THE OTHER SIDE OF APPLE II

POLLUTION SPREADS THROUGH APPLE'S SUPPLY CHAIN

8-31-2011

Friends of Nature
Institute of Public & Environmental Affairs
Green Beagle
Envirofriends
Green Stone Environmental Action Network

Cover Photo by Chuong Nguyen

Executive Summary

In the report titled 'The Other Side of Apple,' published January 20th, 2011, a coalition of environmental organizations brought to light problems of pollution and poisoning in Apple's supply chain in China. Yet to this day, Apple has systematically failed to respond to all queries regarding their supply chain environmental violations.

Faced with an ever evasive Apple, a group of Chinese NGOs decided to dig deeper and carry out further investigations into the environmental problems that exist within Apple's supply chain. Through five months of research and field investigations we have found that the pollution discharge from this $300 billon dollar company has been expanding and spreading throughout its supply chain, and has been seriously encroaching on local communities and their surrounding environments.

Figure 1: Mapping of some suspected Apple suppliers

Through our investigations, we discovered that the pollution from some of Apple's suppliers had already caused severe damage to the environment. Amongst these companies is the Meiko Electronics' plant in Guangzhou, a suspected PCB supplier to Apple Inc. This company had previously schemed to conceal their environmental violations. However, this plan was foiled by the Environmental Protection Department. Within just a few months, this company was penalized for more than ten violations.

Furthermore, the amount discharged from the Meiko Electronics PCB plant, in Wuhan, is even more than that at the plant in Guangzhou. The neighboring lake, named Nantaizi (or Southern Prince), is seriously contaminated. Through third party monitoring the water in the discharge channel to the side of the company's premises was found to contain heavy metals, including copper and nickel, which are standard pollutants from PCB plants. The copper content in the sediment sample, taken from the Nantaizi Lake and the discharge channel intersect reached as high as 4270 mg/kg, which is 56 to 193[1] times the amount found in the sediment in the major lakes in the middle reaches of the Yangtze River.

The large volume of discharge in Apple's supply chain greatly endangers the public's health and safety. Through the process of our investigations, we discovered several suspected suppliers to Apple that have been the target of numerous complaints from local communities. Located in Kunshan, the two companies Kaedar Electronics and Unimicron Electronics have been subject to repeated complaints from local residents due to their emissions discharge. The residents of this community worry that the health of their children will be severely damaged. More seriously, a village in the vicinity of the company has experienced a phenomenal rise in cases of cancer.

Foxconn Electronics, located in Taiyuan, Shanxi Province, has a huge production capacity and is involved in serious pollution resulting from its metal surface processing. In recent years the local residents have repeatedly filed complaints with local agencies against the Foxconn factory's irritant gases. These gases often leave the nearby residents with irritated nasal passageways, watering eyes and they sometimes make it hard for residents to open their windows, due to pollution being so intense. The local government has called on the company to control its pollutant discharge many times, but the pollution that severely affects the quality of life for the residents has yet to be resolved.

We have found from this investigation that the volume of hazardous waste produced by suspected Apple Inc. suppliers was especially large and some had failed to properly dispose of their hazardous waste. Each day, Ibiden Electronics Beijing Company produces several dozen tons of hazardous waste containing heavy metals copper, nickel and cyanide. However, during further checks the environmental agency discovered that even though there are strict national regulations for the hazardous waste transport manifests to be filled out; in this case they were all left blank. After checks, the agency also discovered that the exact whereabouts of the heavy metals sludge was not clear. Moreover, the Shenzhen Municipal Hazardous Waste Treatment Station who are responsible for the treatment of hazardous waste from the electronics industry, including Foxconn's, was also found to have discharged pollutants against the authorized standards.

[1] In March, 2006, a task group chose sampling points at five places in the lakes of the middle reaches of the Yangtze River or places relatively isolated from the main river. The places were Tian'ezhou Chinese River Dolphin Conservation site in Jianli county, Hubei Province; Dongting Lake (Junshan South); Honghu Deepwater Area and Wuhan Donghu and Liangzi Hu (Fankou). According to the results of this research, the lowest levels of copper in the sediment of lakes of the middle reaches of the Yangtze were 22ppm and the greatest was 75ppm. Yu Guoan, Wang Zhaoyin, Liu Cheng, Huang Wendian, study into the quality of sediment in the middle reaches of the Yangtze River, study into silt, 2007.

Hazardous waste is not only directly toxic to humans and animals, it may also pollute the streams, rivers, lakes and seas and may infiltrate and contaminate soil and ground water through rain and snow, causing long-term impacts that are extremely difficult to remedy and clean up. Apple's rejection to fulfill its responsibility to disclose environmental information will likely cause an immense amount of hazardous waste released into the environment from its supply chain, which could ultimately lead to hidden long-term environmental and public health dangers.

From these two investigations, the coalition has discovered more than 27 suspected suppliers to Apple that have had environmental problems. However, in the '2011 Supplier Responsibility Report' published by Apple Inc., where core violations were discovered from the 36 audits, not a single violation was based on environmental pollution. The public has no way of knowing if Apple is even aware of these problems. Again, the public has no way of knowing if Apple has pushed their suppliers to resolve these issues.

Therefore, despite Apple's seemingly rigorous audits, pollution is still expanding and spreading along with the supply chain. Meanwhile, on May 20th, 2011, a disastrous incident involving an explosion took place at a production line responsible for iPad2s at the polishing workshop at Foxconn Chengdu, causing the deaths of three workers and injuring 15 more. After this incident, it was discovered that the first phase of this enormous plant, was expected to be the largest iPad2s supplier globally, taking only 76 days to construct. A media investigation revealed that in order to expedite construction, the polishing workshop machinery was installed at the same time as that production was taking place; meanwhile, the second batch of workers, after having only two or three days training, were sent to their posts to begin work.

For this kind of company to have passed an audit led by Apple's Vice-President and then go on to win the main contracts for Apple's global iPad market, it must surely leave one to question Apple's auditing process. However, there has been no way to confirm any of these queries with Apple Inc., as the company will not actively disclose any information, nor will it even passively respond to questions regarding their suppliers. Under the cover of Apple's annual auditing report, the company continues to issue contracts to polluting companies for its OEM production, so as to pursue blood stained profits at the cost of the environment and communities.

During the past year and four months, a group of NGOs made attempts to push Apple along with 28 other IT brands to face these problems and the methods with which they may be resolved. Of these 29 brands, many recognised the seriousness of the pollution problem within the IT industry, with Siemens, Vodafone, Alcatel, Philips and Nokia being amongst the first batch of brands to start utilizing the publicly available information. These companies then began to overcome the spread of pollution created by global production and sourcing, and thus turn their sourcing power into a driving force for China's pollution control.

However, Apple has become a special case. Even when faced with specific allegations regarding its suppliers, the company refuses to provide answers and continues to state that "it is our long-term policy not to disclose supplier information." A large number of IT supplier violation records have already been publicized; however, Apple chooses not to face such information and continues to use these companies as suppliers. This can only be seen as a deliberate refusal of responsibility.

Apple has already made a choice; to stand on the wrong side, to take advantage of the loopholes in developing countries' environmental management systems, and to be closely associated with polluting factories so that it can continue to grab their own super profits, at the expense of the environment and communities; becoming a barrier in China's path towards pollution reduction.

Consumers also need to make a choice. We believe Apple's consumers would not accept the poisoning of the environment, the harm to communities and the sacrifice of employee rights in exchange for their trendy electronic products. For the sake of the health of the public, the protection of the environment, the basic rights of workers in Apple's production lines, and in order to give our children a safe and clean place to live; **we call upon consumers to express their concerns to Apple, so that Apple can hear the voice of the public.**

Contents

Foreword

In the report titled 'The Other Side of Apple,' published January 2Oth, 2011, the coalition of environmental organizations brought to light many serious problems in Apple Inc.'s supply chain in China. After the report was published, Apple went on to issue their own annual CSR report in which they acknowledged, for the first time, that 137 workers had been poisoned by n-hexane while working at a production line for one of their products. Yet, to this very day, some of the poisoned workers' very reasonable demands for treatment and compensation have not been fully resolved. The workers have written three letters to Apple, but they have not received a word of reply.

Furthermore, Apple remains completely non-responsive about the pollution cases raised by the environmental groups. In "The Other Side of Apple" report, environmental organizations had highlighted a series of environmental violation issues in Apple's supply chain. These included a hazardous waste leakage at Suzhou Lian Jian Technology (Wintek), Dongguan Fugang Electronics' administrative penalty of 100,000 RMB for serious violations, Dongguan Wanshida's rapid expansion that led to an increase in discharge, repeated complaints from the public about Dongguang Shengyi Electronics' emissions, as well as, emission issues exceeding the authorized standards at several subsidiary companies of the Guangzhou Nanbo Group. Apple has not responded to any of these problems.

On the one hand Apple has been silent about its environmental and social responsibilities, yet at the same time, in order to satisfy the upsurge in market demand, the company continues to expand its supply chain in China. According to related reports on the topic, Apple's iPhone sales volume for the 1st quarter of 2011 was more than double the volume for the same period the previous year.[2] This signifies that the volume of mobile phone production in China continues to expand. At the same time, in order to satisfy the production demands of their new generation of tablet computers, the iPad 2, Apple's printed circuit board production in China has also seen a trend of rapid expansion.

Apple Inc.'s policy of not commenting and to bury their heads in the sand when queries are raised by the public does not mean that the problems of pollution and poisoning within the supply chain will automatically vanish. On the contrary, its continuously expanding supply chain signifies that its environmental risks will also simultaneously increase. Faced with a stubbornly evasive Apple Inc., a number of Chinese environmental NGOs decided to dig deeper and to further investigate the environmental problems that exist within Apple's supply chain. Through five months of research and field investigations we found that the pollution discharge from this enormous industrial empire has been expanding and spreading throughout its supply chain, seriously encroaching on the local communities and their environment.

[2] Apple in the first quarter surpassed Nokia to become the world's largest mobile telephone company - 2011-04-22 03:15:23, Source: *tech.163.com/*)

Section 1 - Shocking Levels of Environmental Pollution

According to a number of news channels, at the start of 2011, Apple finalized a second list of printed circuit board (PCB) suppliers for its second generation of tablet computers, the iPad 2. The number of suppliers had increased to seven and included Ibiden, TTM, Gold Circuit Electronics Ltd., Nan Ya Printed Circuit Board Corporation, Huatong, Tripod Technology Corporation and Meiko Electronics.[3] Whilst looking more closely at these suppliers Meiko Electronics[4] caught our attention.

Case 1 – Guangzhou Meiko Electronics: Repeatedly Exceeded Authorized Standards & Discharged Through Hidden Pipes

Meiko Electronics is a listed Japanese company. In 1998, the company invested US$205 million constructing Meiko Electronics (Guangzhou Nansha) Co., Ltd., their first production base in China, which is in Guangzhou Municipality, Guangdong Province. Over the past number of years, this company, which is located in the Nansha Economic and Technological Development Zone, has often been added to the list of local polluting enterprises due to serious pollution discharge.

Figure 2: Satellite image of Guangzhou Meiko Electronics (suspected Apple Inc. supplier)

On February 23rd, 2009, the '2008 Assessment Results for the Key Pollution Sources Environmental Protection Credit Management Plan,' issued by the Guangdong Provincial Environmental Protection Bureau, showed the evaluation results for Meiko Electronics (Guangzhou Nansha) Co., Ltd. to be an 'Environmental Protection Credit Management - Enterprise under Strict Environmental Protection Supervision (Rated - Red).'[5]

[3] (List of Second Batch iPad2 PCB Suppliers Confirmed, FP Display, Published: 2011-01-25.

[4] Based on publicly available information, this company is also a suspected supplier to: Sony, Panasonic, Hitachi, Canon, Motorola, Siemens, Sanyo and Samsung.

[5] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=602161 - A company under serious environmental supervision is said to be rated as "Red." By carrying out any of the following acts a company can be rated as under strict environmental supervision. 1. Pollutant discharge is seriously in breach of the authorized standards. Main wastewater and waste gas pollutants are more than double the allowed amounts, or the total pollutants discharged are more than twice the allowed limit. 2. Hazardous waste not entrusted to a qualified company for treatment and disposal. 3. The factory has received a notice to make a payment within a specified deadline but has not made a payment for discharge fees within that deadline. Been handed two or more administrative penalties or had two or more penalties enforced by a court of law. 4. Has had a large scale

In 2009, the Guangzhou Municipal Environmental Protection Bureau carried out a supervision order on the companies with environmental problems who were subject to public complaints and who directly polluted wastewater. The Guangzhou MEP Bureau also carried out supervision on the 169 companies needing focused regulation with both high energy consumption and high levels of pollution levels within seven industrial categories. Meiko Electronics (Guangzhou Nansha) Co., Ltd. was amongst these companies. Owing to the fact that it was a "state monitored key pollution source, with its wastewater discharge in breach of authorized standards and its provincial environmental protection credit having been rated as red", the company was listed as one of the seven "key violators needing special enforcement" and was required to finish all rectification work by November 30th, 2009.[6] [7]

On July 4th, 2009, there was a complaint made from a member of the public who reported that in Nansha District "in the evening or on rest days, one of the factories, I don't know which one, discharges emissions that have a smell that irritates the throat." The Nansha District Environmental Supervision Unit then carried out investigations into multiple enterprises operating in the Nansha area. The results of the investigations showed that at one time, Guangzhou Meiko "was directly discharging organic gases from three discharge outlets without using activated carbon absorption devices." The inspection results also showed that the Municipal Environmental Protection Bureau issued an administrative penalty to the company in July for having a generator producing exhaust gases that were in breach of the authorized standards.[8]

During media interviews in July 2009, the head of the Guangzhou Municipal Environmental Protection Bureau, Ding Hong, stated that "over a period of one and a half years, we inspected Meiko Electronics 29 times, and on 15 of those occasions we found their emissions discharge to be in breach of the authorized standards."[9]

On January 27th, 2010, the Guangdong Province Environmental Protection Department's Joint Supervisory Office convened a press conference to detail the provincial environmental problem supervision work for 2010. At the meeting 20 companies were listed for special enforcement supervision due to "secret or direct discharge of pollution, emissions that seriously exceeded authorized standards and acts relating to illegal construction projects, all with severity." Guangzhou Meiko's name was ranked at the top of the list.[10]

On June 4th, 2010, the program "Undercurrents" on CCTV2's regular Economics & Law segment exposed the specifics of Guangzhou Meiko Electronics' emissions discharge that exceeded the authorized standards, as well as how the company used an overflow outlet as a hidden discharge pipe to directly discharge polluted water.[11] During the investigation, this company repeatedly attempted to hide its violations from the Guangzhou Municipal Environmental Protection Bureau's inspection team by making false statements. However, the Guangzhou EPB staff saw through the tricks and penalized the company more than 10 times over the next few months of inspections.

---

or very large scale environmental pollution incident (not including those caused by natural disasters). 5. Found to have on two or more occasions secretly discharged, discharged through leakage or directly discharged pollutants. 6. Failure to report pollutant discharge that was then discovered by the EPB. 7. Received an administrative penalty from the EPB for conduct that resulted in environmental pollution.

[6] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=604850

[7] 'The Guangzhou Municipality 2009 List of Supervised Companies with Prominent Environmental Problems.' Guangzhou Municipal Environmental Protection Bureau Government Information Disclosure, 2009-07-08.

[8] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=604850

[9] Guangzhou Environmental Protection Bureau head gives a ruthless speech: Nanbo Plant Pollution Mishandling, Resignation. Yangcheng Evening Paper, 2009-07-08.

[10] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=613306

[11] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=613306

Figure 3: Overspill outlet adjusted over the pool

On April 12th, 2011, Guangdong Provincial Environmental Protection Department issued the "Publication of 2008 Assessment Results for the Key Pollution Sources Environmental Protection Credit Management Plan." The results of the assessment showed that Meiko Electronics (Guangzhou Nansha) Co., Ltd. was still rated as 'Yellow'[12] meaning that that their environmental problems had still not been completely resolved.

Case 2 – Wuhan Meiko Electronics:[13] Large Volumes of Wastewater Discharged into Surrounding Rivers and Lakes

After establishing their factory site in Guangzhou in 1998, Meiko Electronics decided in 2005 to establish another factory in the Wuhan Economic and Technological Development Zone (Zhuankou Development Zone) in Wuhan Municipality, Hubei Province. The factory, named Meiko Electronics (Wuhan) Co., Ltd., acted as a new PCB production base for the company on the Chinese mainland. The initial investment in this factory was considered to be US$ 80 million, with plans for final investment to reach a total of US$ 255 million, creating a large scale manufacturing base with an annual production value of US$ 400 million.

Both the volume of water used by the Meiko Electronics production line and the amount of wastewater discharged by the plant are very large. As the daily discharge volume of wastewater is expected to

[12] Companies with an environmental warning are said to be rated as "Yellow." By carrying out any of the following acts a company can be rated as having an environmental warning. 1. Pollutant discharge in breach of the authorized standards but not seriously over. Main wastewater or waste gas pollutants are less than double the amount allowed in the standards. The total volume of main pollutants discharged is less than double the amount allowed. The level of noise outside the factory boundary is over the authorized standards and is proving a nuisance for the local community. For a factory in an urban area if the level of noise is over the authorized standards then a warning can be issued. 2. Solid waste (not including hazardous waste) not treated and disposed of according to regulations. 3. The factory has received a notice to make a payment within a specified deadline but has not made a payment for discharge fees within that deadline. Been handed one administrative penalty or had one penalty enforced by a court of law. 4. Found to have on one occasion secretly discharged, discharged through leakage or directly discharged pollutants. 5. To have been found by the EPB to have misreported or concealed the discharge of pollutants. 6. Complaints from the general public have been confirmed by investigations yet the company has not taken any measures to make improvements. 7. The company has some sort of environmental violation and does not cooperate with the EPB's investigations resulting in pollution and harm to the economy or if they are exposed in the media.

[13] At the Meiko Group's largest production base in China, their main clients are Apple Inc., Motorola, Siemens, Samsung, Panasonic, Toshiba and Sony.

reach 12,000 tons after the company is built and reaches full operating capacity, and as the company's wastewater contains the heavy metals nickel and copper, local residents had misgivings about water pollution since the factory was first built.[14] For these reasons, the relevant departments set stringent regulations for this company's pollutant standards and required that after treatment, the wastewater from the company be piped and directly discharged into the Yangtze River instead of nearby lakes.

By consulting official information about this company we found that in 2005, there was information describing its advanced treatment processes and stringent treatment standards. Afterwards, we discovered that the relevant departments had pushed Meiko Electronics to discharge treated water into their neighbor, Chenming Paper Factory's, large discharge outlet, therefore reducing pollution emissions. We learned that the factory had a chlorine accident in April 2008 that led to the poisoning and hospitalization of 18 workers.[15] By February 2011, related documentation pointed out that as a company producing hazardous waste, this company did in fact fail to fully observe the rules of waste management and handling.[16]

Figure 4: Wuhan Meiko Electronics, Discharge Channel, Nantaizi Lake, Dongfeng Sluice Gate Google Earth Satellite Image

In order to further understand the discharge status, in April 2011, Friend's of Nature's Wuhan Branch and the Institute of Public & Environmental Affairs went to the Wuhan Meiko Electronics site. The lawyer Zeng Xiangbin, who is the person in charge of Friend's of Nature's Wuhan Branch, invited Zhang Zhilai, an ex-employee of Meiko Electronics and Wan Zhengyou, a Nantaizi Lake fish farmer to participate in the investigation.

[14] Wuhan Municipal Environmental Protection Bureau Report on the Situation Surrounding Meiko Electronics. Wu Huan (2005) No.42, Wuhan Municipal Environmental Protection Bureau Office, 2005-10-9.
[15] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=589859
[16] Hubei Provincial Environmental Protection Department Pollution Prevention Office; Concerning the 2010 Hazardous Waste Pollution Prevention Supervision Situation, Yi Huan Bao (2010) No. 31, February 15th, 2011.

To the eastern side of the Meiko Electronics factory and separated by a road and small green belt of land is a water channel about 150 meters in length that leads into Nantaizi Lake. Walking along the side of the drainage channel we were very startled to discover that the whole waterway was flowing with a milky white liquid. We rode in a small fishing boat out into Nantaizi Lake. The water in the lake was an ash grey color with white bubbles accompanying groups of black floating objects. The water carrying these objects then slowly flowed towards the most distant parts of the lake until they blended into a haze on the horizon. Nantaizi Lake is directly linked to the Yangtze River meaning the contaminated water will eventually feed into the Yangtze River.

Figure 5: On-site Investigation, Photo: Ma Jun

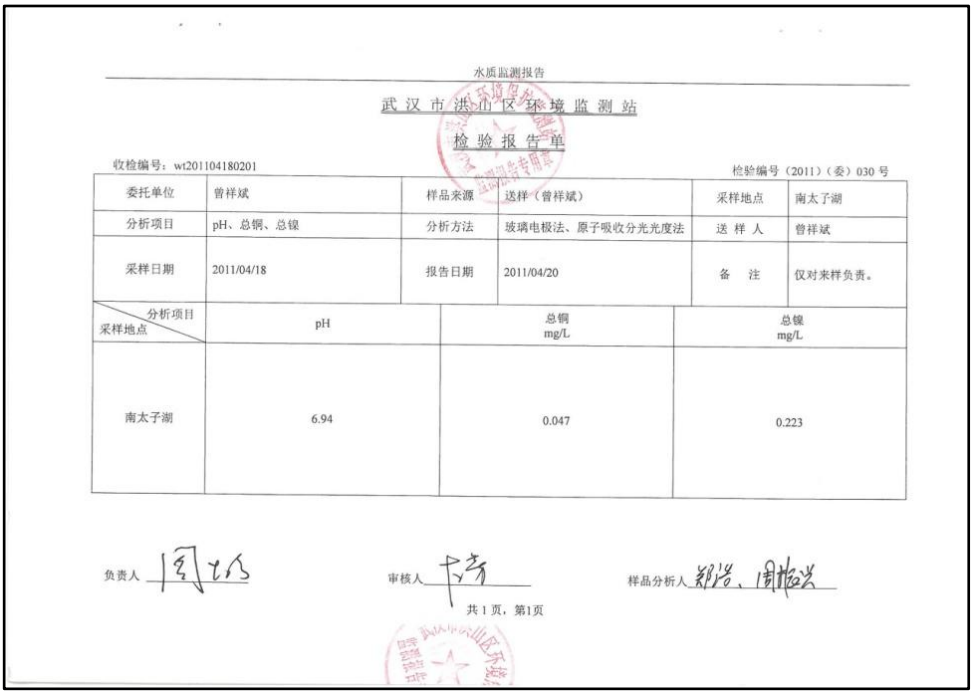
We turned around and rowed back towards the small drainage channel and found that the water around the channel's outlet was quite shallow revealing a small ash grey mudflat. Wan Zhengyou turned his oar in the water stirring up thick grey mud. On entering the small drainage channel, the color of the water changed from ash grey to a milky white, making it seem as if we were rowing on a river of milk. It was only each time an oar cut through the water that black mud was brought up to the surface and churned together with the milky white liquid.

About half way along the drainage channel was a concrete pillar where we discovered many different layers of green marks. The ex-employee from Wuhan Meiko Electronics, Zhang Zhilai, thought that these marks were very likely to have come from the green oil that is often used on printed circuit boards to create a green, solder resistant area on the board. Wan Zhengyou also told us that at night the volume of water being discharged is often much larger, so much so that it almost obscures the concrete pillars.

After paddling further along the drainage channel we came across a several meter wide culvert with a road passing overhead and even further on, the roof of Meiko Electronics could be seen in the distance. After just a few drops of rain landed, steam appeared out of the polluted milky water in the tunnel entrance and was blown over by the wind, bringing with it an acidic odor that made everyone want to cough. “Our generation drinks polluted water but the next generation will be drinking poisoned water” said Wan Zhengyou.

Figure 6: Leading to Nantaizi Lake Discharge Channel, Photo: Ma Jun

Figure 7: Discharge Channel’s Wastewater Sample Inspection Results



水质监测报告

武汉市洪山区环境监测站

检验报告单

收检编号：wt201104180201　　检验编号（2011）（委）030号

委托单位	曾祥斌	样品来源	送样（曾祥斌）	采样地点	南太子湖
分析项目	pH、总铜、总镍	分析方法	玻璃电极法、原子吸收分光光度法	送 样 人	曾祥斌
采样日期	2011/04/18	报告日期	2011/04/20	备　注	仅对来样负责。

分析项目 / 采样地点	pH	总铜 mg/L	总镍 mg/L
南太子湖	6.94	0.047	0.223

负责人　　审核人　　样品分析人 郑浩、周振芳

共1页，第1页

During the on-site investigation we took a sample of the milky white water in the drainage channel that ran into Nantaizi Lake. The sample was then sent to the Wuhan Municipal Hongshan District Environmental Protection Monitoring Station for testing to be carried out. The results of the testing showed that the water sample contained the heavy metals copper and nickel. The concentration of nickel in the sample was found to be 0.223mg/L, which was 11.15 times over the authorized standards limits of 0.02 mg/L[17] for centralized water designated to be a source of domestic drinking water or surface water.

In fact, in 2006, in order to remove the risk that the Chenming No.1 Factory's wastewater posed to the downstream Zhuankou drinking water source point, and to lighten the pollution load on Nantaizi Lake, the Wuhan Municipal Economic and Technological Development Zone Administrative Committee built a discharge pipe for the sole use of Chenming No.1 and No.2 Factories and Meiko Electronics. The production wastewater from these three factories was collected into one pipe and discharged directly to the Yangtze (downstream from the Zhuankou drinking water plant).

According to the Wuhan Municipal Environmental Protection Bureau, with regards to Meiko Electronics (Wuhan) Co., Ltd's second phase printed circuit board production line project environmental impact report approval, its "production wastewater (copper, nickel, cyanide, fluoride, degreasing agents contained in production wastewater as well as other cleaning and acidic wastewater) needed to be collected and treated separately, so as to reach the 'Comprehensive Wastewater Discharge Standard' (GB8978－1996) Table 1 and Table 4. Once the wastewater had reached the Level I standard it could then be discharged into the Yangtze river through dedicated drainage pipes."[18]

On December 9th, 2008, the Ministry of Water Resources Yangtze River Water Resources Commission also issued a document that required that the wastewater from the Meiko Electronics Factory wastewater treatment plant, after treatment that meant it reached the authorized standards, would be discharged through the pumping station, which the companies shall build, into the Yangtze river, along with treated wastewater from the No.1 and No.2 Chenming Paper Factories and the treated wastewater from the Wuhan Economic and Technological Development Zone wastewater treatment plant. The treated wastewater would then flow of its own accord through the Dongfeng sluice gate and into the Yangtze. Among the combined discharge the amount of treated wastewater from the Meiko Electronics factory wastewater treatment plant should not exceed 10,000 tons/day. [19]

We found the Chenming Paper Factory discharge outlet and saw a very thick metal pipe discharging torrents of brownish red wastewater into the river. A large amount of white foam was forming on the surface of the river and flowing on towards the Dongfeng sluice gate. After arriving at the Dongfeng sluice gate we saw that the wastewater and white foam were able to flow directly and unhindered straight into the Yangtze. An elderly keeper of the sluice gate told us that at night the wastewater foam discharge was much greater and it often had a stench that was so bad he was unable to sleep.

[17] Surface Water Environmental Quality Standard GB3838-2002, National Environmental Protection Bureau, National Quality Supervision Inspection Quarantine, Ratified: 2002-04-28.

[18] Wu Huan Guan (2007) No. 33, Municipal Environmental Protection Bureau, 'Regarding Meiko Electronics (Wuhan) Co., Ltd. PCB Production Line Phase II Construction Program EIA Report Approval, Wuhan Municipal Environmental Protection Bureau Office, Printed: July 27th, 2007.

[19] 'Regarding the Approval by Wuhan Municipal Economic and Technological Development Zone Pollutant Water Treatment Plant for the Installation of a Pollutant Discharge Outlet into the River.' License [2008] No. 169, Ministry of Water Resources Yangtze River Water Resources Committee, 2008-12-09.

Figure 8: Discharge Outlet Used by Meiko Electronics & Chenming Paper Companies, Photo: Ma Jun

On June 2nd, 2011, the lawyer from the Wuhan branch of Friend's of Nature, Zeng Xiangbin, and the Pony Testing Company got the test results from the sampled milky white water from the drainage channel leading to Nantaizi Lake. The results showed that the CODcr concentration was 192 mg/L, which is 4.8 times the Category V (40mg/L)[20] Environmental Surface Water Quality Standard. The copper content here is believed to be between 56-193 times the amount of copper found in the sediment in the middle reaches of the major lakes of the Yangtze River.

Considering that heavy metals do not degrade easily and actually accumulate, the Pony Testing Company was entrusted by the NGOs to carry out testing on a sample of sediment from the drainage channel and a sample at the point where the drainage channel flowed into Nantaizi Lake. The results showed that the amount of copper in the sample from the drainage channel contained 463mg of copper per Kg, and the sediment sample taken at the point where the drainage channel flowed into the lake contained 4270mg of copper per Kg.

[20] Surface Water Environmental Quality Standard GB 3838-2002, National Environmental Protection Bureau, National Quality Monitoring Inspection & Quarantine, Ratified: 2002-04-28.

Figure 9: Discharge Channel & Nantaizi Lake Sediment Sample Monitoring Results (Monitoring Body: Pony Testing Company, Time of Sampling June 3rd, 2011)

检 测 结 果
(Test Result)

报告编号(Report ID)：E06032048306D-048406D　　第 2 页，共 2 页 (page 2 of 2)

样品编号和名称 (Sample Number and Name)	检测项目 (Test Item)	检测结果 (Test Result)
E06032048306D 湖面（南太子湖）底泥	总铜，mg/kg	4.27×10^3
	总镍，mg/kg	26
E06032048406D 牛奶河沟底泥	总铜，mg/kg	463
	总镍，mg/kg	14
以下空白 (End of Report)	以下空白 (End of Report)	以下空白 (End of Report)

When considering that heavy metals have difficulty degrading and can actually accumulate, the Pony Testing Company, commissioned by the coalition, carried out further testing on samples of sediment taken from the drainage channel and the outlet of the drainage channel at the point at which it flows into Nantaizi Lake. The results of the testing showed that the sediment in the drainage channel contained 463mg of copper per Kg and the sediment at the point where the drainage channel flowed into Nantaizi Lake contained 4270mg copper per Kg.

By comparing the results of the testing with the NOAA Sediment Quality Standards[21] and Yangtze River Main Stream Sediment Quality Standard Levels, it is obvious that the levels of copper in the sediment in the drainage channel are unusually high, and the levels of copper in the sediment where the drainage channel flows into Nantaizi Lake are incredibly high.

[21] The NOAA Sediment Quality Standard (Effects Range Approach, ERA), is complied based on the data compilation of a large volume of chemical and biological effects. Currently it is internationally the most widely accepted method of developing sediment quality standards and is used by some Government departments as well as research bodies. Firstly, an introduction to this method by Long and Morgan, from the US National Oceanic and Atmospheric Administration (NOAA) national status and trend research project contents, sampling hundreds of locations, assessing the biological effect of sediment pollutant adsorption, testing the application of balanced allocation methods. Laboratory sediment biological analysis method and other types of methods to obtain the sediment quality standard statistics, there are different methods of observation and calculation for the chemical concentrations to push the biological effects to carry-out a classification sequence. To confirm the biological effect sequence as 10th percentile and 50th percentile therefore corresponding sediment pollutants content value is defined as (Effects Range-Low, ER-L), the 50th percentile therefore corresponding sediment pollutants content value is defined as (Effects Range-Median, ER-M), Quote from: Liu Cheng, Wang Zhaoyin, He Yun, Investigation into Water quality Standards of Sediment Deposition, Sediment Research, Phase II, April 2005.

Sample	Copper mg/Kg	Nickel mg/Kg
Nantaizi Lake Sediment	4270	26
Drainage Channel Sediment	463	14
NOAA Sediment Quality Standard ERL Values[22]	34	20.9
NOAA Sediment Quality Standards ERM Values	270	51.6
Yangtze River Sediment Quality Standards Level I[23]	35	35
Yangtze River Sediment Quality Standards Level II	65	55
Yangtze River Sediment Quality Standards Level III	150	75
Yangtze River Sediment Quality Standards Level IV	250	100

Figure 10: Comparison of Sediment Inspection Results & Standards

The NOAA Sediment Quality Standards are set to two limit values, ERL (Effects Range-Low) and ERM (Effects Range-Median) where the ERL value represents a "low" toxicity effect and the ERM value represents a "medium" toxicity effect. When the content of heavy metals in the sediment is less than the ERL value then the probability of producing negative effects (toxicity impact) is less than 10%. If the content of heavy metals in the sediment exceeds the ERL value but is below the ERM value then the probability of producing toxicity effect increases to 20-30%. If the heavy metals content in the sediment exceeds the ERM value then the chances of producing toxic effect increases to between 60-90%.[24]

According to the results of the testing carried out by the Pony Testing Company, the sediment from the drainage channel near Meiko Electronics and the sediment in Nantaizi Lake had amounts of copper in them that far exceeded the NOAA Sediment Quality Standard ERM Values, meaning that the possibility of producing harmful toxicity effects is very large.

On June 2nd, 2011, the lawyer from Friends of Nature, Zeng Xiangbin, led the Pony Testing Company to carry out testing at the Dongfeng sluice gate where the combined outlet from Meiko Electronics and Chenming Paper Factory discharges wastewater. They discovered that the CODcr was as much as 186mg/L and the concentration of the heavy metal nickel was as much as 0.013mg/L. Even though the wastewater was heavily diluted by the nickel free water being discharged from the Chenming Paper Factory, the total concentration of nickel was 3.25 times higher than the predicted amount.[25]

[22] Sediment Quality Guidelines developed for the National Status and Trends Program
[23] Liu Cheng, Wang Zhaoyin, He Yun, Investigation into Water quality Standards of Sediment Deposition, Sediment Research, 2005.
[24] Yu Guo'an, Wang Zhaoyin, Liu Cheng, Huang Wendian, Investigation on Sediment Quality in the Middle Yangtze River, Sediment Research, 2007.

[25] Based on the 'Wuhan Municipal Environmental Protection Bureau Report Regarding the Situation of Meiko Electronics' Program," Wu Huan (2005) No.42, the Meiko Company decided to use a complete set of advanced environmental protection technology, tools and equipment all imported from one of Japan's leading environmental protection companies ,the Ebara Company. The wastewater estimations are below: **Meiko Electronics' Wuhan Plant Primary Pollutant Discharge Chart (Unit: mg/l)**

Based on there being 300 working days per year, by taking the concentrations in the samples and the volume of water being discharged at this outlet per day (Chenming Paper Factory No. 1 - 50,000 tons/day, Chenming Paper Factory No.2 – 10,000 tons/day, Meiko Electronics – 10,000 tons/day)[26] it was possible to work out that the amount of nickel discharged per year could be as much as 0.017 tons,[27] [28] 16.06 times the amount permitted.

On August 25th, 2011, we sent a corporate environmental conduct letter to Meiko Electronics inquiring about the company's environmental management. As of August 30th, 2011, we have yet to receive any kind of response from the company.

Section 2 - Causing Direct Harm to the Community

The large quantities of discharge from Apple's supply chain, not only causes serious environmental pollution but even causes direct harm to the health and safety of the public. Through investigations, we discovered many supplier companies to Apple that have been subject to public complaints.

Case 3 - Kaedar Electronics & Unimicron Electronics: Affected Citizens Kneel & Ask for Help

The company Kaedar Electronics (Kunshan) Co., Ltd. (*hereinafter referred to as* Kaedar Electronics) is located in Kunshan, Jiangsu Province. We came to know of Apple's relationship with this company through a commercial bribery scandal.[29] [30]

This company holds a 2006 pollution record in the Pollution Map Database. This record shows Kaedar Electronics as having "extended operations without authorization and excessive external discharge of untreated wastewater." The Kunshan Municipal Environmental Protection Bureau "ordered a halt to the production on the extended production line and issued a 100,000 RMB financial penalty."[31]

	Total Copper	Nickel	Total Cyanide	Pollutant Water Treatment Unit
Guangzhou Plant (Measured)	0.43	0.10	0.079	SEECO (Guangzhou)
Wuhan Plant (Estimated)	0.24	0.004	0.0027	Ebara (Japan)
Discharge Standard	0.5	1.0	0.5	---
Surface Water Environmental Quality Standard	1.0	---	0.2 -	---
Domestic Drinking Water Hygiene Standard	1.0	---	0.05	---

[26] Wu Huan Guan (2009) No. 101, Wuhan Municipal Environmental Protection Bureau Report Regarding the Situation of the Development of Key Cases After Supervision Work, November 5th, 2009.

[27] On July 22nd, 2011, The IPE contacted the Wuhan Municipal Environmental Protection Bureau regarding the annual permitted volume of copper and nickel pollutant discharge for Meiko Electronics (Wuhan) Co., Ltd. Based on the response from the Wuhan Environmental Protection Bureau on August 12th 2011 the permitted pollutant discharge volume for Meiko Electronics (Wuhan) Co., Ltd. was set at; Copper 0.91 tons and Nickel 0.017 tons per annum.

[28] Wuhan Municipal Environmental Protection Bureau, Regarding Meiko Electronics (Wuhan) Co., Ltd. Environment Impact Assessment for the Annual production of 2.4 million m^2 of printed circuit boards and 3.6 million m^2 of base boards. Wu Huan Guan (2005) No.43, Wuhan Municipal Environmental Protection Bureau Office, August 29th, 2011.
Wu Huan Guan (2007) No.33 Municipal Environmental Protection Bureau Regarding Meiko Electronics (Wuhan) Co., Ltd. Printed Circuit Board Production Line Phase II Construction Project Environmental Impact Assessment Report Approval, Wuhan Municipal Environmental Protection Bureau Office, July 27th, 2007.

[29] August 13th, 2010, a mid-level management employee at the US Apple Inc. was sued for providing kickbacks to six Asian suppliers to Apple accessory suppliers, National Business News, 2010-8-18. The suppliers involved include Kaedar Electronics Co., Ltd. located at Suzhou. Kaedar Electronics parent company is the listed company Pegatron Corporation from Taiwan. The company's media spokesperson Lin Qiutan verified this by saying: "The person responsible has already been suspended and we are undertaking follow-up investigations."

[30] Based on publicly available materials, this company at the same time is a suspected supplier to Toshiba, HP, Dell and Lenovo.

[31] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=627963

On June 3rd, 2011, the 'Kunshan Municipal 2010 Industrial Enterprises Environmental Conduct Rating Notice Publication' was released; stating that Kaedar Electronics had been rated as a 'yellow company,'[32] which means that "even though the pollutant discharge was within the national standards it had exceeded the total volume control targets or some other violation had taken place."[33]

Kunshan Unimicron Electronic Co., Ltd. (*hereinafter referred to as* Unimicron Electronics) is also located in Kunshan, Jiangsu Province. According to publicly available information, this company serves as the Kunshan production base for Taiwan's Unimicron Group,[34] and Unimicron is a suspected PCB supplier to Apple Inc.[35]

Unimicron Electronics holds a 2005 record in the Pollution Map Database and was rated as a 'red company,'[36] which means that "even though efforts were made to control pollution, the pollutant discharge still had not reached the national pollutant control standards, or a major pollution incident had taken place, or the company had a compliance rate of more than 50% and less than 80%.[37] In 2007, this company was rated as a yellow company,[38] which means that "even though the pollutant discharge was within the national standards it had exceeded the total volume control targets or some other violation had taken place."[39]

Figure 11: A Google Earth Satellite Image of Kaedar and Unimicron and the Local Communities.

[32] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=662894
[33] Notice on Matters Relating to the Implementation of Industrial Enterprises Environmental Behavior Information Disclosure Systems. Kun Huan (2001) No.33, Kunshan Municipality Environmental Protection Bureau, 2007-03-22.
[34] Regarding Xinxing Production Base: http://www.unimicron.com/about07.htm#07
[35] Based on publicly available information, this company is also a suspected supplier to Nokia
[36] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=600241
[37] Notice on Matters Relating to the Implementation of Industrial Enterprises Environmental Behavior Information Disclosure Systems. Kun Huan (2001) No.33, Kunshan Municipality Environmental Protection Bureau, 2007-03-22.
[38] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=592306
[39] Notice on Matters Relating to the Implementation of Industrial Enterprises Environmental Behavior Information Disclosure Systems. Kun Huan (2001) No.33, Kunshan Municipality Environmental Protection Bureau, 2007-03-22.

While further searching the related data, we came across many public complaints in online forums which were directed towards these two companies. This information stated that since 2006, the residents have been constantly subjected to the effects of the company's emissions, wastewater and noise levels; especially the spray coating emissions from Kaedar Electronics and the acid gas emissions from Unimicron Electronics. Many of those who complained worry about the impact on the health of their children, with some residents noting that they had already sent their children to stay elsewhere. In these forums, some people had mentioned they had reported this matter many times.

Within this Kunshan forum some of the residents had reported the problem many times. In amongst the comments we came across an official response posted by a forum user saying, "You have reported the pollution problems of Kaedar Electronics (Kunshan) Co., Ltd. and Kunshan Unimicron Electronic Co., Ltd. to the open mailbox of the provincial party secretary, the head of our department places much importance on this, on one hand we have instructed the Suzhou Municipal Environmental Protection Bureau to handle the investigations, and on the other hand we have arranged for the personnel from the relevant departments to undertake supervision.[40]

According to the response, Kaedar Electronics' main product is the outer casing and interior of notebook computers, their emissions mainly come from the spraying part of the production process and the noise is mainly produced by fans and the cooling towers. Unimicron Electronic Co., Ltd. has three phases of construction and a gold plating production line, with acid gas and dust as its main waste gas emission.

According to the response, Kaedar Electronics and Unimicron Electronics have both constructed treatment facilities. By looking at the results from the ordinary, non-scheduled monitoring we can see that the emissions for both companies are within the level 2 standard of the 'Atmospheric Pollutant Comprehensive Discharge Standards.' The factory noise at Kaedar Electronics was also within the third category standard of the 'Factory Noise Standards for Industrial Enterprises.'

But the response also said that "through holding many on-site inspections, Kunshan Municipal Environmental Protection Bureau discovered that because the factory was rather close to a residential area, even if the factory's emissions and noise were within the authorized standards, they were bound to have an effect on the surrounding environment. For these reasons, the Kunshan Municipal Environmental Protection Bureau required that the two factories, based on the fact that they already meet the discharge standards, should make further improvements to their pollution control facilities so as to reduce the affect on the surrounding area. Meanwhile the EPB has also proposed that Kunshan Municipal Government devise a plan for the two companies to be relocated."

On April 19th, 2011, Nanjing Green Stone's Li Chunhua and two staff members at the Institute of Public & Environmental Affairs carried out an investigation at the Wangfang Shui'an Community, the place where the online complaints were concentrated. From the investigation, a group of residents gave an account of the annoyance caused by the last 6 years of waste gas discharge at Kaedar Electronics and Unimicron Electronics. According to the residents, the "poisonous gas" that is sometimes discharged

[40] After seeing the post on the Kunshan Forum, the coalition made checks on the situation through the Jiangsu Provincial Government website's "Provincial Party Secretary Mailbox." This column includes the sections "view letters" and "selected letters." However the "selected letters" column was empty and in order to view the selected letters you need to enter a "serial number" and "query password."The responses to these letters are not open to the general public.

from these companies mean they do not dare open their windows, otherwise they will wake in the middle of the night choking.

We found many residents concerned about the emission's health impact on their children. During on-site investigations we came across a young boy who is a student at the community's kindergarten. The boy, named Tong Haiyi, aged eight years old, accompanied by his mother, led us to the outer northern wall of Wangfang Shui'an community. It was then that we saw that Kaedar Electronics and the kindergarten were only separated by an iron fence. With a gust of wind came the offensive odor.

It was at the side of this company and his kindergarten that Tong Haiyi pulled on his mother's hand and said, "Sometimes when I come back home and I'm studying, I have chest pains, and when you come to fetch me, I feel really dizzy. Sometimes there is a really strange smell at school." His mother told us he often has headaches, dizziness and frequent nose bleeds, which makes her very concerned.

Ms. Mei, who was the first to raise complaints in 2006, also came with us. She had started complaining because she was pregnant at that time and was especially worried about the effects the emissions from Kaedar Electronics would have on her child. Subsequently, her complaints came to no avail as Kaedar Electronics' pollution stayed the same. In order to protect her son's health, she had no option but to send him to be raised at her parent's home. Therefore she had no other choice but to endure long periods of separation from her child.

At this time, the Villagers from the neighboring, Unit 8 of Tongxin village, came over to vent their anger about the grave impact Kaedar Electronics and Unimicron Electronics has had on their lives; they also wanted us to go with them to have a look at their village. Leaving the community and by-passing Kaedar, the villagers took us to a small bridge. Below the bridge ran a small stream, with their village, populated by around twenty families, on its banks. The factories were very close to the village. "This is Kaedar Electronics," said one of the villagers, pointing at a large factory building. On the other side of the river there were two more factories, which according to accounts from the villagers, were also electronics factories.

According to the villagers' comments, Tongxin village was a once a prosperous model village. Ten years previously Kaedar Electronics constructed their plant, occupying the arable land and giving the villagers very low compensation. According to the villagers, in these ten years, the village's stream that once had relatively clean water has now turned inky black. In the past few years, these electronics companies have been discharging wastewater and emitting waste gases, along with noise pollution. Over the ten year period, many people have fallen sick, with a sharp increase in the village's cancer rates. The villagers had hoped to take this matter up with the factory, but they could not find a means to do so. They have reported the problems to the local government but the company seems to very quickly become aware of this and so before someone goes to carry out monitoring at the factory, the smell often disappears.

During the investigation, the villagers spontaneously took water from the stream, pouring the water into a plastic bottle. Suffering from gastric cancer, Zhu Guifen, who has already had her stomach removed due to cancer, clutched a plastic bottle; along with more than ten middle-aged villagers they assembled in front of us. At that time, we were astonished by the scene in front of our camera. These

ladies, with an average age of 55 suddenly and simultaneously fell to their knees, clutching the bottle of polluted water and pleaded “We beg you, help us! Help us ordinary people!”

Figure 12: During the investigation the villagers suddenly dropped to their knees and asked for help. Photo: Wang Jingjing

Afterwards, the Tongxin village residents provided us with a statistical chart of local residents with cancer. At the end of May 2011, we again visited Tongxin village, specifically to verify the situation of cancer patients. We found that since 2007, from just the No.8 section of Tongxin Village, the number of people who have suffered from cancer or died from cancer was more than nine, and the total population of the section of the village was less than 60.

江苏省昆山市同心社区娄下村癌症患者情况

组	姓名	性别	死亡时间	年龄
8	朱老虎	男	肝癌2000年亡	52岁
11	胡其华	男	肝癌2003年亡	45岁
10	唐卫明	男	肝癌2006年亡	49岁
11	朱荣林	男	胃癌2007年亡	78岁
8	朱金荣	男	前列腺癌2008年亡	81岁
8	陈瑞龙	男	胃癌2008年亡	62岁
8	金炳坤	男	肝癌2009年亡	84岁
8	金卫生	男	肝癌有关2009年亡	86岁
8	陈金囡	女	肝癌2009年亡	81岁
8	唐阿小	男	肠癌转肝2010年亡	67岁
11	朱菊林	男	乙肝恶变2010年亡	47岁

组	姓名	性别	康复期	年龄
10	唐阿素	女	2005年鼻癌切除	59岁
10	施明	男	2008年肝移植手术	56岁
11	朱康英	女	2009年淋巴癌切放化疗	59岁
11	胡金花	女	2008年奶癌切除化疗	51岁
11	朱卫康	男	2009年胃全切放疗	67岁
8	冯杏仙	女	2009年胃癌大部分切除化疗	62岁
8	金永林	男	2007年眼癌切除（毫米癌）	65岁
8	朱桂芬	女	2011年胃癌摘除（毫米癌）	63岁
11	朱言元	男	2011年胃癌大部切除在化疗中	50岁

娄下村70年代初只有陈瑞英一人癌症死亡，工作单位是县政府伙夫，病故时才50多岁。

Figure 13: Cancer Situation of Tongxin Community, Louxia Village, Kunshan City.

Cancer Situation of Tongxin Community, Louxia Village, Kunshan City, Jiangsu Province

Group	Name	Gender	Illness	Diagnosis/ Death	Age
8	Zhu Laohu	Male	Liver cancer, Death	2000	52
11	Hu Jihua	Male	Liver cancer, Death	2003	45
10	Tang Weiming	Male	Liver cancer, Death	2006	49
11	Zhu Dinglin	Male	Stomach cancer, Death	2007	78
8	Zhu Jinrong	Male	Prostate cancer, Death	2008	81
8	Chen Ruilong	Male	Stomach cancer, Death	2008	62
8	Jin Bingkun	Male	Liver cancer, Death	2009	84
8	Jin Weisheng	Male	Liver cancer related, Death	2009	86
8	Chen Jinnan	Female	Liver cancer, Death	2009	81
8	Tang Axiao	Male	Intestinal cancer which moved to the liver, Death	2010	67
11	Zhu Julin	Male	Malignant hepatitis B, Death	2010	47
10	Tang Asu	Female	Nasal cancer surgical removal	2005	59
10	Shi Ming	Male	Liver transplant	2008	56
11	Zhu Kangying	Female	Lymphoma removal, Chemotherapy	2009	59
11	Hu Jinhua	Female	Breast cancer removal, Chemotherapy	2008	51
11	Zhu Weikang	Male	Full stomach removal, Radiotherapy	2009	67
8	Feng Xingxian	Female	Stomach cancer - large part surgically removed, chemotherapy	2009	62
8	Jin Yonglin	Male	Eye cancer surgical removal (Multiple myeloma)	2007	65
8	Zhu Guifen	Female	Stomach cancer removal (Multiple myeloma)	2011	63
11	Zhu Yanyuan	Male	Stomach cancer - large part surgically removed	2011	50

In the 1970's, only one person, Chen Ruiying died from cancer. Mr. Chen was a mess cook for the County Government and died in his early fifties.

On July 11th, 2011, two staff members from the Green Stone Environmental Action Network along with a volunteer, set out for Tongxin village in Kunshan to carry out investigations. Under the bridge that passes over the river at the back of the village, the investigators discovered a pollution discharge pipe placed above the surface of the water, polluted water was constantly flowing from the pipe mouth. The villagers believed this polluted water discharge pipe belonged to Unimicron Electronics.

On August 25th-26th, we learned of the circumstances surrounding both Kaedar Electronics and Unimicron Electronics. We queried whether or not there were any plans for the companies to relocate or if any preparations had been made, whether or not this was because of exceeding wastewater standards, for violating discharge limits and being subjected to financial penalties. We wondered if they understood the complaints of the local residents and if they were willing to communicate with the community regarding their complaints. We demand this company explain all of their discharged wastewater and emissions, the main components in their pollutant and release their annual discharge volumes.

We sent a letter to Unimicron Electronics on August 25th, 2011. As of August 30th, 2011, we have not received a response from this company. Kaedar Electronics refused to accept the reminder letter from the NGOs that was attempted to be sent by fax on many occasions.

Case 4 – Foxconn Taiyuan: Repeated Complaints by Residents on Pollution Emissions

Foxconn Technology Co., Ltd. is located at Foxconn Industrial Park, No. 23 Dianzi Street, Xiaodian District, Taiyuan city and is mainly engaged in the production and processing of components for mobile phones and notebook computers. Within this park, four production projects have been constructed, respectively; magnesium alloy 3C electronic mechanism surface treatment project; magnesium alloy 3C electronic mechanism surface treatment extension project; 24,000,000 set mobile phone components engineering project, 3C production supporting set radiator series product fabrication extension engineering project.

Figure 14: Google Earth Satellite image of Foxconn (Taiyuan) and the residential area Hengda Oasis.

From 2009, the local residents started to react online to the pollution problems at Foxconn. On August 8th, 2010, the Shanxi Province Environmental Protection Bureau on their website section "Environmental Administrative Penalty > List of Companies with Supervision & Environmental Problems" published the 'Investigative Report into the handling of the Environmental Petitions to Foxconn Technology Co., Ltd. regarding Emissions Pollution."

According to this document, the Taiyuan City Environmental Protection Bureau, along with the Economic Zone Environmental Protection Bureau, carried out on-site investigations for legal compliance. After doing a complete search for pollutant sources, it was ultimately confirmed that: "The reasons for the creation of the atmospheric pollution were the exhausts from the paint workshop and the oil vapor produced by cutting in the machine workshop had been discharged outside."[41]

Focusing on the above mentioned issues, the Taiyuan City Environmental Protection Bureau made these demands on the company:

1. Monitoring of ambient air in the surrounding residential areas should be carried out as soon as possible.
2. Up-grading improvements should be made to the paint workshop emissions treatment facilities and volume of discharge should be reduced as much as possible, by December 2010.
3. Tests should be performed on the oil vapor produced during cutting in the workshop before September 2010. When the results are released the best course of action should then be decided upon.
4. Monitoring of pollutants produced at every discharge outlet should be carried out in accordance with national regulations.

This document clearly set a deadline of December 2010 for this company to complete the up-grade improvements of the paint workshop emissions treatment facilities. However, as of July 2011, when we talked to local residents, the response we received was that the emissions were still a nuisance, with some residents responding saying that the suffocating gases had caused them headaches and nausea. Some residents expressed special concern regarding the possible damage to their children's health.

On June 21st, 2011, Ms. Chen, Mr. Guo and Mr. Peng, along with seven residents from the Hengda Oasis community in Taiyuan City contacted the "Government and Administrative Hotline," they had complained that the irritant gases discharged by Foxconn often left the nearby residents with irritated nasal passageways, watering eyes and sometimes it was difficult for them to open their windows, due to the intensity of the pollution.[42]

The Taiyuan Municipal Monitoring Station found that the smell causing this public reaction was mainly due to the acidic gasses from the production processes, while the fumes from painting and the oil vapor from production processes combined together made these gases irritant. Although the testing that followed did not find any instances of standards being breached, the Shanxi Provincial

[41] The document went on stating: "However, during the on-site checks, all areas of the painting workshop had been fitted with emissions cleaning equipment and were running normally and there had been no requirements mentioned in the environmental impact assessment report to do with the mist odor from oil vapor produced by cutting."

[42] Provincial Environmental Protection Department "Government and Administrative Hotline" Feedback Page, Shanxi Shiting Wang, 2011-07-20

Environmental Supervision Team Commissioner Xu Rongmin disclosed that, "During the period when the Foxconn Group had not correctly nor steadily used the pollution control facilities, the Taiyuan Municipal Environmental Protection Bureau had also subjected the company to a penalty each time a violation was discovered."

On July 20th, 2011, while participating in the "Government and Administrative Hotline" process, Shanxi Provincial Environmental Supervision Team Commissioner Xu Rongmin stated:[43] On the afternoon of July, 5th, 2011, the Taiyuan Municipal Environmental Protection Bureau together with the economic zone's Administrative Committee held a meeting with the persons responsible for this issue within Foxconn in order to co-ordinate how to deal with the company's irritant odors. The company was required to immediately adopt measures to control their pollution discharge and to fundamentally resolve the disturbing production process gas issue.

According to Commissioner Xu's briefing on July 6th, Foxconn should have adopted several measures in accordance with the requirements from the negotiations. However, over a three day period beginning on July 9th, the Taiyuan Municipal 12369 reporting hotline received 11 complaints regarding the irritant odor. It was for this reason that on July 11th, the Municipal Environmental Protection Bureau and the Development Zone Administrative Committee urgently issued a letter regarding the appropriate treatment of complaint cases regarding the Foxconn Group's irritant gases. The letter required the Economic Development Zone Administrative Committee to adopt the following measures:

1. Immediately control the company's irritant odor discharge.
2. Strengthen the company's supervision management and at all times to monitor the pollutant data, ensuring that all pollution prevention facilities are operating steadily, so that pollutant discharge is stable. Resolutely put an end to the phenomenon of discharge standards being breached. Guarantee that the local residents have a normal life.
3. Take measures to communicate and co-ordinate with the surrounding residents so as to avoid other adverse effects of production.

According to our understanding, Foxconn has already halted production of the entire C Zone painting line which is close to the Hengda Oasis community, and has also stopped using the equipment where oil vapor collecting and separation devices were not installed or where the equipments' collecting results were poor.

From Commissioner Xu's briefing, on July 15th, the Environmental Protection Department convened a special conference that agreed that the environmental monitoring station will continue to organize all aspects of monitoring for Foxconn's pollutant sources. The supervision team was required to hand down decisions on rectifications to be carried out during a set time limit. During the time limit the company was given to carry out rectification work, the Economic Development Zone EPB was given the task of carrying out daily on-site monitoring. At the same time the construction unit was given the task of carrying out a final environmental impact assessment.

On August 25th, 2011, we sent a corporate environmental conduct letter to Foxconn Technology

[43] Provincial Environmental Protection Department "Government and Administrative Hotline" Feedback Page, Shanxi Shiting Wang, 2011-07-20

inquiring about the company's environmental management. As of August 30th, 2011, we have yet to receive any kind of response from the company.

Section 3 - Huge Amounts of Hazardous Waste Leaves Hidden Dangers for China

In August 2010, we raised with Apple a problem concerning one of its suspected suppliers. The company was Lianjian (China) Technology Co., Ltd. (Wintek) and the problem was that Suzhou Environmental Protection Bureau had given them an 80,000 RMB administrative penalty, due to the fact that in September 2009, "they had not adopted the appropriate measures which had resulted in hazardous waste run-off and had failed to fill out a hazardous waste transport manifest." In the January 2011, report "The Other Side of Apple," we again raised these problems.

After a long wait, apart from a reply from Apple in November 2010, stating that "our long term policy is to not disclose any of our suppliers," the coalition has not received any sort of reply from Apple regarding this issue.

The reason that hazardous waste is given so much attention by environmental protection organizations is that it can be extremely poisonous for humans and can also have a serious effect on the natural environment. Former Executive Chairman of the United Nations Environment Programme, Dr. Tolba, has pointed out that "nuclear war, poverty, population issues, the misuse of energy and hazardous waste are the five biggest threats to mankind." Dr. Tolba's successor, Mrs. Dowdeswell, also pointed out that "dealing with hazardous waste is one of the most difficult problems that the world has to face."[44]

The definition of hazardous waste in "The People's Republic of China Solid Waste Pollution Prevention Law," is "waste included on the national directory of hazardous waste, or the sort of waste identified as having a hazardous nature according to nationally regulated waste distinguishing standards and methods. In research studies, hazardous waste is defined as any waste that has dangerous toxic (such as acute toxicity, slow effect toxicity and ecological toxicity), explosive, corrosive, infectious, or reactive characteristics."[45]

Faced with Apple Inc's silence, the coalition carried out a more in depth investigation into the hazardous waste situation in the IT industry, and especially Apple's suppliers. During the investigation we found that the manufacturing of electronic goods involves etching, electroplating, spray-coating, injection molding and welding production processes. These production processes, apart from producing a large amount of wastewater containing heavy metals and cyanide, waste gases containing VOCs and tin and lead fumes, also produce hazardous waste containing waste acids, waste alkalis, etching fluid, electroplating fluid, and waste sludge produced during the wastewater treatment process that contains heavy metals.

By looking at the amounts of hazardous waste produced by groups of companies contained in the *Pollution Map Database*, we discovered that the IT industry was one of the groups that produced the most hazardous waste. In amongst these companies we found that Apple's suspected suppliers,

[44] Liu Haiying, An Approach to Hazardous Waste Treatment/Disposal and Management Measures in Shanghai, Shanghai Environmental Sciences, 2010.
[45] Liu Haiying, An Approach to Hazardous Waste Treatment/Disposal and Management Measures in Shanghai, Shanghai Environmental Sciences, 2010.

including Tripod (Wuxi) Technology Corporation Co., Ltd., Boardtek Computer (Suzhou) Co., Ltd., Nan Ya Printed Circuit Board (Kunshan) Corporation, Hongfujin Precision Industry (Shenzhen) Co., Ltd., Shenzhen Fu Tai Hong Precision Industry Co., Ltd., Lianneng Technology (Shenzhen) Co., Ltd., Compeq Manufacturing (Huizhou) Co., Ltd., Changshu Plant of Gold Circuit Electronics were producing very large amounts of hazardous waste.

The table below shows the amount of hazardous waste produced by Apple's suspected suppliers in 2007, 2008, 2009 and 2010.

Figure 15: Apple Supplier's Hazardous Waste Production Situation

Name of Company	Amount of Hazardous Waste Produced (Tons)			
	2007	2008	2009	2010
Tripod (Wuxi) Technology Corporation[46]	——	61960	58266	112653
Changshu Plant of Gold Circuit Electronics[47]	10840	19038	15265.4	12583
Nan Ya Printed Circuit Board (Kunshan) Corporation[48]	16087	17449	18470.75	21098
Boardtek Computer (Suzhou) Co., Ltd.[49]	——	19796	29274.55	30984
COMPEQ Manufacturing (Huizhou) Co., Ltd.[50]	11113.18	17675.49	15818.21	——
Lianneng Technology (Shenzhen) Co., Ltd.[51]	20956	15099.48	14746.83	——
Lianneng Technology (Shenzhen) Co., Ltd. No.2 Factory[52]	11960.00	——	——	——
Hong Fujin Precision Industry (Shenzhen) Co., Ltd.[53]	19156	12316.56	12308.31	18629.51
Shenzhen Fu Tai Hong Precision Industry Co., Ltd.[54]	8870.4	——	16187.04	14983.94
Dongguang Shengyi Electronics Co., Ltd.[55]	1500	7596.34	7831.98	——
Ibiden Electronics (Beijing) Co., Ltd.[56]	——	8000	——	8000
Kunshan Unimicron Electronics Co., Ltd.[57]	——	7889.47	7379	7381
Hong Qun Sheng Precision Electronics (Yingkou) Co., Ltd. [58]	——	——	6638.88	——
Hongqisheng Precision Electronics (Qinhuangdao) Co., Ltd[59]				3175
Hong Fujin Precision Industry (Taiyuan) Co., Ltd.[60]	704	1597	442	1116.27

[46] Refer to: 2008 http://www.ipe.org.cn/pollution/s_detail.aspx?id=8655, 2009 http://www.ipe.org.cn/pollution/s_detail.aspx?id=4370, 2010 http://www.ipe.org.cn/pollution/s_detail.aspx?id=10550,

[47] Refer to: 2007 http://www.ipe.org.cn/pollution/s_detail.aspx?id=8628, 2008 http://www.ipe.org.cn/pollution/s_detail.aspx?id=4353, 2009 http://www.ipe.org.cn/pollution/s_detail.aspx?id=4364, 2010 http://www.ipe.org.cn/pollution/s_detail.aspx?id=11467,

[48] Refer to: 2007 http://www.ipe.org.cn/pollution/s_detail.aspx?id=8620, 2008 http://www.ipe.org.cn/pollution/s_detail.aspx?id=4354, 2009 http://www.ipe.org.cn/pollution/s_detail.aspx?id=4361, 2010 http://www.ipe.org.cn/pollution/s_detail.aspx?id=11466,

[49] Refer to: 2008 http://www.ipe.org.cn/polution/s_detail.aspx?id=4352, 2009 http://www.ipe.org.cn/pollution/s_detail.aspx?id=4360, 2010 http://www.ipe.org.cn/pollution/s_detail.aspx?id=11464,

[50] Refer to: 2007 http://www.ipe.org.cn/pollution/s_detail.aspx?id=8826, 2008 http://www.ipe.org.cn/pollution/s_detail.aspx?id=9593, 2009 http://www.ipe.org.cn/pollution/s_detail.aspx?id=4839,

[51] Refer to: 2007 http://www.ipe.org.cn/pollution/s_detail.aspx?id=7739, 2008 http://www.ipe.org.cn/pollution/s_detail.aspx?id=7750, 2009 http://www.ipe.org.cn/pollution/s_detail.aspx?id=4560,

[52] Refer to: 2007 http://www.ipe.org.cn/pollution/s_detail.aspx?id=8033,

[53] Refer to: 2007 http://www.ipe.org.cn/pollution/s_detail.aspx?id=7741, 2008 http://www.ipe.org.cn/pollution/s_detail.aspx?id=7752, 2009 http://www.ipe.org.cn/pollution/s_detail.aspx?id=7760, 2010 http://www.ipe.org.cn/pollution/s_detail.aspx?id=11311,

[54] Refer to: 2007 http://www.ipe.org.cn/pollution/s_detail.aspx?id=8035, 2009 http://www.ipe.org.cn/pollution/s_detail.aspx?id=7758, 2010 http://www.ipe.org.cn/pollution/s_detail.aspx?id=11313,

[55] Refer to: 2007 http://www.ipe.org.cn/pollution/s_detail.aspx?id=6946, 2008 http://www.ipe.org.cn/pollution/s_detail.aspx?id=6998, 2009 http://www.ipe.org.cn/pollution/s_detail.aspx?id=7011,

[56] Refer to: 2008 http://www.ipe.org.cn/pollution/s_detail.aspx?id=5631, 2010 http://www.ipe.org.cn/pollution/s_detail.aspx?id=11836, 2010 record's corresponding name is：捷斐电子（北京）有限公司,

[57] Refer to: 2008 http://www.ipe.org.cn/pollution/s_detail.aspx?id=11834 2009 http://www.ipe.org.cn/pollution/s_detail.aspx?id=11835, 2010 http://www.ipe.org.cn/pollution/s_detail.aspx?id=11504,

[58] Refer to: 2009 http://www.ipe.org.cn/pollution/s_detail.aspx?id=10873,

[59] Refer to: 2010 http://www.ipe.org.cn/pollution/s_detail.aspx?id=11967,

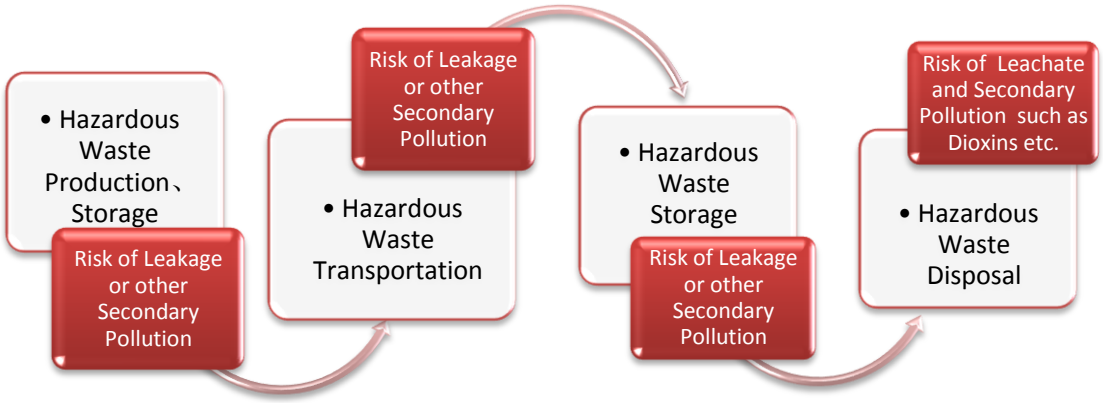
[60] Refer to: 2007 http://www.ipe.org.cn/pollution/s_detail.aspx?id=7009, 2008 http://www.ipe.org.cn/pollution/s_detail.aspx?id=6956, 2009 http://www.ipe.org.cn/pollution/s_detail.aspx?id=6965, 2010 http://www.ipe.org.cn/pollution/s_detail.aspx?id=11833,

From the companies listed above, Hong Fujin Precision Industry (Shenzhen) Co., Ltd, Shenzhen Fu Tai Hong Precision Industry Co., Ltd., Hong Qun Sheng Precision Electronics (Yingkou) Co., Ltd, Hongqisheng Precision Electronics (Qinhuangdao) Co., Ltd, Hong Fujin Precision Industry (Taiyuan) Co., Ltd. all operate under the banner of Foxconn.

Of course the amount produced does not mean that that is the amount discharged. During the process of collecting and organizing the data on hazardous waste, we often read that a company that had produced the hazardous waste had also carried out "Final Disposal."

However, after further research we found that the disposal of many types of hazardous waste can be very difficult and the proper disposal processes can be very expensive. During the process of collecting, transporting, storing and disposing of this waste, if these stages are not managed well, or the level of treatment is inferior, then there is the risk of secondary pollution.

Figure 16: Hazardous Waste Pollutant Risk



Many of Apple's suspected suppliers are producing huge quantities of hazardous waste, so improper disposal of the waste would create a serious hazard. The first "Other Side of Apple" report raised the problems of Lianjian (Wintek) Suzhou "not adopting the appropriate measures which resulted in hazardous waste run-off." In the course of this investigation we found more problems of this kind at suspected Apple suppliers.

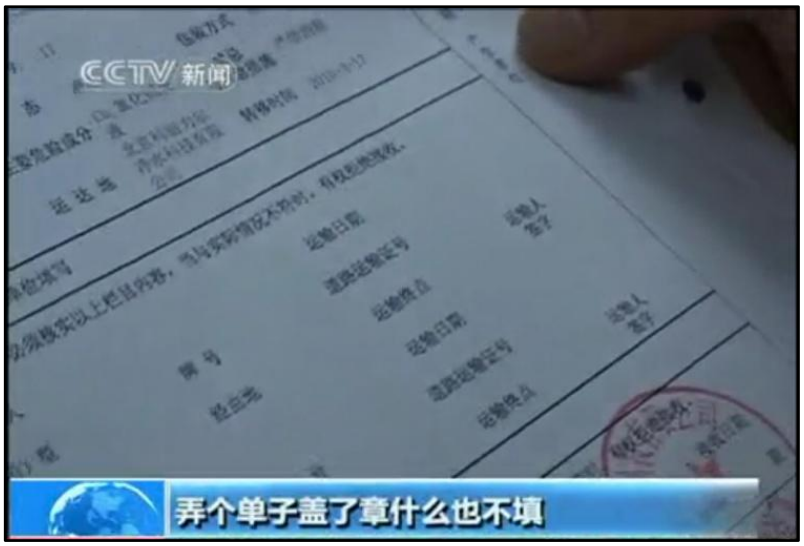
Case 5 – Ibiden Electronics (Beijing) Co., Ltd.:[61] Missing Heavy Metals Sludge

Japan Ibiden Co., Ltd. (Ibiden) is one of the largest specialist developers and manufacturers of printed circuit boards in the world and is a suspected supplier to Apple. Ibiden Electronics (Beijing) Co., Ltd. was established in 2000 and the factory acts as their product manufacturing base in China.

[61] Information suggests that Ibiden is a supplier to Apple.

On June 25th, 2010, China Central Television's news channel broadcast the program "Close to 70% of Corporations Using Heavy Metals Suspected of Breaking the Law." During the program they stated that "Ibiden Electronics (Beijing) Co., Ltd. is one of the largest PCB companies in the world. During the manufacturing process, the company produces several dozen tons of hazardous waste containing copper, nickel and cyanide per day. During the investigation, while looking at the company's transport manifest contract, the inspection personnel discovered that the manifest forms for the transferring of heavy metals, which according to national regulations needs to be stringently filled out with complete and actual information, were left completely blank."

Figure 17: Blank Hazardous Waste Manifest



During the course of the program they also stated that: "during the on-site investigation, the inspection personnel discovered that all the so-called hazardous waste transport manifest forms which were left blank already had the official stamp of the contractors applied....."the inspection team went to the hazardous waste transfer unit to carryout verification and found that the exact whereabouts of Ibiden's sludge containing heavy metals could not be identified."

At the hazardous waste location, we also saw that the "comprehensive utilization volume" of hazardous waste was very large. For instance, in the 2010 State of the Environment Report, the amount of comprehensive utilization (including the storage capacity from previous years) was 9.768 million tons,[62] 61.6% of the total amount produced. However, during our investigations we discovered that even those fully registered hazardous waste treatment companies may still cause serious environmental pollution in their comprehensive utilization projects.

On August 25th, 2011, we sent a corporate environmental conduct letter to Ibiden Co., Ltd. inquiring about the company's environmental management. As of August 30th, 2011, we have yet to receive any kind of response from the company.

[62] 2010 Report on the State of the Environment in China, Ministry of Environmental Protection of the People's Republic of China, 2011-05-29.

Case 6 – Shenzhen Hazardous Waste Treatment Station Co., Ltd.: Discharge Seriously Over the Authorized Standards

Shenzhen Municipal Hazardous Waste Treatment Station Co., Ltd. was established in 1988 and was the first specialist organization in China to treat industrial hazardous waste. The plant has the capacity to treat 350,000 tons of hazardous waste per year, and according to the information on their website, one of their clients is Foxconn, Apple's most important supplier.[63]

Even though this company is a fully qualified, specialist organization, during the operation of its project to re-use waste copper liquid, it had violations for discharging over the authorized standards which has impacted the environment. In the "Alkali Copper Chloride Produced During Waste Copper Liquid Comprehensive Utilization Relocation Project Environmental Impact Assessment Report for Shenzhen Municipal Hazardous Waste Treatment Station" (summary version) issued by the Shenzhen Environmental Protection Bureau on November 19th, 2008, the monitoring results for all the tests done at the wastewater discharge outlet of Shenzhen Municipal Hazardous Waste Treatment Station are shown.[64] The company's "total copper discharge was over the authorized standards in June 2003, and in July 2006, the COD, suspended particulate matter, total copper, total zinc and total nickel were all in breach of the authorized standards."

The Administrative Penalty Notice Serial No. Shenren Huanfazi (2010) No.34 in the "2010 Administrative Penalty Decisions (June-December)" published by the Shenzhen Municipal EPB website on March 17th, 2011, showed that Shenzhen Hazardous Waste Treatment Station Co., Ltd. "on April 7th, 2010, had concentrations of pollutants in the company's final discharge outlet of: total suspended particles - 14900mg/L, COD - 2850 mg/L which were over the company's maximum permitted discharge allowance of total suspended particles - 400mg/L and COD - 500mg/L) (see No. 10070)."

From the "Alkali Copper Chloride Produced During Waste Copper Liquid Comprehensive Utilization Relocation Project at Shenzhen Municipal Hazardous Waste Treatment Station," we can also see that as an important base for the production and processing of IT products, the amount of hazardous waste being produced containing copper has increased year on year. The EIA report states that the amount of hazardous waste this plant was designed to treat was 40,000 tons/year. Following the year on year increase in the amount of hazardous waste produced by the Shenzhen Municipality, the copper waste liquid alone is as much as 40,000 tons/year, which greatly exceeds the designed comprehensive utilization capacity, meaning that the plant cannot satisfy the Shenzhen Municipality's future hazardous waste treatment requirements.

The local rivers have already been polluted by industrial waste. This environmental impact assessment quoted from the water quality monitoring documentation for the Shajing River and Dongbao River in the "Shenzhen Municipal Western Area Electroplating Industry Base Environmental Impact Report", states that Although "*they have basically not breached the authorized standards*," in 2004 and 2006, the results from the Dongbao River sediment quality monitoring showed that, *"The amount of copper, nickel, zinc and lead at the monitoring point was higher than the Shenzhen soil elements background*

[63] Shenzhen Municipal Hazardous Waste Treatment Station Co., Ltd. Website: http://www.szhwts.com/cs1/chuli_fwdw.htm, According to information on this website, this station also provides a service to Hitachi, Samsung, Siemens, Sanyo, IBM, Philips, Toshiba and other large IT brands.

[64] According to "Alkali Copper Chloride Produced During Waste Copper Liquid Comprehensive Utilization Relocation Project Environmental Impact Assessment Report (Summary) for Shenzhen Municipal Hazardous Waste Treatment Station," Violation record according to routine monitoring data supplied by Shenzhen Municipal Hazardous Waste Treatment Station, Monitoring unit: Shenzhen Municipal Environmental Monitoring Station: Sampling point: Shenzhen Municipal Hazardous Waste Pre-treatment Base Wastewater Discharge Outlet.

values. Compared with historical data, there was an upward trend in the amount of heavy metals contained in the river's sediment in 2004 and a slightly greater amount in 2006 compared with 2004." This shows that the surrounding industrial pollution sources have had an effect on the sediment in the Dongbao River.

It should be pointed out that the risks from hazardous waste can be long term and hidden. If the harmfulness of hazardous waste were to break out it would not only poison animals and humans but it could also combust or explode causing a fire that if not controlled could pollute the atmosphere. Contaminated rainfall and snow can permeate and pollute the soil and ground water and by means of surface run-off can pollute rivers, lakes and seas. This can create long term consequences that can be difficult to reverse. Restoring an environment that has been polluted or an ecology that has been damaged not only takes a long time but also takes huge investment. Sometimes there is no way of restoring the environment meaning the consequences cannot be measured in monetary terms.[65]

Many of Apple's suspected suppliers produce very large amounts of hazardous waste. Amongst these companies there are those whose hazardous waste management is not very strict, so it goes without saying that there are environmental risks. This problem once again shows that the IT industry is not a green industry, nor a virtual industry, but is in fact a seriously polluting industry that has a huge affect on the environment. Faced with questions about environmental violations, Apple Inc. has remained completely evasive and unwilling to carry out its responsibilities to disclose environmental information. Apple's policy of non-disclosure may lead to a large volume of hazardous waste run-off, which will ultimately bury a long-term risk to China's environment and to the public's health.

Section 4 - Even More Pollution Records in Apple's Supply Chain

During the Phase II investigation, we found the enforcement records of more suspected Apple suppliers:

Figure 18: Suspected Apple Suppliers' Environmental Supervision Chart

Location	Name of Company	Year of Supervision Record
Shenzhen	Hong Fujin Precision Industry (Shenzhen) Co., Ltd.	2010
Beijing	Foxconn Precision Components (Beijing) Co., Ltd.	2011
Wuhan	Hong Fujin Precision Industry (Wuhan) Co., Ltd.	2010
Wuhan	Meiko Electronics (Wuhan) Co., Ltd.	2008, 2009, 2010
Suzhou	Boardtek Computer (Suzhou) Co., Ltd.	2007, 2009
Suzhou	Casetek Computer (Suzhou) Co., Ltd.	2010
Shanghai	C&M Technology (Shanghai) Co., Ltd.	2006, 2007, 2009, 2010
Zhenjiang	Jubao Precision Machining (Jiangsu) Co., Ltd.	2010, 2011
Suzhou	Kunshan Huayang Electronics Co., Ltd.	2010
Suzhou	Suzhou Huayang Co., Ltd.	2010
Shenzhen	Shenzhen Assunny Precision Circuit Scien-Tech Co., Ltd.	2010
Shenzhen	Ho Weih Precision Technology (Shenzhen) Co., Ltd.	2010

[65] Nie Yongfeng, Waste Treatment Engineering Technical Manual (Solid Waste Volume), Beijing: China Environmental Science Press, 2000, 6-88.

Case 7 - Foxconn: Three Factories with Environmental Violation Problems

- **Hong Fujin Precision Industry (Shenzhen) Co., Ltd.**

Through monitoring wastewater discharge from Hong Fujin Precision Industry (Shenzhen) Co., Ltd's (F Area) on June 8th, 2010, the concentration of phosphate was found to be 3.79mg/L, which is more than the allowance stated in their discharge permit (No. 01114) (the highest concentration of phosphate allowed in their discharge is 0.5mg/L). For these reasons the company was fined 40,000 RMB. [66]

- **Foxconn Precision Component (Beijing) Co., Ltd.**

Received an environmental protection administrative penalty for not constructing hazardous waste storage sites to store spent, activated carbon and for failing to classify waste.[67]

- **Hong Fujin Precision Industry (Wuhan) Co., Ltd.**

Transfer manifest was not in accordance with relevant regulations regarding the use of one manifest per vehicle and each vehicle having a separate manifest for each type of hazardous waste. The amount of waste copper sludge produced was more than the registered amount that the company reported to the authorities and the company did not re-submit a further report. [68]

Case 8 – Boardtek Computer (Suzhou) Co., Ltd. & Casetek Computer (Suzhou) Co., Ltd.: Adopting Methods to Evade Water Pollutant Discharge Supervision.

Boardtek Computer (Suzhou) Co., Ltd.:

- The "2009 Suzhou Municipal Environmental Protection Bureau Status of Administrative Penalties," issued on January 25th, 2010, by the Suzhou Municipal Environmental Protection Bureau, showed that Boardtek Computer (Suzhou) Co., Ltd. "was fined 100,000 RMB for discharging water pollutants whilst adopting methods to avoid supervision."[69]

- The results of the 2009 Suzhou Municipal City Enterprise Environmental Conduct Ratings Results showed that this company was rated as "Yellow."[70]

- The results of the 2007 Suzhou Enterprise Environmental Conduct Information Disclosure Ratings Results showed that this company was rated as "Yellow."[71]

---

[66] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=655528,
[67] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=654898,
[68] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=653791,
[69] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=613950,
[70] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=613950,
[71] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=576360,

Casetek Computer (Suzhou) Co., Ltd.

- The "2010 Suzhou Municipal Environmental Protection Bureau Status of Administrative Penalties," issued on March 22nd, 2011, by the Suzhou Municipal Environmental Protection Bureau, showed that Boardtek Computer (Suzhou) Co., Ltd. "was fined 100,000 RMB for discharging water pollutants whilst adopting methods to avoid supervision."

- The "Notice Regarding the Publication of the 2010, Suzhou Municipal Industry Environmental Conduct Evaluation Results," published by the Suzhou Municipal Environmental Protection Bureau on June 13th, 2011, showed that Boardtek Computer (Suzhou) Co., Ltd. was evaluated as "Black." [72]

Case 9 – Shenzhen Assunny Precision Circuit Scien-Tech Co., Ltd.: Discharging Heavy Metals in Breach of the Authorized Standards

On June 17th, 2010, during an on-site investigation, law enforcement officers from the Shenzhen Municipal Human Habitat and Environment Committee discovered that, while Shenzhen Assunny Precision Circuit Scien-Tech Co., Ltd. was conducting maintenance on their wastewater collection pipes, the workshop wastewater was draining through a broken pipeline and being discharged outside into the municipal drainage network. By testing the wastewater, it was found to have a pH of 1.57, COD of 114mg/L and total copper of 1790mg/L. All of these values were over the authorized levels stipulated in their pollutant discharge permit (No. 10675) which states the highest authorized pollutant concentrations as: pH 6-9, COD 80mg/L and total copper as 0.5mg/L. For this, the company was subjected to a financial penalty of 70,000RMB.[73]

Apart from problems with the suppliers that have already been mentioned, Ningbo Chimei Electronics Co., Ltd., Suzhou Weixin Electronics Co., Ltd., Kecheng Technology (Suzhou) Co., Ltd., Kesheng Technology (Suzhou) Co., Ltd. and Infineon Technology (Wuxi) Co., Ltd. all have supervision records. For more details please visit www.ipe.org.cn.

Section 5 - Apple's Audits Cover Up Blood Stained Production

One month after the coalition's "The Other Side of Apple" report was released in January 2011, Apple Inc. published their "Apple Supplier Responsibility 2011 Progress Report."

In "The Other Side of Apple" we quoted Apple's public commitment to corporate social responsibility that states: "*Apple is committed to ensuring that working conditions in Apple's supply chain are safe, that workers are treated with respect and dignity, and that manufacturing processes are environmentally responsible.*" In the report we listed the problems in Apple's supply chain, such as; workers being made occupationally disabled due to occupational poisoning, the pollution of local communities and the environment, as well as, the serious issues surrounding worker's rights and

[72] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=654933,
[73] Refer to: http://www.ipe.org.cn/pollution/com_detail.aspx?id=655542

dignity. For these reasons, we have concluded that Apple has violated all three of the promises made in their supplier social responsibility report.

In the 2011 report published by Apple they made some very subtle changes to how they worded their commitments. On the Apple website they stated that "Apple is committed to ensuring the highest standards of social responsibility," but in the next report it had been changed to "Apple is committed to driving the highest standards of social responsibility." Apple also altered this sentence: "*Apple is committed to ensuring that working conditions in Apple's supply chain are safe, that workers are treated with respect and dignity, and that manufacturing processes are environmentally responsible.* Changing the wording to; "We require that our suppliers provide safe working conditions, treat workers with dignity and respect, and use environmentally responsible manufacturing processes wherever Apple products are made."

Changing "ensure" to "require" looks so easy, but it means Apple is pushing the social responsibility involved in production on to the suppliers who manufacture its products. Therefore, when environmental organizations raise questions about pollution and poisoning, it is naturally a problem with the supplier. As long as Apple raises 'requirements' to suppliers, it will not assume any responsibility for breaching their commitments.

Apple has even moved beyond making "requirements," they have also developed social responsibility auditing for their suppliers. In their supplier responsibility report, Apple claims that in 2010 they carried out 127 audits and over the past few years have carried out a total of 288 audits.

Figure 19: Development of Apple's Supplier Responsibility Audits

Source: "Apple's Supplier Responsibility 2011 Progress Report," Apple Inc. February 14th, 2011.

Over the past several years, Apple has audited 288 facilities for compliance with our Code.

	2007	2008	2009	2010
First-time audits	39	69	83	97
Repeat audits	-	14	19	30
Total facilities audited	**39**	**83**	**102**	**127**

In the report, Apple claimed to have audited 127 suppliers and found 36 core violations to the company's 'Code of Conduct.' The report gave many readers the impression that Apple was conscientiously carrying out inspections and that its actions were even surpassing the commitments that they had made. The result of all this was that in some people's eyes, Apple had taken a leap to become the world's most socially responsible IT brand.

The report got Apple out of its predicament and the company even won much acclaim. However, by looking attentively at the report, it is possible to see that apart from the names of Foxconn, where 12 people jumped off buildings, causing shock globally, and Wintek, where 137 workers were poisoned, all the other names of the suppliers where "core violations" have occurred remain secret. There is no way of knowing who they are or confirming whether or not they have adopted any corrective measures. For these reasons, Apple has succeeded in avoiding true public supervision of its supply chain.

Buried under layers of deceit by Apple, these environmental pollution problems have not caught the attention of western society and so naturally have not been the main focus of Apple's audits and reports. Amongst the 36 core violations found by Apple; 18 facilities where workers had paid excessive recruitment fees, 10 facilities where underage workers had been hired; there were two instances of worker endangerment; four facilities held falsified records; one case of bribery and one case of coaching workers on how to answer auditors' questions.

Not one of the companies with environmental problems that the Chinese NGOs has pointed out to Apple has appeared on their list of suppliers with core violations. Apple has not supplied the name of any of its suppliers with problems of environmental pollution. The public has no way of knowing whether or not Apple has discovered any of these problems. Again, the public has no way of knowing whether or not Apple has pushed these suppliers to take corrective actions. So consequently, under Apple's seemingly rigorous audit procedures, pollution has spread throughout the company's supply chain and has even begun to directly claim the lives of the young.

Case 10 – Foxconn Chengdu: The Blood Stained iPad2

At around 19:00 on May 20th, 2011, there was a large explosion during production in the polishing workshop along the production line of the iPad 2 at Foxconn's Hongfujin Chengdu factory. The explosion resulted in the death of two workers and injuries to 16 others. Not long after, another of the workers died from their injuries, bringing the total number of dead to three.[74]

Figure 20: Explosion at Foxconn Chengdu's iPad2 Polishing Workshop Production Line (Picture Shared Online)

[74] Foxconn Workshop Explosion Leads to Death Toll Rising to 3 People, Xinhua Wang, 2011-05-23.

The explosion was initially identified as having been caused by the buildup of aluminum dust inside a ventilation duct that was ignited when an electrical device was turned on.[75] A dust explosion not only causes a huge blast but can also produce toxic gasses. The types of dust that explode most easily include metal dust (magnesium dust, aluminum dust etc.) and the body of the iPad is made from aluminum.[76] Staff members who worked in the polishing workshop have said that "although we were wearing face-masks, our whole bodies were covered with the dust," so it was obvious that the workshop's dust control system had some problems.[77]

In delving deeper into the causes of the incident people were surprised to discover that this huge factory, made up of eight different factory buildings and covering an area of 250 acres was built in only 76 days. According to an explanation from the head of Foxconn's investment group, Zhuang Hongren, the construction was nothing short of a miracle in the history of global factory construction.[78] Eventually this plant will supply two thirds of the world's iPads.

Figure 21: Satellite Image of the General Location of Foxconn Chengdu.

Building at such a hasty speed must mean that pollution control and production safety present huge challenges. According to the accounts given to the media by workers from the polishing workshop, equipment started being installed in the workshop in December 2012, and production was taking place whilst the machines were being installed. The machinery was fully installed in January 2011. "We really didn't realize before that dust could cause explosions, the work of dust elimination was given to those employees with more experience."[79]

According to media analysis, the reason Foxconn's construction was undertaken so quickly was

[75] Foxconn Chengdu Dust Explosion: Plant Safety Attracts Violation Queries, IT Business News Network, 2011-05-24.
[76] Factory Building Explosion Interrogation, Foxconn leaps in to Quicken Production. http://www.cqn.com.cn/news/xfpd/szcj/cj/415955.html
[77] Chengdu Factory Explosion Highlights Obvious Foxconn Management Loopholes, China Business News, 2011-05-25.
[78] Eight Factory Buildings Constructed in 70 Days, Foxconn Project Investment Witness to Chengdu's Speed, Chengdu Business Paper, 2010-10-23.
[79] Chengdu Factory Explosion Highlights Obvious Foxconn Management Loopholes, China Business News, 2011-05-25.

"because it tried to satisfy the demands from Apple".[80] On March 2nd, 2010, Apple's new product, the iPad 2 was unveiled. Apple's fourth quarter financial report published in October 2010, showed that for the three months of July, August and September, a total of 4.19 million iPads were sold and Apple have said that if it wasn't for a lack of supply they could have sold even more.[81]

Apple needed to urgently expand production output. On August 18th, 2010, Apple dispatched an audit team to Chengdu, supervised by a vice president in charge of manufacturing. According to media reports they inspected the staff dormitories and the construction site of the workshop that was being built in an intensive way with overtime. The project passed Apple's audit fairly quickly. [82]

Foxconn Chengdu's duty to fulfill orders meant that there was insufficient time to complete the necessary training at the plant. According to a report in the 'China Business News' the first batch of workers to work in Foxconn Chengdu spent three months training at Foxconn Shenzhen before starting production at the factory in Chengdu. However the second batch of employees only trained for two or three days before starting work.[83]

Figure 22: May 20th, Explosion Victim's Families Wait outside the Hospital Ward (Photo: Xinhua News Agency Reporter Li Qiaoqiao)

Figure 23: May 21st, Victim of Foxconn Explosion in the Emergency Room Receiving Treatment, father of the patient to the right.

[80] Foxconn "Apple," China Business Journal, 2011-5-30.
[81] Foxconn's 10 Billion USD Moves West: Half of Global iPads Come from Chengdu, National Business Daily, 2011-03-11.
[82] Foxconn's 10 Billion USD Moves West: Half of Global iPads Come from Chengdu, National Business Daily, 2011-03-11.
[83] Chengdu Factory Explosion Highlights Obvious Foxconn Management Loopholes, China Business News, 2011-05-25.

The cost of Foxconn building their factory at such haste was the injuries to 18 young workers, three of whom are no longer with us, leaving behind broken families and endless sorrow. The fact that this company was able to pass an audit by a team led by the vice president in charge of manufacturing and then win the main global order for Apple's iPad 2 should lead people to raise legitimate questions about Apple's auditing process.

However, these questions cannot be answered because Apple will neither proactively disclose information nor respond to queries regarding specific suppliers.

Under these circumstances, Apple's yearly audit report becomes mere green wash and thanks to such cover Apple manages to continue using polluting companies as its OEM suppliers and to pursue the blood stained Apple speed at the cost of the environment and communities.

Section 6 - Many IT Brands Have Taken Positive Action

Whilst Apple has been completely avoiding any questions about environmental problems in their supply chain, many other IT brands have been actively pushing suppliers to establish awareness of their environmental responsibilities and to make improvements to existing environmental pollution problems.

Brands which have made positive transformations

While Apple remains to be highly evasive, if not totally non-responsive, other brands such as Siemens, Vodafone and Nokia have made significant progress toward responsible supply chain management.

Siemens: leading the 29 IT brands with innovative solutions and solid supplier engagement

Since the publication of the last IT industry investigation report in January 2011, Siemens has made significant progress in two aspects:

1. The integration of publicly available information into the company's environmental supply chain management;

Siemens' took steps to go beyond manually searching their suppliers in the 'China Pollution Map Database' and developed a technological search mechanism in order to quickly and conveniently search all companies in the database and to match them against their own existing suppliers.

2. Requesting suppliers with violation records to publicly disclose the corrective actions taken or the measures they are due to take;

Following the detection of matching suppliers, Siemens was quick to issue letters directly from the company CEO and CPO, demanding prompt communications with the coalition in order to identify supplier corrective actions or to risk losing the association with the Siemens brand and company. Siemens was sure to make clear that environmental non-compliance would not be tolerated and that contact should be made with the coalition within a one month period to determine the way forward.

Within this one month period Siemens had twelve companies that came forward to give either verbal explanations of their violation circumstances or in addition some provided documentary materials. Coincidently, one of these supplier companies is also believed to be a supplier to Apple Inc. Currently, 12 of Siemens' suppliers have provided either verbal or written feedback and/or have supplied updated monitoring data on the NGO's public information sharing platform. Amongst these 12 companies one has successfully undertaken an off-site document review and the company violation record has been removed from the forefront of the 'China Pollution Map Database.'

Vodafone: Extending supplier environmental performance to monitor further upstream.

Since learning about the case of a violating supplier, Vodafone has become the first brand to apologize to the people affected and the company has expressed concern for the harm caused to the natural environment. Being the first company to openly proclaim its remorse for the incident in its supply chain, Vodafone pro-actively took steps to ensure the promises of its environmental commitments were upheld.

Since the publication of the last IT industry investigation report in January 2011, Vodafone has made significant progress in extending supplier environmental performance monitoring further upstream.

In May 2011, after rounds of communications, Vodafone contacted the NGOs to confirm that the company had already initiated using the publicly available information and they had also instructed their tier-one suppliers to do so. After this initial test period the tier-one suppliers returned with positive feedback and ideas on how to enhance the use of the information available.

Later in May, Vodafone updated the NGOs on the progress made and the NGOs were pleased to hear of the great strides made by the company. Tier-one suppliers had proceeded to actively engage with

tier-two suppliers to promote the use of publicly available data to enhance supply chain management.

Vodafone has actively promoted the use of publicly available data to search for infractions. 19 Tier 1 suppliers and close to 1500 sub Tier 1 suppliers have been searched and checked for compliance, with three Tier 2 companies choosing to use these tools on a regular basis.

Nokia: Established a supply chain search mechanism and also pushed Wanshida and Wintek to provide enterprise feedback.

Since the IT Industry Investigative Report (Phase IV) was released in 2011, Nokia has communicated with the coalition on numerous occasions. After communicating with the NGO coalition, Nokia decided to establish a supply chain search mechanism. The search mechanism was split into two parts:

1. Reactive

If a supplier with environmental violations came to the attention of Nokia through the NGO coalition's report, then Nokia made sure to seriously follow up on it. They also ensured that the violating suppliers' environmental status was updated on the IPE database.

2. Proactive:

During the auditing of a new supplier, Nokia will search the IPE database to see whether or not that new supplier has any violation records.
During their end of year audit, Nokia will search the IPE database for their suppliers' environmental status so as to confirm the key points of the audit.

Recently Nokia has been pushing their supplier, Shenghua Group's subsidiary company, Wanshida LCD Display Co., Ltd. to give explanations regarding the company's 2010 environmental supervision record. After suggestions from the NGO coalition, Shenghua Group decided to give preliminary explanations regarding the 2009 and 2010 environmental supervision records for Lianjian (China) Technology Co., Ltd.

It is worth noting that these two companies were amongst the suspected Apple suppliers that were mentioned in the phase I report. Prior to this, Apple Inc. has always given the excuse of having a "policy of not disclosing any supplier data," and refuses to respond to the NGOs queries relating to the problems with these two companies.

Company Name	Replied to NGO Letter	Checked the Purpose of the Study	Checks on Supplier Violation Cases		Use of Public I 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
Siemens	✓	✓	✓	✓	✓	✓	✓	X	X	X
Vodafone	✓	✓	✓	✓	✓	✓	✓	X	X	✓
Philips	✓	✓	✓	✓	✓	✓	✓	X	✓	X
Nokia	✓	✓	✓	✓	✓	✓	✓	X	X	X
Alcatel-Lucent	✓	✓	✓	✓	✓	✓	✓	X	X	X
BT	✓	✓	✓	✓	✓	✓	X	X	X	✓
HP	✓	✓	✓	✓	✓	X	✓	X	X	X
Samsung	✓	✓	✓	✓	✓	X	✓	X	X	X
Sanyo	✓	✓	✓	✓	✓	X	✓	X	X	X
Sony	✓	✓	✓	✓	✓	✓	X	X	X	X
Toshiba	✓	✓	✓	✓	✓	X	X	X	X	X
Panasonic	✓	✓	✓	v	✓	X	X	X	X	X
Sharp	✓	✓	✓	X	✓	X	X	X	X	X
Lenovo	✓	✓	✓	X	✓	X	X	X	X	X
Intel	✓	✓	✓	X	✓	X	X	X	X	X
Seiko Epson	✓	X	✓	✓	✓	X	X	X	X	X
Motorola	✓	✓	✓	✓	✓	X	X	X	X	X
Hitachi	✓	✓	✓	✓	X	X	X	X	X	X
Canon	✓	X	✓	✓	X	X	X	X	X	X
Cisco	✓	X	✓	✓	X	X	X	X	X	X
Dell	✓	✓	✓	✓	X	X	X	X	X	X
Haier	✓	✓	✓	X	X	X	X	X	X	X
TCL	✓	✓	✓	X	X	X	X	X	X	X
Foxconn	✓	✓	✓	X	X	X	X	X	X	X
SingTel	✓	✓	✓	X	X	X	X	X	X	X
BYD	✓	✓	✓	X	✓	X	X	X	X	X
IBM	✓	X	✓	X	X	X	X	X	X	X
LG	✓	X	✓	X	X	X	X	X	X	X
Ericsson	✓	X	✓	X	X	X	X	X	X	X
BlackBerry- Rim	✓	X	✓	X	X	X	X	X	X	X
Apple Inc.	✓	X	✓	X	X	X	X	X	X	X

Figure 24: NGOs Communications Progress 'Fact Sheet' with the 31 IT Brands

Section 7 - Does Apple have a Responsibility for Pollution in its Supply Chain?

The poisoning of workers and violation of environmental regulations at suppliers shows that there is an obvious gap in environmental and social responsibility management throughout Apple's supply chain. Both in the West and in China, however, there are many who think that because these poisonings and pollution incidents did not occur in Apple's own factories, then none of the problems are directly related to Apple.

This way of thinking is not impossible to understand, as the problem touches on complex outsourcing relationships and OEM supplier production chains in the processes of economic globalization, as well as consequent environmental and social responsibility problems. Needless to say, in the event of poisoning and pollution incidents, the violating supplier has a responsibility, as does the government department whose lack of supervision may have caused the incident. However Apple cannot avoid its own responsibility either, for the following four reasons:

Firstly, any company that produces a large amount of hardware must bear the responsibility for the environmental and social costs incurred during the manufacturing process. This view has already taken hold and is increasingly becoming a social consensus. In the wave of economic globalization, Apple Inc. has not retained any of its own factories and even the production of parts as small as screws has been completely outsourced. However, just because Apple has outsourced all its production, it does not mean that the problems of pollution and workers suffering occupational injuries during the manufacturing of Apple products have disappeared. The IT industry commonly uses many manufacturing processes that cause serious pollution and emissions of heavy metals or other harmful substances. Clean rooms are used to manufacture precision IT products and because harmful chemicals collect in these rooms they become dangerous areas for occupational poisoning.

Over the past nine months, on the basis of research carried out by environmental organizations, Apple and 28 other IT brands have been pushed to recognize these problems and resolve them. Amongst all of the 29 brands, Apple was the only company to be completely unresponsive. Although recently, under public pressure, Apple has admitted to the poisoning at Lian Jian Technology (Wintek), they continue to place all the blame on the supplier.

By this logic, Apple can make unlimited claims to being green and, because they do not manufacture anything, they can even claim to have no connection to the pollution and occupational injuries that occur during the production process. As a result of outsourcing all of its production, Apple Inc. is actually shifting responsibility for the environmental and social costs of its manufacturing so that it no longer has to bear the responsibility for whatever pollution and poisoning occurs in the production of its products.

If this kind of logic can become established then the large brands that control the major share of world markets can, through the outsourcing of production, avoid the responsibility for environmental costs and occupational injuries that occur during the manufacturing of their products. The result of this would just be a transfer of pollution around the world.

Secondly, the suppliers who violate the standards for levels of pollutants emitted and who ignore environmental concerns and workers' health do these things with the aim of cutting costs and maximizing profits. Publically available materials show that Apple—as a company at the end of the supply chain—has absolute dominance over the distribution of profits

Analysis of the distribution of profits in the supply chain for the iPhone4 carried out by the media have shown that for each iPhone4 that sells for $600, Foxconn and other Chinese assembly companies only receive $6.54. Apple's profit for each iPhone4, on the other hand, is up to $360.
With power comes responsibility, so common sense would say that a company with a great deal of power should also bear a great deal of responsibility. The extreme profits that result from pollution and poisoning go mostly to Apple. When it comes to investigating who is responsible for the pollution and poisoning, though, Apple once again shifts the blame completely. Is it really fair for a company such as Apple, with so much control over the distribution of profits, to not have to bear any responsibility for environmental pollution and worker poisonings in its supply chain?

Thirdly, Apple Inc. understands that when passing the blame for social responsibility it can be difficult to pull the wool over the eyes of the general public; in order to make consumers think they are green and environmentally friendly they come up with high-sounding promises such as "*Apple is committed to ensuring that working conditions in Apple's supply chain are safe, that workers are treated with respect and dignity, and that manufacturing processes are environmentally responsible.*

But through their research, environmental protection groups have found that Apple Inc., with respect to the three aforementioned points, has seriously violated its own promises. If a company violates its own promises, then its leaders should feel guilty, adopt corrective measures and make public explanations of the measures they have taken. This would be a natural reaction. Apple is a leading enterprise in the IT industry, but in facing up to pollution and poisoning in their supply chain they have not shown the slightest bit of regret. On the contrary, they have invariably shifted any responsibility, so that the promises that they made have been shown to be nothing but hot air.
Fourthly, many people do not understand that Apple and other brands' outsourcing of production is not the same as ordinary purchasing behavior. Various sources of information show that Apple is deeply involved in supply chain management—from the choice of materials to use to the control of clean rooms in the production process. Many of the production processes that Apple is involved in have polluting and harmful effects, and so it has a responsibility to make public and explain these problems.

In the wave of globalization, Apple and other brands have implemented global production and procurement practices, outsourcing a number of highly polluting and discharging production processes to China and other developing countries. Meanwhile, in those developing countries, due to local official protection, weak enforcement and gaps in environmental awareness by managers, many suppliers cannot even ensure legal compliance.

In the past, international brands have used the excuse that they "don't know who pollutes and who doesn't," and so have just looked at price when procuring goods and not a company's environmental performance. However, the expansion of China's environmental information disclosure now means

that many companies' environmental violation information is publicly available. Many brands have already started using this information to try and stop the spread of pollution that is caused by global production and procurement.

However, Apple has become a special case. Even when faced with specific allegations regarding its suppliers, the company will still state that "it is our long-term policy not to disclose supplier information." A large amount of IT supplier violation records have already been disclosed, however, Apple has not faced up to them and continues to use these polluting companies. This can only be seen as a deliberate move by Apple.

Apple Inc. needs to make a choice: The first option is to use loopholes in developing countries environmental management, use polluting companies whilst sacrificing the environment and the health of the public in the pursuit of profit. The second option is to cooperate with other stakeholders and establish a more transparent and inclusive social responsibility management system, so that Apple's own green procurement system can overcome the problems of pollution and poisoning in their supply chain and become a force to help reduce China's pollution and emissions.

So far Apple has chosen the first option. They can continue to choose this first option and be an obstacle to China's pollution reduction, but they should do it publically and not continue to green wash with the so-called 'highest' social responsibility standards in their supply chain management. This kind of behavior not only poisons the environment and communities but also misleads global consumers. When Apple makes this choice they must bear the responsibility for the results of pollution and poisoning.

Section 8 - Apple Consumers: You Need to Make a Choice

As in the previous report showing the other side of Apple, we don't want to undermine the Apple brand, on the contrary, we would like to see this kind of brand, that is full of creative innovation and design, to be able to make changes, to become a force for pollution and emissions reduction.

Faced with the existing problems of serious pollution and poisoning in their supply chain, every stakeholder needs to make a choice.

Apple has already made its decision to stand on the wrong side, to use the loopholes in China's developing environmental management, to use polluting companies whilst sacrificing the environment and the communities at this expense, so as to continue to grab for their own super profits and in the meantime turn itself into a barrier to China's pollution reduction.

Consumers also need to make a choice.

We believe Apple's consumers cannot accept the poisoning of the environment, the harm to communities and the sacrifice of employee rights in exchange for their fashionable IT products.

We propose that consumers express themselves to Apple, to allow Apple to hear the voice of the public. As Apple's most important stakeholders, consumers need to clearly express their wishes that Apple should change and improve the environmental management in its supply chain.

For the sake of the health of the public, the protection of the environment, so that workers on the production line do not suffer poisoning again and in order to give our children a secure, safe place to live, please make Apple aware of your concerns.

You can help clean up Apple!