparel brand operators that sell their garment products to customers in the US and other countries. Despite the fact that the direct customers of the Group are garment manufacturers rather than the international brand carriers, in general the Group may agree with their end customers on the types of fabrics to be used in the manufacturing process. As part of its marketing strategy, the Group has been working closely with both garment manufacturers and international brand carriers during the fabric assessment and selection process.
>
> The Group has built up an extensive sales network in Asia. Many of the Group's customers are based in or have set up representative offices in Singapore. The staff in Singapore merely provided marketing and customer service to the Group's customers in Singapore, Taiwan and Hong Kong. The Group's sales and marketing staff make regular visits to and maintain frequent contact with the customers. In addition to maintaining the growth in its existing markets, the Group intends to further expand into other regions such as China, Korea and Europe to diversify its customer base.
>
> Most of the Group's largest customers have had relationships with the Group since its establishment. The Group's ability to maintain customer loyalty is mainly attributable to its commitment to product quality and prompt delivery.[35]

Case Study 2: Zhejiang Qingfeng Textile Dyeing and Printing Company Limited

Zhejiang Qingfeng Textile Dyeing and Printing Company is the first dyeing and printing company established in China under the Hong Kong Qingye Group. Hong Kong Qingye Group focuses especially on the production of cotton and blended cotton fabrics, dyeing and printing and finishing production processes.

This factory has the following environmental violations on record:

- In 2009, this factory was included in a list of dyeing and finishing chemical factories that had been given corrective punishments by the Xiaoshan District government, and was rated as a

[35] http://www.kamhingintl.com/en/portfolio/index.htm

"yellow" factory. [36]

- In 2010, the Hangzhou Municipal Key Pollution Source Company Credit Rating determined this factory to be "red".[37]

According to information on the Global Textiles Network Website, their customers include Guess, Gap, Levi's, Hugo, Esprit, Polo, Tribal, Sag Harbor, Hema, Marks & Spencer, Wal-Mart, Itochu, and Youngor.

Case Study 3: Fountain Set (Holdings) Limited

Fountain Set (Group) Limited is a Hong Kong-listed company. According to their official website:

> Fountain Set (Holdings) Limited and its subsidiaries are recognized in the industry as one of the world's largest circular knitted fabric manufacturers and

[36] http://www.ipe.org.cn/pollution/com_detail.aspx?id=648801

[37] According to Jiangsu Province's environmental rating system, "red" factories fall under at least one of the following conditions:

1. The company has made some effort towards controlling pollution, but cannot sustain stable discharge that follows standards for water, air, sound, or solid waste (records from the EPB show that discharge does not meet standards for any of the items more than 50% of the time, but any one item's average discharge cannot exceed the limit more than 100%).
2. The factory cannot fulfill total discharge limitation standards (less than 2 criteria have discharge over the total limit).
3. Within two years this factory has committed a serious environmental violation, or an incident that is rated level B or higher has occurred at the factory.
4. The company has not developed emergency plans or contains a certain level of environmental risk.

> has long been a driving force in the global market through its vertically integrated operations in spinning, knitting, dyeing, printing and finishing. The Group's product range also includes dyed yarns, sewing threads and garments. As a major fabric supplier to garment manufacturers in over 40 countries that supply to internationally renowned retail brands. The Group's worldwide sales reached HK$7.6 billion (US$975 million) in the financial year 2011.
>
> Headquartered in Hong Kong and listed on The Stock Exchange of Hong Kong Limited, Fountain Set (Holdings) Limited (SEHK: 420) has production facilities in the PRC, Sri Lanka and Indonesia, with marketing and representative offices in 5 countries and a global staff force of approximately 14,200.[38]

In 2006, Dongguan Fu'an Textile Dyeing and Printing Company, a factory under the Hong Kong-listed company Fountain Set was investigated and punished for having hidden pipes that were secretly discharging dyeing and printing wastewater. At the time, the Guangdong Environmental Protection Bureau (EPB) and the State Environmental Protection Administration created a joint investigation team and found a secret wastewater discharge pipe located at the Maozhou River on the border between Shenzhen and Dongguan. They discovered that dark red wastewater being discharged from the factory's discharge outlet could be clearly seen, forming a strip of obviously polluted water on the surface of the river. Water samples from the river contained a substantial amount of pollutants, with chroma exceeding standards by 19.5 times. Another investigator stole into an opening of the factory's premises and went directly to the wastewater treatment facilities. Because they moved quickly, the investigators were able to find a secret pipe sealed securely with a cement covering and a control valve connected to the pipe.[39]

The investigative team found that this Hong Kong listed company, which had previously received many honors and awards, was guilty of rampant and extreme environmental violations. This factory secretly set up two pipes to directly discharge untreated wastewater. One hidden metal pipe, which was 25 cm in diameter and controlled through two hidden control valves, directly discharged more than 20,000 tons of dyeing and printing wastewater. In order to hide this from environmental inspections, the factory also fabricated data on water consumption to give to the local EPB. [40]

Jane Spencer, a reporter with the Wall Street Journal, conducted an investigative report. In her report, she wrote: [41]

> "Plastic file cabinets near the factory floor are labeled with the names of Fountain Set clients, including Gap, Tommy Hilfiger Corp., Reebok and Nike. [42]

[38] http://www.fshl.com/html_eng/about.html

[39] 20,000 tons of dyeing and printing wastewater secretly discharged every day, dayoo.com – Guangzhou Daily, June 16th, 2006.

[40] Ibid.

[41] http://www.bizteller.cn/trade/news/newsSearch/newsContent/46464797.html

[42] According to the Wall Street Journal Report:

http://www.bizteller.cn/trade/news/newsSearch/newsContent/46464797.htm. When the author of the report

> Nearby, workers at computer stations say they are emailing color samples to companies including Lands' End and Abercrombie & Fitch Co.
>
> A bulletin board displays a certificate from Wal-Mart, stating that the plant is "meeting the color testing methods and performance standards of Wal-Mart Stores Inc." Wal-Mart says the certificate refers only to Fountain Set's machinery and color matching.
>
> Many apparel companies distance themselves from Fountain Set, saying they aren't direct customers, even though they use its fabric. Large retailers typically work directly with Fountain Set to set colors and fabric styles each season, but they may ultimately purchase Fountain Set's products through a third party supplier that sews the finished goods.
>
> Companies including Target and Liz Claiborne say they have "no contractual relationship" with Fountain Set, but acknowledge they use its products. As recently as June, Fountain Set named Kohl's Corp. of Menomonee Falls, Wis., as one of its customers. In an email statement, Kohl's said it is "not a Fountain Set Holdings client."
>
> Phillips-Van Heusen Corp., which owns brands including Calvin Klein, didn't respond to inquiries for this story. Eddie Bauer Holdings and Tommy Hilfiger Corp. declined to comment.

After this incident, Fu'an Textiles began to base the majority of their production in the city of Yancheng in the northern part of Jiangsu where they established a company called Yancheng Fuhui Textiles Limited. In an environmental monitoring report released by the Jiangsu Province Environmental Protection Bureau entitled, "Regarding the Verification of the Environmental Impact Assessment Report for Yancheng Fuhui Textiles Limited's Annual Production of 55,000 tons of High-Quality Knitting Material Weaving, Dyeing and Finishing Project", we can see that the annual discharge for this factory was:

1. Atmospheric pollutants: SO2 ≤ 79.46 tons, soot ≤ 19.87 tons.
2. Water Pollutants (discharged into pipes): Wastewater Amount ≤431.7 tons, COD ≤ 1511 tons, SS ≤410.1 tons, NH3-N ≤ 34.5 tons, TP ≤ 17.3 tons, LAS ≤ 86.3 tons.

The city of Yancheng is in the northern region of Jiangsu, where water resources have even less

contacted the companies for an interview, Nike was the only one that could show proof that they had checked the environmental situation at Fu'an previous to the sudden unannounced inspection by the Chinese government. Since 1999, Fu'an was able to pass Nike's water quality inspections. However, the inspections were voluntarily carried out and involved Fu'an sending their own sample to a laboratory commissioned by Nike to do the testing. Nike stated in an e-mail that Fu'an should take a sample under normal circumstances from their wastewater. However, Nike admitted that the sample was probably substituted in secret. However, Fountain Set Holdings said they did not falsify the sample.

environmental capacity than in Guangdong. Because the approved amount of pollutant discharge is relatively high, the impact on many local rivers and coastal waters will require careful monitoring. Based on the lessons of Fu'an Textile, we call on Fountain Set to increase environmental management, pollution control, and information disclosure. We also call on their customers to pay immediate attention to this situation.

Moreover, at Dongguan Shatin Lake Side Textiles Printing and Dyeing Company, which is another company under Fountain Set (Holdings) Limited, their environmental performance also leaves much to be desired. According to the China Textile Import and Export Chamber of Commerce's "2010 Ranking of Chinese Fabric Export Enterprises," this company's exports totaled $230 million and placed 5th overall out of exporting companies. The factory's official website notes that their partners include: Cotton Inc, Cotton USA, Lycra, Outlast, Lenzing, Unifi Inc., Supima Cotton, and Creora.

The China Pollution Map shows that this factory also has a slew of environmental violation records:

- The 2008 Guangdong Provincial Oceanic Environment Quality Bulletin that was released by the Guangdong Provincial Oceanic and Fishery Bureau in April 2009, shows that the industrial wastewater from Dongguan Shatin Lake Side Textiles Printing and Dyeing Company exceeded the standards as set by the Guangdong Provincial Government, "Guangdong Province Water Pollutant Emissions Standard" (DB4426-2001). The pollutants that were over the authorized standard pollution index were suspended solids, measured at 1.12 and $COD_{Cr,}$ measured at 2.08.[43]

- The Guangdong Province Oceanic Environmental Quality Bulletin released in April 2010, showed that the water quality of industrial wastewater from Dongguan Shatin Lake Side Textiles Printing and Dyeing Company entering the coastal outlet, which discharges into the sea, was in breach of wastewater quality standard "Guangdong Province Water Pollutant Discharge Standards" (DB4426-2001).[44]

- The weekly statement from Dongguan's environmental information platform on July 23, 2010 said, "this factory needs to follow requirements and phase out 5 sets of 1000 kw diesel powered generators, 6 sets (3 of 7 mw, 1 of 4.6 mW, and 2 of 3 mw) have already stopped being used, but the EPB has not verified this yet."[45]

- On April 12th, 2012, Guangdong provincial EPB, as part of the 2010 Major Industry Polluting Companies Report, rated this factory as a "red" factory.[46]

[43] http://www.ipe.org.cn/pollution/com_detail.aspx?id=609107

[44] http://www.ipe.org.cn/pollution/com_detail.aspx?id=621509

[45] http://www.ipe.org.cn/pollution/com_detail.aspx?id=621509

[46] On Februray 5th, 2011, Guangdong Environmental Protection Bureau released a document stating that the company was "basically in compliance with related environmental management requirements" and cancelled its "red" rating. More details see: http://www.ipe.org.cn/pollution/com_detail.aspx?id=656048

Case Study 4: Nanjing Zhong Tian Yuangteng Textile Company

Nanjing Zhong Tian Yuangteng Clothing Textile Company is owned by Nanjing Zhong Tian Textile (Group) Company. The company has six large and comprehensive wholly-owned apparel factories and one luggage factory in China. Their products are mostly high-end casual apparel, down coats, cotton apparel and woolen coats.

During our investigations we found that this factory had the following violation records:

- In 2008, the Nanjing Municipal government rated this factory as a “red” factory in their annual environmental rating report.
- In 2009, the Nanjing Municipal government rated this factory as a “red” factory in their annual environmental rating report.
- In 2010, this factory was rated as a “yellow” factory in the Nanjing Municipal Environmental Protection Bureau 2010 Advance Notice of 2010 Environmental Conduct Evaluations because of “undocumented discharge”.

The main page of this company shows that they supply to a number of international luxury brands including: Esprit, Guess, Lafuma, Mexx, Luhta, ECL, Monoprix, Go Sport, Oxbow, C&A, Cortefiel, Teddy Smith and Ferrari.

MAJOR FINDINGS 3: Major Apparel Brands have varied Responses When Confronted with Suspicions of Pollution in their Supply Chains

On March 22nd, 26th and 29th, 2012, after preliminary investigations into links between well-known apparel brands and textile manufacturers with environmental violations, we sent out letters to the CEOs of 48 companies.

The letter first of all explained that we are a number of environmental organizations from China and that in the interest of reducing pollution emissions and safeguarding the environment we have been looking into the environmental performance of different companies. The letter then went on to draw the companies' attention to the environmental impacts caused by the textile industry. The letter also provided a list of their suspected suppliers who hold violation records. It was hoped that the brands could investigate and confirm if these were their suppliers and then through their green purchasing power push the suppliers to make corrective actions.

After the letter was sent out a number of brands responded. Amongst these, several of them, including, Nike, Esquel, Walmart, H&M Levi's, Adidas, and Burberry have already started to take proactive measures and have carried out inquiries and pushed suppliers to take corrective actions. It should be noted that the good performance of the companies listed above did not come about by chance. They have, over a period of time, already worked together with the NGOs to make use of publically available supervision records to manage their supply chains.

A portion of these brands, beyond responding to the specific questions outlined in the letter, also showed support for the work toward bettering China's environment by Chinese NGO's.

Nike said in their response, "As a long-term participant in the Green Choice Alliance, we (Nike) support IPE and other Chinese NGO's to promote the corporate and environmental responsibility of Chinese companies. They continued, "Not only do we use IPE's database ourselves, we also require our Chinese partners to monitor their own environmental violations and in certain circumstances require them to disclose their corrective action plans."

In their response, Levi's wrote, "We believe that this database is a useful tool that can be used to confirm compliance with our Chinese suppliers. This database reveals the problems that currently exist in the industry and can help us focus our attention on the suppliers that need to improve their environmental performance.

Adidas said, "We welcome the efforts that the Green Choice Alliance has made in China in the past few years and we support the leadership of IPE in pushing the public disclosure of environmental information." Adidas continued, "If suppliers violate relevant regulations, including environmental and pollution regulations, we will require suppliers to put in place corrective actions. If these violations are not rectified, we will follow-up with a warning, and the situation (in the worst case) might lead to termination of the business relationship.

Even though brands such as C&A, Tesco, Gap, Li Ning, Next and Uniqlo had not had any contact with the environmental organizations previously, they were still able to start a dialogue in the relatively short space of time they had been given and some have made in-depth inquiries into supplier violation cases and some are thinking of establishing a supplier search mechanism.

However, amongst the 48 brands there were still a number who did not respond at all. These included international brands such as Marks & Spencer, Esprit, Calvin Klein, Armani, Carrefour, and other international brands. There were also three Chinese brands that did not respond, these included 361 Degrees, Anta, and Youngor.

It is true that there are a number of very innocent reasons why brands may not have responded. For example, the amount of time given to reply was limited and complex internal information exchange procedures and confusion over language and supplier names may have delayed their replies. We understand these difficulties and look forward to the brands issuing a response and taking action. For these reasons, we will continue to closely observe the brands and give regular updated assessments of the brands' management of their supply chain on our web page.

However, we feel that some of the brands are not responding because they do not agree with the idea of societal supervision. During the investigations, we saw that some of Zara's suspected suppliers had environmental violation problems; one factory had complaints from the local public and another factory's manufacturing wastewater was directly discharged without being treated, which was on a short list of serious violations in the local area. In addition to this there was a case of a suspected supplier where an incident of workers cleaning the wastewater treatment pool resulted in their deaths. After we sent out this round of letters we received a reply from Zara that stated: "We regret that we cannot respond to individual requests for information from schools, universities and professionals regarding our business model."

It is obvious that a number of Zara's suspected suppliers have very serious problems. Zara is one of the world's largest fashion retailers and on their website they state, "The principles governing Inditex's commitment to Corporate Social Responsibility include: good faith in relationships with stakeholders and society at large; an ongoing dialogue with the aforementioned stakeholders and social organizations; and, finally, transparency in our business activities generally, and, specifically, in the development of our sustainability strategy." [47] We feel that Zara's response violates their promise. We call on Zara to stop using their "business model" as an excuse and to respond to the questions raised by the environmental organizations.

[47] http://www.inditex.com/en/corporate_responsibility/sustainability

Brand Assessment Rankings[48]

	Company Name	Replied to NGO Letter	Checked the Purpose of the Study	Checks on Supplier Violation Cases		Use of Public Information to Enhance Supply Chain Management		Push for Suppliers to Make Corrective Action & Disclose Information		Further Extension of Environmental Management into the Supply Chain	
				Performed Initial Checks	Performed In-depth Checks	Considered Establishing a Search Mechanism	Decided to Establish a Search Mechanism	Corrective Action & Explanation	Regular Disclosure of Discharge Data	Directly Extended to Main Materials Suppliers	Pushing Tier 1 Suppliers to Manage Tier 2
1	H&M	√	√	√	√	√	√	√	√	x	x
2	Nike	√	√	√	√	√	√	√	x	x	√
3	Esquel	√	√	√	√	√	√	√	x	x	x
4	Walmart	√	√	√	√	√	√	√	x	x	x
5	Levi's	√	√	√	√	√	√	√	x	x	x
6	Adidas	√	√	√	√	√	√	√	x	x	x
7	Burberry[49]	√	√	√	√	√	√	√	x	x	x
8	C&A	√	x	√	√	√	x	x	x	x	x
9	Tesco	√	x	√	√	x	x	x	x	x	x
10	Target	√	x	√	√	x	x	x	x	x	x
11	Gap	√	x	√	x	x	x	x	x	x	x
12	Li Ning	√	√	√	x	x	x	x	x	x	x
13	Next	√	x	x	x	x	x	x	x	x	x
14	Uniqlo	√	x	x	x	x	x	x	x	x	x
15	Disney	√	x	x	x	x	x	x	x	x	x
16	Converse	x	x	x	x	x	x	x	x	x	x
17	Benetton	x	x	x	x	x	x	x	x	x	x

[48] An updated version of this chart can be found on the IPE website here: http://www.ipe.org.cn/En/alliance/new_sc.aspx?pid=007

[49] Burberry has been using the water pollution database to carry out supply chain management and to push suppliers to make corrective actions and disclose information. During this investigation no violation records were found for Burberry's suppliers.

18	Polo Ralph Lauren	x	x	x	x	x	x	x	x	x	x
19	Abercrombie & Fitch	x	x	x	x	x	x	x	x	x	x
20	Tommy Hilfiger	x	x	x	x	x	x	x	x	x	x
21	Reebok	x	x	x	x	x	x	x	x	x	x
22	361 Degrees	x	x	x	x	x	x	x	x	x	x
23	Puma	x	x	x	x	x	x	x	x	x	x
24	Kappa	x	x	x	x	x	x	x	x	x	x
25	Guess	x	x	x	x	x	x	x	x	x	x
26	Youngor	x	x	x	x	x	x	x	x	x	x
27	Sears-Roebuck & Co.	x	x	x	x	x	x	x	x	x	x
28	Mizuno Corporation	x	x	x	x	x	x	x	x	x	x
29	Lotto	x	x	x	x	x	x	x	x	x	x
30	Lafuma	x	x	x	x	x	x	x	x	x	x
31	Anta	x	x	x	x	x	x	x	x	x	x
32	Cortefiel	x	x	x	x	x	x	x	x	x	x
33	DKNY	x	x	x	x	x	x	x	x	x	x
34	Liz Claiborne	x	x	x	x	x	x	x	x	x	x
35	Lee Jeans	x	x	x	x	x	x	x	x	x	x
36	Victoria's Secret	x	x	x	x	x	x	x	x	x	x
37	Macy's	x	x	x	x	x	x	x	x	x	x
38	Kmart	x	x	x	x	x	x	x	x	x	x
39	J.C. Penney	x	x	x	x	x	x	x	x	x	x
40	Giordano	x	x	x	x	x	x	x	x	x	x
41	Ann Taylor	x	x	x	x	x	x	x	x	x	x
42	Cotton Inc.	x	x	x	x	x	x	x	x	x	x
43	Esprit	x	x	x	x	x	x	x	x	x	x
44	Calvin Klein	x	x	x	x	x	x	x	x	x	x
45	Armani	x	x	x	x	x	x	x	x	x	x
46	Marks & Spencer	x	x	x	x	x	x	x	x	x	x
47	Carrefour	x	x	x	x	x	x	x	x	x	x
48	Zara	x	x	x	x	x	x	x	x	x	x

Note: An Explanation of the Evaluation Marks in the Table

In the table, a dark colored check shows that the company has reached the requirements for that item. A light colored check means that the company has only partially reached the requirements and a gray cross means that the company has not yet reached the requirements.

III. MAIN RECOMMEDATIONS FOR ALL PARTIES

Multilateral Cooperation can Collectively Promote Sustainable Development in the Textile Industry

As an integral part of strengthening environmental protection, since 2003, the Chinese government has promulgated a series of laws and policies to promote the disclosure of environmental information and public participation. The Chinese public's environmental awareness has continuously increased, the capacity of environmental organizations has been strengthened, and enterprises have started to realize the importance of environmental protection. All these aspects lay the foundations for resolving environmental pollution problems through extensive cooperation in the public and private sectors.

Specific recommendations are outlined below:

GOVERNMENT DEPARTMENTS:

Should Strengthen Supervision, Expand Information Transparency and Use Market-Oriented Measures to Guide Companies to Reduce Energy Consumption

1. It is recommended that environmental supervision of the textile industry is strengthened. Achieving compliance is a necessity so illegal activities must be investigated and stricter implementation of discharge standards and other types of regulation must be urged.

2. It is recommended that environmental information disclosure is further expanded. Comprehensive, complete and prompt publication of environmental supervision records for textile companies is a must. At the same time, companies should be urged to publish their discharge and resource consumption data in order to facilitate the strengthening of public supervision.

3. It is recommended that environmental economic policy tools, such as price leveraging, green procurement, green investment and green foreign trade are used to guide companies towards energy savings.

TEXTILE BRANDS AND RETAILERS:

Should Utilize Information Disclosure and Work with Stakeholders to Promote Emissions Reduction in the Supply Chain.

In this report we have listed many apparel brands together, hoping they can assist within the industry to establish a level playing field based on social and environmental guidelines. We

expect this to develop healthy competition between the brands to collectively promote sustainable development within the textile industry. Our evaluation criteria and our recommendations and expectations for the apparel brands can also be seen in this chart.

Buyer Name	Replied to NGO Letter and Checked the Purpose of the Study	Checks on Supplier Violation Cases	Use Public Information to Enhance Supply Chain Management	Push Suppliers to Make Corrective Action and Disclose Information		Further Extension of Environmental Management into the Supply Chain	
				Corrective Action and Explanation	Regular Disclosure of Discharge Data	Directly Extended Management to Main Materials Suppliers	Pushing Level 1 Suppliers to Manage Level 2 Suppliers

Specific explanations are as follows:

First, push brands to respond to whether or not they understand the background of the NGO investigation. This is in order to facilitate a deeper understanding of the environmental impacts caused by the production processes of textile products.

Second, raise specific cases of suspected violating suppliers with brands, not only in order to resolve specific pollution issues, but also to assess whether the company has formulated a mechanism to provide feedback to the public.

Third, assess whether or not the brand has established its own regular screening mechanism. It is hoped that companies will go beyond the stage of passive responses to public questions and utilize information disclosure to actively and more effectively identify supply chain violation problems.

Fourth, promote supplier corrective actions and the disclosure of information. It is hoped that brands can procure responsibly, guide suppliers to develop a sense of environmental responsibility to the public and implement pollution reduction.

For these criteria there are two sub-criteria, namely '*Corrective Action and Explanation*' and '*Regular Disclosure of Discharge Data.'* Why do we want to push suppliers to take corrective actions, while at the same time urging them to provide public explanations? The four main reasons are as follows:

A) From the perspective of safeguarding the public's environmental rights, the violating behavior of suppliers exceeding discharge standards brings potential or actual impacts on the environment and has an impact on the health and safety of local residents. Therefore, the public has the right to demand that violating enterprises publicly disclose what went wrong in the first place and the corrective actions that had been adopted, as well as whether the problems have been resolved

B) From the perspective of corporate responsibility, violating enterprises have a responsibility to make their issues known, to provide explanations of the results of any corrective actions and to provide any relevant proof. Brands that depend on out-sourced manufacturing also have a responsibility to supervise and encourage suppliers to provide the

above-mentioned explanations and proof.

C) From the perspective of assisting brands to promote environmental management standards, through our experiences, we discovered that information disclosure will lay down public scrutiny in the supply chain, helping to apply public pressure so that companies will recognize their social responsibility, thus promoting compliance with environmental laws and regulations.

D) From the technical aspect of the NGO assessing a brands' level of management, if suppliers with violation records do not make public explanations of their corrective actions, the public will not be able to assess the effectiveness and the outcome of these actions. Therefore, they will be unable to determine the basic level of the brands' supply chain environmental management.

Why push factories in the supply chain to make regular public disclosure of discharge data? The two main reasons are as follows:

1） From the perspective of corporate environmental management, the disclosure of discharge data means the company must collect, collate and document external or internal monitoring results. Such practices help supplier companies understand their pollution control conditions and help brands clearly recognize the size of the ecological footprint of their products.

2） This is a key step for suppliers to move beyond compliance. Prior to these evaluation criteria, almost all the other criteria aim to push the enterprise to abide by environmental laws. Of course, environmental compliance is important, but legal demands are merely basic requirements. It is necessary for companies to continue improving from the basic foundation of compliance. Continuous improvement should not be based on empty statements but should be supported with solid data that could prove whether their environmental performance has been improved and whether their ecological footprint is expanding or has been reduced.

Fifth, environmental management needs to be extended throughout the entire supply chain. In today's world where apparel procurement and production is global, the apparel industry relies on extensive outsourcing, especially for processes with high pollution, high emissions, and high risks. However, in our research, we found that the environmental management of brands has not been extended throughout the supply chain in the same way as production. Many apparel brands continue to make excuses that the violating factories are not "tier 1" or "direct suppliers," and some brands even state that they can only be responsible for managing tier 1 suppliers. In response, we believe that when pollution continues to extend with the supply chain, just monitoring and managing tier 1 suppliers is insufficient. Apparel brands must extend their environmental management beyond tier 1 suppliers.

At the same time, we fully understand the challenges that brands face with regards to supply chain management. As supply chains extend, the number of suppliers continues to grow and supplier relationships also become more complex. The amount of control that brands have over their suppliers, especially in cases where they don't have direct contracts, also weakens as the supply chains grow longer. We have held many discussions with apparel brands to address these

challenges. Based on these discussions, we have outlined two major aspects from which to effectively evaluate supply chain environmental management policies:

1）Environmental management should directly extend to main material suppliers. We have come to understand that beyond considerations of quality control, some brands have specific requirements for where their direct suppliers source all the materials they use, to the point of designating main materials suppliers. Also, main materials suppliers often have large pollutant discharges and are often enterprises with large environmental footprints. We hope that brands can extend their supply chain management to these main materials suppliers and effectively control the environmental risks in their own supply chain.
2）Tier 1 suppliers should be pushed to monitor the environmental performance of tier 2 suppliers. During our discussions, many brands have expressed that since they do not have direct contractual relationships with suppliers beyond tier 1, and the number of suppliers they have is very large, the influence they have only extends as deeply as tier 1. A number of brands have stated that they require first tier suppliers to push for environmental standards to be implemented at second tier suppliers.

We recommend that brands, in addition to pledging to use publicly available information to monitor their tier 1 suppliers, also require their tier 1 suppliers to make the same pledge. This would then mean that tier 1 suppliers should use available government information to monitor their own tier 1 suppliers. This kind of arrangement spreading environmental management along the supply chain will help brands overcome the conflict of decreasing influence and increasing pollution risks.

When environmental monitoring extends to material suppliers, brands can truly realize complete pollution control through the life-cycle of textile products. We are confident that this will cause a chain reaction and provide a strong impetus to help control China's pollution predicament.

TEXTILE INDUSTRY MANUFACTURERS:

Should establish a sense of environmental responsibility, conform to societies expectations and implement clean production

We recommend that manufacturers be aware of the following four trends:

1. Government environmental supervision has been strengthened, environmental information disclosure is continuously expanding and the cost of enterprises breaking the law is increasing.

2. A growing population, deteriorating ecosystems and environmental pollution are all leading to substantial increases in natural resource and energy prices.

3. The Chinese public's awareness of the environment is continuously increasing and more and more environmental organizations are starting to pay attention to the environmental

performance of corporations.

Through collecting and organizing environmental monitoring data published by all levels of government, environmental protection organizations established the water pollution and air pollution databases. As of April 2012, a total of 97,000 supervision records for companies all over China had been collected. In 2007, 21 environmental protection organizations established the Green Choice Alliance (GCA) and have pushed large scale retail companies to carry out supervision of their suppliers. At present there are 41 environmental protection organizations in the GCA (see appendix chart 1 for details).

4. Under pressure from consumers, large scale brands and retailers will take steps towards responsible purchasing.

A number of large corporations, including large scale apparel brands and retailers, have started working with the environmental protection organizations. By using the database search function, they can very easily compare the list of their suppliers with the lists of companies with government sourced violation records. Through regular comparisons, a number of manufacturers with violation records have started to make rectifications and provide explanations to the general public. There have already been some suppliers who have lost orders because they did not want to make rectifications or couldn't make rectifications.

With this awareness as a foundation, we recommend that manufacturers should establish a sense of environmental responsibility, rectify environmental violation problems and establish pollution emissions monitoring and recording and reporting systems – towards a more proactive stance to promote environmental performance and take steps towards clean production. For specific measures that can be taken please also see the 10 Best Practices that are published by NRDC.[50]

CONSUMERS:

Must place an importance on companies' environmental performance so that green consumerism leads to green manufacturing.

Clothing, food, housing and transport are people's basic needs. So, in this context, the public are all apparel industry consumers. This industry adds some glamour to the lives of consumers. However, the pollution emissions that the industry produces during manufacturing processes also have a serious impact on environmental ecosystems, which in turn damages people's quality of life and can even cause harm to their health.

We firmly believe that consumers do not agree with causing environmental pollution in exchange for their fashionable clothes. For this reason, we propose that consumers pay attention to the environmental performance of apparel brands and retailers, and voice their expectations and

[50] http://china.nrdc.org/info_library_info_down.php?down=1&id=531&cid=108

requirements to those apparel brands who do not respond to questions from the public. Consumers are a brand's most important stakeholders. Through voicing their concern and hopes they can be a strong force in making apparel brands improve the environmental management of their supply chains.

Please let the apparel industry hear your voice so that we can clean up the fashion industry together!

IV. APPENDICES

Appendix I: Participating Organizations in the Green Choice Alliance

Green Choice Alliance (GCA) NGO Member Organizations	
1	Friends of Nature
2	Global Village Beijing
3	Green Earth Volunteers
4	Global Environmental Institute
5	Huaihe River Guardians
6	Gansu Green Camel Bell
7	Friends of Green in Tianjin
8	Beijing Association of Sustainable Development
9	Center for Legal Assistance to Pollution Victims
10	Chongqing Green Volunteer Federation
11	Nanjing Green Stone Environmental Action Network
12	Nature Watcher Volunteer
13	Hubei Green Hanjiang
14	Environmental Protection Commonweal Association
15	Xinjiang Conservation Funds
16	Hebei Green Friend Association
17	Yunnan Green Watershed
18	Wenzhou Green Eyes
19	Wild China
20	Green Island
21	Green Beagle
22	Shanghai Oasis Ecological Conservation & Communication Center
23	Shaanxi Women's Federation "Red Phoenix Project"
24	Friends of Green Environment
25	Green Longjiang
26	Green Anhui
27	Green Zhujiang
28	Green River
29	Dalian Environmental Resource Center
30	Center for Rural Development & Biodiversity Protection of Lanzhou University
31	South China Nature Society
32	Green Kunming
33	Chongqing Liangjiang Voluntary Service Center

34	Institute for Environment & Development
35	Fujian Green Home Environmentally Friendly Center
36	Green Hunan
37	Green Zhejiang
38	Green Panjin
39	Gull Protection Association of Panjin City
40	Xiamen Greencross Association
41	Institute of Public & Environmental Affairs

Appendix II：Relevant Case Studies

Over the past few years the Green Choice has pushed companies to make rectifications and has formed a number of case studies. For details please see follow these links:

- Greening Supply Chains in China

http://www.ipe.org.cn/Upload/Report-Green-Supply-Chain-In-China-EN.pdf

- Suzhou Hytex Apparel Co., Ltd. - On-site Audit Explanation & Conclusions

http://www.ipe.org.cn/En/about/notice_de.aspx?id=10680

Appendix III. A Listing of "Red" and "Black" Factories

Some "Red" and "Black" rated company records (the following "red" and "black" records can be searched on the *Pollution Map Database* for more details www.ipe.org.cn)

企业名称	企业环境信用评价记录
常州市国裕纺织品有限公司	2006 红色、2007 红色
常州市宝麟纺织有限公司	2008 红色、2011 红色
南通朝阳漂染有限公司	2008 红色、2009 红色
南通华源染织厂	2006 黑色、2009 黑色、2010 红色
南通毛腈纺织厂	2009 红色、2010 黑色
南通佳伟染织服饰有限公司	2009 黑色
南通润达特阔染整有限公司	2009 黑色

瑞安市彩虹印染有限公司	2007 红色、2009 红色
瑞安市华荣织造实业有限公司	2007 红色、2008 黑色、2009 红色
瑞安市联大如意针织厂	2007 红色、2008 红色、2009 红色
苏州华思丝绸印染有限公司	2009 红色、2010 红色
苏州常成纺织印染有限公司	2010 黑色
苏州市申亚印染有限公司	2010 黑色
中山市超业纺织印染有限公司	2009 红色、2010 红色
中山市华星染织洗水有限公司	2007 红色、2010 红色
中山市侨发染织洗水有限公司	2007 红色、2010 红色
中山溢盛纺织印染有限公司	2009 红色、2010 红色
中山宏丰针织有限公司	2009 红色、2010 红色
中山市万福针织绒毛有限公司	2009 红色、2010 红色
中山市民联洗水有限公司	2008 红色、2009 红色
海盐东方印染有限公司	2007 红色、2009 红色
东莞市明珠染整实业有限公司	2010 红色、2011 红色
佛山市冠成针织有限公司	2008 红色、2009 红色、2010 红色
桐庐春弘纺织印染有限责任公司	2010 黑色
昕发印染有限公司	2007 红色、2010 黑色
杭州余杭禾丰印花厂	2010 黑色
浙江华佳利丝绸制品有限公司	2010 黑色
杭州三信织造有限公司	2008 红色、2010 黑色
桐庐富强织染有限公司	2009 红色、2010 红色

杭州润宇制衣有限公司	2009 红色、2010 红色
姜堰市嘉信纺织印染厂	2010 黑色
南通三赢染织有限公司	2009 红色、2010 红色
南通朝阳漂染有限公司	2008 红色、2009 红色
南通大生红鹿毛纺织有限公司	2005 红色、2007 红色、2009 红色、2010 红色
南通格瑞福染整有限公司	2007 红色、2008 红色、2009 红色、2010 红色
南通恒源印染有限公司	2008 黑色、2009 红色
南通华联纺织染整有限公司	2005 红色、2006 黑色、2007 红色、2008 黑色、2009 红色、2010 红色
南通华隆染织有限公司	2007 红、2008 黑、2009 红色、2010 红、
南通润达特阔染整有限公司	2009 黑色、2010 红色
南通佳伟染织服饰有限公司	2005 黑色、2006 红色、2007 黑色、2008 黑色、2009 黑色、2010 黑色
南通山鹰印染有限公司	2009 红色、2010 红色
南通喜而奇针织服装有限公司	2007 黑色、2009 红色
南通新有拉绒整理有限公司	2008 黑色、2009 红色
瑞安市华利染织有限公司	2007 红色、2010 红色
苏州常成纺织印染有限公司	2010 黑色
苏州市申亚印染有限公司	2010 黑色
苏州市吴中区佳幸漂染有限公司	2004 红色、2005 红色
江阴市周庄染整厂	2006 黑色、2007 黑色
南通中天纺织印染有限公司	2007 红色、2008 红色

江阴市华彩漂染厂	2007 红色、2009 红色、2010 红色
南通山鹰印染有限公司	2009 红色、2010 红色
苏州华思丝绸印染有限公司	2009 红色、2010 红色
中山市万福针织绒毛有限公司	2009 红色、2010 红色
中山溢盛纺织印染有限公司	2009 红色、2010 红色
江阴市盛凯纺织有限公司	2010 黑色

This table only represents a very small number of company violation records. For more details please follow this link: http://www.ipe.org.cn/En/pollution/corporation.aspx

Appendix IV: NRDC's 10 Best Practices

NRDC's 10 Best Practices for Textile Mills to Save Money and Reduce Pollution

These 10 Best Practices are a starting point for dyeing and finishing mills to reduce pollution while helping to save them money, as developed by the Natural Resources Defense Council's Responsible Sourcing Initiative. These best practices can be used by brands as a way to check on whether or not factories have made an effort to reduce pollution in basic and cost-effective ways.

For example, in NRDC's case study of the Jiangsu RedBud Textile Company (江苏省紫荆花纺织科技股份有限公司), this factory reduced their water and energy use very significantly with these best practices. Their water use reduction allowed the treatment plant to go back into compliance because the water treatment could then proceed without violating environmental regulations. Previously ranked second worst in environmental compliance, the Redbud mill become second best by just implementing three of these best practices.

To read more about these best practices and look at more specific information on the Jiangsu RedBud Textile Company case study, please go to NRDC's website at this link: http://www.nrdc.org/international/cleanbydesign/

For documents and relevant information in Chinese, please check: http://www.nrdc.cn/our_program_flag.php?cid=256

NRDC's 10 Best Practices

Practice	Percentage Resources Saved	Cost	Payback Period
Leak detection, preventive maintenance, improved cleaning	Water: 2-5%; Energy: 1.5-5%	Insignificant	< 1 month
Reuse cooling water : from singeing from air compressor system from preshrink	Energy: 1.6-1.8% Water: 2-5% Water: 2% Water: 1%	$1,500	< 1 month
Reuse condensate	Water: 2-3%; Energy: 0.8-3.2%	variable	1 month - 1 year
Reuse process water: from bleaching from mercerizing	 Water: 4% Water: 3%	$3,000 - $30,000	< 1 month
Recover heat from hot rinse water	Energy: 2-12%	$44,000 - $95,000	2 - 4 months
Prescreen coal	Energy: 3%	$35,000	5 months
Maintain steam traps	Energy: 1-5%	Insignificant	< 1 month
Insulate pipes, valves and flanges	Energy: 0.01-0.5%	$4,500	< 1 month
Recover heat from smokestacks	Energy: 1%	$22,000	8 months
Optimize compressed air system	Electricity: 0.3-3%	Insignificant	< 1 month

Appendix V: A Number of Textile Industry Pollution Incidents in China since 2007

时间	标题	城市	链接
1/22/07	鞍山324家违法排污印染等企业被查处	鞍山	http://www.texindex.com.cn/Articles/2007-1-12/77205.html
11/24/10	河北容城工业污染废水横流村民不吃自家粮	保定	http://news.qq.com/a/20101126/001544.htm
10/22/09	宜山一印染企业废水超标排放被停产整治	苍南	http://info.screen.hc360.com/2009/10/23090540425.shtml
2003-6-8	印染厂油污染黑小河	长乐	http://news.sina.com.cn/c/2008-03-06/042313526700s.shtml
9/17/08	常熟两家印染厂被勒令停产整顿	常熟	http://www.texindex.com.cn/Articles/2008-9-17/158173.html
2009-3-9	环保夜查企业偷排污水一旦发现从严查处	常州	http://www.wj001.com/news/wanxiangwujin/2009-12-25/5755.html
1/20/10	童子河 1 公里河水成“黑段”	常州	http://news.sina.com.cn/c/2010-01-20/055016960654s.shtml
12/25/09	常州西夏墅镇南岸河污染原因已查明	常州	http://www.js.chinanews.com/cz/news/2009/1225/9211.html
2008-11-10	广东 3800 平方公里海域严重污染珠江口成排污口	东莞	http://env.people.com.cn/GB/12408343.html
12/13/08	未办环保手续旧厂内照开工	佛山	http://www.fs0757.com/news/200812/145313K52DB41C9B79A4.shtml
4/28/09	染织厂偷排工人看不过眼	佛山	http://fs.southcn.com/xwss/shxw/content/2009-04/28/content_5106041.htm
2009-11-10	三水一纺织厂顶风作案废水直排河涌	佛山	http://www.citygf.com/FSNews/FS_002008/201009/t20100911_709015.html
3/29/11	两企业周末偷排致河涌被染黑还说不知情	佛山	http://www.citygf.com/FSNews/FS_002003/FS_002003005/201103/t20110329_1422897.html
6/22/11	废水直排汾江无牌企业被取缔	佛山	http://fs.house.sina.com.cn/news/2011-06-22/094329257.shtml
1/18/12	标本兼治是正道	佛山	http://www.texindex.com.cn/Articles/2012-1-19/248507.html
4/15/11	佛山高明 3 印染企业偷排被罚近 500 万	佛山，高明区	http://gd.nfdaily.cn/content/2011-04/15/content_22749505.htm
5/23/07	市民举报晋安区某印染厂偷排污水	福州	http://www.66163.com/Fujian_w/dskb/20070523/fz193385.html
2010-6-8	江西顺富印染公司被通报	抚州	http://info.texnet.com.cn/content/2008-10-06/207154.html
3/25/10	排污印染厂昨被关停	高邑	http://www.he.xinhuanet.com/news/2010-03/25/content_19339332.htm
2007-3-7	广州重拳出击污染突出企业 11 家被挂牌督办	广州	http://env.people.com.cn/GB/5943339.html

2006-5-9	海门市正章染整有限公司超标排放水污染物（[罚]2009088)	海门	http://www.21food.cn/html/news/26/526885.htm
2012-6-11	这段江水怎么红了印染废水是元凶	杭州	http://hzdaily.hangzhou.com.cn/hzrb/html/2011-12/06/content_1183191.htm
6/17/08	虎门百余印染作坊无证作业污染河涌	虎门	http://informationtimes.dayoo.com/html/2008-06/17/content_227583.htm###
8/26/08	秀洲一印染企业有偷漏排污水嫌疑	嘉兴	http://job.zhulong.com/hr/news_read_87441.html
11/27/09	嘉兴 15 家企业违法排污较严重被市环保局曝光	嘉兴	http://qy.qianlong.com/7440/2009/11/27/4722@5300462.htm
4/16/10	私设暗管偷排漏排嘉兴我市查获 65 家违法排污企业	嘉兴	http://zjnews.zjol.com.cn/05zjnews/system/2010/04/16/016526030.shtml
2006-7-10	央视调查：浙江嘉兴纺织基地竟成“污染基地”	嘉兴	http://news.hexun.com/2010-06-07/123917290.html
8/28/07	散户偷排现象严重　秀洲家庭纺织工业亟待转身	嘉兴，秀洲区	http://info.texnet.com.cn/content/2007-08-28/121617.html
2011-1-11	守着母亲河，有水不敢喝	胶州	http://hb.qq.com/a/20111101/000445.htm
8/24/09	练江刮起治污风暴 60 多家印染企业责令停产	揭阳汕头	http://news.southcn.com/g/2009-08/24/content_5613719.htm
2011-9-9	市环保局检查小北河镇水洗印染企业	辽阳	http://liaoyang.nen.com.cn/76844871960231936/20091109/2201618.shtml
2009-8-8	山东牟平叫停两家超标排污印染企业	牟平	http://info.texnet.com.cn/content/2008-09-08/203491.html
11/13/07	华润印染日排５０００吨废水入通甲河	南通	http://xsc.niit.edu.cn/article/s/580937-224177-0.htm
2005-12-10	宁波鄞州染整厂污染事件后续：集中清排水管	宁波	http://www.ctanet.cn/News/Show_172126.html
7/28/11	宁波仪科科技、宁波嘉乐染整涉嫌向奉化江偷排废水	宁波	http://www.cqn.com.cn/news/xfpd/szcj/cj/446829.html
1/15/12	宁波奉化江油污来自长丰桥边一家针织印染企业	宁波	http://nb.people.com.cn/n/2012/0115/c200892-16679173.html
6/23/09	广东普宁市被曝治污不力 4 官员集体上电视道歉	普宁	http://leaders.people.com.cn/GB/9521431.html
12/23/11	肥城三娘庙：大汶河旁仍在哭泣的“癌症村”	山东肥城地区	http://www.cqn.com.cn/news/cjpd/511310.html
2003-7-8	广东:汕头企业夜间偷排印染废水被罚 10 万	汕头	http://news.h2o-china.com/policy/market_supervisor/702071206599392_1.shtml
2004-1-10	粤环保厅"杀回马枪":汕头两英镇污染依旧	汕头	http://www.gd.xinhuanet.com/newscenter/2010-04/01/content_19402475.htm

2012-6-11	河水发黑变臭蚬子溪虾灭绝	汕头	http://news.chaoren.com/20111206_36490.html
4/13/10	前脚刚摘牌后脚就偷排	汕头市潮南区两英镇	http://www.cenews.com.cn/xwzx/fz/qt/201004/t20100412_633055.html
2007-4-7	绍兴五家印染企业超排被查	绍兴	http://www.printingadd.com/tiring_room/new/hynews/20077494820.htm
11/16/09	白天偷排污水“威凌印染”被逮个正着	绍兴	http://bay-hzrb.hangzhou.com.cn/system/2009/11/16/010251178.shtml
2012-12-11	圣荣印染继续污染绍兴环保局被指越权	绍兴	http://news.chemnet.com/item/2011-12-12/1603890.html
2003-6-9	跨界偷排污染瓯江不能承受之重	温州	http://zjnews.zjol.com.cn/05zjnews/system/2009/03/06/015316456.shtml
6/15/07	无锡水污染事件敲响印染业环保警钟	无锡	http://www.cdpa.org.cn/zxzx/yrzj/8991.htm
3/15/10	江水变红，原来是有人偷排废水	萧山	http://www.xsnet.cn/news/shms/2010_3/1074837.shtml
2011-11-7	印染公司埋设暗管偷排废水被重罚	兴宁	http://www.meizhou.cn/news/0711/11/071111058.html
4/14/09	烟台水源地上游污染物查明系一废弃印染厂倾倒染料	烟台	http://www.shm.com.cn/newscenter/2009-04/14/content_2554053.htm
12/28/11	“红河谷”排污企业承诺整改	盐城	http://jsnews.jschina.com.cn/system/2011/12/30/012416507.shtml