

FINDINGS AND RECOMMENDATIONS  
OF THE FACT-FINDING COMMISSION  
ON THE MINING OPERATIONS  
IN RAPU-RAPU ISLAND

*19 May 2006*

## FOREWORD

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### **The Meaning of Our Task**

President Gloria Macapagal Arroyo's Administrative Order (AO) No. 145, which created the Rapu-Rapu fact-finding commission, underscored without being explicit the cogent realization that any idea of economic progress that does not embrace the Earth in all its precious biological diversity, or merely wants to attract investments with insufficient regard for people's health and environmental protection, lacks seriousness and integrity and is worse than irrelevant.

This means that, at the outset, mining – as far as the President of this Republic is concerned – is more than just an *economic* and not merely a *legal* issue. It is something more foundational for the life of the nation, something that touches on both life and the house of life called the environment and, therefore, to be situated, governed and justified in the context of ecological ethics often referred to these days as *geo-ethics*.

The spirit of the AO is a welcome affirmation of the principle of stewardship of the national patrimony, which is enshrined in the Philippine Constitution – laying accent on the protection, care and proper use of our nation's resources.

In this approach the truth of science and the truth of ethics meet as one truth and the challenge of technology is underscored as a continuing task to help us overcome the stresses, and the economic, social, and political forces that could drive us down a self-destructive course.

Among perceptive observers here and abroad for some time now there is no doubt about the fact that a quiet gold rush has hit the Philippines. The price of gold is higher than it has been in two decades and the demand is real, unlike in past gold manias, which had to do with girding empires, economies or currencies. Today millions of millions of people want gold and will pay for it not just in the Americas and Europe but even more so in India and China.

In October of last year a months-long investigation of gold mines in the American West, Latin America, Africa and Europe, provided a rare look into how some hard-rock metal mines, including gold, had become *"the near-equivalent of nuclear waste dumps that must be tended in perpetuity."*

In the United States alone that year the cost of cleaning up reached \$54 billion. Their Government Accounting Office chastised their Environmental Protection Agency (EPA) and said legal loopholes, corporate shells and weak federal oversight had compounded the costs and increased the chances that mining companies could walk away without paying for cleanups and pass the bill to taxpayers.

At some mines 100 tons or more of earth have to be excavated for a single ounce of gold, and CYANIDE, not the only option, is used and considered the most cost-effective way to retrieve microscopic bits of "invisible gold." When all those masses of disturbed rock and earth have been dug up, and then exposed to the rain and air for the first time, one is at last confronted with the source of *mining's multibillion-dollar environmental time bomb*: sulfides in that rock will react with oxygen, making sulfuric acid.

That acid pollutes. Worse, however, is that it also frees heavy metals like cadmium, lead and mercury, which are harmful to people and fish, even at low concentrations. And the chain reaction can go on for centuries.

In October 11<sup>th</sup> and 29<sup>th</sup> last year, reports that the results of these investigations elsewhere in the world were being played out simultaneously here in our own country, even after so many warnings by local scientists, did not fail to get even a weak agency to fine a foreign firm the nominal sum of more than ten million pesos for its violations of law and ethics. President Arroyo's AO is precisely about the October disaster in southern Luzon.

Today more and more sectors are asking questions like: is the current utilization of our mineral endowment designed to serve the basic needs of our people who live and work in a backward agricultural mode of production? Is it geared to addressing the need of our national economy to making a successful leap to becoming a strong industrial state? Or isn't the current utilization of our mineral advantage being used again to develop underdevelopment in our land - purely for

the benefit of the developed nations' economies and for the super-profitable advancement of a few mining companies?

And, of course, no matter how huge the mineral deposits, they are finite. Wouldn't the mineral resources run out soon enough on account of their being limited, given the unregulated corporate greed to control every significant mineral vein in the country? Shouldn't we rather develop our own basic and medium industries to ensure we have enough wherewithals for industrialization?

Most important of all, the State must support and protect Filipino corporations who take the risk of entering the mining field *as part of a national industrialization program*. It is the State that is mainly responsible for the country's strategic economic development plan. It should thus be able to *re-channel government support* after thorough review of what is useful and what is not and be surprised to see how many billions can still be re-directed to priorities furthering the task of *building a strong industrial economy*. One need not give up on the possibility of seriously developing in our country an integrated mining industry.

There *is* room for foreign investments – room. It is not rational to give them the whole house. What we need is a strong state that can rigorously screen and strictly regulate investors. Can't the State make sure that foreign participation in the critical stages of minerals extraction and processing be in accord with a defined program for technology transfer and constitutionally correct equity shares?

It is time we open our eyes to the fact that we are often fried in our own grease. What triggers the activity of funders and investors abroad are the licenses and permits and certificates here. The resource is here. The kind of investment that mining is is not, in the words of one U.P. economist, "market-seeking" or "efficiency-seeking" but, rather, mainly "asset-seeking". The power to allow the production of new wealth is here. Filipino financiers can do as good if not a better job if backed up by the sovereign state.

After the October incidents last year, the mining firm Lafayette was forced to stop processing gold at Rapu-Rapu. The discharge incidents contained cyanide, killing marine life. The stoppage effectively brought forward a scheduled gold plant halt to transfer to a base metals circuit ahead of copper and zinc processing at the polymetallic project. Rapu-Rapu was ramping up to 55,000 ounces a year of gold and had planned to start processing base metals late November, adding 10,000 tons

of copper concentrate, 14,000 tons of zinc and 600,000 ounces of silver yearly over six years.

Rapu-Rapu is the Philippines' first new foreign-owned mine in three and a half decades and, despite its relatively small size, is regarded by authorities as key to attracting more global mining investment. Behind Rapu-Rapu is a wave of potential new foreign-owned projects, including redevelopment of the Tampakan copper mine by joint venture partners Indophil Resources NL (IRN.AU) and Xstrata PLC (XTA.LN). This latter project has a price tag of at least \$1-Billion.

This report is about Rapu-Rapu, particularly and not necessarily about the whole country as such – yes, our country or that part of Earth that is so incredibly rich in gold, silver, copper, nickel, chrome and zinc that there is now a consensus among governments and industry in the valuation of the mineral wealth within the territorial limits of the Philippines at more than a trillion dollars' worth, at least.

But since it is quite true that the universal is always lodged in the particular, one should not be surprised that some of our findings and recommendations will have applicability elsewhere in our nation and around the world so long as the applications are made with thorough discernment and prudent judgment.

At the very least, this Commission submits the following report happy and proud that it did the best it could and very well, indeed, in the very short timeframe that was given it and with the cooperation that it elicited from all concerned.

*For* THE RAPU-RAPU FACT FINDING COMMISSION



Charles R. Avila

Vice-Chair and Spokesperson

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**EXECUTIVE SUMMARY**

**Findings and Recommendations  
of the Fact-Finding Commission  
on the Mining Operations in Rapu-Rapu Island**

This is the comprehensive fact-finding report of the Rapu-Rapu Fact-Finding Commission submitted to President Gloria Macapagal-Arroyo.

The Rapu-Rapu Fact-Finding Commission was created in March this year, by virtue of Administrative Order No. 145, by President Gloria Macapagal Arroyo, to “Investigate the Effects of the Mining Operations of Lafayette Philippines, Inc. (LPI) on People’s Health and Environmental Safety in the Municipalities of Rapu-Rapu in the Province of Albay and Prieto Diaz, Gubat, Barcelona, Bulusan, and Bacon in the Province of Sorsogon.” This is an independent commission constituted in order to “get the facts and circumstances surrounding the alleged health and environmental hazards brought about by the operations of Lafayette Philippines, Inc., and to make appropriate recommendations.”

The Rapu-Rapu Fact-Finding Commission carried out individual and group studies and investigations. Public hearings, key informant interviews, ocular inspection, and review of paper trail were undertaken. Results were discussed and analyzed collectively.

The two tailings spill incidents were the proximate cause of the health and environmental hazards in Rapu-Rapu and coastal municipalities of Sorsogon. The narration of events surrounding the first and second tailing incidents was based on interviews with Lafayette engineers and workers, and residents who actually witnessed the incidents, and based on the reports of the Environmental Management Bureau (EMB) and the Mines and Geosciences Bureau (MGB) of the Department of Environment and Natural (DENR) Resources Region V and official communication to the government by the Lafayette Group.

*The First Tailings Spill Incident*

Between midnight to 2 A.M. of 11 October 2005, the main pumping unit of Rapu-Rapu Processing, Inc. (RRPI) malfunctioned. This main pump was supposed to pump the increasing volume of tailings from the waste pond, called events pond, located at the site of the CIL or Cyanide-in-Leach processing area (*inside* the gold processing plant) towards the upper tailings pond (*outside* the plant). Before the reported main pump malfunction, a back-up pump earlier

confirmed to have broken down leaving only the main pump operating until it, too, gave way. There was no back-up pump to operate and to control the then increasing volume of combined tailings and process water in the events pond.

Within the next three and a half hours, a combination of slurry materials and process water overflowed from the events pond to the premises of the gold processing plant. Some flowed to the plant's storm water drainage, and then led to the nearby waterways – the Alma and Pagcolbon Creeks, then finally to the open sea.

In the afternoon of the same day, several dead fish, shrimp and crustaceans were observed floating at the mouths of the two creeks.

According to RRPI and DENR MGB V reports, approximately 20 cubic meters of slurry materials flowed out. Comparing the duration of the overflow up to the time the slurry materials reached Alma and Pagcolbon creeks and the distance between the events pond and these creeks, however, the Commission is convinced that the volume of slurry materials is much more than the reported 20 cubic meters.

Based on the results of DENR water analysis, the slurry materials contained cyanide beyond the standard of 0.05 mg/liter. This caused the death of several marine organisms found at the mouths of Alma and Pagcolbon creeks. The Commission, however, thinks there were other toxic heavy metals and chemicals that should have been analyzed for proper and adequate remedial measures.

#### *The Second Tailings Spill Incident*

With only the clean up of the events pond done and the rest of the recommendations yet to be completed or implemented, the company resumed operations on 17 October 2005.

Two weeks later, on 31 October 2005, it rained heavily. By 1 P.M. of the same day, water elevation at the Lower Tailings Storage Facility was almost full due to continuous rainfall.

The Rapu-Rapu Minerals, Inc. (RRMI) management undertook measures by constructing drainage diversion bunds and channels in order that any excess water would be directed in controlled manner over limestone drains to the main Settling Pond and then on to the Polishing Pond. These ponds are tailings

storage and control facilities built around the mine site. The actions are intended to decrease the water volume inside the tailings facility and therefore, to protect the integrity of the dam structure or to prevent it from collapsing.

Backhoes were used to make an emergency drainage canal. Water was then released from the lower tailings storage facility through the canal leading to the Settling Pond and Polishing Pond and overflowed further down to Ungay Creek and the adjacent Hollowstone Creek.

Effluents were coming out from the Polishing Pond flowing to the Hollowstone Creek.

Meanwhile, while mitigating measures were being undertaken, RRRRI suspended its gold milling and CIL operations.

In the morning of 1 November 2005, fishes and other marine organisms were found dead at Ungay and Hollowstone Creeks.

As per DENR investigation report, results of water sampling analysis showed that:

1. The effluent failed to meet DENR Effluent Standards per DENR Administrative Order 90-35 for parameter cyanide; and,
2. Samplings conducted on 4 and 5 November, 2005 at most of the receiving bodies of water failed to conform with DENR Standards under DENR Administrative Order 90-34 for parameter cyanide.

The receiving bodies of water referred to are Hollowstone Creek, Ungay Creek and Binosawan River. The cyanide in the water released from the tailings dam and ponds was reported as the cause of death of various marine organisms in the said bodies of water found following the second tailing incident.

*The Commission's Comments On the Tailings Spill Incidents:*

In the first tailings incident, a combination of tailings and process water overflowed from the events pond. As per DENR-approved plant design, the tailings and the process water from the CIL should have been pumped towards the upper tailings storage pond so as not to cause any overflow of the contents of the events pond. The events pond was only for emergency and should have remained dry all throughout the gold processing.

The events pond, however, was being used by RRPI not for the emergency purpose it was so designed. Since RRPI began operating, the events pond had become its temporary storage of tailings and process water during gold processing. Tailings and process water from this pond were then pumped to the upper pond. By so doing, however, Lafayette rendered the events pond useless as a safeguard or emergency infrastructure in case of an event such as a tailings incident. At the time of the incident, the events pond was already half full to capacity during the night shift and then overflowed by 2:36 in the following morning.

The pump that directs the tailings and process water from the events pond to the upper pond has malfunctioned several times. Thus, another pump, the main pump, had been used by Lafayette until it, too, malfunctioned, on the day of the tailings incident. An empty bottle of mineral water was reportedly found sucked by the main pump and believed to be the cause of its malfunction. There was no more back up pump when the two pumps failed. So, when the main pump stopped working, the events pond overflowed. Lafayette had no emergency mechanism to stop or mitigate this kind of incident. The DENR-approved Lafayette engineering design was operated without the emergency mechanism.

The sample analysis reported by EMB V indicated only cyanide levels because it had no equipment capable of analyzing toxic heavy metals. While it is tasked to monitor the Lafayette operations for safety purposes, it does not have the capability of monitoring toxic heavy metals always present in mine tailings and that pose long-term adverse impact to human health and environment.

It was wrong of DENR to have approved Lafayette's resumption of operations six days after the first tailings incident. Most of the recommended measures were not accomplished despite Lafayette's commitment to undertake them. When Lafayette resumed operations on 17 October 2005, only the pump had been repaired, the events ponds reduced to 30% and sandbags installed at Alma and Pagcolbon Creeks.

It was also very negligent of the MGB officials who were coincidentally in the area on the day of the tailings incident and who conducted an on-the-spot investigation when they failed to impose immediate remediation measures on the mining company. It was not until two days after, or on 13 October 2005, that MGB Region V dispatched an investigation team to check the veracity of the initial report and to assess the extent of the damage wrought by the incident.

The second tailings incident was not an unforeseen event. The heavy rainfall on 31 October 2005 was not one in 25 years. In a 10-year rain fall monitor by PAGASA, 125 mm more or less rain fall, is common in the area. It is a usual occurrence in the area as also confirmed by residents. The Institute for Environmental Conservation and Research (INECAR) in its study, warned about this six years ago.

The freeboard capacity of the dam was not enough to contain even the common rain fall volume considering that the DENR-approved design requires 190 meters (Environmental Protection and Enhancement Program or EPEP as approved on 26 April 2002). Lafayette, however, had only built 127.9 meters at the time the second tailings incident occurred. Lafayette was already operating, regrettably with DENR consent, despite the fact that the freeboard capacity requirement had not yet been complied with.

After the second tailings incident, Lafayette proposed in its rehabilitation plan to increase the dam height and freeboard capacity from 127.9 meters to 135 meters. The proposal was approved by DENR, again, despite the fact that the proposed increase was still 55 meters short of the original design requirement (as per EPEP).

DENR has been noticeably consistent in allowing Lafayette to violate especially the environmental protection requirements of its approved EPEP.

Not only rain water run-off was discharged contrary to Lafayette reports. A combination of water and effluents was discharged at about 3 P.M. of 31 October 2005.

The deadly cyanide content of the waters and effluents discharged from the dam and ponds indicate failure of the detoxification system of RRPI. This detoxification system is supposed to detoxify the water held at the Lower Tailings Storage Facility from a free cyanide level of 5 parts per million to below 0.2 parts per million DENR standard for effluent discharge.

Lafayette engineers claim that it was impossible for the tailings to be mixed with the run-off. It was not impossible. The undisputed heavy rainfall could have ordinarily stirred and mixed the rainwater and tailings.

The discharged tailings and effluents do not only carry cyanide but other toxic heavy metals as shown in subsequent studies made. An independent environmental investigative mission organized by the non-governmental

organization Center for Environmental Concerns (CEC)-Philippines reveals that aside from cyanide, toxic heavy metals were found in the sediments of the contaminated creeks. Other studies: INECAR, the University of the Philippines-Philippine General Hospital (UP-PGH) and the Department of Health (DOH), and even the UP Natural Science Research Institute (NSRI) report point to the presence of toxic heavy metals in the rivers and creeks surrounding the mine and mine processing site.

EMB V reported only the presence of cyanide because it has no capability to analyze other toxic heavy metals. The results of several environmental studies following the tailings incidents thus disproved Lafayette's claim that it only discharged rain water run off.

Lafayette commenced its operations, with DENR consent again, while it was yet to complete the construction of its tailings pond according to the required freeboard capacity.

Lafayette resumed its operations on 17 October 2005 despite the measures to prevent another October 11 incident (as ordered by DENR and recommended by Multi-partite Monitoring Team or MMT) not having been completely complied with. It has been negligent from the start for not observing the required safety and emergency procedures and infrastructures. It has been continuously negligent when it resumed operations without again adequately and effectively complying with the DENR-imposed measures. Thus, the continuing negligence of Lafayette caused another engineering failure aggravated by the act of unauthorized discharging of effluents on 31 October 2005.

Considering that the engineering measures after the first tailings incident had not yet been adequately complied with by Lafayette, it was negligent for the EMB-DENR to have not anticipated any danger or similar disaster as that of the first incident. It did not give any precaution or warning, and did not order any disaster prevention action given the heavy rain fall on 31 October 2005.

#### *On the Effects of the Tailings Incidents and Long-term Impact of Mining Operations*

During the first and second tailings incidents, fishes and other marine organisms were undoubtedly affected. That fact was not disputed even by the mining company. What was unclear was the extent of the effects of the tailings

incidents on the surrounding seas and fishing industry in the island and the adjacent province of Sorsogon.

In the first tailings incident, Lafayette reported that only about one to two kilograms (kg) of thumb-sized fishes and small marine creatures were found dead near the mouth of Alma and Pagcolbon creeks. In the second incident, it reported that approximately 15-17 kg of fishes and marine creatures were affected in Barangay Binosawan.

The mining company obviously tried to downplay the fish kill incidents.

Some Rapu-Rapu residents gave testimonies to the Commission that they were able to recover more dead fishes immediately after the tailings incidents, particularly the second. Two sacks of dead fishes were allegedly buried in Brgy. Binosawan on November 1, 2005. Also, fish kills were monitored in September or about a month before the first tailings incident by the multi-partite monitoring team.

Fish kills also occurred on several occasions in November 2005 and affected the coastal waters of Sorsogon and practically the whole of the Albay gulf.

After the fish-kill incidents was the fish-scare. Fish buyers stopped buying fishes caught at the Albay gulf near the rich fishing grounds between the island of Rapu-Rapu and the coastal areas of Sorsogon. As much as 80% of the fish trade in Legazpi City was affected.

In Sorsogon, the fish scare caused "unwarranted and untold sufferings" to fisher folk families, fish traders and the fish consuming public, in the words of Sorsogon Governor Raul Lee.

After its study, the UP-NSRI reported that Sorsogon's, as well as Albay's waters, fish and underwater sediments are safe, although toxic heavy metals were noted in rivers/creeks coming from the mine site. The NSRI findings have been repeatedly referred to by LPI in declaring that the slurry materials that overflowed in the first tailing incident and the effluents it deliberately discharged in "controlled manner" during the second tailings incident were treated or detoxified waters free from toxic heavy metals and chemicals. The NSRI team that conducted the tests, however, had admitted in several occasions that its findings were not conclusive and need further studies.

The Commission believes NSRI's own skepticism on its findings and disregards Lafayette's reliance on it and in its self-serving declaration of having performed adequate detoxification of the tailings that overflowed in the first tailings incident and discharged in the second tailings incident.

Besides, the NSRI tests were conducted in late January 2006 or almost three months after the tailings incidents. Factors, such as dilution effects of heavy metals, dispersion of sediments, and oxidation of cyanide, over time, had to have altered the environment compared to that immediately after the tailings incidents.

The NSRI study, therefore, brought forth more questions than answers. Some things are certain though: There was a fish kill and a fish scare following the tailings incidents. And, the UP-NSRI study does not clear LPI from any wrong doing it may have caused for the fish kills and fish scare victimizing the people of Albay and Sorsogon provinces.

While the findings made by different groups will always need further studies to establish the causal connection between the observed immediate effects and the tailings incidents, the Commission makes the finding that there is a high probability of connection and that the incidents subsequently led to certain negative consequences to health, environmental and economic problems to the people of Rapu-Rapu and nearby coastal municipalities of Albay and Sorsogon.

The groups and individuals which looked into the immediate effects of the tailings incidents are: 1) DENR MGB and EMB Reg. V; 2) the Bureau of Fisheries and Aquatic Resources (BFAR); 3) UP-NSRI; 4) DOH and UP - College of Medicine, Pharmacology and Toxicology Department, UP - National Poison Management and Control Center (NPMCC), and UP - College of Medicine, Dermatology Department; 5) the non-government CEC-Philippines, in consultation with the UP - Mining, Metallurgical and Materials Engineering Department (MMME); 6) Dr. Emelina Regis of INECAR/Ateneo de Naga University; and 7) Dr. Teresita Perez of the Environmental Science Division, Ateneo de Manila University.

Though taken at different periods within five months following the tailings incidents and the samples analyzed were variedly sourced, these different studies yield telling common result, which is: presence of toxic heavy metals are present in the soil, water, and sediments samples and in the urine

and blood of some of the patients coming from the communities near the mine site.

As to the high levels of mercury found in the dead pygmy whale and dolphin separately found in Rapu-Rapu, newly-elected Corporate President Carlos Dominguez of Lafayette, categorically denied that Lafayette is using mercury in its operations and thus Lafayette could not be the source of the toxic mercury in the two mammals.

But Lafayette did not analyze mercury and other toxic heavy metals in the ore that it mines because, as justified by Mr. Dominguez, the law does not require it. This omission by Lafayette, though not legally required in a certain sense, is nonetheless against Lafayette's moral obligation to the people and environment of Rapu-Rapu. It is a mining practice and a geo-ethical duty that ore classification be conducted by responsible miners to determine the target minerals content and at the same time determine the accompanying toxic heavy metal in the ore that shall be addressed by appropriate environmental protection and management plan.

On the issue of acid mine drainage (AMD), on the other hand, lies most of the worries of groups opposing mining in the island. For the Commission, the questions that must be answered are: Is Lafayette able to control AMD? Or is the mining company in fact aggravating AMD and all its harsh effects?

The subaqueous deposition, which LPI has adopted among other supplemental actions to prevent AMD is not used in hilly terrains, although it has been proven successful in large mines in flat terrain according to a number of scientific studies.

In a hilly terrain, gradients and flow velocities are too great to achieve stagnant, anoxic conditions. In this situation, subaqueous deposition may be counterproductive and actually enhance the production and leaching of acid products.

Rapu-Rapu is a hilly terrain with steep slope.

In other words, Lafayette, in its EPEP, designed strategies without yet thoroughly understanding the nature and potentials of AMD in its mine site, in particular, and in the Rapu-Rapu environment, in general.

Far more important, AMD mitigation can be ascertained based not solely on best practices in other countries but based on the particular geo-physical and overall ecological characteristics of the Philippines as an archipelago, with half of its lands sloping at 18 degrees or more, and with vast biological resources and endemism to nurture and protect. Even as no mining technology has, as yet, sufficiently addressed or come up with solutions to AMD that should not be an excuse to be less than stringent in preventing AMD.

This strong signal must now be served to investors, as well as the people who are the real stakeholders in mining projects - that the State is most serious in implementing responsible mining. Compliance with anything less should be considered irresponsible mining by Philippine standards.

#### *On Lafayette and DENR accountabilities*

Lafayette is guilty of irresponsibility for starting operations prior to the completion of environmental protection infrastructures. The tailings pond, polishing pond and other structures were not yet finished when Lafayette decided to commence operations, possibly due to the high price of metals at that time.

Because the dam structures, which were designed to accommodate heavy rainfall events were unfinished, spillage of tailings decant occurred in the second spill incident. The storm drainage infrastructures at the tailings ponds were quite inadequate or virtually non-existent.

Ten of the 29 conditionalities and sub-conditionalities in the Environmental Compliance Certificate (ECC) were found violated by the LPI Group.

The Commission finds the DENR, its bureaus (i.e., MGB and EMB), its regional offices, including its monitoring team, to be so dysfunctional as to be unable to prevent the occurrence of the October incidents. They simply did not have the sufficient capability of monitoring mining operations in Rapu-Rapu. Worse, though, is that if they had the capability then they utterly lacked will.

State monitoring of Lafayette environmental performance was not to best practice standards. It lacked the rigorousness and strictness to properly police an environmentally critical operation such as mining as well as the flexibility to adapt to changing environmental conditions.

*Other findings*

The Commission finds Lafayette's corporate structure, its special economic zone, the several tax incentives that it enjoys, its production reports, export sales and taxes paid for these produced and exported items, as well as the company's social acceptability to be questionable and tainted with irregularities.

*On the corporate set-up*

There are two companies operating in Rapu-Rapu island with mining-related permits—RRMI and RRPI. The former is the Minerals Production Sharing Agreement (MPSA) holder, while RRPI holds the mineral processing permit. RRMI sells its ores to RRPI for processing which exports the metals to foreign buyers. RRPI and RRMI share a lot in common in terms of stockholders and directors. To this, the Commission is well-aware that questions have been raised whether this set-up violates the Constitution mandate but this is beyond our reach and we opt to leave this to the proper agencies to determine. What is more relevant is to determine its implications on the two incidents and the corresponding fault and liability. Suffice to state, for legal purposes, RRMI and RRPI were created as two separate entities and it would be error to treat them as one for regulatory purposes but two whenever convenient.

In this context, there were actually two environmentally critical projects (ECPs) operating in Rapu-Rapu. The first was for mineral extraction, the other for mineral processing. However, verification of records reveal that RRPI does not have an ECC and effectively operating without one. Only RRMI holds an ECC as transferee of LPI, the original grantee. The Commission finds that this "confusion" was the direct and necessary result of the intentional and deliberate decision by the Lafayette group to set-up their companies as such and should be held accountable for all its legal consequences.

*On the PEZA issue*

On May 1, 2004, the Office of the President signed into law Proclamation 625 declaring the LPI mining area In Rapu-Rapu as Special Economic Zone Pursuant to Republic Act No. 7916 as Amended by Republic Act No. 8748.

It maybe said that LPI's Country Manager Mr. Roderick Watt at that time haggled much to clinch the proclamation and its subsequent certification from the Philippine Economic Zone Authority (PEZA). In a letter to President Arroyo,

Watt threatened that the \$45 million in capital investments from Lafayette Ltd of Australia as well as \$10 million in investments from LG Group of Korea may be put on indefinite hold if the Rapu-Rapu ecozone status did not materialize. Watt said that the investments he quoted were predicated on the grant of Lafayette's PEZA application.

Watt complained to the President that the only requirement hindering Lafayette's PEZA application was the signature of Rapu-Rapu Mayor Dick Galicia on a certificate of concurrence required by PEZA rules. Watt inadvertently stated in his letter that the President could act on the Lafayette PEZA application even without the Mayor's concurrence.

Two months after Watt's letter, Lafayette's much sought after ecozone status was granted by the Office of the President.

But that is not the major blot on Lafayette's corporate character. Far more damaging is Lafayette's use of a questioned resolution by the Rapu-Rapu Sangguniang Bayan endorsing the Rapu-Rapu ecozone that has since been described as fictitious by members of the Sangguniang Bayan (SB), purportedly the source of the controversial resolution.

What is worse: in an official complaint to the PEZA, SB Secretary Allan Asuncion charged that his signature was forged in a supposed official minutes of the SB November 19, 2003 regular session which he also described as fictitious. During that SB session, the controversial SB resolution favoring the grant of ecozone to Rapu-Rapu was supposedly read and passed by the municipal council of Rapu-Rapu.

Following the controversy, the SB passed resolutions urging various government personalities, including the President, to revoke the ecozone status given to the Rapu-Rapu project of Lafayette.

While the Commission is not in a position to rule on the controversy covering the grant of an ecozone status to the Rapu-Rapu Polymetallic Project (RRPP), the Commission nevertheless makes the following findings:

1. There are apparent irregularities in Lafayette's application to the PEZA and the grant of the Ecozone status to a portion of the Rapu-Rapu Polymetallic Project;

2. The Rapu-Rapu Sangguniang Bayan has made strong charges directed to the reputation and corporate integrity of Lafayette that should be taken seriously, investigated and be the subject of judicial actions, if need be;
3. There is a need to assess the benefits as against the costs or losses the government may have incurred in the contract and special privileges accorded to Lafayette Philippines Inc.
4. Lafayette Philippines Inc. enjoys a very wide leeway in the conduct of its minerals extraction and business operations in Rapu-Rapu that should be made more transparent, accountable and rigorous in terms of discouraging and checking against possible abuses.

*On the issue of Underreporting of Production and Possible Tax Cheating*

LPI-RRMI/RRPI or the Lafayette Group underreported the amount of ore and processed gold/silver produced. RRMI officially reported to MGB V that a total of 67,693 metric tons of gold ore had been mined in 2005. Based on "extracted" evidence from Mr. Villanueva, Geology Manager of RRMI during a Commission hearing at Lafayette, the amount of mined gold ore is 136,180 metric tons, with grade of gold given as 2.33 g. per ton. The Annual Environmental Protection and Enhancement Program (AEPEP) for 2006, submitted by RRPI to the MGB V also gives a slightly higher amount of mined gold ore at 137,349 metric tons. Thus, the official report of production of gold ore is only one-half of the actual produced.

The excise tax paid by RRMI for the year 2005 was PhP 2,065,511.54 (BIR tax records). The amount is equivalent to 2% of the value of dore exported by RRPI (\$ 2,444,145 converted into PhP).

This amount is equivalent to estimated value of the 157 gold/silver dore with a weight of 1,258,592.5 g. exported by RRPI. RRPI estimated that the average gold content of the dore shipment at 12% or 151,031 g. of gold, while the silver content of the dore was estimated at an average of 59% or 742,569.6 g. of silver.

However, a total of 132,307 metric tons of this ore had already been milled, according to the sworn statement of Mr. Villanueva. This same amount of processed gold ore is confirmed/given in the document AEPEP for 2006. The estimated total of gold and silver that can be extracted from this actual amount of processed gold ore is 308,275 g. of gold and 1,869,498 g. of silver. This

indicates that the excise tax paid by RRMI is probably only half of what it ought to pay the national government.

*On the polymetallic project's social acceptability*

Prior to its approval and during the public consultations and hearings, Lafayette's ECC was vehemently opposed, raising, among others, the issues of the fragile nature of Rapu-Rapu's island ecosystem, the potential for acid mine drainage (AMD) and the torrential rain weather pattern in the area. On hindsight, the merit of these contentions have been validated and should be a serious cause for concern for the country on the ability of the EMB and DENR to exercise wise judgment in protecting our environment given how spectacularly they were proven to be wrong at so short a time.

The Commission, particularly notes the haste in the grant of the ECC notwithstanding the seriousness of the objections, raised and the fact that prior to its issuance, the environmental agencies were well aware of an ongoing Senate committee investigation on the matter. Worse, notwithstanding the committee recommendation for the DENR not to issue an ECC, it still proceeded to do so.

To be sure, there were other irregularities such as the conduct of the only public hearing right inside the premises of the ECC applicant. The Commission took note of the sheer inaccessibility of the site, the absolute reliance on Lafayette to reach the premises where the hearing was held within the site and the extremely limited options to travel in and out of the site.

In fact, anyone who must have attended this public hearing had to depend entirely on Lafayette for transportation and accommodations. These circumstances do not augur well for a real and meaningful participation and constitutes a failure of the public hearing process.

Another major flaw in the social acceptability process is the non-inclusion of Sorsogon. Sorsogon stakeholders, particularly the marginalized fisher folk of the coastal communities, had every right to be consulted and be heard because they are likely (and has, in fact, been the case) to face the environmental risks associated with the Rapu-Rapu Project.

Non-governmental organizations (NGOs) and people's organizations (POs) opposed to mining in the island were not included in consultations and were, in fact, barred from joining hearings and proceedings, like Sagip-Isla and Umalpas-Ka.

Although the failure to consider Sorsogon and other stakeholders is more than sufficient ground to nullify and revoke the ECC in question, it is worth mentioning the other Environmental Impact Assessment (EIA) shortcomings if only to prove its inherent invalidity. One of these is the failure to address cumulative impacts. At this point, it is worth reiterating the definition of *environmental impacts* as “the probable effects or consequences of proposed projects or undertakings on the physical, biological and socioeconomic environment that can be direct or indirect, cumulative, and positive or negative.”

#### RECOMMENDATIONS

1. Set up a People’s Health and Environmental Protection fund from the side of the national government to be used for compensation of the health victims and rehabilitation of the impacts of mining operations on the livelihood of those affected by the October tailings spill incidents. Pay the victims directly after an assessment of their complaints/problems.

Although Commission recognizes that the Lafayette Group is primarily liable for the consequences and damages wrought by the tailings incidents and its mining operations in Rapu-Rapu, our present laws, however, do not impose this liability upon the mining firm adequately and expediently – hence, the recourse to action from the National Government.

2. Fund and support the epidemiological study proposed by University of the Philippines – Philippine General Hospital (UP-PGH) and the Department of Health (DOH). Establish the scientific parameters for the health and safety conditions for the safe food intake of fishes and other aquatic food from the Albay gulf.
3. Cancel RRMI/RRPI PEZA registration on the basis of the irregularities found and for the reason that the Rapu-Rapu LGU has been unduly deprived of local taxes.
4. The Bureau of Internal Revenue (BIR) should investigate LPI, RRMI, and RRPI (the Lafayette Group) for underreporting of ore/processed dore production and violations of tax laws. The DENR should investigate the bureaus and regional units involved for negligence of duties. For purposes of realistic monitoring by the State it is strongly suggested that all gold/silver sales of mining firms be given to the Bangko Sentral ng

Pilipinas (BSP) as it does with small-scale mining operations – at least for the first four years of a mining company's initial operations.

5. Rescind all financial and economic incentives, including PEZA and Board of Investments (BOI) tax incentives to LPI/RRPI/RRMI (the Lafayette Group).
6. Order LPI/RRPI/RRMI (the Lafayette Group) to pay back all back taxes equivalent to those waived because of incentives/privileges for the whole duration of their mining operations.
7. Build the capability of DENR-MGB and EMB, both nationally and in the regions to be able to manage and monitor effectively mining firms and mining operations. Also democratize this process of managing and monitoring mining firms and operations by engaging local government units (LGUs) and people's organizations and by building their capabilities for effective engagement.
8. Issue a moratorium on mining in Rapu-Rapu and a suspension of MPSAs in the island pending scientific and experts' favorable resolution of the issue of ecological conservation and the AMD problem in a fragile small island ecosystem.
9. Cancel the ECC of RRMI and RRPI on the following grounds:
  - a. violations of 11 out of 29 conditionalities and subconditionalities contained therein;
  - b. the cumulative effects of the mining operations to human health, environment, and ecology have not been properly addressed;
  - c. social responsibility and acceptability issues still persist and remain unresolved to this day; and.
  - d. poor capability of DENR, Mines Rehabilitation Fund Committee (MRFC) and MMT to manage and monitor the mining operations of LPI Group.

The current ECC holders shall be allowed to re-apply should they want to continue operations in Rapu-Rapu. However, the scope of the EIS shall be

decided not only by the usual review committee but by a bigger panel to include scientists/experts and representatives of people's organizations and NGOs.

10. Review the Philippine Mining Act, specifically the provisions on the ownership and management of mining firms and operations, to protect the interest of the Filipino people and the Philippine government. Look to the need for creating an independent *Mining Authority* that will focus on the mining industry alone in terms of complete and timely monitoring especially on the impact of mining operations to people's health and environment and on the just share that must go to the government and the Filipino people.

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## The RAPU-RAPU FACT-FINDING COMMISSION

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### FINDINGS AND RECOMMENDATIONS ON THE MINING OPERATIONS IN RAPU-RAPU ISLAND

*19 May 2006*

#### INTRODUCTION

**On 11 October 2005**, tailings overflowed from the events pond<sup>1</sup> of the Rapu-Rapu Polymetallic Project on the island of Rapu-Rapu in southern Luzon, and flowed into the adjacent Alma and Pagcolbon Creeks and into the Albay Gulf.

Twenty days later, or on 31 October 2005, effluent<sup>2</sup> from the tailings dam of the same Rapu-Rapu Polymetallic Project was released into its settling pond<sup>3</sup> and polishing pond,<sup>4</sup> draining into the nearby Ungay and Hollowstone Creeks and eventually into the Albay Gulf.

Attributed to these tailings incidents are the following complaints and reports:

?? About a hundred persons living within the perimeter of 20 kilometers around the Rapu-Rapu Polymetallic Project mine site suffered from skin rashes, itchiness, and lesions from the period of October 2005 to February 2006—an unusual pattern in their communities as per municipal health records. (DOH-UP PGH)

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<sup>1</sup> Emergency pond

<sup>2</sup> Any wastewater, partially or completely treated or in its natural state, flowing out of the manufacturing plant, industrial plant or treatment plant. [DENR DAO 1990-35]

<sup>3</sup> Settling pond is a method of removing very fine particles from water by means of gravity. The dirty water enters the basin at one end and the cleaner water is taken out at the other end by decanting. The water must be in the basin long enough for the desired particle size to be removed. Smaller particles require longer periods for removal and thus larger basins. In open pit mining, slurry is pumped to a tailings dam or settling pond, where the water evaporates.

<sup>4</sup> Polishing pond further cleans the water coming out of the settling pond.

- ?? Water and soil samples randomly taken from Ungay, Hollowstone, Alma and Pagcolbon Creeks, Binosawan River and the Albay Gulf at different periods from October to November 2005 yielded positive at significant levels of toxic heavy metals (cadmium, copper, lead, arsenic and chromium). (Institute for Environmental Conservation and Research [INECAR]-Ateneo de Naga University / DOH - UP PGH / Center for Environmental Concerns [CEC])
  
- ?? Several species of fishes and marine organisms were found dead at the mouths of Alma and Pagcolbon Creeks several hours after the first tailings incident and more dead organisms including grasses along the creeks were found at the mouths of Ungay and Hollowstone Creeks after the second tailings incident. Cyanide, a chemical used as reagent in the gold and silver processing in the polymetallic project, was found to be the cause of death of the aquatic and marine organisms which have ingested it or had skin contact with it during the tailings incidents. (DENR-EMB V report)
  
- ?? A dead pygmy whale was found in November 2005, and later in March 2006 a dolphin went aground and eventually died too. Both mammals, under laboratory tests, revealed the presence of mercury at toxic levels in their livers and flesh. Mercury was found to be the cause of the death of the dolphin. Two other studies showed the prevalence of mercury in the flesh of several species of fishes in the cited bodies of water. (Report by Sagip Isla/Philippine Institute of Pure and Applied Chemistry laboratory analysis)
  
- ?? The mineral ore of the polymetallic project was never tested for mercury and thus continued to be a suspect source, despite the project's not using mercury as re-agent.
  
- ?? Within the next two months following the tailings incidents, Albay and Sorsogon fisher folks were not able to sell their fish catch because of the public fear of cyanide and mercury contamination of fishes in the area. There are more than 2,000 households who complained of loss

of income and other damages. (Random interviews / Position paper of INECAR)

Long-term adverse effects of the tailings incidents continued to be a source of apprehension for the nearby communities. (INECAR / DOH-UP PGH)

The Rapu-Rapu Polymetallic Project is operated by the Rapu-Rapu Processing, Inc. (RRPI), a unit of Lafayette Philippines, Inc. (LPI). The latter is 74-percent owned by Lafayette Mining Ltd, an Australian listed company, with the remaining 26 percent held by Philco (jointly owned by LG Metals and Kores Inc.), a Malaysian corporation, per testimony of LPI President Carlos Dominguez at the House of Representatives and at the Rapu-Rapu Commission.

The LPI, according to Dominguez, though foreign-owned is only a "holding company" since the actual mining operation is being done by two Albay-based Filipino firms, Rapu-Rapu Minerals, Inc. and Ungay-Malobago, Philippine corporations, with approved Mineral Production Sharing Agreements (MPSAs) and patented claims in Rapu-Rapu Island and with which LPI has a joint venture agreement. The project covers a surface area of one hundred eighty (180) hectares at Barangays Pagcolbon, Malobago, and Binosawan, Rapu-Rapu, province of Albay.

The 60-40 capitalization requirement, which constitutionally prohibits foreigners from owning more than 40 percent of utilities and mining firms, allowed "management consultancy services," for the holder of the Mineral Production Sharing Agreement (MPSA). This document does not refer to any sharing agreement with the State, because there is none.

LPI has joint venture agreements with Ungay Malobago and Rapu-Rapu Minerals on a 40-60 percent ratio. "Management consultancy service is allowed," LPI said, explaining how Dominguez was not fronting or acting as dummy for foreign investors.

Thus, to the question, "Are you foreign-owned?" one's denial of the obvious truth for an answer is now no longer considered a lie, technically

speaking, even by the Supreme Court, if one were legally correct enough to have properly layered the ownership pattern. The language differs from common sense or what is ethically right but it is currently legal.

LPI also said the processing plant, under the law, could be owned 100 percent by foreigners, so there was no need to hide the real owners.

“The mining company (as opposed to the processing company) is owned 60 percent by a Philippine company (Rapu-Rapu Holdings Inc.) and 40 percent by Lafayette Phils, which is well within the constitutional limit,” LPI said.

The Rapu-Rapu Polymetallic Project, one of the first new mining ventures approved in the Philippines after 15 years, was seen before the tailings incidents as a milestone in the resurrection of the Philippine mining industry which has been in steady decline since the 1980's. It is one of the 24 priority large-scale mining projects included in the government's 10-point program from 2004 to 2010. The Mines and Geosciences Bureau (MGB) projected from it a potential investment of \$42 million and revenues of \$246 million. The government stands to collect an annual excise tax, without incentives, of only 2 percent annually in excise taxes from the project's revenues.

In addition to these modest sums, however, the project promises to bring development to Rapu-Rapu through employment opportunities and by undertaking community projects which include building of roads, school houses, waiting sheds, multi-purpose halls, electricity, water system and other donations.

Considering at the same time both the potential economic contributions and environmental hazards of the Rapu-Rapu Polymetallic Project (RRPP), the impact of the recent tailings incidents together with the long-term mining operations is a concern that is clearly much bigger than the Island of Rapu-Rapu. It has direct or indirect, remote or proximate, immediate or strategic, impact on the national mining industry and economy, on international trade, and on local and regional biodiversity.

For the people of Rapu-Rapu and surrounding municipalities, their complaints about skin diseases, fish kill and fish scare causing loss of income, and presence of toxic heavy metals and chemicals at significant levels in their environment, are very serious matters that alarm them and threaten their future. Yet, one senior MGB official was content to describe the tailings incidents a “minor disaster”.

If this was a minor disaster in mining, what could be a major one? Still, whether minor or major, resulting human health problems, environmental hazards, and loss of income of people put into doubt the wisdom, adequacy or relevance of the 1995 Mining Act of the Philippines (Republic Act No. 7942, 1995), and other environmental and pollution control laws. This paper is the comprehensive fact-finding report of the Rapu-Rapu Fact-Finding Commission (RRFFC).

## **Approach and Methodology**

### *Methodology*

Individual and group studies and investigations were carried out according to current best practice. Public hearings, key informant interviews, ocular inspections, laboratory tests and paper trail pursuit were undertaken. Results were discussed and analyzed collectively.

### *Data Sources*

The fact-finding report is based upon a large number of specialist investigations and testimonies of persons with personal knowledge of the two tailings incidents. The RRFFC and the investigative teams it organized and led included international and Filipino experts in a number of scientific, engineering, socio-economic and medical disciplines.

As mandated, the RRFFC investigations were undertaken for specific purposes as follows:

- ?? Investigation of the proximate causes, contributory factors and surrounding circumstances of the tailings incidents;

- ?? baseline and social investigations;
- ?? investigation of the potential environmental, economic, social and human health effects of the tailings incidents;
- ?? risk assessment of the remedial actions taken, and proposed rehabilitation and disposal operations; and,
- ?? recommendation of technical, legal and other remedial courses of actions.

The individual and group reports from these investigations, as well as other data sources from literature, are referenced in the appropriate sections and listed in full in the bibliography of the Full Report.

Most of the data are primary data collected since March, specifically for the Fact-Finding; however, some secondary data have also been used. These were sourced from available literature or from databases.

#### *Profile of the Commission*

The Rapu-rapu Fact-Finding Commission is composed of the following:

Chairman:	Bishop Arturo M. Bastes, SVD, DD
Vice Chairman:	Mr. Charles R. Avila
Members:	Bishop Jose Rojas, Jr.
	Dr. Aloysius U. Baes
	Atty. Ronaldo P. Gutierrez
	Mr. Gregorio Tabuena
	Dr. Rodolfo A. Tamayo, Jr.
	Mr. Jojit G. Cañada
	Ms. Marilou D. Barcelá

### *Scope of the Fact-Finding*

The scope of the fact-finding is to investigate the effects of the mining operations of LPI on the inhabitants and environment of Rapu-Rapu Island and nearby municipalities. However, in the analysis of the effects in order to recommend appropriate actions, the RRFFC inevitably delved into the incidental administrative licensing and regulatory processes, legalities and other technicalities involved in or attached to the tailings incidents in particular and to the mining operations in general.

### *Duration of the Fact-Finding*

The fact-finding process was undertaken from March 17 to May 17, 2006. This Fact-Finding Report was prepared from April 20 to May 18, 2006.

### OVERVIEW OF MINING PROCEDURES

**Modern mining**, as defined academically, is the process of removing ore from its original site beneath the earth's surface. Ore is the solid rock or mineral from which metal or other valuable minerals can be extracted. To extract a small amount of gold or any other valuable from the ore, extensive work is required.

When ore is located relatively shallow under the earth's surface, open pit mining is usually employed. This is the method used in Rapu-Rapu. This type of mining uses giant trucks and shovels to uncover the ore.

Once the ore is mined, the gold or any other mineral still needs to be extracted from the ore. Milling is the primary step in the treatment of ore and is usually done at the mine.

Crushing, the first stage of the milling process reduces the coarse ore to pebble-size in preparation for grinding. The pebble-size ore is placed in large, rotating cylinders where pieces of steel, and sometimes chunks of ore grind the pebbles into small pieces so that the gold and other minerals can be released. Various separation processes are then used to remove the fine mineral particles from their host rock.

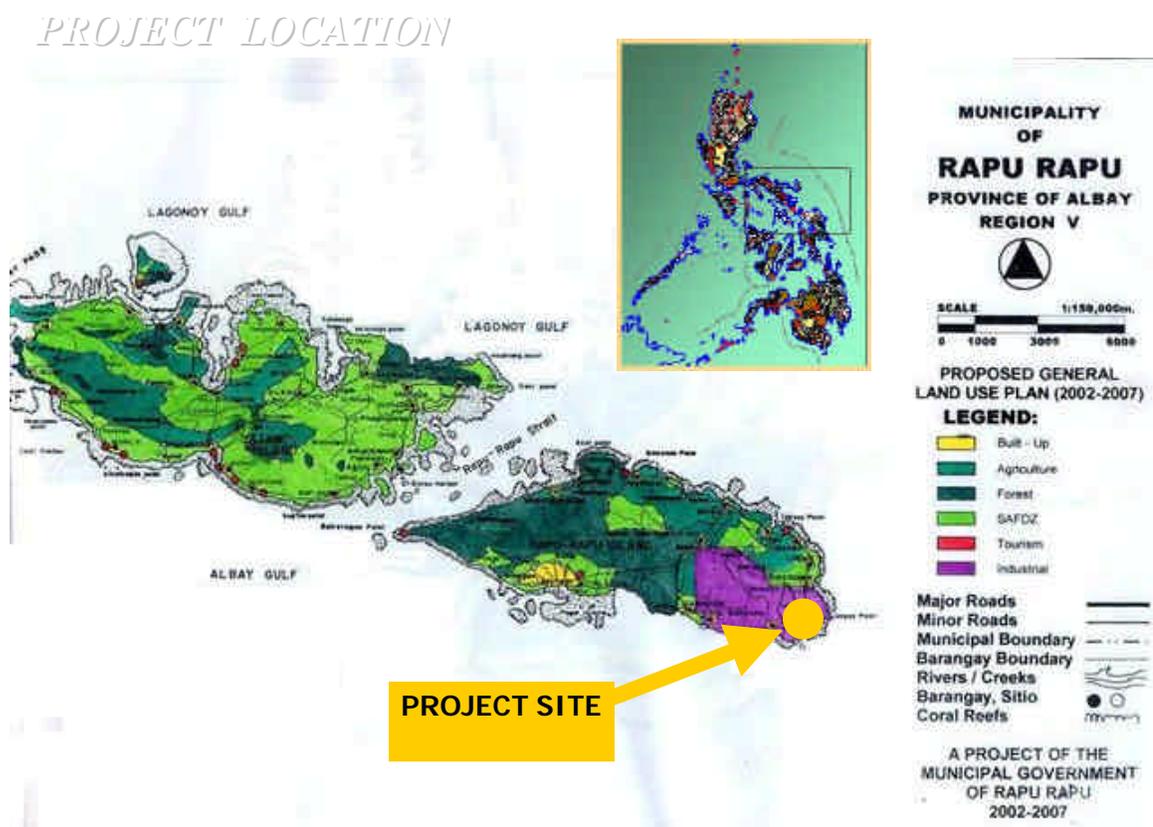
Flotation is the most common method of separating base metal minerals, many of which are deposited in sulphide compounds. The finely ground ore is mixed with water, called process water, to form a slurry. Certain chemicals or reagents that coat only the desired mineral components are added in small amounts. One of these reagents is cyanide. Rising air bubbles capture the coated mineral particles and float them to the surface where they are skimmed off to a separate circuit. The waste rock, now called tailing, remains in the slurry. The wastes or the tailings containing the chemicals and reagents used in this stage are controlled through tailings ponds and other waste management and disposal facilities.

The process of flotation is capable of increasing the concentration of minerals many times and of separating several different minerals from a complex ore body.

From this stage, the extracted minerals are then shipped to smelting and refining plants for further processing.

It was in the stage and site of flotation when the tailings incidents occurred in the Rapu-Rapu Polymetallic Project.

**Figure 1.** Location of the Rapu-Rapu Polymetallic Project



Source: LPI

**Figure 2.** General mine area



**Source: LPI**

**CHAPTER 1**

## CHAPTER 1

### I. THE TRUTH ABOUT THE TAILINGS INCIDENTS

Lafayette Philippines, Incorporated (LPI) uses the Carbon-in-Leach (CIL) method in the mineral processing for gold recovery. In this process, LPI uses cyanide to recover gold from mineral ores. Cyanide is added to the ores that have been crushed and grinded to free up the gold in leaching plants.

Cyanide-laden effluents from the mill are treated in the detoxification tank where a chemical reagent sodium metabisulfite ( $N_2S_2O_5$ ) is introduced to neutralize cyanide. After passing through the detoxification tank, the treated tailings are not yet safe to be released to the environment. Thus, the tailings are pumped through a series of tailings and settling ponds where cyanide will be neutralized by dosing the ponds with lime until the tailings reach the standards set by the Department of Environment and Natural Resources (DENR).

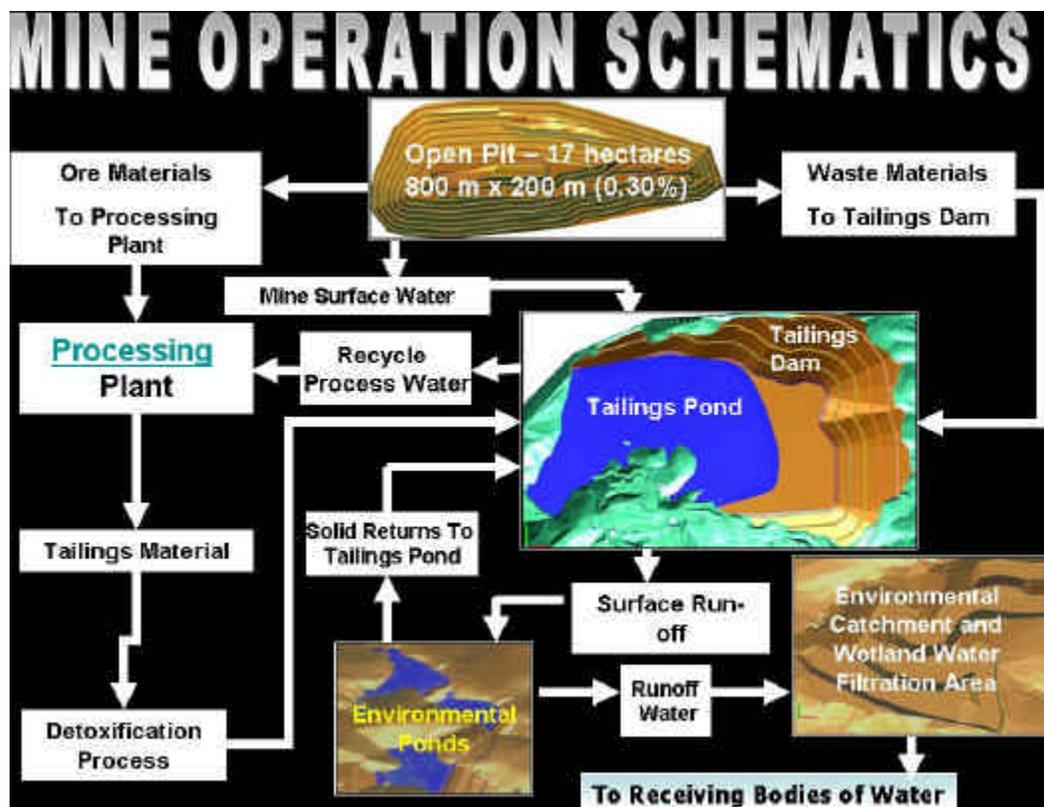
LPI has one emergency pond in its mill plant (called events pond), two tailings dams and two settling ponds for this purpose. Exposure to sunlight over a certain period of time can reduce the concentration of toxic forms of cyanide in solution to meet DENR standards.

The tailings decant/solution, however, do not only contains cyanide. Other toxic heavy metals present in the ores become part of the tailings decant material in the process of recovering gold. Additionally, the tailings sediment, upon contact with oxygen present in air and water or pyrites in geologic rock formations, produces acid mine drainage (AMD) adverse to humans and the environment.

To prevent AMD, LPI employs several methods of containment, neutralization and submergence (detailed discussion of LPI's AMD prevention on page 35).

Below is an illustration of the flow of tailings material as per DENR-approved LPI design.

**Figure 4.** Flow of tailings and waste water as per RRPI-LPI design



Source: LPI

However, what happened in the first and second tailings incidents are different from what has been designed and approved.

#### The First Tailings Incident

**LPI and DENR version:** An initial report was sent to the DENR-EMB by LPI's Senior Environmental Engineer Carmelita B. Pacis, on 12 October 2005. LPI's initial report stated that "an incidental leakage of voluminous amount of mine tailings made it through via Alma and Pagcolbon Creeks into the ocean thereby causing a fish kill on said area." Note that the incident was described a leakage and the amount voluminous.

An earlier sample-taking by MGB Safety Inspection personnel on 11 October 2005 revealed that there was indeed a fish kill in the vicinity near the mouth of the said creeks and that water samples collected in the area denoted alarming concentrations of cyanide that exceeded the DENR standard in some by more than a thousand times. Note that there were MGB personnel on the day the tailings incident occurred. But while the MGB team coincidentally in the area on the day of the tailings incident conducted an on-the-spot investigation, there were no immediate remediation measures imposed on the mining company. It was not until two days after, or on 13 October 2005, that MGB Region V dispatched an investigation team to check the veracity of the initial report and to assess the extent of the damage wrought by the incident.

DENR-MGB V Regional Director Reynulfo Juan clarified a week later the events that led to the tailings spill. Note that in their different reports, LPI and the DENR call the incident a leakage interchangeably with spillage.

According to Director Juan, based on the MGB-V 13 October 2005 investigation report, two pumps were designated to pump tailings to the upper tailings dam. One malfunctioned while another had a defective valve that resulted in stoppage of tailings pumping. There was neither an alternate or back-up pump installed that would augment the installed pump in case of pump failure. Also, appropriate valves and fittings were not installed to prevent back flow of tailings slurry. The events pond was already 40% full at the start of the night shift thereby reducing the pond's containment capacity. The events pond got filled and overflowed.

Indirectly denying the voluminous amount of tailings that overflowed, Director Juan also clarified that the amount was only approximately 20 cubic meters.

From the same investigation report, analysis of water samples shows that:

1. Results of samples taken by MGB V last 11 October 2005 show high cyanide levels compared to DENR standards of 0.05 mg/l pursuant to DAO 1990-34 on revised water usage and classification / water quality criteria for class C water. This indicates that highly concentrated tailings slurry sipped through the said creeks into the ocean.
2. Results of samples taken by EMB V last 13 October 2005 revealed that samples from the mouth of Alma Creek failed to conform to the standard denoting that significant of spillage of tailings were present until the third day after the incident. This was confirmed through ocular inspection. The direct flow of the voluminous spills was toward the creek.

Based from the findings, the EMB V remarked that "the firm's effluents affected the characteristics of the receiving body of waters wherein results of the water sampling conducted exceeded the standard set forth x x x Such act (Sic) constitute violation of Sections 27-a and 27-f, chapter 5 of DAO 2005-10, the Implementing Rules and Regulations of RA 9275, the Philippine Clean Water Act of 2004."

It recommended that a Notice of Violation be issued to the firm and that a Technical Conference be held to resolve the problem. It further recommended that all engineering measures be undertaken to abate recurrence of said breakdown as indicated in the findings of the EMB V report. *Underscoring ours.*

The cyanide level of the tailings that overflowed during the 11 October 2005 event was more than 35 parts per million (ppm), way above the DENR standard of 0.05 ppm. This indicates that the cyanide levels have not been sufficiently reduced even after the tailings have passed through the detoxification tank. Ideally, cyanide levels at this stage should be about 3-5 ppm, indicating that the amount of cyanide detoxifying agent (sodium metabisulfite) was insufficient. When the tailings are exposed to natural sunlight in the upper and lower tailings containment facilities over an average of 4-5 days, cyanide levels will be further reduced and reach the DENR standards. (DENR Fact Sheet)

For 10 days from October 11, DENR ordered LPI to stop its grinding and processing operations and to undertake the recommended measures. But after only six days, DENR modified its own order and approved LPI's request to resume operations basing its approval on LPI's compliance report.

The Multipartite Monitoring Team (MMT), on the other hand, in its October 13 meeting, recommended several more measures<sup>5</sup> to prevent another October 11 incident. The MMT was organized by LPI in coordination with DENR as legally required for projects for which ECCs were issued pursuant to an EIS to undertake compliance monitoring. The purpose is to encourage public participation, greater stakeholders' vigilance and provide appropriate check and balance mechanisms in the implementation of the project. The MMT report shall be the basis of DENR's action without prejudice to DENR's undertaking a validation of the events covered or leading to the MMT report. (EPEP)

#### **RRFFC findings:**

In addition to the facts established above through LIP and DENR reports, the following important details and information were found by RRFFC through its study of the same written reports and other relevant documents, ocular inspection at the mine site and the surrounding communities, key informant interviews and public hearings.

1. What happened in the first tailings incident was an overflow in the events pond, as distinguished from a spillage or a leakage, of a combination of tailings and process water coming from the CIL detoxification circuit of the gold processing plant. As per DENR-approved plant design, the

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<sup>5</sup> Multipartite Monitoring Team recommended measures to prevent another October 11 incident:

- Institute remedial measures to prevent tailings backflow and install another valve on tailings line discharge side of the tailing pump;
- Redesign the pit to accommodate the change in geometry of the tailings discharge line;
- Institute regular pumping of slurry in events pond, reduce its level to 15% then implement a procedure that the grinding section can only be run if the event pond is 50% or lower;
- Storm water drainage around the mill complex should not be allowed to drain into active water ways. Install earth bunds and sand bags strategically around the events pond area and close the storm water drain pump cover until the area is cleaned and wastes disposed off;
- Institute emergency measures to contain possible contamination of marine life;
- Institute emergency warning and alarm systems for local population;
- Total systems review of event pond procedures and the whole procedural flow in the processing plant;
- Desilt and repair damaged silt control structures along both creeks (Alma and Pagcolbon); and,
- Conduct weekly water monitoring for heavy metals and chemicals analysis.

Source: *Minutes of MMT Meetings 13 October 2005 (Available at the RRFFC Archives)*

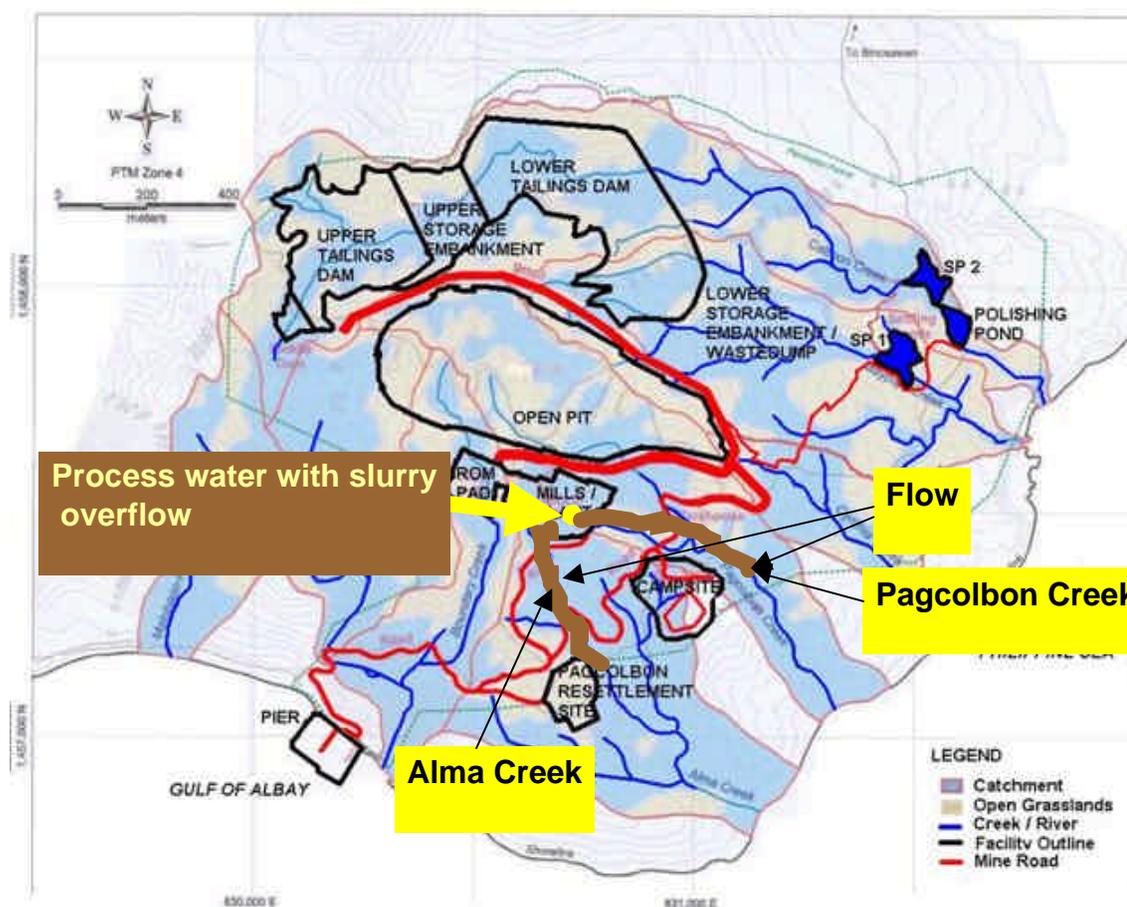
tailings and the process water from the CIL should have been pumped towards the upper tailings storage pond (or upper pond for brevity) so as not to cause any overflow of the contents of the events pond. The events pond was only for emergency and should have remained dry all throughout the gold processing.

2. The events pond, however, was being used by LPI not for the emergency purpose it was so designed. Since LPI began operating, the events pond has become its temporary storage of tailings and process water during gold processing. Tailings and process water from this pond were then pumped to the upper pond. By so doing, however, LPI has rendered the events pond useless as a safeguard or emergency infrastructure to an event such as a tailings incident. At the time of the incident, the events pond was already half full to capacity during the night shift and then overflowed by 2:36 in the following morning.
3. The pump that directs the tailings and process water from the events pond to the upper pond has malfunctioned several times. This fact was gathered by RRFCC from interviews with LPI personnel. This fact never appeared in the reports of the MGB monitoring personnel (while they are tasked to monitor LPI operations) until only after the tailings incident. Thus, the main pump has been used by LPI until it, too, malfunctioned, on the day of the tailings incident. An empty bottle of mineral water was found sucked by the main pump believed to be the cause of its malfunction. There was no more back up pump when the two pumps failed. So when the main pump stopped working, the events pond overflowed. LPI has no emergency mechanism to stop or mitigate this kind of incident. The DENR-approved LPI engineering design was operated without the emergency mechanism.
4. The sample analysis reported by MGB V indicates only cyanide levels because it has no equipment capable of analyzing toxic heavy metals. While it is tasked to monitor the LPI operations for safety purposes, it does not have the capability of monitoring the toxic heavy metals that are

always present in mine tailings and that pose long-term adverse impact to human health and environment.

5. It was wrong of DENR to have approved LPI's resumption of operations on 17 October 2005. Most of the recommended measures were unaccomplished despite LPI's commitment to undertake them. When LPI resumed operations on 17 October 2005, only the pump has been repaired, the events ponds reduced to 30% and sandbags installed at Alma and Pagcolbon Creeks.
6. It was also a negligent conduct for the MGB team who was coincidentally in the area on the day of the tailings incident and who conducted an on-the-spot investigation that the team failed to impose immediate remediation measures on the mining company. It was not until two days after, or on 13 October 2005, that MGB Region V dispatched an investigation team to check the veracity of the initial report and to assess the extent of the damage wrought by the incident.

**Figure 4.** Illustration of the first tailings incident



Source: EMB V

### The Second Tailings Incident

**LPI and DENR version:** An initial report from LPI official Ian Kennedy (General Manager for Operations of Rapu-Rapu Processing Inc. [RRPI] of LPI) dated 2 November 2005 was received by EMB V on 3 November 2005. As reported, on 31 October 2005 between 12 am to 6:30 A.M., the project site received very heavy rainfall (approximately 125 mm). LPI describes the rainfall as one that happens only in 25 years. (LPI report) Large portion of the resultant run-off was directed into the environmental settling ponds and subsequently dozed with lime.

Afterwards, the RRPI management undertook measures by construction of drainage diversion bunds and channels to decrease the water volume in the

ponds to protect the integrity of the dam structure or to prevent it from collapsing. Backhoes were used to make an emergency drainage canal.

*x x x the main cause of discharging wastewater at the U3 (by opening a certain portion) was the accumulated wastewater from the Upper Tailings Pond (UTP), spring and run-off from the upper portion of the area caused by heavy rainfall on 31 October 2005. If this wastewater is not allowed to be discharged, the accumulated wastewater and run-offs would overflow at U3 which might damage the waste dump area and there would be more area damaged compared to allowing it to flow (Sic) thru "control discharge" x x x<sup>6</sup>*

Meanwhile, while mitigating measures were being undertaken, RRPI suspended its gold milling and CIL operations by 4:30 am of 1 November 2005 not to resume milling operations until freeboard levels of settling and polishing ponds return to acceptable levels.

In the morning of 1 November 2005, fishes and other marine organisms were found dead at Ungay and Hollowstone Creeks. Two residents of Barangay Binosawan submitted about 10 pieces of dead finger-size fish and marine creatures contained in a glass and a plastic bag. Approximately 15-17 kg fish and marine creatures were confirmed affected.

A letter from Malobago Bgy. Captain Reynold Asuncion dated 2 November 2005 was received by EMB on 3 November 2005 requesting for any help from said office on the alleged fish kill. To validate the said reports and to assess the extent of the damage brought about by the said incident, EMB V dispatched an investigation team on 4 November 2005. Note that the EMB investigation was conducted four days after the heavy rain fall.

The EMB found and reported that LPI had violated the first condition in its waste water discharge permit (issued 11 April 2005): *The permit holder shall contain its 981,120 cu. m/year waste tailings into the tailings ponds. The tailings pond shall be operated within its allowable impounding capacity thus no*

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<sup>6</sup> Statement made by Engineer Elmer A. Ragas, manager of MESH, RRPI-LPI, as appearing in the EMB-DENR Region V Investigation Report dated 4 November 2005

*overflows shall be allowed to be discharged from the pond. Discharging of effluent which is not in conformance with the effluent standard under DAO 90-35 shall be a ground for revocation of this permit.* EMB recommended, among others, that LPI should be issued an Order revoking its Waste Water Discharge Permit (WDP) and Chemical Control Order for Cyanide until such time that the quality of its effluent conforms to the standard, all the corrective/mitigating measures are in place and paid the corresponding penalty per RA 9275.

As per EMB investigation report<sup>7</sup>, results of water sampling analysis showed that:

1. The effluent failed to conform with DENR Effluent Standards per DENR Administrative Order 90-35<sup>8</sup> for parameter cyanide; and,
2. Samplings conducted on 4 and 5 November, 2005 at most of the receiving bodies of water failed to conform to DENR Standards under DENR Administrative Order 90-34<sup>9</sup> for parameter cyanide.

The receiving bodies of water referred to are Hollowstone Creek, Ungay Creek and Binosawan River. The cyanide in the water released from the tailings dam and ponds is the cause of death of various marine organisms in the said bodies of water found following the second tailings incident.

#### **RRFFC Findings:**

1. The heavy rain fall on 31 October 2005 is not one in 25 years. In a 10-year rain fall monitor, 125 mm more or less rain fall, is common. See Appendices for rain fall data. It is a usual occurrence in the area as also confirmed by residents and as warned six years ago by INECAR in its study (Regis).

<sup>7</sup> EMB-DENR Region V Investigation Report (p.2) dated 5 November 2005

<sup>8</sup> DENR DAO 1990-35 **Section 4. Heavy Metals and Toxic Substances.** Industrial and other effluents when discharged into bodies of water classified as Class A, B, C, D, SA, SB, SC, SD, in accordance with section 68, as amended, of the 1978 NPCC Rules and Regulations shall not contain toxic substances in levels greater than those indicated in table one. Table 1 sets the limit in discharging toxic and deleterious substances in marine waters as follows: arsenic, 0.5; cadmium, 0.1; chromium (hexavalent), .2; cyanide, 0.2; lead, 0.5; mercury, 0.005; pcb, 0.003; formaldehyde 1.0

<sup>9</sup> See Appendices for DENR DAO 1990-34 Table of water quality criteria under Section 69 providing for the water quality criteria for toxic and other deleterious substances for coastal and marine waters (for the protection of public health).

The freeboard capacity of the dam was not enough to contain even the common rain fall volume considering that the DENR-approved design requires 190 meters (EPEP as approved on 26 April 2002) but LPI has only built 127.9 meters at the time the second tailings incident occurred. LPI was already operating, regrettably with DENR consent, despite the freeboard capacity requirement has not yet been complied with.

After the second tailings incident, LPI proposed in its rehabilitation plan to increase the dam height and freeboard capacity from 127.9 meters to 135 meters. The proposal was approved by DENR, again, despite the fact that the proposed increase is still short of 55 meters from the original design requirement (as per EPEP).

DENR has been noticeably consistent in allowing LPI to violate especially the environmental protection requirements of its approved EPEP.

2. Not only rain water run-off was discharged as LPI reported but a combination of water and effluents. The discharging was done at about 3 P.M. of 31 October 2005 and not on November 1 as reported in the LPI letter.

LPI engineers claim only rainwater was discharged during the second tailings incident. They further claim that it was impossible for the tailings to be mixed with the run-off.

It was not impossible.

The undisputed heavy rain fall could have ordinarily stirred and mixed the rain water and tailings.

3. The discharged tailings and effluents do not only carry cyanide but other toxic heavy metals as shown in subsequent studies made. (INECAR / CEC studies) EMB V reported only presence of cyanide because it has no capability to analyze other toxic heavy metals. The results of several environmental studies

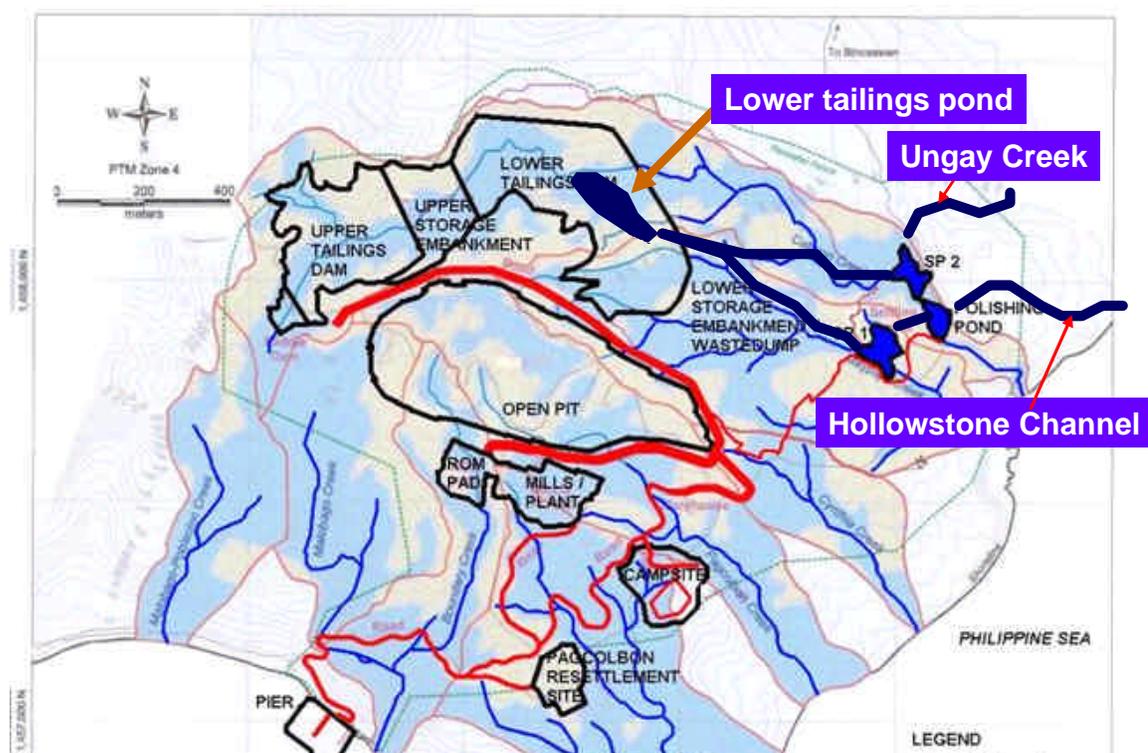
following the tailings incidents thus disproved LPI's claim that it only discharged rain water (or run off).

4. LPI commenced its operations, regrettably with DENR consent, while it was yet to complete the construction of its tailings pond according to the required freeboard capacity.

5. LPI resumed its operations on 17 October 2005 despite the measures to prevent another October 11 incident (as ordered by DENR and recommended by MMT) not having been completely complied with. It has been negligent from the start for not observing the required safety and emergency procedures and infrastructures. It has been continuously negligent when it resumed operations without again adequately and effectively complying with the DENR-imposed measures. Thus, the continuing negligence of LPI caused another engineering failure aggravated by the act of unauthorized discharging of effluents on 31 October 2005.

6. Considering that the engineering measures after the first tailings incident have not yet been adequately complied with by LPI, it was negligent for the EMB-DENR to have not anticipated any danger or similar disaster as that of the first incident. It did not give any precaution or warning, and did not order any disaster prevention action given the heavy rain fall on 31 October 2005.

**Figure 5.** Illustration of the second tailings incident



*Source: EMB V*

On PAB Resolution,  
LPI's Request to Lift Suspension of Waste Water Discharge Permit,  
and Request to Reclassify Hollowstone Creek into a Gully

On 9 January 2006, DENR Secretary Michael Defensor issued a Resolution / Order In The Matter of the Water Pollution Control and Abatement Case versus RRPI for Violation of RA 9275 and its Implementing Rules and Regulations (DENR PAB Case No. 05-00744-05) ordering the following:

1. To cease and desist from causing the discharge of waste water to the environment until and unless all the settling ponds, polishing and events ponds are fully rehabilitated and capable of containing waste water and other sources of waste water relevant to respondent's operation.
2. DENR V in coordination with the MGB V is directed to conduct weekly monitoring and sampling of respondent's waste water as well as that of the sampling points previously identified. (Recall that MGB V has no capability of analyzing heavy metals.)
3. DENR V is directed to conduct a technical conference for the institution of remedial measures.
4. The PAB legal counsel is directed to institute the filing of appropriate charges against LPI before proper agencies for the deaths of marine organisms.
5. An initial amount of P10.4 million was imposed as fines and penalties covering the period of violation from 11 October up to 14 December 2005. The amount of P300,000 as fines is also imposed upon LPI for violation of three ECC conditions.<sup>10</sup>

LPI, on the other hand, publicly announced its intention to appeal and bargain for reduced fines and penalties.

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<sup>10</sup> DENR-PAB Case No. 05-00744-05 In The Matter of the Water Pollution Control and Abatement Case vs. RRPI (Respondent) Notice of Issuance of Resolution/Order dated 9 January 2006, pp. 5-6: (2) Violating the conditions of its ECC, to wit: a) control and/or reduction by management of impacts of all identified geological and environmental hazards and risks associated with the project, including release of toxic or hazardous chemicals and substances xxx; b) submission to the EMB Coastal Management Plan for approval and strict implementation of the same throughout the life of the project xxx; and c) xxx

On 16 February 2006, EMB V submitted an Inspection Report which inspection was conducted on 6 January 2006. The inspection was made to verify reported continuance of mill operation and the discharging of the effluents to the environment despite the suspension of LPI's WDP and the use of cyanide in the operation. The inspection report is also in response to a letter by LPI (signed by Roger C. Cabautan, Manager of LPI's Sustainability Department) requesting EMB V "to reclassify Hollowstone not as a receiving body of water but just a gulley and therefore allowing us to direct water effluent from the polishing pond to the coastal marine water where 0.2 ppm is acceptable in accordance with the DAO 35 series of 1990."

The letter partly states:

"At present our company is in the process of completing the construction of our tailings storage facility. In the construction, water management is a vital factor particularly reducing the water level inside the dam to continue the construction and meet the requirements.

We are making it a point to be compliant with the DENR regulations particularly in as far as water effluent is concerned. One of the company's predicaments, however, is to maintain compliance to water free-cyanide analysis from our polishing pond discharge at 0.2 ppm and 0.05 ppm at the Hollowstone Creek as receiving body of water. Nominating Hollowstone Creek as a receiving body of water was an oversight the company made. In truth and in fact, Hollowstone is just a gulley, without water in it."

The EMB V Inspection Report contains the following important findings (excerpts):

A. Findings of the facility inspection revealed that the firm has not resumed operation of its Gold Mill Plant since 31 October 2005. However, it was found that liquid effluents are being discharged towards the Hollow Stone Creek x x x

in violation of Sec. 27 (discharging regulated water pollutants without the valid required permits or after the permit was revoked for any violation of any condition therein) of DAO 2005-10 (Implementing Rules and Regulations of RA 9275, The Philippine Clean Water Act of 2004), although the discharged effluent was found to be conforming with the DENR Effluent Standards under DAO 90-35 for CN though the ph level was beyond the allowable range.

B. x x x Upon verification at the site, this Office (EMB V) found that before the water channel at the Hollow Stone area was not originally a creek, but was more of a gully. The gully serves as a drainage path for surface run offs in that area and has no other water beneficial use since water is intermittent on the channel.

With such definition, the discharged effluents at the gully shall be considered continuation of the final effluent, in which the Effluent Standards shall apply. But considering that the discharging of CN contaminated waters could not be allowed into the gully or by land spreading, it is imperative that the final discharge should be conveyed directly towards the sea, so as to prevent contamination of the land environment between the pond and the sea.

C. On 4 January 2006, EMB V received letter from firm (LPI) requesting for the lifting of the suspension of (their) waste water discharge permit since they have to build up the upper tailings dam embankment and comply with the conditions imposed by the Mine Rehabilitation Fund Committee, but the high level at the lower tailings storage facility prevents them to do so x x x this Office (EMB V) conducted initial evaluation of the proposed waste water disposal scheme and has the following initial findings:

\* The request to lift the suspension imposed by this Office on their waste water discharge permit is not relevant to the firm's proposed disposal scheme. The WDP previously issued to the firm was for the disposal of their mill tailings to the tailings pond only, while their proposed disposal is from the tailings pond to the environment. It should be noted that the disposal of mill tailings to the environment was not covered by the ECC granted for the project. Hence, there is

a need for the firm to apply for a separate WDP for the proposed temporary disposal procedure x x x

**Comments of RRFFC:**

1. The wastewaters referred to consist of decant of tailings pond as well as the tailings itself, and surface runoff that may have intermingled with the tailings materials. As such, the wastewater parameters of concern are not limited to gross parameters (pH, TSS, COD) and cyanide, but should include levels of toxic heavy metal ions such as divalent arsenic, cadmium, copper, lead, mercury, nickel, zinc, and hexavalent chromium. It is entirely wrong for LPI (or EMB) to state that the wastewater effluent/discharge from the polishing pond to coastal marine waters is acceptable just because the levels of cyanide were found conforming to DENR standards. The wastewaters have not been ascertained to contain acceptable levels of toxic heavy metals and thus, are unacceptable.

2. Apart from the discussion on whether Hollowstone is a creek or a gully, the fact remains that LPI intends to use the area as a channel for their effluents to flow, eventually to the marine environment. There are two issues of concern here: one, is that LPI does not have a water discharge permit at present, to discharge their effluents and/or associated run-off (those that have intermingled with tailings materials) to the land or water environment, and two, their effluents have not yet been established to be truly compliant with all relevant provisions of the Clean Water Act (see no. 1 above). LPI need to apply for a separate permit for the proposed use of the Hollowstone area as a discharge channel. More importantly, LPI must ascertain that all their discharges are compliant not only with respect to the gross parameters and cyanide, but also with the levels of toxic heavy metals.

3. The LPI request of January 4, 2006 for EMB to lift the suspension of the wastewater discharge permit to allow them to build up the tailings dam embankment, was not granted. The EMB reasoned out that the wastewater discharge permit currently held by LPI does not refer to disposal of tailings to the environment, rather, it refers to the disposal of their mill tailings to the tailings pond only.

More importantly, however, it should be pointed out that the construction of the appropriate tailings dam should have been done earlier, before the start of full operations of the mine and mill and LPI should, in fact, be penalized for starting full mine and mill operations without appropriate wastewater impoundment facilities. With this consideration, the discharge of wastewaters from the tailings pond to the environment should be considered only as a last option and, only if, the wastewaters in the pond could be ascertained to be truly compliant with clean effluent requirements (see no. 1 above).

**Figure 6.** Fish kill in Rapu-Rapu



## II.

### IMMEDIATE EFFECTS AND LONG-TERM IMPACT

#### *The Fish Kill and the Fish Scare*

Subsequent studies found the existence of toxic chemicals in samples examined which caused the fish kill incidents. The fish scare that followed from the fish kill incidents arose from apprehensions that fishes caught after the tailings incidents were not safe for human consumption. Even the Department of Health issued an advisory not to eat fishes caught in the area. This was after fish samples monitored for mercury one month after the tailings incidents showed mercury levels ranging from 0.5 (the government standard) to 2.43 parts per million (ppm).

During the first and second tailings incidents, fishes and other marine organisms were undoubtedly affected. That fact was not disputed by even the mining company. What was unclear was the extent of the effects of the tailings incidents on the surrounding seas and fishing industry in the island and the adjacent province of Sorsogon.

In the first tailings incident, LPI reported that only about one to two kilograms (kg) of thumb-sized fishes and small marine creatures were found dead near the mouth of Alma and Pagcolbon creeks. In the second incident, it reported that approximately 15-17 kg of fishes and marine creatures were affected in Barangay Binosawan.

The mining company obviously tried to downplay the fish kill incidents. The company went as far as causing the issuance of certifications from barangay leaders of Binosawan, Malobago and Pagcolbon saying fishermen in the said barangays were not affected by the tailings incidents.

Some Rapu-Rapu residents, however, gave testimonies to the RRFFC that they were able to recover more dead fishes immediately after the tailings incidents, particularly the second. Two sacks of dead fishes were allegedly buried in Brgy. Binosawan on 1 November 2005. Also, fish kills were monitored in

September or about a month before the first tailings incident by the multi-partite monitoring team.

After the fish-kill incidents was the fish-scare. Fish buyers stopped buying fishes caught at the Albay gulf near the rich fishing grounds between the island of Rapu-Rapu and the coastal areas of Sorsogon. As much as 80% of the fish trade in Legazpi City was affected. Rapu-Rapu families which depended on fishing for survival found fish buyers shunning their catch; they were forced to eat the fish they caught themselves. Previously just having enough to feed their families, they now only eat once per day, according to a testimony of the wife of a fisherman in Pagcolbon.

In Sorsogon, the fish scare caused "unwarranted and untold sufferings" to fisher folk families, fish traders and the fish consuming public, in the words of Sorsogon Governor Raul Lee. After several studies, including the government's fisheries bureau, failed to make conclusive findings on the health and safety of fishes caught in the area, Sorsogon City Mayor Sally Lee commissioned the University of the Philippines - Natural Sciences Research Institute (UP-NSRI) to conduct further studies.

After its study, the NSRI reported that Sorsogon's, as well as Albay's waters, fish and underwater sediments are safe. However, while NSRI's laboratory analysis indeed showed safe levels for water and fishes sampled, it showed otherwise for sediments taken from the mine site and several other areas in the study area, including some coastal areas in Sorsogon. Moreover, although the NSRI ruled out mercury and arsenic contamination among the water and fish samples it studied, its sediments results showed other heavy metals, including arsenic, lead, copper and cadmium at levels either very near or exceeding government standards.

The NSRI study cleared the air somewhat regarding the fish scare that has proven to be devastating economically for the fishing industry and the fishing population in Sorsogon and Rapu-Rapu, Albay. However, it may not be for long as the study also indicated sediment samples with heavy metals that may not be far from ideal or safe. As a councilor and fisherman in Rapu-Rapu,

who testified before the Commission, said: it is not in the water but in the sediments that fishes eventually get contaminated through bioaccumulation with heavy metals that render it unsafe. Indeed, he may be right, as he further said that fishes do not eat the water but planktons or sea organisms living in underwater sediments.

For the RRFFC, the NSRI study brought forth more questions than answers. Some things are certain though: There was a fish kill and a fish scare following the tailings incidents. And the UP-NSRI study does not clear LPI from any wrong doing it may have caused for the fish kills and fish scare victimizing the people of Albay and Sorsogon provinces.

#### *Loss of Livelihood*

The two incidents caused a fishkill that ultimately spawned a fish scare. The Commission finds that the fishkill was directly attributable to the acts and negligence of the operators of the Rapu-Rapu mining project as earlier discussed. The fish scare was a natural consequence of the fishkill that resulted from RRPI and RRMI's acts given the serious health risks that the consuming public were potentially exposed to. LGU officials should not be faulted for raising these valid concerns because it is precisely their duty to protect the general welfare of their constituents.<sup>11</sup> That RRPI and RRMI did not notify Sorsogon officials at all of the nature and extent of these two incidents and simply waited for this social disaster to unravel before coordinating with Sorsogon LGUs simply aggravate their liability. Precisely, this lack of access to truthful information amidst the constant spin only fueled the fish scare. The fisherfolk of Sorsogon became the ultimate victims.

While a full-blown study of the damages sustained by Sorsogon fisherfolk was not submitted to the Commission,<sup>12</sup> we are nonetheless able to use proxy values to approximate the extent of their loss of livelihood. For this purpose, we can use the existing values from the demographic data used by the Lafayette

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<sup>11</sup> R.A. 7160, Sec. 16.

<sup>12</sup> Even the BFAR does not have a baseline study.

group as baseline information of their “direct impact” stakeholders in Bgys. Pagcolbon, Malibago and Binosawan in Rapu-Rapu island. This is a good and conservative approximation because these fishing communities share the same fishing grounds and residents of these two nearest municipalities have common family ties with the constant traffic across the gulf. In this regard, Lafayette’s own baseline study show:

**Table 2-65 Estimates of Fishing Effort in the Primary Impact Barangays (July 2000) Provided by the Respondents**

Gear type	Estimated Volume (kg) of Catch/day trip	Number of fishing days/mo	Number Of fishing Mo/yr	Estimated Annual Volume of Catch	Number Gear	Estimated Annual Production (kg)	Average Price (Php)	Monetary Equivalent
<b>Bgy. Malobago</b>								
Spearfishing with compressor	15	25	12	4500	5	22,500	50	1,125,000.00
Manual spearfishing	1	10	12	120	25	3,000	50	150,000.00
Tuna Drift Gill net (Pamo)	15	15	4	900	20	18,000	80	1,440,000.00
Spear/light	3	15	4	180	30	5,400	50	270,000.00
<b>Bgy. Pagcolbon</b>								
Manual spearfishing	5	25	12	1500	33	49,500	50	2,475,000.00
Tuna Drift Gill net (Pamo)	30	15	5	2250	7	15,750	80	1,260,000.00
Gill net (Pangke)	1	25	12	300	10	3,000	50	150,000.00
<b>Bgy. Binosawan</b>								
Manual spearfishing	8	25	12	2400	50	144,000	50	7,200,000.00
Gillnet (Pangke)	15	15	4	900	5	4,500	50	225,000.00
Tuna Drift Gill net (Pamo)	32	15	8	3840	18	69,120	80	5,529,600.00
						334,770		19,824,600.00

SOURCE: Lafayette Group Powerpoint Presentation, “Environmental Compliance Reports”.

The table shows the estimated volume of catch per day of a fisherman engaged in a specific form of fishing in the three barangays of Rapu-Rapu. The above data can be used to estimate the average income per month using the table below:

Catch/Day	Price	Days/Mo	Income/Mo.	# of Gears	Total/Mo.
<b>Bgy. Malobago</b>					
15 kg	P50	25	P18,750	5	P 93,750
1	50	10	500	25	12,500
15	80	15	18,000	20	360,000
3	50	15	2,250	30	67,500
<b>Bgy. Pagcolbon</b>					
5	50	25	6,250	33	206,250
30	80	15	36,000	7	252,000
1	50	25	1,250	10	12,500
<b>Bgy. Binosawan</b>					
8	50	25	10,000	60	600,000
15	50	15	11,250	5	56,250
32	80	15	38,400	18	691,200
<b>Totals</b>			<b>P142,650</b>	<b>213</b>	<b>P2,351,950</b>
<b>Max:</b>	32	P80	25	P38,400	
	kg				
<b>Min:</b>	1	P50	10	P500	
	kg				
<b>Ave:</b>			<b>P14,265</b>		<b>P11,042</b>

Two averages are produced. The first one, P14,265, uses a simple average. The second, P11,042, takes into account the number of fishermen who use a certain type of fishing gear in weighting the average. The result for the 3 barangays give an indicative monthly income for someone who fishes in Albay Gulf in any given month. This can serve as proxy values for the gross income lost by Sorsogon fisherfolk. All that is needed is to multiply P11,042 with the number of affected fishermen times 5 months (November 2005 to March 2006).

**MGB Condition.** The Commission took notice that one of the conditions imposed by the MRFC against RRPI after the 2<sup>nd</sup> incident occurred for the

affected fishermen to be compensated.<sup>13</sup> According to the minutes of an MRF Committee meeting, the following observations were made:

- Per investigation, no fishermen were affected. October to January not a regular fishing period due to stormy weather condition.
- Brgy. Captain Ebuenga certified that no fishermen were affected in barangay Binosawan.
- RRMI willing to provide fingerlings to Binosawan fishermen and livelihood assistance.
- RRMI to buy produced fish in the area at current market price.<sup>14</sup>

On the other hand, the Lafayette group considers this matter a non-issue and banners a certification dated 23 November 2005 from the barangay captain of Bgy. Binosawan that “no individual fisherman complained nor reported to me that they are claiming for compensation on the alleged fish kill.”<sup>15</sup>

The Commission finds such antics deplorable. In fact, it is so preposterous, it strains the mind just where to begin amidst a barrage of nonsensical observations duly recorded in the said minutes. It is beyond dispute that by December 12 at the latest, the province of Sorsogon was already sounding the alarm bells on the economic crisis being suffered by their constituents as a result of the two incidents.<sup>16</sup> This was three (3) days before the MRF Committee meeting was held so the temerity to use the Binosawan certification amidst a growing real problem in Sorsogon was appalling and insensitive. The willingness to accept the same is even more ludicrous. The most affected fisherfolk were from Sorsogon and it is for them that the Commission had taken the effort to conduct a Direct Market Values/Direct Damage Approach valuation of what they have lost from the two incidents, even

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<sup>13</sup> Memorandum to MGB-V Regional Director, MGB Engineer III and Engineer IV, 07 November 2005, p.3.

<sup>14</sup> Minutes of the MRFC Meeting (RRMI), 15 December 2005, p.5.

<sup>15</sup> RRPI Powerpoint Presentation, “Compliance Status to Commitments”, March 2006, Slide #12.

<sup>16</sup> SP Resolution Nos. 235-2005 and 236-2005 entitled “A Resolution Respectfully Requesting Hon. Governor Raul R. Lee to Provide Assistance to Displaced Families of Fisherfolks in the Municipality of Prieto Diaz and Bacon District of Sorsogon City” and “A Resolution Most Respectfully Requesting DSWD Regional Office Director Eliseo Copian to Provide Emergency Assistance of Rice and Sardines to Displaced Families of Fishermen in the Municipality of Prieto Diaz and Bacon District of Sorsogon City,” respectively.

if this encompasses only actual damages and not the more significant moral damages.

ALL-ENCOMPASSING PROXIMATE EFFECTS  
OF THE TAILINGS INCIDENTS

The tailings incidents had immediate negative effects in Rapu-Rapu and adjacent areas, ecosystems and people in the island, as well as the whole of Albay and Sorsogon provinces.

Indeed, the tailings had all-encompassing proximate effects. The people's health, livelihood and future have been impacted by these events. Without knowing it, their environment was altered and only realized disturbing changes when they woke up with fish deaths on their shores or sores on their feet and bodies. Looking at their surroundings, they see that their environment has never been the same again.

The Commission took time to listen to many informed and concerned individuals and institutions in Albay, Sorsogon and Manila, whose professional expertise helped in explaining the immediate health and environmental effects of the tailings incidents. Many of these sources conducted earlier fact-finding investigations, and their results form part of this Commission's reports. Poring through volumes of information provided by these sources, the Commission realized that the tailings incidents may not be the only causes of the complaints and predicaments suffered by the people. Many of these complaints in fact can be blamed on generally accepted adverse effects of mining. The twin tailings events, however, may have accelerated these effects.

While the findings made by different groups may not be conclusive and need further studies to connect to observed immediate effects of the tailings incidents, the Commission feels that there is a high probability of connection or that the incidents subsequently led to or caused certain negative consequences to health, environmental and economic problems to the people of Rapu-Rapu and nearby coastal municipalities of Albay and Sorsogon.

*Findings of Health and Environmental Studies*

Both government and non-government groups immediately dispatched fact-finding teams to assess the immediate effects of the tailings incidents.

An inspection team of the MGB-V coincidentally at the mine site for a regular inspection when the Oct. 11 tailings incident happened took the occasion to investigate and did water sampling at the bodies of water where tailings spilled. Two days later, the MGB-V conducted another investigation in Rapu-Rapu. On the other hand, various government agencies and NGOs responded to calls from people and barangay officials of the affected communities after the second tailings incident.

The groups and individuals which looked into the immediate effects of the tailings incidents are: 1) DENR MGB and EMB Reg. V; 2) BFAR Reg. V; 3) UP-Natural Sciences Research Institute (UP-NSRI); 4) Department of Health and UP Pharmacology and Toxicology Department, UP National Poison Control and Management Department, and UP Dermatology Department; 5) the non-government Center for Environmental Concerns-Philippines; 6) Dr. Emelina Regis of INECAR/Ateneo de Naga; and 7) Dr. Teresita Perez of Ateneo de Manila. (See Appendices for complete reports.)

The results of the studies of these groups were provided to the RRFFC and form the major secondary sources of information for the Commission in regard to the immediate health and environmental effects of the tailings incidents.

## DENR MGB and EMB

Cyanide contamination of bodies of water from the mine plant to creeks leading to the coastal waters of Rapu-Rapu were measured from October 12, 2005 to February 24, 2006 alternately by the MGB and EMB Region V units of the DENR. About 40 cyanide measurements were done within this period. Highest measurement was recorded by the MGB at the upper Alma Creek on October 11 which measured 31.65 mg/L (or ppm), exceeding the DENR standard (0.05 mg/L) by 632 times. Second highest is Hollowstone Creek where the joint EMB-MGB sampling on Nov. 5 registered 19.59 mg/L of cyanide content. Cyanide content in both creeks as well as other bodies of water up the offshore marine waters of Binosawan and Malobago continued to register cyanide readings beyond DENR standard until Nov. 29. It was only in the Dec. 10 reading by MGB-V where the cyanide levels in affected bodies of water dissipated to comply with the DENR standard based on DAO 34.

The fish kills that were immediately observed following the tailings spills have been attributed to the presence of toxic levels of cyanide. Toxic cyanide levels in marine waters are known to immediately induce fish kills. The reported October 11 and Nov. 1 fish kills demonstrate this. Since high cyanide readings beyond safe levels were monitored until Nov. 29, it can mean that marine life in Rapu-Rapu was not safe until this period. It also means that cyanide content in tailings discharged by the mining company was not sufficiently detoxified resulting to unsafe waters released to the environment within the same period.

The DENR findings on cyanide were further corroborated in other studies conducted in Rapu-Rapu immediately after the tailings incidents.

**Table 1.** *Results of the water quality sampling by MGB*

Station Identification	Date	Free Cyanide (mg/L)	DENR Std (DAO 34) (mg/L)	Percent Exceedance (%)	Remarks
Alma Creek, spills point of discharge	11 Oct 05	31.65	0.05	63,200	Failed
Pagcolbon Creek, spills point of discharge	11 Oct 05	6.42	0.05	12,740	Failed
Mouth of Alma Creek	11 Oct 05	15.05	0.05	30,000	Failed
Mouth of Pagcolbon Creek	11 Oct 05	9.95	0.05	19,800	Failed
Mouth of Alma Creek	13 Oct 05	0.0651	0.05	30.2	Failed
Mouth of Pagcolbon Creek	13 Oct 05	0.0383	0.05		Passed

**Table 2.** *Results of water quality sampling by MGB*

Station	Date	pH	DO (mg/L)	CN (mg/L)	DENR Std. for CN	Percent Exceedance (%)	Remarks
Binosawan River	11 04 05	8.25	8.9	0.067	0.05	34	Failed
Ungay Creek DS	11 04 05	8.47	6.4	0.468	0.05	836	Failed
Ungay Creek DS	11 05 05	7	8.1	0.244	0.05	388	Failed
Hollowstone Creek DS	11 04 05	4.00	1.0	15.28	0.05	30,460	Failed
Hollowstone Creek DS	11 05 05	7.00	5.0	17.82	0.05	35,540	Failed
Alma Creek 1 DS	11 04 05	8	8.5	0.316	0.05	532	Failed
Alma Creek 1 DS	11 04 05	7.90	8.9	0.190	0.05	280	Failed
Alma Creek DS/ Pt of discharge	11 04 05	7.90	7.8	0.361	0.05	622	Failed
Pagcolbon Creek DS	11 04 05	3.40	8.4	0.045	0.05		Passed
Pagcolbon Creek US/Pt of discharge	11 04 05	7.00	8.4	0.084	0.05	68	Failed
Binosawan Offshore	11 04 05	9.00	6.75	0.119	0.05	138	Failed
Ungay Creek Offshore	11 04 05	7.00	7.7	0.095	0.05	90	Failed
Alma Creek Offshore	11 04 05	8.00	7.6	0.113	0.05	126	Failed
Effluent at Polishing pond	11 04 05	8.0	0	52.00	0.2	25,900	Failed
Effluent at Polishing pond	11 05 05	7.00	0	19.28	0.2	9,540	Failed

## Bureau of Fisheries and Aquatic Resources (BFAR)

After the fish kill incidents, the BFAR received several fishkill samples submitted for analysis by the mayor of Prieto Diaz. The fishes were found positive for cyanide.

On 3-4 November 2005, BFAR collected sea water, drinking water, fresh water and goat fish samples and then tested using the MVU method Atomic Absorption Spectrophotometer. BFAR made the following remarks on the results of the analysis:

- ?? Samples of freshwater in Binosawan 1 and 2, sea water from Lupi Prieto Diaz, and San Ramon, were above the standard limit whereas fresh water from Pagculbon 1 and 2 and sea water from Bacon shore and Malubago are within the standard limit for mercury, 0.002 ppm (Ref-Water quality criteria for fresh water, coastal, and marine waters. DENR AO No. 34 series of 1990).
- ?? Sample of drinking water from Malubago is within the standard limit for mercury which is 0.001 ppm (Ref-Codex Standard for Natural Mineral Waters).
- ?? Sample of goat fish from Malubago is within the standard limit for fish, 0.5 ppm (Ref-FAO Food Regulation Applied to Fish FAO Circular 825).

Why seawater samples were detected beyond standards for mercury and within the standard for marine organisms is not altogether implausible. Fishes and marine organisms living in waters with high mercury levels may not be immediately contaminated with mercury. It does not mean, however, that fishes are safe in waters with high mercury levels. Overtime, as mercury-contaminated waters settle in the sea's sediments and planktons and are eaten by sea bottom swimming marine creatures, the latter become contaminated and so do other pelagic or shallow water fishes eventually. This may explain the dolphin, sperm whale and large talakitok found dead in Rapu-Rapu and Sorsogon coastal waters.

(See preceding subsection for further discussion on subsequent BFAR reports negating mercury contamination.)

On the other hand, mercury contamination in humans may induce on a later date serious illnesses ranging from bone and nerve sickness to cancer. (See CEC report)

**Table 3.** *BFAR Water and Fish Tests for Chemical-Mercury-MVU Method Using Atomic Absorption Spectrophotometer*

Sample	Location/Place collected	Date collected	Mercury(Hg) concentration
1. Seawater	Lupi Prieto Diaz	Nov 3 05	0.044 ppm
2. Seawater	Tupaz Prieto Diaz	Nov 3 05	<0.1 ppb
3. Seawater	San Ramon	Nov 3 05	0.011 ppm
4. Seawater	Malubago	Nov 4 05	<0.1 ppb
5. Drinking water	Malubago	Nov 4 05	<0.1 ppb
6. Freshwater	Binusawan 1	Nov 4 05	0.004 ppm
7. Freshwater	Binusawan 2	Nov 4 05	0.006 ppm
8. Freshwater	Pagculbon 1	Nov 4 05	<0.1 ppb
9. Freshwater	Pagculbon 2	Nov 4 05	0.001 ppm
10. Seawater	Bacon shore	Nov 4 05	<0.1 ppb
11. Goat fish	Malubago	Nov 4 05	0.028 ppm

## CENTER FOR ENVIRONMENTAL CONCERNS (CEC)-PHILS.

Skin diseases after swimming

The CEC-Philippines fact-finding group found five Rapu-Rapu residents suffering from skin diseases which the victims said they developed after swimming and coming in contact with affected coastal waters of Rapu-Rapu from Brgys. Binosawan to Tinupan. Three children, including a one-year old baby, were among these victims who have skin lesions all over their bodies. The victims and their relatives said itchy skin rashes started affecting them after bathing in the sea or getting water from the sea between the last week of October and the first week of November, 2005. This is the first time this happened, the victims said.

Sediments with toxic heavy metals**Table 7.** CEC Sediment Analysis Results

SAMPLE ID	METAL									
	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Copper	Nickel	Zinc
CSS A	0.01	0.56	0.07	1.36	<0.0030	0.03	<0.0002	4.17	0.23	79.9
CSS B	0.01	0.55	0.05	0.74	<0.0030	<0.0001	<0.0002	2.35	0.15	33.26
CSS C	0.01	0.57	0.05	0.87	<0.0030	<0.0001	<0.0002	2.28	0.18	38.38
CSS D	0.02	0.72	0.07	1.34	<0.0030	0.28	<0.0002	3.02	0.19	39.51
CSS E	0	0.47	0.05	0.99	<0.0030	<0.0001	<0.0002	1.5	0.1	111.4
CSS F	0	0.31	0.07	1.21	1.26	0.01	<0.0002	1.71	0.14	74.7
CSS I	0	4852	0.07	2.29	<0.0030	0.01	<0.0002	2.34	0.4	38.68
CSS II	0.01	0.36	0.11	3.27	<0.0030	0.01	<0.0002	1.94	0.25	39.33
E1	0	0.42	0.05	1.18	<0.0030	<0.0001	<0.0002	1.58	0.23	112.2
E2	0	0.33	0.05	1.17	<0.0030	1	<0.0002	1.79	0.19	67.2
G 1	0	0.44	0.04	0.98	<0.0031	0.01	<0.0002	1.58	0.14	54
G 2	<0.0008	0.57	0.05	1.21	<0.0031	0	<0.0002	2.19	0.2	84.6
26111	0.01	0.23	0.03	1.21	<0.0031	0	<0.0002	8.82	0.14	78.6
112	0.01	0.31	0.06	3.29	<0.0031	0	0.07	12.79	0.34	83.6
11	<0.0008	0.25	0.01	0.26	0.12	0.01	<0.0002	0.47	0.1	35.29
29111	0.01	0.92	0.06	1.39	0.25	0.01	<0.0002	3.24	0.32	37.13
F 1	0.01	0.34	0.04	1.16	<0.0031	0.01	<0.0002	2.61	0.17	33.48
F 2	0.01	0.26	0.12	3.07	<0.0031	0.02	<0.0002	1.63	0.27	1.92

This non-government group collected 34 sediment samples last November 12 and 13, 2005 from different sampling points in rivers and creeks around the mine site and processing plant. The sediment samples were analyzed for heavy metals by the Environmental Engineering Unit of the Chemical Engineering Department of UP Diliman. Analysis showed that the sediments registered high pH values or acidity and contained traces of mercury, arsenic, and cadmium but high levels of copper, chromium and zinc. *See full study report at the Appendices.*

#### UP-NSRI

The following surface waters were tested by the University of the Philippines-Natural Sciences Research Institute for presence / levels of Mercury, Arsenic and other heavy metals:

?? Albay Gulf (Prieto Diaz, Bacon, Rapu-Rapu, Lupi)

?? Saltahan River (Rapu-Rapu Island)

?? Lafayette Zone (Polishing Pond, Hollowstone Channel, Ungay Creek)

?? Hixbar Creek (Rapu-Rapu Island)

UP-NSRI studies showed that the surface waters and fishes from Rapu-Rapu and Sorsogon had non-detectable levels of mercury and arsenic. According to its interpretation of laboratory results, not one among water samples collected from 28 sampling sites showed mercury and arsenic beyond the DENR regulation level of 0.002 mg/L and 0.05 mg/L for mercury and arsenic, respectively. It also showed that not one among 13 fish and shellfish samples analyzed contained mercury above the Food and Agriculture Organization regulation limit of 0.5 mg/kg.

However, there is no interpretation provided for sediments sampled and analyzed by UP-NSRI. Laboratory results of 25 sediments samples showed traces of heavy metals like arsenic, lead, copper and cadmium in samples

analyzed from the mine's polishing pond; Hollowstone gully; Ungay canal in Binosawan; offshore areas at the Albay gulf, Saltahan river in Rapu-Rapu, Ibingan river in Sorsogon, some areas of Brgys. Lupi and San Rafael, Sorsogon and at the Bacon, Sorsogon commercial seaport.

Sediments studied by NSRI showed high levels of arsenic ranging from 4.0 mg/kg to 50.4 mg/kg, with the highest measurement found at Hollowstone gully near the mine site. See Appendices for the full UP-NSRI report.

The NSRI study was in response to a request made by the local government of Sorsogon. It was conducted late January 2006.

This NSRI findings have been repeatedly referred to by LPI in declaring that the slurry materials that overflowed in the first tailing incident and the effluents it deliberately discharged in "controlled manner" during the second tailings incident were treated or detoxified waters free from toxic heavy metals and chemicals. The NSRI team that conducted the tests, however, had admitted in several occasions that its findings are not conclusive and need further studies.

Besides, the NSRI tests were conducted in January 2006 or three months after the tailings incidents. Factors such as dilution effects of heavy metals, dispersion of sediments, and oxidation of cyanide, over time, may have altered the environment compared to that immediately after the tailings incidents.

Thus, the RRFFC, chooses to believe NSRI's own skepticism on its findings and disregards LPI's reliance on it and in its self-serving declaration of having performed adequate detoxification of the tailings that overflowed in the first tailings incident and discharged in the second tailings incident.

DEPARTMENT OF HEALTH (DOH)

UP-COLLEGE OF MEDICINE, DEPARTMENT OF PHARMACOLOGY AND TOXICOLOGY

UP-COLLEGE OF MEDICINE, NATIONAL POISON MANAGEMENT AND CONTROL CENTER (NPMCC)

UP-COLLEGE OF MEDICINE, DEPARTMENT OF DERMATOLOGY

Heavy metals and chemicals positive in blood and urine

The DOH groups conducted medical diagnosis among 98 individuals; some of them are those who complained of skin disorders and other ailments following the tailing incidents. The medical study found that eight children in Area 1 (near Legazpi City approximating same profile as the study sites distant from affected areas of the tailings incidents) have toxic heavy metals such as cadmium, lead, arsenic and mercury in their blood and urine. In Area 2 (Bacon, Gubat, Prieto Diaz, Bulusan and Barcelona in Sorsogon), 23 children are positive with toxic heavy metals in their blood and urine.

Although Area 1 is not ideal for controlled study given its proximity to Tiwi Geothermal Plant that may also be a source of significant levels of heavy metals in the environment, yet without comparing, the results in Area 2 is undisputable.

But, for lack of epidemiological studies, the medical findings are not conclusive to state that the presence of levels of heavy metals in blood and urine is indicative of heavy metal contamination of rivers in Rapu-Rapu, the Albay gulf and Sorsogon coastal waters. Further studies are needed to determine the correlation of the disease and how the patients have acquired such disease.

Absence of a study to precisely identify the correlation does not, however, defeat the possibility of contamination. No study too has been conducted to prove the impossibility of contamination, while logical medical explanation (see below) is considered possible.

The certification issued by Dr. Edna Freya Barba-Tan, former municipal health officer of Rapu-Rapu, last February 6, 2006 was found by the RRFFC as unbelievable. In a public hearing, Dr. Tan, admitted that her certified medical findings were not obtained through laboratory tests but merely statements of her opinions based purely on her medical practice. The certification was also made, according to Dr. Tan, upon request of LPI. (See transcription of March 23 public hearing in the Appendices)

Excerpts of Dr. Tan's certification:

"Inspection and verification revealed that the skin disease was caused by a bacterial infection called Impetigo Contagiosum which as the name implies is caused by bacteria usually Staphylococcus Aureus or Streptococcus. It is a contagious disease which usually infects people with poor nutrition, stress, post partum, or with other existing disease. It means that skin rash is hardly caused by a chemical like cyanide or mercury which attacks more the blood and neurological system."

The theory of UP-PGH group is a logical explanation on the sudden rise in the number of skin infections complaints following the tailings incidents.

#### *The theory of weakening skin immune system*

Initially, dermatology experts of the UP-PGH group found that the skin disorders of some of the patients are more of fungal and bacterial infections rather than that of skin illnesses due to exposure to toxic heavy metals and chemicals.

Explaining the rise of reported skin disorder cases in Rapu-Rapu and the surrounding municipalities of Sorsogon after the tailing incidents up to February 2006 when the study was made, toxicology experts in the group hypothesize that it is most probably due to the weakening of the skin immune system of the patients. The weakening of the skin immune system, on the other hand, may be

due to exposure of the patients to a particular toxic heavy metal hexavalent chromium. Hexavalent, chromium stimulates the increase of the glucose content of the protein in the skin cells and its specific effect is the weakening of the defense capability of the skin to fight simple bacterial and fungal infections. Said hexavalent form of chromium may be absorbed by the human body through inhalation or through the pore openings of the skin.<sup>17</sup>

Thus, the chromium finding suggests that the theory of the weakening immune system is a logical possibility.

The UP-PGH group recommends, among others, treatment of the patients found with high levels of heavy metals and chemicals in their blood and urine, more controlled studies and laboratory tests, and wider study on the health impact of the tailing incidents in relation to the deterioration of the environmental quality due to increased dispersion of heavy metals and chemicals to the environment.

#### Toxic heavy metals in soil and fish

Studies on possible toxic heavy metal contamination of soil and fishes were also conducted by the DOH group. Results show that cadmium, lead, copper and arsenic, in varying levels, are present in the soil and in the flesh of various fishes. Low to medium levels of mercury are present in several fish samples.

The analysis of cyanide in the water and soil samples, and in the fishes, was deliberately excluded. The group explains that since the study was conducted three months after the tailing incidents, it is not anymore probable that cyanide could be detected, for example in the fishes. A living organism could only survive for three days upon contact or ingestion of toxic levels of cyanide.

The group found traces of arsenic in Albay and Sorsogon soil samples that are beyond the standards of the US Environmental Protection Agency (EPA)

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<sup>17</sup> Testimony of Dr. Irma Makalinao of UP-PGH who is also a member of the medical team who conducted the study, during the RFFCC public hearing on 25 April 2006

of 0.062 ug/g. Three out of eleven soil samples analyzed from Area 1 and 2 have arsenic ranging from 0.08 ug/g to 0.28 ug/g. The groups mobilized by the DOH likewise collected water for toxic heavy metal analysis. The water samples were sent to Dartmouth University at New Hampshire in the United States of America for analysis. Results of the water quality analysis are yet to be announced. See *full report at the Appendices*.

**Table 4. UP-PGH Study Results**

SUMMARY OF DETECTION LIMITS		
PARAMETER	EXISTING GUIDELINES STANDARDS	DETECTION LIMITS OF THE LABORATORY
MERCURY		
FISH	500 ng/g of fish (FAO)	0.1 ng/g (NIMD-JAPAN)
SOIL	23 ug/g (EPA-PRG,2004)	0.01 ug/g
BLOOD	< 7 ug/L(child)	1 ug/L
	<15 ug/L (adults)	
ARSENIC		
SOIL	0.062 ug/g(EPA, PRG)	0.01 ug/g
BLOOD	<3 ug/L	5 ug/dl
URINE		
CADMIUM		
FISH	LOC = 3.7 ppm (molluscan bivalves)	
	Consumption LOC = 28 ug/person/day	
	crustacea:3 ppm;clams,oysters:4 ppm	
SOIL	37 ug/g (EPA,PRG)	
BLOOD	<0.5 ug/dL	1 ug/dL
LEAD		
FISH	<500 ng/g fish	
SOIL	150 ug/g (EPA,PRG)	
BLOOD	10 ug/dl (child);20 ug/dl (adult)	1 ug/dl
URINE	<50 ug/g creatinine	
	<200 ug/L; 8 hrs	
CHROMIUM		
FISH	Level of concern (LOC) = 13 ppm (USFDA)	
	0.1-0.3 mg of inorganic Cr/person/day	
	Cr+3: 50-200 ug/person/day	
	crustacea:12 ppm clams and oysters Cr;13 ppm	
SOIL (as Cr+6)	30 ug/g (EPA PRG)	
BLOOD	<0.5 ug/dL	1 ug/dl
COPPER		
FISH		
SOIL	3,100 ug/g (EPAPRG)	
BLOOD	< 14 ug/L	

**Table 5.** *UP-PGH Results of Fish Sample Analysis*

February, 2006

	Total Hg(NIMD, JAPAN)	Cadmium	Chromium (Total)	Copper
MALIGAYA, BULUSAN (FISHERMAN)	ng/g wet weight	(ug/g)	ug/g	ug/g
1. DANOY (LUPAK LUPAK)	8.45			
2. Lobster	9.35			
3. Camilo (Crabs)	9.37			
LUNETA, BARCELONA (FISHERMAN)				
4. ANGOL	2.61			
5. AGINGAYON	14.05			
6. TARAGBAGO	2.32			
PRIETO DIAZ (FISHERMAN)				
7. TALAD	28.33			
8. KITONG/BATLOG	2.83	0.88	0.45	1.32
9. TUROS/BATATAWAY				
10. PARANGAN	49.13			
11. ANGOL	3.13	0.08	0.2	0.27
12. TALAD	46.9	0.16	0.51	0.72
PRIETO DIAZ MARKET				
13. TILAPIA	1.29			
14. KUBALAN	1.2			
15. SUGA	16.38			
16. MARINYAN	8.04			
17. TURAGAO	26.6			
GUBAT MARKET				
18. TARAGBAGO	1.22			
19. WAL-AN	20.44			
20. BUTLOG	1.23	3.07	0.47	1.9
21. ANGOL	4.7			

**Table 6.** *UP-PGH Results of Soil Sample Analysis*

SOIL SAMPLES	UG/G					
	AREA	MERCURY	CADMIUM	LEAD	ARSENIC	CHROMIUM
1. MALIGAYA, BULUSAN	ND	0.6	6.76	0.17	5.76	4.41
2. MABUHAY, BULUSAN (COASTAL)	ND	0.24	3.55	0.6	2	7.95
3. LUNETETA, BARCELONA	ND	0.22	3.63	0.06	2.35	3.97
4. SAN, IGNACIO, GUBAT	ND	0.12	1.98	0.06	1.18	2.53
5. PRIETO DIAZ (COASTAL)	ND	1.4	31.29	0.28	2.78	7.83
6. BACACAY, ALBAY (COASTAL)	ND	0.28	3.58	0.05	1.25	6.95
7. PRIETO DIAZ, INFRONT OF RHU	ND	1.58	10.6	ND	3.7	1.7
8. GATBO, BACON	ND	0.48	6.67	0.03	8	16.18
9. LUNETETA, BARCELONA (COASTAL)	ND	0.26	2.53	ND	0.12	1.43
10. GATBO, BACON	ND	0.18	1.3	0.08	0.28	3.76
11. GATBO, BACON (COASTAL)	ND	0.44	4.53	ND	4.52	8.7

DETECTION LIMIT	DL=0.010 UG/G			DL=0.010 UG/G		
EPA PRG, 2004	23	37	150	0.062	30	3,100

#### INECAR-ATENEO DE NAGA UNIVERSITY

Since 2000, INECAR conducted various and continuing environmental studies in Rapu-Rapu, including a recent (April 29, 2006) chemical analysis of water, sediments and plants found in rivers and creeks. INECAR studies validate the concerns of its head Dr. Emelina Regis about plants in Rapu-Rapu having critical levels of heavy metal content inhibiting plant growth and productivity.

INECAR said there is proof of biological contamination leading to losses in biological life in weeds and seagrasses gathered in Rapu-Rapu, Albay and Prieto Diaz, Sorsogon. Examining the cells of the leaves of these grasses under a microscope revealed reduced starch production due to destruction of chloroplasts in the leaves of weeds. "Chloroplasts are responsible for the production of food in plants; their destruction directly reduce plant productivity," states a Feb. 27, 2006 INECAR study. Citing informed sources, the study adds that the destruction of aquatic vegetation results in reduction in fish population.

INECAR is among the first groups to respond to the situation after the tailings spills. It conducted a fact-finding mission in Nov. 11-13 in Brgys. Malobago, Pagcolbon and Binosawan, together with Tanggol Kalikasan-Legazpi and the Social Action Center of the Diocese of Albay.

INECAR went back to the Rapu-Rapu in Dec. 12, 2005 and Feb. 5, 2006 and discovered that effluents continue to leak in creeks which lead to the sea despite structures put up by the mining company to hold back these tailings.

**Table 8.** INECAR Fresh Water Sample Analysis [Results Released 6 April 2006]

Sample Codes	Analytes, ug/ml			
	Cd	Cu	As	Hg
1. ST 9 Hollowstone (Ungay) Time collected: 4:00 pm Date collected: 3-23-06	0.018	1.40	ND*	ND
2. ST 10 Catmon (Hollowstone) Time collected: 5:30 pm Date collected: 3-23-06	0.003	0.02	ND	ND
3. ST 11 Upper Tailings Pond Time Collected: 2:03 pm Date Collected: 3-23-06	ND	2.22	0.006	ND
4. ST 12 Lower Tailings Pond Time Collected: 3:30 pm Date Collected: 3-23-06	0.004	0.23	ND	ND

**Table 9.** INECAR Sediment Sample Analysis [Results Released 19 April 2006]

Sample Codes	Analytes, ug/g				
	Cd	Cu	As	pH at 32 deg. (10% soln)	Hg
1. ST 9 Hollowstone (Ungay) Time collected: 4:00 pm Date collected: 3-23-06	ND	18	0.4	3.7	ND

2. ST 10 Catmon (Hollowstone) Time collected: 5:30 pm Date collected: 3-23-06	ND	138	ND	4.7	ND
3. ST 11 Upper Tailings Pond Time Collected: 2:03 pm Date Collected: 3-23-06	ND	143	ND	4.8	0.03
4. ST 7 Control Site Time Collected: 5:23 pm Date Collected: 3-22-06	ND	74	0.2	6.2	0.03

<b>Table 10. INECAR Biological Sample Analysis Results</b>				
Biological Sample	Chromium, mg/kg		Copper, mg/kg	
	(dry weight)		(dry weight)	
ST1 Pagcolbon Axonopus 13 March 2006 10:20 AM	44		130	
ST1 Pagcolbon Axonopus 13 March 2006 10:20 AM	7.9			
ST1 Pagcolbon Axonopus 13 March 2006 10:20 AM	34		41	
ST3 Pagcolbon Outlet Axonopus 13 March 2006 2:30 PM	4.8 (LOQ*=7)		100	
ST3 Pagcolbon Outlet Axonopus 13 March 2006 2:30 PM	8.1		240	
ST3 Pagcolbon Outlet Axonopus 13 March 2006 2:30 PM	3.6 (LOQ=7)		180	
ST7 Control Site Axonopus 24 March 2006 9:30 AM	15		17	
ST7 Control Site Axonopus 24 March 2006 9:30 AM	21		22	
ST7 Control Site Axonopus 24 March 2006 9:30 AM	18		16	
Method of Analysis	AAS*	Flame	AAS	Flame
	(Ref.2)		(Ref.2)	
*ND - None Detected				
*LOQ - Limit of Quantitation				
*AAS - Atomic Absorption Spectrophotometry				

<b>Table 11. Heavy Metal Contents in Plants [INECAR]</b>		
	Natural Plant Content (ppm)	Critical Levels (ppm)
Arsenic	1	20
Cadmium	0.4	5
Chromium	<1	30
Copper	30	>30
Lead	6	50
Mercury	0.04	0.3
Nickel	3	20
Zinc	100	300

DR. TERESITA PEREZ OF THE ENVIRONMENTAL SCIENCE DIVISION, ATENEO DE MANILA UNIVERSITY

A dead dolphin was found near the coast of Albay last March. Dr. Teresita Perez of the Ateneo De Manila University Environmental Science Department and the Center for Environmental Concerns-Philippines (CEC-Phils) took the liver of the dead dolphin for examination at the laboratory of the Philippine Institute of Pure and Applied Chemistry. Results show presence of toxic levels of mercury and cadmium in the liver of the dead dolphin. *See Appendices for the full report.*

The dead dolphin is the latest of similar incidents reported in Albay and Sorsogon that are primarily blamed by residents to the mining in Rapu-Rapu and secondarily to the tailings spills last October. Last January 25, a dead pygmy sperm whale initially mistaken for a dugong or sea lion was found near a mangrove area in Brgy. Poblacion, Rapu-Rapu. A flesh sample of the dead whale was submitted for analysis by Sagip-Isla to the Philippine Institute for Pure and Applied Chemistry and was found to have high levels of mercury, cadmium and copper. Last March 20, a large dead Talakitok was seen floating near the coast of Bacon, Sorsogon.

**Figure 7. Dead Sperm Whale**



Source: Sagip-Isla

### *The Mercury Question*

At least three different scientific studies conducted after the tailings incidents have consistently proven the presence of significant levels of mercury among other toxic heavy metals found in the fishes and sea mammals along the coastal waters of Albay and Sorsogon. These studies are the following with summary of their findings:

1. Fishkill samples from Prieto Diaz town of Sorsogon were analyzed by the Bureau of Fisheries and Aquatic Resources (BFAR) on 30 November 2005 and concluded that the samples positive with mercury and unfit for human consumption. Two other subsequent studies (December 8-11 and 19, 2005) were made by BFAR upon request of the local government units, the LPI, and the DENR for the purpose of "validation" of the first report. The results of the later studies are different the first BFAR report. Accordingly, mercury traces found in the new samples passed the DENR and FAO standards. But the second and third BFAR studies did not actually invalidate the first. By validation, samples from the same fish population should have to be retested. The Nov. 30, 2005 samples were fishkill samples. But the subsequent samplings were not fishkill samples. Thus, there is neither validation nor invalidation of the first report. Mercury, as found in the first study, was present in the fish samples taken.

2. The sediment samples taken by CEC-Phils and analyzed by UP Eng Center show traces of mercury. See Table 2.

Reacting to the first BFAR (Nov. 30, 2005 sample/study) and CEC study results, a Fact Sheet on the mercury issue in Albay was released by the MGB on 2 February 2006 containing the following:

- ?? Mercury is not used in the recovery of gold in the Rapu-Rapu Polymetallic Project in Albay. The gold processing plant of Rapu-Rapu uses cyanide, the most preferred chemical reagent by international gold mining companies, to recover gold from mineral ores.
- ?? The major natural sources of mercury are emissions from volcanoes and evaporation from natural bodies of water. Albay Gulf is prone to mercury contamination owing to its proximity to active volcanoes like Mayon Volcano.
- ?? Naturally-occurring mercury, whether it is mined or not, is slowly being released to the environment and water systems through erosion, volcanic emissions, hot springs and other natural processes.
- ?? Geological studies revealed that there is an identified mercury deposit in Albay. Cinnabar (HgS), the chief mercury mineral, occurs in a wide variety of environment and lithologic units but most preferably in rocks that are porous, fractured and with sufficient permeability to allow passage of ore solutions or vapors.
- ?? The earth's crust is also an important source of mercury for bodies of natural water. Some of this mercury is undoubtedly of natural origin, but some may have been deposited from the atmosphere and may, ultimately, have been generated by human activities. Thus it is difficult to assess quantitatively the relative contributions of natural and anthropogenic mercury to run-off from land and natural bodies of water.

- ?? The DENR standards for mercury and other metals are absolute except in areas wherein the normal values are already beyond these standards. In those areas, like in the case of the Rapu-Rapu polymetallic project, the natural values will be considered as the standard for that particular area as indicated in their Environmental Compliance Certificate. Any scientific analysis should consider the natural values or baseline data for that particular area before concluding that the levels exceed DENR standards.
- ?? The presence of heavy metals such as cadmium, chromium, lead, arsenic and mercury from the sediment samples analyzed by the Environmental Engineering Department of the UP College of Engineering is to be expected because the project area inherently contains these metals. Gold and copper deposits are usually associated with the abovementioned metals. The unusual high levels of these metals indicate the economic viability of opening up a mine. The study only pointed to the "acidity and presence" of so-called "toxic heavy metals" but did not qualify whether the levels are beyond toxicity levels.

Although the RRFFC agrees with MGB that mercury is naturally occurring and present almost everywhere, it is more so in mining areas where ores containing toxic heavy metals are mobilized to the surface. Its natural occurrence, as stated in the MGB Fact Sheet, does not rule out the possibility that mercury could also be present in the ores being mined and processed by LPI.

In a public hearing, newly-elected Corporate President Carlos Dominguez of LPI, categorically denied that LPI is using mercury in its operations. LPI could not be the source of the toxic mercury according to him.

When asked, however, if there is mercury in the ore that LPI mines, Dominguez answered that LPI would not know. LPI did not analyze mercury in the ore because the law does not require it. Only LPI's target minerals (gold, silver, copper and zinc, plus arsenic and lead) were analyzed and the ore assay of target minerals was submitted as required.

For the Fact-Finding Commission, this omission by LPI, though not legally demandable, is against its moral obligation to the people and environment of Rapu-rapu. It is a mining practice that ore characterization as to its toxic heavy metal content is conducted by any responsible miner to determine the target minerals and at the same time determine accompanying toxic heavy metals in the ore that shall be addressed by appropriate environmental protection and management plan.

Without a complete ore assay, the miner could not adequately prevent human health or environmental hazards that unidentified toxic heavy metals could cause.

Environmental guidelines by international bodies such as the World Bank and World Health Organization provide that miners should always consider mercury and other toxic heavy metals in precious and base metals mining because of the known hazards of these metals. By international protocol, LPI is also bound to observe this responsible mining practice.

3. The blood, flesh and intestine of the dead pygmy sperm whale found in Brgy. Poblacion, Rapu-Rapu, upon laboratory analysis, revealed traces of mercury higher than the standard for fishes and other marine creatures. The BFAR standard of 0.5 ppm of mercury in fishes is exceeded in the samples which registered a mercury content of 1.1 ug/g. While it may be true that mercury is prevalent in the natural environment of Rapu-Rapu, mining may have led to unleashing more of this heavy metal to the peril of endangered marine species in the island.

The mercury analysis of samples of the dead whale's remains was conducted by the Philippine Institute of Pure and Applied Chemistry for the Society of Our Lady of the Most Holy Trinity, based in Poblacion, Rapu-Rapu, Albay.

#### Long Term Impact

### *The Acid Mine Drainage Issue*

On the issue of acid mine drainage (AMD), lies most of the worries of groups opposing mining in the island. According to INECAR, which conducted its own investigation in Rapu-Rapu after the two tailings incidents, it is not only cyanide introduced by mining that caused the fish-kills and the poisoning of wildlife, but AMD, whose effects are "greater, more widespread and long lasting."

For INECAR and like groups, mining in Rapu-Rapu is not environmentally safe because of AMD and the natural conditions of the island which render the AMD process induced by mining almost uncontrollable or unmanageable.

For the RRFFC, the question or questions that must be answered: Is LPI able to control AMD? Or is the mining company in fact aggravating AMD and all its harsh effects?

LPI, in coordination with the MGB, outlined AMD control strategies in its Environmental Enhancement and Protection Program (EPEP). The Environmental Compliance Certificate (ECC) granted by the DENR to the mining company also qualified the submission of an AMD control system design as one of the conditions of mining in the island.

What follow is a comparative study of the LPI positions on AMD and the INECAR studies on the inherent hazards of AMD and mining in Rapu-Rapu. Based on this analysis, the RRFFC makes its findings and recommendations taking regard of the actual observed conditions on the island, future projections of AMD impact in Rapu-Rapu and the government's thrust towards responsible mining.

### Acid Mine Drainage Defined

According to LPI's EPEP

*AMD is the acidic runoff derived from oxidation of sulfides in tailings, waste rocks or mine workings. AMD degrades the water quality rendering it unfit for use. It destroys aquatic ecosystems. Upon contact, it may cause redness, pain, and burns to the skin. When ingested, burns to the mouth, throat and stomach, sore throat, vomiting and diarrhea may result. AMD dissolves heavy metals present in waste rocks, tailings or mine workings, enhancing the mobility and bioavailability of heavy metals.*

According to INECAR

*AMD is a chemical reaction occurring naturally when iron sulfide rocks are exposed to oxygen and water producing sulfuric acid and red iron sulfate precipitate making rivers red and acidic. This happens during mining.*

From these definitions, there is a consensus that AMD is a product of mining and it impacts negatively to the people and the environment.

### LPI's AMD Control Strategies

The EPEP submitted by the mining company committed the adoption of "world's best practices" on AMD prevention. Accordingly, these "best practices" include:

1. Sub aqueous deposition and wet cover of potentially acid forming (PAF) tailings;
2. Correct mix of PAF and non-acid forming (NAF) waste rocks for PAF rock encapsulation, and a composite dry soil cover to seal the waste rock dump during mine decommissioning;

3. Upon depletion of deposit, pit flooding to prevent the oxidation and AMD generation of PAF wall rocks;
4. Regular monitoring of tailings storage and waste dump facilities re: structural stability, tailings pore water analyses, waste dump temperature, and waste dump pore gas oxygen. Excess in threshold measurements will trigger non-conformance report to be closed only after problem/problems have been solved;
5. Monitoring of effluents for  $\text{SO}_4^{2-}$ , pH and metals, where non-conformance to DENR standards will trigger non-conformance report to recommend lime treatment and other actions.

In addition, the EPEP proposed the following supplemental actions:

1. Installation of (a) settling pond, (b) anoxic limestone drain, and (b) aerobic wetland in event of acidic runoff from tailings dam and waste dump; continuous water quality monitoring of pond influent and wetland water; and further lime treatment and adjustment in treatment design, if required;
2. Collection of pit surface runoff in a pit sump during open pit construction and operation. Sump water to be pumped to tailings pond, where water will have pH of 7 to 8 to neutralize acidic sump water; and
3. Testing for pH of groundwater depressurized from open pit; acidic water brought to pit sump and pumped to tailings pond.

It must be added that EPEP provisions on major AMD control strategies begin with a thorough understanding of the AMD process, specific to the project site and the identification, characterization and location of PAF and NAF materials.

## RRFFC's Comments

It is important to note here that subaqueous deposition which LPI has adopted among other supplemental actions to prevent AMD has been proven successful in large mines in flat terrain, according to a number of scientific studies. It is not used in hilly terrains.

Subaqueous deposition or a method of submerging the tailings material under the water table relies on several physico-chemical phenomena for success. Oxygen diffuses very slowly and has limited solubility in water. For this approach to succeed, a stagnant or no flow condition and relatively thick saturated zone appears critical. Stagnant flow conditions leading to the development of anoxic (oxygen free) conditions and a saturated thickness on the order of several tens of feet appear to effectively curtail oxygen diffusion. This approach is most successful in large mines in flat terrain where groundwater gradients are low, the saturated zone is thick, and aquifers are of large aerial extent.

Submergence is generally not used in a hilly terrain where gradients and flow velocities are too great to achieve stagnant, anoxic conditions, and where water tables are generally very low. In these situations, submergence may be counterproductive and actually enhance the production and leaching of acid products.

Rapu-Rapu is a hilly terrain with steep slope.

In other words, LPI, in its EPEP, committed the above-named strategies without yet thoroughly understanding the nature and potentials of AMD in its mine site, in particular, and in the Rapu-Rapu environment, in general.

The RRFFC thus finds the AMD prevention strategy of LPI as incompatible, unscientific and environmentally risky under particular circumstances and geo-physical characteristics of Rapu-Rapu island.

Nevertheless, the company, through BMP Environment and Community Care (which also prepared LPI's EPEP), undertook subsequent evaluations of the

presence of AMD on the mine site and its vicinities. The first LPI evaluation report of AMD (September 2002) confirmed active AMD processes along the Pagcolbon creek. The second evaluation report (October 2003) states that the high  $\text{Fe}^{3+}/\text{Fe}^{2+}$  (41.6) ratio in the influent "indicates that the AMD process is in the advanced stage."

The AMD at Pagcolbon creek was determined to have originated from exposed sulfide minerals inside an old adit driven by Benguet Corp., the former mine claimant which explored LPI's mine site. No other creeks manifested AMD. (This changed after the tailings incidents, however.)

LPI's AMD evaluation is a fulfillment of the first phase of the company's control strategies to thoroughly understand the AMD process specific in its mine site.

To address the existing AMD at the old Benguet adit, the mining company used the Anoxic Lime Drain (ALD) method to reverse the acidity of the drainage emptying at the Pagcolbon creek. Yet even during the process of EIS, EPEP and AMD evaluation by the mining company, the ALD method was already determined to have very little effect in mitigating AMD. According to LPI's EPEP, ALD is "ineffective if AMD containing sulfates are greater than 2,000 mg/L due to gypsum precipitation and limestone armoring."

#### INECAR Study

AMD already existed at LPI's mine site prior to its commercial operation. During LPI's exploration activities in 2000, INECAR conducted water sampling of a creek near the mine site and detected high acidity (or low pH values) of the water in the creek (Pagcolbon creek). It found sulfates in the acidic creek, indicating that sulfuric acid, a product of AMD, caused the acidity of the water. It also found the water contaminated with lead and cadmium beyond the DENR standard, while the soil has very high arsenic content (720 ppm).

The INECAR study made the following conclusions:

1. An old and abandoned mine site (Hixbar, located 3 kms. from LPI) that still manifests AMD and pollution is a living proof that the barren and lifeless condition of the land left by mining in Sta. Barbara (Hixbar mine site) will also happen in LPI's mining area.
2. Typhoons, heavy rainfall most times of the year and steep topography are factors that cannot be mitigated. These facilitate heavy metal contamination, land erosion and subsequent contamination of marine environment and destruction of a fragile island ecosystem.
3. The destruction of the genetic wealth of the island cannot be compensated by mining in Rapu-Rapu.

As to LPI's commitment to prevent AMD, INECAR believes this cannot be possibly implemented because the island has a) steep slopes; b) Type II climate; and c) massive sulfide rock types capable of generating AMD.

All odds argue against mining in Rapu-Rapu. Environmental pollution prevention, in fact, is very difficult in the island inasmuch as all mining involve some form of natural disruption, and AMD is one of them. If mining can be pursued in the island, it must be within well-established principles of responsible mining. This is something that LPI has not been able to demonstrate notwithstanding former descriptions of its Rapu-Rapu project as "state of the art".

State of AMD following the tailings incidents

Following the tailings incidents, INECAR found a protective structure purposely constructed by LPI to hold back the downward movement of possibly contaminated tailings, silt, soil and water. INECAR took pictures of the structure and found a red-yellowish (yellow boy) coloration developed from December 12, 2005 to February 5, 2006, indicating AMD within two months that pictures were taken of the structure.

According to INECAR: "With AMD occurring this fast, the leaching out of heavy metals from exposed iron sulfide in tailings, silt and soil will continue, thus heavy metal pollution cannot be contained in the island. AMD may again cause a) death to living organisms; and b) release of toxic heavy metals that causes losses of productivity of aquatic and terrestrial plants."

INECAR believes that the AMD in the area is now more widespread. Before LPI started operating, only the Pagcolbon creek showed signs of AMD. Now, according to INECAR, other creeks in Barangays Malobago and Binosawan are affected.

INECAR found the Pagcolbon creek still measuring pH ranges of 4.3 to 5.7 even on rainy days. The DENR pH standard is between 6 to 8. INECAR also believes that there is a high probability that toxic heavy metals like Arsenic, Lead, Cadmium, and Copper are being leached out by AMD and released to creeks and the sea.

More importantly, the AMD process induced by mining in Rapu-Rapu is calculated to last for several lifetimes, even for thousands of years. This should not be taken as an excuse to mine indiscriminately, however. Otherwise, it is not just the present but the future of Rapu-Rapu Island and generations of its people that are compromised and sacrificed for the benefit of a few and for a very limited period. That does not in anyway mean responsible mining.

#### *On Responsible Mining*

Contrary to government expectations, responsible mining did not happen in Rapu-Rapu. LPI was not able to exercise all caution and care that its mining agreement and ECC required it and the particular conditions in Rapu-Rapu island necessitated.

AMD, being naturally occurring in the island of Rapu-Rapu, should have been a condition for more stringent standards in limiting mining and its effects on the island.

Not only was LPI lax in complying to the conditions of its various permits, this laxity resulted into a heavy price to pay in terms of losses on the environment, the people's health and the long-term impacts of the tailings spill and the aggravation of the AMD which the company sought but failed to control nor mitigate.

What happened in Rapu-Rapu should be an eye-opener. In various parts of the country with a history of large-scale mining, AMD has been detected to be occurring in similar, even further advanced, stages of manifestation. There is a need to identify AMD-prone mining areas in the Philippines because of the volcanic nature of most of the island and the steep slopes in mineralized lands. This can be handled by the MGB.

Far more important, AMD mitigation can be ascertained based not solely on best practices in other countries but based on the particular geo-physical and overall ecological characteristics of the Philippines as an archipelago, with half of its lands sloping at 18 degrees or more, and with vast biological resources and endemism to nurture and protect. Even as no mining technology has yet sufficiently addressed or come up with solutions to AMD that should not be an excuse to be less than stringent in preventing AMD.

This will be a strong signal to investors as well as the people who are the real stakeholders in mining projects that the government is dead serious in implementing responsible mining. Compliance to anything less than this standard is irresponsible mining, according to Philippine standards.

### III.

#### WEAKNESSES IN THE GOVERNMENT'S MONITORING SYSTEM

LPI is guilty of irresponsibility having started operations even prior to the completion of environmental protection infrastructures. The tailings pond, polishing pond and other structures were not yet finished when LPI decided to commence operations, possibly due to the high price of metals at that time. Because the dam structures which were designed to accommodate heavy rainfall events were unfinished, spillage of tailings decant occurred in the second spill incident. The storm drainage infrastructures at the tailings ponds were very inadequate or virtually non-existent.

#### *ECC Violations*

RRFFC found that 10 conditionalities and subconditionalities imposed upon LPI in its Environmental Compliance Certificate (ECC) have been violated by the mining firm. These are:

	CONDITION	FACTUAL BASIS
12	The proponent must commission an independent third party to undertake a continuing study on the effects of the project on the health of the workers and affected residents, particularly the women and children. The results of which will be submitted annually to the EMB, EMB Regional Office V, MGB Regional Office V, and DOH for evaluation. the terms of reference and the study program should be submitted to the EMB and the DOH for evaluation and approval within sixty (60) days upon issuance of the ECC	The company has not submitted to the EMB, MGB and DOH annual health study reports pertaining to the "effects of the project on the health of the workers and affected residents, particularly the women and children," which should have been done by a commissioned independent third party.
14	The proponent must see to it that the environmental management and monitoring plan is strictly implemented to include the following:  Monthly monitoring of the proponent of air/water quality and emission/effluent generated from the operations, the results of which must be submitted to EMB, EMB	The company compliance of this condition was largely through the quarterly MMT report submitted to the DENR. These reports however show that the environmental monitoring of "air/water quality and emissions/effluents generated from the operations" of the mine was not undertaken on a monthly basis.
14.1	Regional Office V, MGB and MGB Regional Office V. Should the monitoring results indicate that there are violations of DENR standards, the proponent MUST immediately cease its operation and institute remedial measures until such time that the monitoring results conform to the DENR standards	The company also did not immediately cease "its operation and institute remedial measures until such time as the results conform to the DENR standards" even when MMT quarterly reports indicated cyanide exceedance in several sampling sites especially during the monitoring period that coincided with full scale gold mining/milling operations (e.g., page 19 Mine Rehabilitation Fund Committee MMT

	CONDITION	FACTUAL BASIS
14.5	Control and/or reduction by management of impacts of all identified geological and environmental hazards and risks associated with the project, including release of toxic or hazardous chemicals and failure (open pit, settling ponds/silt traps, waste dumps, tailings dam, and stockpiles), fire or explosion due to flammable or explosive materials (fuel oil and explosives), accident due to mechanical equipment failure within the mill plant, release of tailings and waste rocks, as well as flooding, due to structural failure of tailings dam and its appurtenant structures, water diversion and collection system, sediment control dams, and/or waste dumps, must be managed to reduce and control environmental impacts. In case of emergency, the above-stated hazards and risks must be addressed immediately for the protection of the workers, nearby residents and sensitive ecosystems.	<p>Mine Rehabilitation Fund Committee MMT 3<sup>rd</sup> Quarter Monitoring Report dated September 2005)</p> <p>The company commenced milling and gold processing operations even when the tailings containment infrastructures were not at par with best practice standards and the tailings dam has not yet been fully constructed following the approved plan. These were major factors that led to the 31 October 2005 spill incident, and which violated provisions of the condition pertaining to the “release of toxic and hazardous chemicals and failure (...tailings dam...)” and the emplacement of adequate “water diversion and collection system.” This incident had adverse impacts to the surrounding communities and the environment. The company also failed to construct and maintain a leak proof mine tailings containment complex as suggested by the absence of a fail-safe mechanism during pump failures, the clogging of a plastic bottle of the pipe, and the uncontrolled gravity driven movement of water into the low capacity events pond that led to the 11 October 2005 spill incident.</p>
14.6	Submission to the EMB of the COASTAL MANAGEMENT PLAN for approval and strict implementation of the same THROUGHOUT the life of the project. A semi-annual status report on its implementation must be submitted to the EMB and EMB Regional Office V	The company has no approved coastal management plan. The Pollution Adjudication Board also noted this violation in their report dated 9 January 2006 and submitted to DENR Secretary Michael Defensor.
14.8	Submission to EMB of a Solid Waste Management Program for approval prior to start of construction. This plan must implement the same throughout the life of the project. Mine and other solid wastes must be properly stockpiled and/or disposed of in permanent, stabilized areas away from any water body and drainage systems, and maintained in safe and non-polluting conditions;	Although the company has separate waste bins distributed throughout the mine site complex, the segregation process fails not in the source but in the transport and dumping site as witnessed by some Commissioners of the RRFCC during one of their site visits to the mine complex.
17	The proponent must conduct a continuing inventory of AMD generation potential (EG by acid generation test works), the results of which must be submitted quarterly to the EMB, MGB Regional Office V and MGB Regional Office V. Whenever the potential for AMD generation is identified measures for controlling and mitigating it as well as managing its most probable impact must be undertaken. The proponent must also submit the final design of its AMD treatment system consisting of a settling pond and a wet and prior to its construction;	The DENR has no records of quarterly submitted reports detailing the “continuing inventory of AMD generation potential.”
	The mill plant will source most of its water	

	CONDITION	FACTUAL BASIS
19	form the decanted water at the tailings dam. Likewise the quality of all water releases from the dam must be ensured to be of quality equal to or better than the DENR standards. The EMB Regional office V, MGB Regional office V must be notified of Water quality analysis results;	The October 2005 incidents are concrete examples of gross violations of the provision stating that, "the quality of all water releases from the dam must be ensured to be of quality equal to or better than the DENR standards." In addition, prior to these incidents, MMT monitoring already reported exceedances in cyanide concentration relative to the DENR standard in several water samples collected from creeks draining the mine complex and offshore areas along the southeast coastline of Rapu-Rapu Island.
20	Periodic sampling of all effluent at strategic places of the tailings dam must be undertaken and evaluated for subsequent action to ensure their conformity to the DENR standards;	Available documents indicate that neither the company nor the MMT undertook "periodic sampling of" effluents "at strategic places of the tailings dam." Water in the tailings dam itself should have been sampled along with the sampling of pre-determined creeks and offshore areas.
23	The tailings dam with an impounding capacity of approximately five million (5,000,000) metric tons of tailings produced over the mine operations must be constructed strictly in accordance with its design criteria and largely from waste rocks excavated from the open pit. It must be provided with sufficient freeboard and spillway capacity to ensure that it can withstand the maximum probable storm event. Its outer slopes must be stabilized and protected against progressive erosion	A report dated 14 July 2005 and submitted by Mr. Ian Kennedy, Vice-President for Operations of Rapu-Rapu Processing, Inc. to Dir. Reynulfo A. Juan, Regional Director, Mines and Geosciences Bureau (MGB)-DENR Region V entitled, "ECC Compliance Accomplishments 2 <sup>nd</sup> Quarter 2005," stated that "geotechnical drilling, surface mapping, site walkovers, and slope stability assessments for the sound design of the tailings dam" along with "stringent technical specifications for construction of the dam" as well as "regular stability monitoring through piezometers and control monuments" were continuing. This unambiguously shows that the construction of the mine tailings dam was not yet completed when the company started the processing of its gold ore, and as such "sufficient freeboard and spillway capacity" were not attained to "ensure that it [could] withstand the maximum probable storm event." The 31 October 2005 incident, the larger of the two spills, is a clear example of the violation of this ECC Condition.
25	Transport, handling, storage, and utilization of cyanide and other toxic chemicals must be in accordance with the provisions of RA 6969;	Stock of cyanide (NaCN) left in part of the processing yard without safety bunds as observed by some Commissioners during mine site visits.

Equally guilty are government regulators who allowed LPI to operate despite the mining and environmental infrastructures being still incomplete. These regulators, even in the exercise of ordinary diligence, would have seen the danger posed by the unfinished structures.

There had been lapses in monitoring and control. It cannot be said that the October 11<sup>th</sup> and 31<sup>st</sup> 2005 tailings incidents were unforeseen or unforeseeable, or happenings due to force majeure, or separate events independent of or unconnected with each other. They were events waiting to happen, borne out of government negligence in enforcing the conditions of the ECC and private sector eagerness and selfish desire to produce the precious metals.

The RRFFC finds the DENR, its bureaus (i.e., MGB and EMB), its regional offices, including its monitoring team, to be dysfunctional enough to be reliable to prevent the occurrence of the October incidents. They have poor capability of monitoring mining operations in Rapu-Rapu.

Government monitoring of LPI environmental performance was not to best practice standards. It lacked the rigorousness and strictness to properly police an environmentally critical operation such as mining as well as the flexibility to adapt to changing environmental conditions.

The following instances show DENR's dysfunctionality or poor capability or plain negligence combining with LPI's own negligent acts and omissions.

1. Dir. Reynulfo A. Juan and Dir. Gilbert Gonzales, Regional Directors of Mines and Geosciences Bureau-Department of Environment and Natural Resources (MGB-DENR) and Environment and Management Bureau (EMB)-DENR in Region V, respectively, as well as Asst. Secretary Jeremias I. Dolino, Director of the MGB, hinted that they lack the necessary resources (e.g., funds, personnel and equipment) to properly regulate the Rapu Rapu Island mining operations (Public sessions of the Rapu-Rapu Fact Finding Commission held on 20 March 2005 in Legazpi City, Albay and 4, 6 and 7 April 2005 in Quezon City). Although this is often the persistent case in most if not all government regulating institutions, it should not be used as reason whenever a disaster occurs.

2. The DENR failed to immediately warn potential victims of the adverse impacts of the October 2005 spill incidents. Although Asst. Secretary Jeremias I. Dolino, Director of the MGB, said that the DENR has a Quick Response Protocol

for mining accidents in placed (Public session of the Rapu-Rapu Fact Finding Commission held on 6 April 2005 in Quezon City), this was either largely disregarded or was not flexible enough to effectively manage the quickly evolving nature of the Rapu-Rapu mine spills.

3. The EMB-DENR accepted and approved an Environmental Impact Statement (EIS) submitted by the company that failed to identify Sorsogon, just several km across the bay from Rapu-Rapu Island, as one of the primary impact areas despite the obvious possibility that dispersion of mine waste materials could reach its shores when weather conditions favor the southward transport of the toxic plume. (Dr. Cesar Villanoy, public session of the Rapu-Rapu Fact Finding Commission held on 7 April 2005 in Quezon City and BMP Environment & Community Care, Inc., Hydrodynamic Modeling for the Eastern Coastal Waters of Rapu-Rapu Island, 2004, 12 pp).

4. The DENR has lost its credibility as a regulating agency of mining operations in Rapu-Rapu Island (Councilor Dave Duran, public session of the Rapu-Rapu Fact Finding Commission held on 21 March 2005 in Sorsogon City). People felt that the response of the agency to the October 2005 incidents was not quick enough and that there was a general lack of transparency on how the agency managed the post-spill events. For example, the MGB-DENR and EMB-DENR only conducted a joint detailed investigation on the 31 October 2005 incident, the larger of the two spills, four days after it happened (letter by Dir. Reynulfo A. Juan, Regional Director MGB-DENR Region V for Mr. Ian Kennedy, Vice-President for Operations, Rapu-Rapu Processing, Inc. dated 7 November 2005).

5. Incredibly, no one in the DENR hierarchy accepts responsibility for the disaster despite the fact that the agency is mandated by law to ensure that such event does not happen (Dir. Reynulfo A. Juan, Dir. Gilbert Gonzales, Dir. Oscar Hamada and Asst. Sec. Jeremias I. Dolino, public sessions of the Rapu-Rapu Fact Finding Commission held on 20 March 2005 in Legazpi City, Albay and 4, 6 and 7 April 2005 in Quezon City). At the very least, the Secretary of the DENR should accept responsibility for the incidents.

6. The work of MGB and EMB with regard to managing the environmental impacts of mining operations in Rapu-Rapu Island ultimately necessitates their verification of one another. However, the current set-up wherein the two agencies are under one Department and their national directors report to the same Department Secretary would dampen or limit the advantages inherently provided to independent organizations that regulate the same industry. For the MGB and EMB to be able to efficiently provide the services they are mandated to do, these must be totally independent from one another, which is precluded by the current set-up of the DENR.

7. The Department of Environment and Natural Resources (DENR) and the company did not provide sufficient mechanisms to train representatives of local government units and non-government organizations in the MMT for environmental work monitoring. This suggests a lack of seriousness on the part of DENR to pursue its mandate.

8. The reported siltation and fish kill incidents on the 2nd week of September 2005, less than a month before the October incidents, during the occurrence of heavy rains were never fully investigated (page 22 Mine Rehabilitation Fund Committee MMT 3rd Quarter Monitoring Report dated September 2005). This report should have moved the DENR to implement measures such that similar incidents are avoided. Instead, the recommendation of the Multi-partite Monitoring Team (MMT) was for "...local officials and company representatives...to monitor and document [the] presence of adverse environmental effects within the communities." The aim should have been to eliminate such disastrous events instead of only monitoring and documenting their occurrences. Moreover, the absence of a DENR representative in the recommended monitoring team is incomprehensible. Why did the DENR abdicate its role in the monitoring process when each monitoring group of the MMT included at least one DENR representative (e.g., page 2 Mine Rehabilitation Fund Committee MMT 3rd Quarter Monitoring Report dated September 2005), and the head of the MMT being the Mines and Geosciences Bureau Regional Director or its representative?

9. The DENR accepted and approved an unpaginated report dated 14 July 2005 submitted by Mr. Ian Kennedy, Vice-President for Operations of Rapu-Rapu Processing, Inc. to Dir. Reynulfo A. Juan, Regional Director, Mines and Geosciences Bureau (MGB)-DENR Region V entitled, "ECC Compliance Accomplishments 2nd Quarter 2005," which stated that the company is continuing the "monthly [monitoring of] ... air/water quality and emissions/effluents generated from the operations [of the mine]. However, available information indicates that testing of these parameters was done on a quarterly basis instead of monthly. Clearly, the company violated Environmental Compliance Certificate (ECC) Condition No. 14.4, and the DENR did not act to stop this glaring infringement.

10. The same 14 July 2005 report (see number 3 above) also noted that "geotechnical drilling, surface mapping, site walkovers, and slope stability assessments for the sound design of the tailings dam" along with "stringent technical specifications for construction of the dam" as well as "regular stability monitoring through piezometers and control monuments" were continuing. These activities were being undertaken to satisfy ECC Condition No. 23. This unambiguously shows that the construction of the mine tailings dam was not yet completed when the company started the processing of its gold ore (Report of the Independent Evaluation Team commissioned by the Mine Rehabilitation Fund Committee submitted to Dir. Reynulfo A. Juan, Regional Director, MGB-DENR Region V on 28 December 2005). Despite the attendant environmental hazards, the DENR allowed the company to continue processing their ore.

11. Cyanide concentration exceeded the DENR Standard in 7 of 13 and 7 of 7 inland water and marine water sampling sites, respectively during the 3rd quarter monitoring (page 19 Mine Rehabilitation Fund Committee MMT 3rd Quarter Monitoring Report dated September 2005). In addition 3 out of the 6 sampling stations that passed the DENR Standard were very close to the acceptable concentration limit. Although the marine water results could be attributed to another source(s) (e.g., cyanide fishing) since these have historically failed the DENR Standard being used, the spike in cyanide concentration in inland water sampling sites should have been a cause of concern as this coincided with full scale gold mining operations. Strangely, there

was no mention of this significant observation in the findings column of the Commitment Sheet in the same monitoring report.

12. Failure of the MMT to clearly point out violations of DENR standards (e.g., cyanide concentration exceedance) in its monitoring report and the acceptance and approval of the DENR of the same report is a flagrant violation of Condition No. 14.4 of their ECC, which states in part that "Should the monitoring results indicate that there are violations of DENR standards, the proponent must immediately cease its operation and institute remedial measures until such time as the results conform to the DENR standards." Although this is said in hindsight, stopping of milling operations might have averted the spill incidents that occurred a few weeks after the MMT undertook its 3rd Quarter monitoring.

13. The MMT reports did not include concentrations of toxic heavy metals in the tailings and the ore, which could have provided monitoring teams information on which metals and what media to focus on. It is widely known that each toxic metal has speciation particularities and the conditions of their occurrence vary from one metal to another. Experts from the DENR should have seen this obvious need, and required its institution in the monitoring process even if the Environmental Management Bureau (EMB)-DENR approved Environmental Impact Statement (EIS) did not include such provision.

**CHAPTER 2**

Technically or otherwise, the tailings incidents and their consequences may be viewed differently by people depending on their beliefs, knowledge and experience. Perhaps, for some, they are minor disasters; for others, major or other description.

As to why did the incidents happen some may look into engineering defects while others into management failures and other causes?

For the RRFFC, the fact-finding process of the October 11 and 30 events should be understood and analyzed beyond the quantifiable immediate impacts and causes internal to LPI or within the operational/regulatory framework of its mining practices. This is because, to limit the causation and the corresponding resolution within the mine site or even within the small island of Rapu-Rapu, is superficial.

Mining is not only the physical act of extracting minerals underground. It is not merely an act that disturbs a localized environment and its inhabitants.

Mining is mining state-owned resources which, by law, custom or generally accepted ethical principles, is supposed to benefit the people of the state. Mining is disturbing a portion of the environment which by natural processes creates a chain of movements and changes and effects in the physical environment.

That is why mining operations, big or small, are governed by national and local laws and regulated by national agencies and their regional or municipal counterparts.

Thus, the RRFFC looked farther and deeper into the facts and circumstances of the tailings incidents and found relevant facts and issues in the corporate set-up, in the social acceptability of its operations, in its costs and benefits to the municipality of Rapu-Rapu and to the nation, and in the laws or lack of them governing the different aspects of the mining operations.

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## I.

### THE RAPU-RAPU POLYMETALLIC PROJECT<sup>18</sup>

#### *History*

The Ungay-Malobago area was initially discovered and explored through shallow pits in the late 1930s. During World War II, the Japanese Imperial Army mined nearby Barangay Sta. Barbara. After the war until 1976, Hixbar Mining Company continued to mine the area using open-pit and tunnel mining. It left three of four rivers contaminated and a wide tract of land barren and useless.

Benguet Corp. entered Ungay-Malobago in 1957 and conducted geological mapping and geophysical surveys. Between 1962 and 1965, Benguet drilled over 100 surface and underground drill holes and developed approximately 1,000m of underground development via an adit which exits near the current project location. Work continued to be conducted intermittently by Benguet until 1980. Toronto Ventures Inc. entered the area in 1995 and carried out exploration until 1999 when Lafayette acquired interest in the Project.

#### *Project Profile*

Project Name: **Rapu-Rapu Polymetallic Project.**

Proponent: The proponent is **Lafayette Philippines, Inc.**  
Suite 23, Legaspi Suites, 178 Salcedo Street  
Legaspi Village, Makati City, Philippines

Contact Person: Mr. Roderick D. Watt  
Country Manager, Lafayette Philippines, Inc.

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<sup>18</sup> Information under this section were summarized from Rod Watt's published article "Update on the Rapu-Rapu Polymetallic Project"

[As of this writing, the LPI is represented by its Corporate President Carlos Dominguez]

Telephone Nos: (632)813-4131 Fax: (632)893-9349

Location: The Project is located in Barangays Malobago, Pagcolbon, and Binosawan, Municipality of Rapu-Rapu, Province of Albay. Rapu-Rapu is an island municipality 376 kilometers southeast of Manila. The Project site covers 180 has. located at the eastern side of the island, with the following geographical coordinates: 13°11'00" North latitude and 124°12'16" East longitude. Figure 9 shows the location of the Project.

Project Cost: The project cost is PhP1.8 billion, according to the feasibility study prepared by the proponent, or U.S.\$33,509,812. (at U.S.\$1=PhP53) .

### *Components*

#### Mining Plan

The Project's initial focus of development is the Ungay-Malobago orebody where approximately 6 million tonnes of ore is planned to be mined from a single open pit, 850m long, 300m wide, with a depth of 140 meters. Of the 6 million tonnes, 0.85 million tonnes is gold-rich ore which will be treated in a carbon-in-leach (CIL) plant located adjacent to the pit. The remaining 5.1 million tonnes is sulphide ore that contains copper and zinc in addition to gold and silver that will be treated in a separate sulphide flotation plant also located beside the pit.

#### Metallurgy

The ore treatment facility will comprise separate plants for the treatment of the Ungay sulfide copper/zinc/gold bearing ore and gossan/primary gold bearing ore. The gold plant will produce gold dore, while the sulphide plant will produce two concentrate products: copper-gold-silver and zinc. To be processed

through the two plants are 58,000 tonnes of copper, 311,000 ounces of gold, 3,300,000 ounces of silver and 74,000 tonnes of zinc.

## Geology

According to the exploration study of the geology of the place, massive sulfide deposit in Ungay occurs within a folded sequence of mafic and felsic volcanic rocks. The deposit consists of highly deformed and dismembered sulphide pod composed predominantly of pyrite with lesser chalcopyrite and sphalerite. Chalcocite, covellite, tetrahedrite, bornite and visible gold have also been identified.

Current resources estimated are as follows:

<b><i>Class</i></b>	<b><i>Tonnes</i></b>	<b><i>Gold g/t</i></b>	<b><i>Silver g/t</i></b>	<b><i>Copper %</i></b>	<b><i>Zinc %</i></b>
Measured	6397000	2.7	28.9	1.3	2.2
Indicated	324000	2.2	20.5	0.9	1.4
Inferred	301000	1.9	20.9	0.8	1
Total	7022000	2.6	28.1	1.2	2.1

Ore reserve is estimated as follows:

<b><i>Class</i></b>	<b><i>Tonnes</i></b>	<b><i>Gold g/t</i></b>	<b><i>Silver g/t</i></b>	<b><i>Copper %</i></b>	<b><i>Zinc %</i></b>
Proven	5852000	2.5	28.1	1.2	2.1
Probable	120000	2.1	22.7	1	1.9
Total	5972000	2.5	28	1.2	2.1

### *Government Permits*

Lafayette was issued a number of government permits, chief of which is the Environmental Compliance Certificate (ECC) approved by the DENR dated July 12, 2001. The company's Environmental Protection and Enhancement Programme (EPEP) and Declaration of Mining Feasibility were also approved by the DENR's Mines and Geosciences Bureau. The Office of the President, through Executive Secretary Alberto Romulo, on May 2004 issued Proclamation No. 625 classifying as special economic zone the mining area on a petition by Lafayette.

The following is a list of government permits obtained by Lafayette:

Name of Permit/Agreement	Issuing Authority
ECC	DENR
EPEP	MGB
Declaration of Mining Project Feasibility	MGB
Certificate of Registration	BOI
Foreshore Lease	DENR
Health of Workers Study Programme	EMB
Coastal Management Plan	EMB
Storm Water Runoff Management Plan	EMB
Solid Waste Management Plan	EMB
Roadway Maintenance and Transport Management Plan	EMB
Action Plan for Pier Development	EMB

### *Government Tax Incentives*

A number of tax incentives has been made available to Lafayette. These were granted by the Board of Investments of the Department of Trade and Industry in accordance with the Mining Act (R.A. 7942). The BOI distinguished between the copper-gold-silver production and the zinc production of the company. As there is no existing zinc production in the Philippines, a "pioneer

status" has been awarded to Lafayette's planned zinc production, along with a longer tax concessionary period.

The principal concessions are Income Tax Holidays (ITH) from corporate income tax or 32% on profits arising from copper, gold and silver production for four years, and six years on profits arising from zinc production. Extensions of up to two more years for each ITH has been allowed to Lafayette by the BOI. In addition, the mining company is exempted from the value-added tax (VAT) as its production primarily go to exports.

## II.

### RRFFC'S FINDINGS ON LPI'S CORPORATE STRUCTURE, MINERAL PRODUCTION SHARING AGREEMENT, TAX INCENTIVES, PRODUCTION REPORTS AND EXPORT SALES, SOCIAL ACCEPTABILITY AND COMPLIANCE OF STATUTORY REQUIREMENTS

#### *Confusing Corporate Set-Up*

Based on records obtained by the Commission, there are at least two corporate entities holding mining-related permits and operating inside the island. These are Rapu-Rapu Mining, Inc. (RRMI) and Rapu-Rapu Processing, Inc. (RRPI). RRMI is the MPSA and ECC holder and is responsible for mineral extraction activities. On the other hand, RRPI is engaged in mineral processing and holds a processing permit from the MGB.

Under the law, mineral processing is not required to be Filipino-owned.<sup>19</sup> This allows RRPI to be 100%<sup>20</sup>-owned by Lafayette (Philippines), Inc. (LPI),<sup>21</sup> a domestic subsidiary of Lafayette Mining Ltd. (LML), an Australian based company publicly-listed in the Australian stock exchange. Since LPI merely renders mining-related financial, managerial and technical services,<sup>22</sup> this is allowed by law to be wholly-owned by foreigners. As stated, LML, together with Philco Resources Ltd., a Malaysian company, own 74% and 26% respectively of LPI.<sup>23</sup>

Unlike RRPI and LPI, RRMI is required by the Constitution to be at least 60% Filipino-owned.<sup>24</sup> This 60% is held by Rapu-Rapu Holdings, Inc. (RRHI) while the other 40% is owned by LPI.<sup>25</sup> RRHI itself has a 40% foreign interest<sup>26</sup> but for investment purposes, it is considered a 100% Filipino corporation because it is 60% owned by a Filipino corporation, F&N Property Holdings, Inc. (F&N), another holding company. Significantly, the other 40% owner of RRHI is

<sup>19</sup> R.A. 7942, Sec. 3(aq).

<sup>20</sup> Percentages rounded off since the other stockholders only own 1 share respectively.

<sup>21</sup> General Information Sheet (GIS), filed on 18 January 2006.

<sup>22</sup> Amended Articles of Incorporation, 26 April 2004.

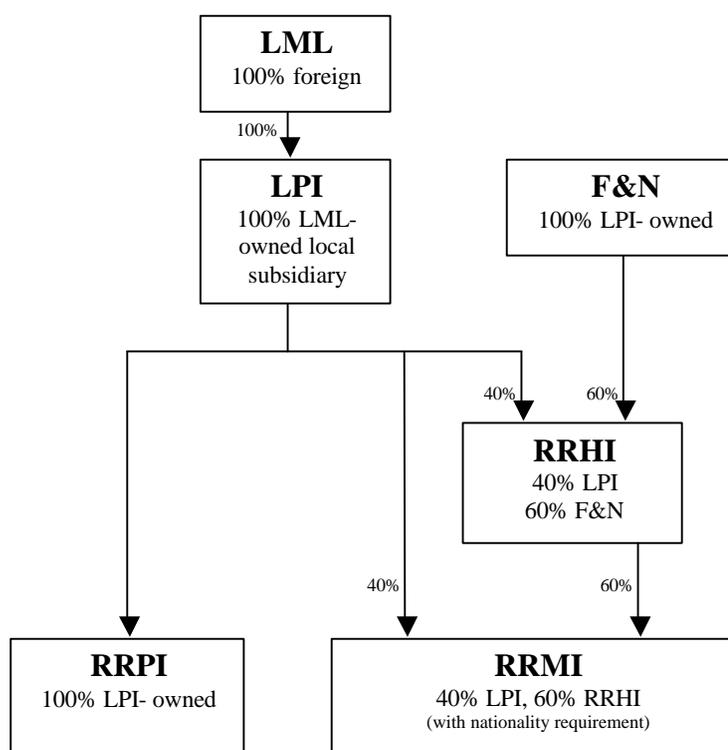
<sup>23</sup> GIS, filed on 10 November 2005.

<sup>24</sup> 1987 Philippine Constitution, Art. XII, Sec. 2. This requirement does not apply to FTAA. (Ibid., last par.; La Bugal-B'laan et al vs. Ramos et al, G.R. No. 127882, 01 December 2004)

<sup>25</sup> GIS, filed on 08 June 2005.

<sup>26</sup> GIS, filed on 10 June 2005.

also LPI.<sup>27</sup> To better understand the intertwined relationships, the following diagram is helpful:



SOURCE: 2005 General Information Sheets (GIS) of RRPI, RRMI, RRHI, LPI and F&N.

Prior to the recent change in management as a result of the two tailings incidents, the composition of shareholders and directors of these corporations are indicated below revealing their interlocking relationships:

**Table – Percentage Ownership of Stockholders**

Stockholder/Percentage <sup>28</sup>	RRMI <sup>29</sup>	RRPI <sup>30</sup>	RRHI <sup>31</sup>	LPI <sup>32</sup>	F&N <sup>33</sup>
LML				74.0%	
Philco Resources Ltd. <sup>34</sup>				26.0%	
LPI	39.992%	39.995% 59.995% <sup>P</sup> 99.990%	39.968%		
RRHI	59.988%				
F&N			59.936% <sup>P</sup>		

<sup>27</sup> Ibid.

<sup>28</sup> All subscribed shares fully paid-up.

<sup>29</sup> GIS, filed on 08 June 2005.

<sup>30</sup> GIS, filed on 18 January 2006.

<sup>31</sup> GIS, filed on 10 June 2005.

<sup>32</sup> GIS, filed on 10 November 2005.

<sup>33</sup> GIS, filed on 24 June 2005.

<sup>34</sup> Malaysian-registered company according to LPI's current president Carlos Dominguez

Roderick Watt <sup>35</sup>	0.004% <sup>36</sup>	0.002%	0.016%	negligible <sup>37</sup>	
Andrew McIlwain <sup>7</sup>	0.004%	0.002%	0.016%	negligible <sup>6</sup>	
Roderick R. C. Salazar III	0.004%	0.002% <u>0.002%</u> <sup>P</sup> 0.004%	0.016% <sup>P</sup>	negligible <sup>6</sup>	33.333%
Philip Sigfrid A. Fortun	0.004%	0.002% <sup>P</sup>	0.016% <sup>P</sup>	negligible <sup>6</sup>	33.333%
Gregorio Y. Narvasa II	0.004%		0.016% <sup>P</sup>		33.333%
Gerard H. Brimo		0.002% <sup>P</sup>		negligible <sup>6</sup>	
Dickson B. Berberabe			0.016% <sup>P</sup>		
Mylene Marcia-Creencia					0.001%
Sung Sik Min <sup>38</sup>				negligible <sup>6</sup>	
	<b>100.0%</b>	<b>100.0%</b> <sup>39</sup>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

<sup>P</sup> - Preferred shares; for Filipinos.

SOURCE: 2005 General Information Sheets (GIS) of RRPI, RRMI, RRHI, LPI and F&N.

**Table – List of Directors**

Name	RRMI	RRPI	RRHI	LPI	F&N
Roderick Watt	✍	✍	✍	✍	
Andrew McIlwain	✍	✍	✍	✍	
Roderick R. C. Salazar III	✍	✍	✍	✍	✍
Philip Sigfrid A. Fortun	✍	✍	✍		✍
Gregorio Y. Narvasa II	✍				✍
Gerard H. Brimo		✍	✍	✍	
Mylene Marcia-Creencia				✍	✍
Sung Sik Min				✍	

SOURCE: 2005 General Information Sheets (GIS) of RRPI, RRMI, RRHI, LPI and F&N.

Finally, a look at F&N reveals that it is actually owned by the same nominal shareholders who comprise all of the enumerated corporations, mostly lawyers of Fortun Narvasa & Salazar law office.

### *Irregular Compliance to EIA Requirements*

As an environmentally critical project, mining in Rapu-Rapu is specifically covered by the Philippine EIS System under the then prevailing DAO #96-37.<sup>40</sup> At first glance, the project had complied with this legal requirement since an ECC was issued in favor of LPI prior to actual operations.<sup>41</sup> However, this ECC was not without its share of problems.

<sup>35</sup> Australian national.

<sup>36</sup> Shading indicates board membership.

<sup>37</sup> Qualifying share with value of P1.00 out of total subscribed and paid-up shares worth P127.0M.

<sup>38</sup> Korean national.

<sup>39</sup> Rounded-off.

<sup>40</sup> Art. II, Sec. 1.0(a).

<sup>41</sup> ECC #0011-644-301C. This was subsequently transferred to RRMI.

First, prior to its approval and during public consultations and hearings, the ECC was opposed, raising important issues such as the fragile nature of Rapu-Rapu's island ecosystem, the potential for acid mine drainage (AMD) and the torrential rain weather pattern in the area, among others. On hindsight, the merit of these contentions have been validated and should be a serious cause for concern for the country with respect to the ability of both EMB and DENR to exercise sound discretion in protecting our environment given how spectacularly they were proven wrong at so short a time.

The Commission particularly notes the haste in the grant of the ECC notwithstanding the seriousness of the objections raised and the fact that prior to its issuance, environmental agencies were well aware of an ongoing Senate investigation on the matter. Worse, notwithstanding the committee recommendation not to issue the ECC,<sup>42</sup> DENR still proceeded to issue one prompting former Sen. Robert S. Jaworski as committee head to express his dismay.<sup>43</sup>

To be sure, there were other irregularities such as the conduct of the only public hearing for this ECC held inside the premises of the applicant. The Commission takes note of the sheer inaccessibility of the site, the absolute reliance on the proponent to reach the premises where the hearing was conducted and the very limited options to travel in and out of the area, so much so that anyone who attended this public hearing must have depended entirely on LPI for transportation and accommodations. These circumstances do not augur well for a real and meaningful participation absent a neutral ground for such an activity and constitutes failure of the public hearing process.

The Commission also tried its best to peek into the circumstances surrounding the issuance of the ECC. The reason for doing so is neither to engage in a blame game nor question the judgment of the decisionmakers.<sup>44</sup> Rather, as the EIA system is the main frontliner in regulatory efforts to mitigate, if not avoid, adverse anthropogenic environmental impacts, an understanding of

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<sup>42</sup> Committee Report No. 659 dated 06 June 2001. ECC#0011-644-301C was issued on 12 July 2001.

<sup>43</sup> Letter to DENR Sec. Heherson T. Alvarez, 20 August 2001.

<sup>44</sup> Namely the EIA Review Committee, the EMB Director and DENR Secretary.

where it failed or fell short of what is required by law and circumstances, can help in reducing further socioeconomic costs of environmental degradation. Unfortunately, we were met by a sudden and widespread case of amnesia at both personal and institutional levels.

Be that as it may, an evaluation was still possible to assess legal compliance in the issuance of ECC #0011-644-301C in order to determine the validity of the said ECC and the extent of liability, if any. This analysis is important because it can partly explain the company response to the two incidents, the reaction of the LGUs both in Albay and Sorsogon, and the legal recourses available to those affected.

#### Non-inclusion of Sorsogon

One of the most critical issues is the non-inclusion of Sorsogon stakeholders in this EIA process. Based on the investigation, the ECC in question was consulted only with LGUs and stakeholders from Albay. According to several witnesses summoned by the Commission, the underlying reason was because the Project would be located only in the island of Rapu-Rapu, within the municipality of the same name,<sup>45</sup> in the province of Albay. No project component will ever be situated in Sorsogon.

The Commission finds this reasoning careless, bereft of legal and factual bases and does not stray too far from the much-ridiculed attempt at passing a law to prevent the entry of typhoons in the country. First of all, it is common error to think that the Philippine EIS System is governed solely by the presidential decrees of yore, namely PD 1151 (1977) and PD 1586 (1978). More relevant to the industry is the Philippine Mining Act of 1995<sup>46</sup> which states in no uncertain terms:

*Environmental Impact Assessment (EIA).*—Except during the exploration period of a mineral agreement or a financial or technical assistance agreement or an exploration permit, an

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<sup>45</sup> Incidentally, the municipality not just covers Rapu-Rapu but the adjacent island of Batan.

<sup>46</sup> R.A. 7942 [1995].

environmental clearance certificate shall be required based on an environmental impact assessment and procedures under the Philippine Environmental Impact Assessment System including Section 26 and 27 of the Local Government Code of 1991 which require national government agencies to maintain ecological balance, and prior consultation with local government units, non-governmental and people's organizations and other concerned sectors of the community x x x x<sup>47</sup>

In turn, Sec. 26 of the Local Government Code provides:

*Duty of National Government Agencies in the Maintenance of Ecological Balance.*--It shall be the duty of every national agency or government-owned or -controlled corporation authorizing or involved in the planning and implementation of any project or program that may cause pollution, climatic change, depletion of non-renewable resources, loss of cropland, rangeland or forest cover, and extinction of animal or plant species, to consult with the local government units, nongovernmental organizations, and other sectors concerned and explain the goals and objectives of the project or program, its impact upon the people and the community in terms of environmental or ecological balance, and the measures that will be undertaken to prevent or minimize the adverse effects thereof.<sup>48</sup>

Note that the law concerns itself less with the location of the project than on the extent of its impacts. Indeed, as far as *environmental impacts* are concerned, the same DAO #96-37 defined it as "the probable effects or consequences of proposed projects or undertakings on the physical, biological and socioeconomic environment that can be direct or indirect, cumulative, and positive or negative."<sup>49</sup> Evidently, these environmental impacts (and practically every aspect of the environment) do not limit themselves along jurisdictional boundaries and this is true locally or internationally. Otherwise, there would be

<sup>47</sup> Sec. 70, R.A. 7942; underscoring supplied.

<sup>48</sup> Underscoring supplied.

<sup>49</sup> Art. I, Sec. 3(j).

no need for treaties on ozone depletion, climate change or migratory species if environmental impacts could all be contained within a particular jurisdiction. As the outcome of the tailings incidents fully bear-out, the most significant impacts were felt across in Sorsogon, not in Albay. We do not find this surprising.

**Geographic configuration.** A quick look at the map below showing project location in Rapu-Rapu vis-à-vis Sorsogon and the rest of Albay indicates their relative distances. Given that the closest municipality to Rapu-Rapu is actually Prieto Diaz in Sorsogon, it is astonishing how both the EMB and DENR could be so oblivious to the potential environmental harm that the project posed to Sorsogon and yet, consider Legazpi an indispensable stakeholder.



SOURCE: Map culled from Google Earth and MGB-V Report.

Equally, there is the Albay Gulf. Another important implication of being an island ecosystem, aside from its fragility and limited carrying capacity, is that it shares a common body of water (Albay Gulf) with other coastal towns. True enough, this bay shared by Sorsogon with Rapu-Rapu and the rest of Albay was the pathway by which Sorsogon got affected with several fishkills. The ensuing fish scare resulted in an alarming loss of livelihood.

Lastly, to demonstrate the relative arbitrariness of territorial delineation from an ecological standpoint, Rapu-Rapu island used to be a part of Sorsogon until it was swapped with Albay for the municipality of Donsol.<sup>50</sup> It cannot and should not be the sole basis of determining stakeholder status.

**Sorsogon monitoring.** Currently, the new management of Lafayette is actively engaged in an IEC campaign that is now more inclusive of the coastal municipalities of Sorsogon. Sorsogon Gov. Raul Lee, for his part, makes much of his understanding with the Lafayette group to have two (2) representatives from the province who will thence be part of the official monitoring team, presumably the MMT.<sup>51</sup> However, this cannot suffice.

First of all, in no way can mere MMT membership comprehend the magnitude of the decision-making process required in assuming risks attendant to mining by the affected stakeholders embodied in the consultation process. This is not the meaning of prior consultations and prior consent. In fact, under the said arrangement, the whole province is actually being shortchanged because as valid and rightful stakeholders, each Sorsogon LGU is entitled to a seat in the MRF Committee<sup>52</sup> which has a more extensive role in regulating mining operations of the company than the MMT. The latter is simply deputized by the MRF Committee to serve as its monitoring arm.<sup>53</sup> Sorsogon membership in the MRF Committee is a matter of right, not a privilege.

Secondly, it bears reminding Sorsogon LGUs and other stakeholders that not once has the province been spurned by the EMB in its efforts to take a more active and institutionalized role in protecting the environmental health and safety of its constituents. SP Resolution #57-03 sought the suspension and reconsideration of the issuance of the disputed ECC for various reasons.<sup>54</sup> The EMB Director replied that the province had effectively been

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<sup>50</sup> According to residents and barangay officials randomly interviewed.

<sup>51</sup> Signed document, no date.

<sup>52</sup> Sec. 183, DAO 96-40.

<sup>53</sup> Sec. 182(e), Ibid.

<sup>54</sup> See attached.

informed by way of perfunctory notices published in the Philippine Star and Bicol Chronicle and that endorsement by LGUs is only a key indicator of social acceptability.<sup>55</sup> Another SP resolution sought the ECC cancellation by the DENR Secretary.<sup>56</sup> SP Resolution #228-05 in turn supported and endorsed the respective resolutions of Prieto Diaz and Sorsogon City to be considered as stakeholders of the mining activities in Rapu-Rapu. Finally, SP Resolution #237-05 sought the President's intervention in the "anomalous" issuance of said ECC, among others. To all these, the MGB could only refer the matter to the MRF Committee for consideration when as a matter of law, they had every right to be in this committee.

But lest the discussion be centered on committee membership, the main requirements are **prior** consultations and **prior** approval. The above efforts to accommodate Sorsogon are palliative at best and leave the stakeholders with little room but to accept a decision which they were wrongfully prevented from taking part. In excluding Sorsogon, the decision makers at that time all claimed to have relied entirely on experts<sup>57</sup> or that their role was merely ministerial<sup>58</sup> or that it was the decision of the national or central office.<sup>59</sup> These are all irrelevant and purely exculpatory.

Precisely, the law does not leave this matter to the discretion of officials and quite simply and clearly mandates prior consultation of every stakeholder because the best person to foresee a potential harm is the one most likely to be affected. Surely, it cannot be left to those who have the wherewithal or simply too removed from the potential consequences. For instance, some officials and the Lafayette group have repeatedly emphasized the negligible volume of fish that were killed or the minute traces of heavy metals found. But to a family with no other source of food than today's catch or to the parents of a child exposed to the health risk and who have no options to transfer residences, these are not trifle concerns. Fortunately, the

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<sup>55</sup> Letter to the Sangguniang Panlalawigan, 01 Jul 2003.

<sup>56</sup> SP Resolution No. 212-05.

<sup>57</sup> Peter Anthony Abaya

<sup>58</sup> "Four Years After My Watch", April 6, 2006, Heherson Alvarez,

<sup>59</sup> Testimony of MGB and EMB regional directors

Constitution was not written for the profit-minded. Instead, social justice pervades and prevails, to wit:

The use of property bears a social function, and all economic agents shall contribute to the common good x x x x<sup>60</sup>

The State shall protect the rights of subsistence fishermen, especially of local communities, to the preferential use of the communal marine and fishing resources, both inland and offshore.<sup>61</sup>

In other words, Sorsogon stakeholders, particularly the marginalized fisher folk of these coastal communities, had every right to be consulted and be heard because they are likely (and was in fact the case) to face the environmental damage from the Rapu-Rapu Project. These rights are protected both in substance and procedure:

The State shall protect and promote the right to health of the people and instill health consciousness upon them.<sup>62</sup>

The State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature.<sup>63</sup>

No person shall be deprived of life, liberty, or property without due process of law x x x x<sup>64</sup>

The right of the people and their organizations to effective and reasonable participation at all levels of social, political and economic decision-making shall not be abridged. The State, shall

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<sup>60</sup> 1987 Constitution, Art. XII, Sec. 6.

<sup>61</sup> Ibid., Art. XIII, Sec. 7.

<sup>62</sup> Ibid., Art. XII, Sec. 15.

<sup>63</sup> Ibid., Sec. 16.

<sup>64</sup> Ibid. Art. III, Sec. 1.

by law, facilitate the establishment of adequate consultation mechanisms.<sup>65</sup>

The laws implementing these rights can be found in the EIA system, the Philippine Mining Act of 1995 and the Local Government Code. In this regard, Section 27 of the latter could not be more explicit:

*Sec. 27. Prior Consultations Required.*—No project or program shall be implemented by government authorities unless the consultations mentioned in Sections 2(c) and 26 hereof are complied with, and prior approval of the sanggunian concerned is obtained x x x<sup>66</sup>

Since there was no prior consultation and prior approval of sanggunians from Sorsogon, ECC #0011-644-301C should be nullified.

#### Implications of the Confusing Corporate Set-up

Another issue worth addressing is whether or not the entities which actually caused the pollution had the necessary permits. As earlier stated, there are two companies operating in Rapu-Rapu island with mining-related permits—RRMI and RRPI.<sup>67</sup> The former is the MPSA holder while RRPI holds the mineral processing permit.<sup>68</sup> RRMI sells its ores to RRPI for processing which exports the metals to foreign buyers. As earlier discussed, RRPI and RRMI share a lot in common in terms of stockholders and directors. To this, the Commission is well-aware that questions have been raised whether this set-up violates the Constitution mandate but this is beyond our reach and we opt to leave this to the proper agencies to determine. What is more relevant is to determine its implications on the two incidents and the corresponding fault and liability. Suffice to state, for legal purposes, RRMI and RRPI were created as two separate

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<sup>65</sup> Ibid., Art. XIII, Sec. 16.

<sup>66</sup> R.A. 7160; *underscoring supplied*.

<sup>67</sup> The rest are just contractors providing various services from technical to maintenance, including LPI, Leighton, etc.

<sup>68</sup> MPP #009-005-V.

entities and it would be error to treat them as one for regulatory purposes but two whenever convenient.<sup>69</sup>

In this context, there were actually two environmentally critical projects (ECPs) operating in Rapu-Rapu. The first was for mineral extraction,<sup>70</sup> the other for mineral processing.<sup>71</sup> The first incident which involved defective pumps which resulted in an overflow of the events pond which discharged tailings into the Alma and Pagcolbon creeks was clearly a processing concern. The slurry was being pumped from the detoxification unit towards the upper tailings storage facility when the pump gave way. However, verification of records reveal that RRPI does not have an ECC and effectively operating without one. Only RRMI holds an ECC as transferee of LPI, the original grantee.

Some may argue that RRMI's ECC comprehends both extraction and processing activities. To that, we can add that it is even allowed to put-up a pier but this does not mean that any third party can build and operate one based on RRMI's ECC. The nature of the ECC as a permit is highly deliberate and restricted given its subject matter—environmental impacts. Its proponent is directly liable for compliance with the conditions attached to it and its transferability is limited. It cannot just be spliced and diced and distributed to different entities. During our investigation and upon verification with different agencies, RRPI was never a transferee of the ECC for its gold/silver processing operations. Hence, when it spilled cyanide-laced water into the said creeks, it was actually operating without an ECC as required by law.

Neither is the contention that RRMI and RRPI are one and the same, valid. Even if EMB and MGB did treat them as one, this simply perpetuated the error. RRMI and RRPI were deliberately set-up for specific reasons with substantially different foreign ownership structures that its beneficial owners were fully well-aware of. It would be highly offensive to our legal system then to allow that for purposes of one law, they be treated as one and the same, but for another, be separate corporate entities.

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<sup>69</sup> E.g. taxation.

<sup>70</sup> Classified under Resource Extractive Industries – Major Mining and Quarrying Projects.

<sup>71</sup> Classified under Heavy Industries – Non-Ferrous Metal Industries.

Finally, on a very practical level, this corporate set-up had a direct hand in the confusion that ensued after the disasters. More than once, we have heard the line that the incidents were minor compared to other mining-related disasters. There are several ways to deconstruct this argument but for this discussion, the question is why were they mishandled? The report of the independent team commissioned by the MRF Committee after the two incidents give the answer—“having multi-organizational entities on-site with overlapping responsibilities in control of environmental aspects [led] to potential confusion in pinning accountabilities for environmental non-compliances.”<sup>72</sup> The Commission finds that this “confusion” was the direct and necessary result of the intentional and deliberate decision by the Lafayette group to set-up their companies as such and should be held accountable for all its legal consequences.

#### ECC Violations

Finally, even assuming that prior consultations were held, cumulative impacts were considered and RRPI and RRMI could be treated as one, the inescapable truth is that ECC #0011-644-301C was significantly violated barely four months from start of operations—twice at that. The EMB has made its own findings which was affirmed by the PAB.<sup>73</sup> The Commission concurs with its own findings (see Chapter 1 for ECC violations).

All told, for failure to validly consult beforehand the stakeholders in Sorsogon and obtain the prior approval of Sorsogon LGUs, ECC #0011-644-301C must be revoked. For gross violations of its ECC, all of RRMI operations must be stopped. For engaging in mineral processing since July 2005 without an ECC, all of RRPI’s operations must be stopped and penalized under P.D. 1586. Finally, absent a validly obtained ECC, any mining activity in Rapu-Rapu island should be suspended indefinitely.

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<sup>72</sup> Final Report, 28 December 2005, p.5.

<sup>73</sup> Order, 09 January 2006, DENR-PAB Case No. 05-00744-05, p.7.

*No Fair Sharing in the  
Questionable Mineral Production Sharing Agreement*

LPI has a joint venture agreement with Rapu-rapu Minerals and Ungay-Malobago, both Philippine corporations, with approved Mineral Production Sharing Agreements (MPSAs) and patented claims in Rapu-Rapu Island.

A Mineral Production Sharing Agreement ("MPSA") is one of the modes of mineral agreement under Republic Act No. 7942, otherwise known as the Philippine Mining Act of 1995 ("PMA").

As used in the PMA, mineral agreement "means a contract between the government and a contractor, involving mineral production sharing agreement, co-production agreement, or joint-venture" [section 3 (ab), PMA].

On the other hand, MPSA is defined as "an agreement where the Government grants to the contractor the exclusive right to conduct mining operations within a contract area and shares in the gross output. The contractor shall provide the financing technology, management and personnel necessary for the implementation of this agreement" [Section 26 (a), PMA].

The government share in the MPSA is provided in Section 80 of the PMA, to wit:

"Section 8. Government Share in Mineral Production Sharing Agreement. --The total government share in a mineral production sharing agreement shall be the excise tax on mineral products as provided in Republic Act No. 7729, amending Section 151(a) of the National Internal Revenue Code, as amended."  
[Underscoring supplied]

Republic Act No. 7729, otherwise known as "An Act Reducing the Tax Rates on Metallic and Non-Metallic Minerals and Quarry Resources" amended Section 151(a) of the National Internal Revenue Code (NIRC), as amended.

As amended by RA No. 7729, Section 151(a) of the NIRC, the reduced excise tax rates for metallic and non-metallic minerals and quarry resources are as follows:

“(A) Rates of Tax. - There shall be levied, assessed and collected on minerals, mineral products and quarry resources, excise tax as follows:

(1) On coal and coke, a tax of Ten pesos (P10.00) per metric ton;

(2) On all nonmetallic minerals and quarry resources, a tax of two percent (2%) based on the actual market value of the gross output thereof at the time of removal, in the case of those locally extracted or produced; or the value used by the Bureau of Customs in determining tariff and customs duties, net of excise tax and value-added tax, in the case of importation.

Notwithstanding the provision of paragraph (4) of Subsection (A) of Section 151, locally extracted natural gas and liquefied natural gas shall be taxed at the rate of two percent (2%);

(3) On all metallic minerals, a tax based on the actual market value of the gross output thereof at the time of removal, in the case of those locally extracted or produced; or the value used by the Bureau of Customs in determining tariff and customs duties, net of excise tax and value-added tax, in the case of importation, in accordance with the following schedule;

(a) Copper and other metallic minerals;

(i) On the first three (3) years upon the effectivity of Republic Act No. 7729, one percent (1%);

(ii) On the fourth and the fifth years, one and a half percent (1 ½ %); and

(iii) On the sixth year and thereafter, two percent (2%);

(b) Gold and chromite, two percent (2%).

(4) On indigenous petroleum, a tax of three percent (3%) of the fair international market price thereof, on the first taxable sale, barter, exchange or such similar transaction, such tax to be paid by the buyer or purchaser before removal from the place of production. The phrase 'first taxable sale, barter, exchange or similar transaction' means the transfer of indigenous petroleum in its original state to a first taxable transferee. The fair international market price shall be determined in consultation with an appropriate government agency.

For the purpose of this Subsection, 'indigenous petroleum' shall include locally-extracted mineral oil, hydrocarbon gas, bitumen, crude asphalt, mineral gas and all other similar or naturally associated substances with the exception of coal, peat, bituminous shale and/or stratified mineral deposits." [Emphasis added]

Republic Act No. 9337 or the Expanded Value-Added Tax Act of 2005 further amended Section 151(a) of the NIRC. Nonetheless, the rates for non-metallic and metallic minerals remain the same as that provided in RA. No. 7729. As presently worded, Section 151 (a) of the NIRC reads:

"(A) Rates of Tax. — There shall be levied, assessed and collected on minerals, mineral products and quarry resources, excise tax as follows:

(1) On coal and coke, a tax of Ten pesos (P10.00) per metric ton;

(2) On all nonmetallic minerals and quarry resources, a tax of two percent (2%) based on the actual market value of the gross output thereof at the time of removal, in the case of those locally extracted or produced; or the value used by the Bureau of Customs in determining tariff and customs duties, net of excise tax and value-added tax, in the case of importation.

Notwithstanding the provision of paragraph (4) of Subsection (A) of this Section, locally extracted natural gas and liquefied natural gas shall not be subject to the excise tax imposed herein.

(3) On all metallic minerals, a tax based on the actual market value of the gross output thereof at the time of removal, in the case of those locally extracted or produced; or the value used by the Bureau of Customs in determining tariff and customs duties, net of excise tax and value-added tax, in the case of importation, in accordance with the following schedule:

(a) Copper and other metallic minerals;

(i) On the first three (3) years upon the effectivity of Republic Act No. 7729, one percent (1%);

(ii) On the fourth and the fifth years, one and a half percent (1½ %); and

(iii) On the sixth year and thereafter, two percent (2%);

(b) Gold and chromite, two percent (2%).

(4) On indigenous petroleum, a tax of three percent (3%) of the fair international market price thereof, on the first taxable sale, barter, exchange or such similar transaction, such tax to be paid by the buyer or purchaser before removal from the place of production. The phrase 'first taxable sale, barter, exchange or similar transaction' means the transfer of indigenous petroleum in its original state to a first taxable transferee. The fair international market price shall be determined in consultation with an appropriate government agency.

For the purpose of this Subsection, 'indigenous petroleum' shall include locally-extracted mineral oil, hydrocarbon gas, bitumen, crude asphalt, mineral gas and all other similar or naturally associated substances with the exception of coal, peat, bituminous shale and/or stratified mineral deposits." [Emphasis added]

At the present rate, the government share in the MPSA in the form of excise tax is two percent (2%) both in the case of (a) copper and other metallic products and (b) gold and chromite.

And that is all the government gets out of this whole controversial Rapu-Rapu Polymetallic Project: 2% direct tax in the form of excise tax.

### ***Inequitable Distribution of Benefits***

One of the main considerations taken into account in allowing large-scale activities despite their environmental impacts is the promised economic benefit that the project will bring to LGUs and local communities.

In the case of the Rapu-Rapu project, this issue was brought into sharper focus by the two incidents which caused a near economic collapse among local fisherfolk in Sorsogon when their traditional source of livelihood was affected by the fish scare that ensued. This prompted the government, both national and local, to release emergency relief funds to arrest the problem. For instance, the Sangguniang Panlungsod of Sorsogon City allocated P1.5 million as immediate food aid to affected families in Bacon district.<sup>74</sup> The national government itself set aside P10 million. To assuage fears, both provincial and city governments of Sorsogon jointly spent at total of P1.256 million for water and fish testing.<sup>75</sup> In the meantime, the actual losses suffered by the affected families have yet to be fully quantified. Approximate values can be adopted using values from Rapu-Rapu and this will already run into tens of millions. In turn, the question begs, how much has the project generated and how much of these benefits have redounded to the locals?

**Revenues.** During the short four-month period that the project was in operation, the Lafayette group amassed gross revenues of \$2,444,145<sup>76</sup> from sale of 157 gold and silver dore bars or roughly P134.4 million.<sup>77</sup> Between August and December 2005, there were seven (7) air shipments from Rapu-Rapu to Hong Kong via Manila:

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<sup>74</sup> Resolution No. 038, series of 2006.

<sup>75</sup> Letter to the Rapu-Rapu Fact-Finding Commission, Office of the Governor - Sorsogon, 24 April 2006.

<sup>76</sup> Transport Permits #RRPI/MPP-V-001-2005 to #RRPI/MPP-V-005-2005; Export Declarations # ED (F/O) 2005-06 to ED (F/O) 2005-007.

<sup>77</sup> Used exchange rate of P55:\$1 which was roughly the prevailing rate at the time of exports.

Table – RRPI Exports (2005)

Date of Shipment	Net Weight (in grams)	Amount (in dollars)
29 August 2005	219,052.2 g	\$446,366
14 September 2005	205,945.1 g	\$360,855
28 September 2005	90,621.3 g	\$141,307
13 October 2005	262,705.2 g	\$501,346
18 October 2005	214,663.7 g	\$411,311
07 November 2005	218,849.8 g	\$461,468
05 December 2005	46,755.2 g	\$121,492
<b>Total</b>	<b>1,258,592.5 g</b>	<b>\$2,444,145</b>

Total gold weighed 161,558.17g while silver was 682,721.74g. Unaccounted for portion of the dore bars stood at 32.92%, or 414,312.59g.

**Government Share.** Under the law, the government's share in the exploitation of this natural wealth in an MPSA is the excise tax it collects currently pegged at 2% based on the actual market value of the gross output thereof at the time of removal, in the case of those locally extracted or produced.<sup>78</sup> By end of 2005, excise tax collections stood at **P2.086 million**<sup>79</sup> out of gross revenues of P134.4 million.

<sup>78</sup> R.A. 7942, Sec. 80.

<sup>79</sup> Fax to the Rapu-Rapu Fact-Finding Commission (Annex A), Office of the Commissioner – BIR, 11 May 2006.

**Taxes.** On the other hand, last year's income tax payments of Lafayette are as follows:

**Table – Income Tax Payments (2005)**

RRMI	P 40,020.41
RRPI	1,190.00
LPI	56.40
RRHI	-
<b>Total</b>	<b>P 41,266.81</b>

The above figure is a far cry from what Lafayette claims to have already paid the government by November 2005 in total taxes amounting to roughly P66.7 million.<sup>80</sup> Upon closer scrutiny, this figure actually takes in account withholding taxes which last year stood at P61.449 million, broken down as follows:

**Table – Withholding Tax Payments (2005)**

	W/H on Compensation	Expanded W/H	Final W/H	Total
RRMI	P 7,670,233.28	P 7,567,735.13	-	<b>P15,237,968.41</b>
RRPI	22,295,171.32	16,364,445.91	6,898,224.38	<b>45,557,841.61</b>
LPI	397,039.58	253,006.39	-	<b>650,045.97</b>
RRHI	-	3,375.00	-	<b>3,375.00</b>
<b>Total</b>	<b>P30,362,444.18</b>	<b>P24,188,562.43</b>	<b>P6,898,224.38</b>	<b>P61,449,230.99</b>

Lafayette's claim is actually not accurate and needs to be qualified. By the nature of withholding taxes, the different Lafayette companies are just mere withholding agents. In other words, they are simply the means by which the government collects taxes due from the actual taxpayers. In the case of

<sup>80</sup> Media Update on Project Progress, Lafayette, 04 November 2005.

withholding tax on compensation, it is the 1,000 or so local employees who paid the government, not Lafayette, because it was from their respective toil that they received paychecks and from where these amounts were deducted. Lafayette et al simply remitted these to the BIR. For many salaried Filipinos whose take home pay is significantly reduced by these taxes, this is a material distinction.

The same is true with the expanded withholding tax except that this is not imposed on those receiving purely compensation income. The amount withheld is creditable against the income tax due from the taxpayer and this basically is the difference with final withholding tax. The rate of expanded withholding tax hovers usually between 10% to 15% depending on the nature of the income.<sup>81</sup> An example of a transaction subject to expanded withholding is the income of consultants. On the other hand, examples of transactions subject to final withholding tax are interest income on bank deposits, cash dividends, interest payments on foreign loans, etc. To be sure, any depositor whose interest was deducted 20% will complain if the bank claims that it was the one responsible for this tax payment.

Of course, it can be argued that absent the mining operation, none of these transactions which generated these taxes (regardless of who is the real taxpayer) would be possible. True, but the factors which give rise to these taxable transactions are more complex than that. For instance, the top brass of these companies (who theoretically pay a larger chunk of the taxes) are not from Rapu-Rapu. Should it be assumed then that without this operation, they would not have received any other income subject to tax? We think not because work opportunities increase with expertise. The same may be said of the expatriates who presumably were the ones subjected to expanded withholding tax. However, the point is to simply remind that claims made on tax gains need to be more closely scrutinized. For taxes on compensation, it is a combination of work opportunity, earning capacity and personal circumstances of the individual that determines taxability.

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<sup>81</sup> An expanded withholding tax of 1% is also imposed on income payments on purchases of minerals, mineral products and quarry resources.

**Employment.** The same can be said with regard to promised employment which should be treated with circumspect. The general impression is that people from the host locality will be hired to fill the announced vacancies but the reality is that employability is a factor of possessed qualifications vis-à-vis job requirements. Specifically on mining, this has to be taken in the context of an industry that relies heavily on huge equipment and machinery to achieve efficiency. But at the same time, where actual labor is required, this is the industry with one of the highest incidence of accidents in the workplace. Finally, tenure is important. In a labor market where the prevailing scheme is to hire contractually for only six months for support services like maintenance and security (usually where locals would be qualified), this has to be weighed in.

#### PEZA Irregularities

An issue stumbled upon by the Commission in the course of its investigation is the existence of an economic zone right inside the mining premises. This is relevant because it demonstrates the sheer disparity and lack of equity in the way the benefits from the mining activity are shared and how the government is actually complicit in this microcosm of the problems of the country. In order to understand this issue, a quick narrative of the antecedent facts is in order.

Ordinarily, MPSA contractors are granted by law a number of generous fiscal incentives.<sup>82</sup> However, as an offshoot of Lafayette's corporate design, these incentives became limited only to RRMI as the sole MPSA holder. RRPI, as a separate legal entity and a mere minerals processing permit holder, is not entitled to these fiscal incentives.<sup>83</sup> Unfortunately, RRPI is the revenue center since it is through RRPI that processed precious and base metals—the ultimate end product of this mining operation—are exported and sold. Without these tax incentives then, it will be subject to all applicable taxes, both national and local; hence, the recourse to the Special Economic Zone Act of 1995.<sup>84</sup>

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<sup>82</sup> R.A. 7942, Sec. 90 to 94.

<sup>83</sup> *Ibid.* in relation to Sec. 26.

<sup>84</sup> R.A. 7916 as amended by R.A. 8748; more popularly known as the PEZA law.

Under this scheme, a portion of the MPSA area will be designated as a privately-run ecozone<sup>85</sup> to be developed and operated by RRMI with RRPI as a locator therein. For RRMI, the tax breaks are a tad superfluous because of the mining act although other incentives such as being considered a separate customs territory are not unwelcome. For RRPI, these tax incentives are indispensable. At the outset, the process of obtaining ecozone status was not without controversy.

One of the specific PEZA requirements is for RRMI to submit the “endorsement of the Sangguniang Bayan of Rapu-Rapu bearing the signature of the Mayor of the Municipality of Rapu-Rapu”.<sup>86</sup> The municipality claims that this was never obtained. What was submitted instead was fraught with irregularities, with allegations of forgery.<sup>87</sup> Lafayette took a direct channel and their position was spelled out in LPI’s Country Manager’s letter to the President,<sup>88</sup> to wit:

The proclamation of an Economic Zone through the Philippine Economic Zone Authority (PEZA)...is a pre-requisite for the approval of the project finance. The PEZA incentives that apply are critical for the economics of the project and therefore, its development. Without the granting of an Economic Zone, project development will not be possible and cannot proceed... It must be noted that last year, Mayor Galicia [of Rapu-Rapu] endorsed the project and the PEZA application, however for reasons of his own, he has now opted not to sign the required concurrence and in effect, hindering project development...[D]espite repeated attempts from the company and a number of other influential individuals notably Albay Governor Al Francis Bichara and Congressman Carlos Imperial, Mayor Galicia has consistently refused to sign the PEZA concurrence. The Rapu Rapu Sangguniang Bayan (SB) have also passed a Resolution endorsing the PEZA application, but again Mayor Galicia did not sign the SB

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<sup>85</sup> Ibid., Secs. 4(a) and 15, as amended.

<sup>86</sup> PEZA Certificate of Board Resolution, Resolution #03-320, No. 2, p.2.

<sup>87</sup> Resolution No. 165-2005, Sangguniang Bayan of Rapu-Rapu, 18 October 2005 with attached Position Paper and Chronology of Events.

<sup>88</sup> Letter to the Office of the President, LPI, 26 February 2004.

resolution and since then, it has lapsed into law in view of his inaction....

In this reference, we formally request the Office of the President to direct the PEZA to forward the application of the Rapu-Rapu Polymetallic Project to the Office of the President where it can be acted on favorably even without the concurrence of the Rapu-Rapu Mayor. We were informed that the concurrence of the Mayor is required in the Completed Staff Work (CSW) mandated by the Office of the President and it is not in the PEZA law. Only the Office of the President can act on this request to proceed with the PEZA proclamation without the mayor's concurrence. If this does not happen soon, the project will have to be put on hold indefinitely and perhaps permanently....

Unless the OP [Office of the President] acts swiftly, as we have mentioned above, the project development will not proceed....

On 01 May 2004, by virtue of Proclamation No. 625,<sup>89</sup> Rapu-Rapu Ecozone was established with RRMI registered as the developer/operator of said ecozone.<sup>90</sup> Since then, the Municipality of Rapu-Rapu has actively sought the revocation of the said proclamation.<sup>91</sup> As to the allegations of forgery of the municipal secretary's signature in certifying the municipal resolution endorsing the ecozone creation, PEZA has made the municipal secretary go back and forth to different agencies to prove that his signature was indeed faked notwithstanding the fact that as owner of the said signature, he himself claims that it was not his.<sup>92</sup>

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<sup>89</sup> Creating and Designating Certain Parcels of Land of the Private Domain Situated at Barangays Malobago and Pagcolbon, Municipality of Rapu-Rapu, Province of Albay as Special Economic Zone Pursuant to Republic Act No. 7916 as Amended by Republic Act No. 8748.

<sup>90</sup> Certificate of Registration No. EZ 04-07 dated 01 May 2004.

<sup>91</sup> Position Paper to the Office of the Liga ng Mga Barangay & Federated Sangguniang Kabataan, Municipality of Rapu-Rapu; Resolution Nos. 165-2005, 183-2005, 182-2005, 068-2005, Sangguniang Bayan of Rapu-Rapu.

<sup>92</sup> A quick look at the true signature of the Municipal Secretary and the alleged forged signature reveal obvious differences.

The regional office of MGB sums up what was lost as a result of the creation of the ecozone.<sup>93</sup> Out of a total expected \$20.48 million tax revenues over the life of the mine, this was reduced by \$3.77 million to \$16.71 million as a result of the Mining Act. With PEZA, this was reduced further by \$8.68 million to \$8.03 million. In sum, total foregone tax revenues comprise 60.8% or \$12.45 million. Of this figure, PEZA incentives account for \$8.68 million or 42.4%.

In peso terms,<sup>94</sup> total expected tax collection is P1.055 billion. However, foregone revenues from the Mining Act (P194.2 million) and PEZA law (P447.0 million) reduce tax collectibles to just P413.5 million. Interestingly, what the government will collect is even lower than what it has waived by virtue of the PEZA incentives.

The SB of Rapu-Rapu issued a position paper entitled “Official Stand of the Sangguniang Bayan ng Rapu-Rapu: Declaration of Extreme Disgust Over the Anomalous and Irregular Manner by which Presidential Proclamation 625 was Founded and Justified that Resulted to the Grant of Tax Exemption Privileges to Rapu-Rapu Minerals Inc. to the Great Loss and Disadvantage of the Poor Municipality of Rapu-Rapu.”

To the extent that it shall develop said Special Economic Zone, RRMI is entitled to the following incentives:

?? Exemption from all national and local taxes and licenses, except real property taxes on lands owned by RRMI and those required to be paid under the Mineral Production and Sharing Agreement No. 122-98-V, dated 17 June 1998. In lieu thereof, RRMI shall pay a five percent (5%) final tax on gross income in accordance with the provisions of Rule XX of the Rules and Regulations Implementing Republic Act No. 7916, as amended;

?? Employment of foreign nationals (RA No. 7916, as amended); and,

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<sup>93</sup> MGB Powerpoint Presentation, “The Rapu-Rapu Polymetallic Project of Rapu-Rapu Minerals, Inc. (RRMI)/Rapu-Rapu Processing, Inc. (RRPI)”.

<sup>94</sup> At P51.50 to the dollar.

?? Permanent Resident Status for foreign investors (Executive Order No. 63).<sup>95</sup>

**PEZA Tax.** In lieu of the various local and national taxes waived by virtue of the PEZA law, PEZA-registered companies operating within ecozones are liable for real property taxes on land owned by developers and 5% of the gross income earned. This 5% gross income tax shall be distributed between the national government (3%) and the municipal/city government where the enterprise is located (2%).<sup>96</sup> From the foregoing, the tax distribution is estimated as follows:

Type of Tax	Total	National	Rapu-Rapu
<i>5% Gross Income Tax</i>			
RRMI	P 40,020.41 <sup>97</sup>	P24,012.25	P 16,008.16
RRPI	1,190.00 <sup>xx</sup>	714.00	476.00
<i>Real Estate Tax on Land</i>			
RRMI	267,180.86 <sup>98</sup>	-	267,180.86
<b>Total</b>	<b>308,391.27</b>	<b>P24,726.25</b>	<b>P283,665.02</b>

**Mining Act.** R.A. 7942 provides a generous bundle of fiscal incentives to contractors of MPSAs. These are:

1. Benefits<sup>99</sup> under the Omnibus Investments Code of 1987:<sup>100</sup>
  - a. Income Tax Holiday – Full exemption from income tax for either four or six years from start of commercial operations depending on whether the project is considered *pioneer* or *non-pioneer*. Exemption period can be extended for another year in each of the following cases: (a) the project uses indigenous raw materials, (b) the project meets the BOI-prescribed ratio of capital equipment to number of workers; and (c) the net foreign

<sup>95</sup> Certificate of Board Resolution No. 03-320 dated 11 December 2003 by the Philippine Economic Zone Authority

<sup>96</sup> R.A. 7916, Sec. 24, as amended by R.A. 8748.

<sup>97</sup> See "Table – Income Tax Payments (2005)".

<sup>98</sup>

<sup>99</sup> R.A. 7942, Sec. 90.

<sup>100</sup> E.O. 226.

exchange savings or earnings amount to at least \$500,000 annually during the first three (3) years of the project. In any case, the total period of exemption shall not exceed eight (8) years. Any project established in less developed areas shall be entitled to six (6) years holiday.

- b. Exemption from wharfage dues and any export tax, duty, impost and fees.
  - c. Tax credit on raw material and supplies that form part of the exported product.
  - d. Additional deduction from taxable income for labor expenses within the first five (5) years amounting to 50% of the wages corresponding to the increment in the number of direct labor for skilled and unskilled workers if the project meets the prescribed ratio of capital equipment to the number of workers as set by BOI. This is doubled if the activity is located in a less developed area.
  - e. Importation of consigned equipment for a period of ten (10) years from the date of registration, provided a re-export bond is posted.
  - f. Privilege to operate a bonded manufacturing/trading warehouse subject to customs rules and regulations.
2. Pollution control devices<sup>101</sup> – will not be considered as *improvements* on land and therefore, not subject to real property tax.
  3. Income Tax Carry Forward of Losses<sup>102</sup> – For the first ten (10) years of operations, net operating losses within a year (without the benefit of the earlier incentives) can be carried forward as a deduction to the taxable income for the next five years following such loss. So the net operating

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<sup>101</sup> R.A. 7942, Sec. 91.

<sup>102</sup> *Ibid.*, Sec. 92.

losses in 2005 can theoretically be applied from 2006 until 2010. The mining company is allowed to apply such annual losses to subsequent years during its first ten years of operations. This is more advantageous than what is currently provided in the Tax Code which allows only a three (3) carryover period.<sup>103</sup>

4. Income Tax Accelerated Depreciation<sup>104</sup>
5. Investment Guarantees<sup>105</sup> – These are:
  - a. Repatriation of investments – right to remit overseas the entire proceeds of the liquidation of foreign investment in the original currency in which it was made at the prevailing exchange rate at the time of repatriation.
  - b. Remittance of earnings – right to remit earnings from investments in the original currency in which it was made at the prevailing exchange rate at the time of remittance.
  - c. Payment of foreign loans and contracts – right to remit payments for foreign loans and contracts at the prevailing exchange rate at the time of payment.
  - d. Freedom from expropriation – unless for public use or in the interest of national welfare or defense and upon payment of just compensation. Compensation can be remitted in the original currency in which the investment was made at the prevailing exchange rate at the time of remittance.
  - e. Requisition of investment – not allowed except in case of war or national emergency and only for the duration thereof and subject to just compensation to be paid either during or immediately after such contingency. Compensation can be remitted in the original

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<sup>103</sup> R.A. 8424, Sec. 34(D)(3) on Net of Loss Carry-Over (NOLCO).

<sup>104</sup> R.A. 7942, Sec. 93.

<sup>105</sup> Ibid., Sec. 94.

currency in which the investment was made at the prevailing exchange rate at the time of remittance.

- f. Confidentiality – except on information on production and sales of minerals, employment, royalty and tax payments, metallic and non-metallic reserves, operational parameters such as mining and milling capacities and rates, and other data agreed upon by the parties.<sup>106</sup>
6. Creditable Expenses<sup>107</sup> – costs incurred in the development of mining communities, science and mining technology can be deducted as expenses.

*Underreported ore production and gold/silver processing*

LPI was deceitful in underreporting its production of ores and processed gold/silver.

The Commission finds strong indications to believe that LPI underreported its production of ores and of processed gold/silver to the MGB.

MGB requires all mining and ore processing firms the reporting of all mined ores and processed goods (gold/silver) monthly, and a summary report every semester. The market value of mined ores and/or processed goods become the basis of the excise tax being levied on mining firms. The Commission believes that LPI and its two satellite corporations, RRMI and RRPI, have underreported the amounts they have submitted to MGB, thereby reducing the basis, and ultimately, the value of excise tax they have paid the government for the year 2005.

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<sup>106</sup> Sec. 229(f), DAO #96-40.

<sup>107</sup> R.A. 7942, Sec. 28.

The following is based on a report submitted and signed by Mr. Guillermo A. Molina Jr., Engineer IV of RRMI to the MGB Region V, dated February 13, 2006, entitled Verification Of Mine Waste and Mill Tailings Generated/ Disposed/ Utilized, for the 2nd semester of CY 2005 (July to December, 2005 operations). This report was submitted by LPI to the Commission under a Subpoena Duces Tecum. The report, which shall be referred to as Verification Report, 2nd sem. 2005, gives a summary of the mining and milling operation for the same period.

Under the Mining Operation section of the report, the total ore produced during the period had been given as: Total ore Produced 117,631 metric tons, of which 67,693 metric tons is the gold ore and the other 49,938 metric tons is the base metal ore.

It should be noted that an MGB form 29-1 (Monthly Report on Production), mandatory for submission by all mining firms to the MGB should have given a monthly picture of the production of ores and of processed ores and products. The LPI however, failed to submit to the Commission copies of the said report for their 2005 operations even after Subpoena Duces Tecum was issued for these specific documents.

The Commission however is confident that the total semestral values given in the Verification Report, 2nd sem. 2005, should give the same information as the totals for the period for values given in the Monthly Report on Production. In fact, the Commission will be suspicious if any deviation would occur when comparing the said values from the two different reports.

We have noted based on the Verification Report, 2nd sem. 2005, and also from sworn statements of witnesses from LPI during the hearings, that the bulk of mining of ores was done during the months of July to October, 2005, up until the time of the second spill incident on October 31, 2005.

Under the Milling Operation section of the Verification Report, 2nd sem. 2005, the production rate for gold and silver is given as 25,500 g. of gold per month , and 81,470 g. of silver per month. The report indicates, and also from sworn statements of LPI witnesses during the hearings, that the carbon in-leach

(CIL) process plant for gold/silver milling operated only from July to October, 2005. However, it is suspected that the averaging of gold and silver production, as reported in the Verification Report, 2nd sem. 2005, was done for the whole duration of the semester or for six months. Thus, the total amount of gold is (25,500 g./mon x 6 mon.) 153,000 g. and 488,820 g. silver for the 2005 milling operations, according to the Verification Report, 2<sup>nd</sup> sem. 2005.

The product of the milling operations is gold-silver dore which is given in the Verification Report, 2nd sem. 2005, as 12% gold and 59% silver, on the average, the remaining 37% probably made-up of other metal "impurities".

However, in a sworn statement "extracted" by the Commission from Mr. Roger Villanueva, RRMI Geology Manager, during the Commission Hearings at the LPI mining site on March 23, 2005, he stated that the total gold ore mined by RRMI during 2005, the bulk of which was in the months of July to October, 2005, is 136,180 metric tons. This gold ore was mined from the eastern portion of the open pit, he added. This amount of gold ore mined is more than twice the amount reported and contained in the Verification Report, 2nd sem. 2005.

Mr. Villanueva added in his sworn statement that the amount/grade of gold in this gold ore is 2.33 g. of gold per ton of ore, on the average. The average grade of silver in this gold ore was not given by Mr. Villanueva, but was found in another document obtained by the Commission from LPI under a Subpoena Duces Tecum, entitled Annual Environmental Protection and Enhancement Program (AEPEP) for 2006, January 2006 submitted by RRPI to the MGB. In the document AEPEP for 2006, the average grade of silver in the processed gold ore is 14.13 g. per ton of gold ore. A total of 132,307 metric tons of this ore had already been milled, according to the sworn statement of Mr. Villanueva. This same amount of processed gold ore is confirmed/given in the document AEPEP for 2006. Thus, the estimated total of gold and silver that can be extracted from the processed gold ore is 308,275 g. of gold and 1,869,498 g. of silver.

The total amount of gold extracted from the processed gold ore based on Mr. Villanueva's sworn testimony is more than two times the total amount of gold given in the Verification Report, 2nd sem. 2005. LPI have underreported their gold production by more than 50% of their total gold production. The total amount of silver extracted from the processed gold ore based on Mr. Villanueva's sworn testimony is more than three and a-half times the total amount of silver given in the Verification Report, 2nd sem. 2005. LPI have underreported their silver production by more than 74% of their total silver production.

These are the strong indications that LPI has committed underreporting of its production of ore and of the processed gold and silver.

LPI probably cheated the government of the Republic of the Philippines of taxes equivalent to their unreported amount of gold and silver produced.

In a sworn statement given to the Commission during a hearing held in Quezon city on April 4, 2006 by Mr. Jesus Sirios, OIC Office of the Deputy Director for Policy and Planning, PEZA, disclosed the total export earnings of LPI as per their records. Mr. Sirios said that for the year 2005, LPI exported 157 gold/silver dore bars valued at \$ 2,444,145. This amount is equivalent to the export of 1,258,592.5 g. of the gold/silver dore. The same figures had been made earlier in a sworn statement by MGB Region 5 Director Reynulfo Juan, when he testified before the Commission during the hearing held in Quezon city on the same date.

Seven sets of export documents were obtained from the Bureau of Customs, Region 5 in Legaspi related to seven shipments of gold-silver dore in 2005, obtained by the Commission under a Subpoena Duces Tecum. The documents were Export Declaration from BOC region 5 office, Legaspi city; Request for Ore Transport Permit for Gold/Silver Dore Shipment (Nos. DS 001 to 007) coming from RRPI and signed by a Mr. Peter Dillon, Asst. Vice President - Commercial; Transport Permit from the MGB Region 5 and signed by Mr. Reynulfo Juan, MGB region 5 Regional Director (RRPI/MPP-V-001-2005 to -V-007-2005); and completed PEZA Export Tally form for the seven shipments.

It is noteworthy to cite the following excerpts from the Transport Permit document signed by Mr. Reynulfo Juan, Director MGB Region 5, for each of the seven shipments:

"RRPI is required to submit the final assay of this shipment to this office.", and

....."RRPI is exempt from paying excise tax as per incentives in the PEZA declaration covered by PEZA Registration No. 04-52 dated July 12, 2004. Excise tax of RRMI for the supply of the mined ore to RRPI is due at the end of third quarter of 2005 per BIR regulation."

The excise tax of RRMI for the year 2005 is probably undervalued. The reason is the underreporting by RRMI of the amount of ore produced as presented and discussed in the previous section. RRMI reported (Verification Report, 2nd sem. 2005) that a total of 67,693 metric tons of gold ore had been mined in 2005. Based on "extracted" evidence from Mr. Villanueva, Geology Manager of RRMI during a Commission hearing at LPI, the amount of mined gold ore is 136,180 metric tons, with grade of gold given as 2.33 g. per ton. The Annual AEPEP for 2006, submitted by RRPI to the EMB gives a slightly higher amount of mined gold ore at 137,349 metric tons. The reported amount given by RRMI which is the basis of the excise tax is less than half the amount of gold ore given in the sworn statement of Mr. Villanueva and the document Annual AEPEP for 2006.

The excise tax paid by RRMI for the year 2005 was PhP 2,065,511.54 ( BIR tax records obtained by the Commission under Subpoena Duces Tecum. The amount is equivalent to 2% of the value of dore exported by RRPI (\$ 2,444,145 converted into PhP). This amount is second only to the total taxes paid by RRMI, the highest of which is PhP 7,679,233.28 which corresponds to the workers' compensation tax. The excise tax is a very small compared to the amount the government has to give (PhP 10,000,000) to initially cover for the economic impact of the two tailings incidents in October of 2005.

RRPI has to pay income and other taxes based on the value of its exported gold/silver dore and other products (copper and zinc concentrates). The gold and silver assay given in the Request for Ore Transport Permit for Gold/Silver Dore Shipment (Nos. DS 001 to 007) coming from RRPI and signed by a Mr. Peter Dillon, Asst. Vice President - Commercial, is an estimated amount. Similarly the value of each of the dore bars and its total in USD are also estimated amounts.

It is understandable for MGB to require RRPI to submit a final assay of the gold and silver contained in the dore bars because MGB wants a final estimate of their total value, which is then used to compute the taxes (income, etc.) that the company has to pay the Philippine government.

However, both MGB and PEZA use in their reports the estimated values given in the RRPI-LPI request. This indicates that no final assay of the gold and silver in the shipped dore bars has ever been submitted by RRPI-LPI. Furthermore, this indicates that the actual values of the dore shipment have not been reported to MGB and PEZA.

It is very probable that RRPI has underestimated the gold and silver content of the dore bars, and also the value of these dore bars. Thus, it is very probable that RRPI may have paid lower taxes than they ought to, thus cheating the government of tax income.

The amount of gold ore processed and the gold and silver produced from these ores have been underreported by RRMI-LPI. It is probable that all the 157 shipped dore correspond to the total gold and silver produced from the 132,307 tons of gold ore, as "extracted" from Mr. Villanueva. RRFFC could not account for the other 157,724.7 g. It is possible that each dore contained almost double the reported gold and silver, and thus, its value is more than double the estimated value given in the RRPI-LPI request. The Commission finds strong reasons to believe that the government has been cheated by underpayment of taxes amounting to almost twice what has been paid by RRPI-LPI.

Incidentally, recall that the total amount of gold is (25,500 g./mon x 6 mon.) 153,000 g. according to the Verification Report, 2<sup>nd</sup> sem. 2005, Milling Operations section. The total amount of gold that can be extracted from the 67,693 metric tons of gold ore as reported in the Verification Report, 2<sup>nd</sup> sem.2005 is 157,724.7 g. Based on the RRPI request, the gold content of the dore shipment was estimated to average 12% or 151,031 g. of gold, while the silver content of the dore was estimated to have an average of 59% or 742,569.6 g. of silver (based on the average gold and silver values of dore given in the Verification Report, 2<sup>nd</sup> sem. 2005). It is apparent that the falsehood has been made to be very consistent in all the reports that RRMI-RRPI-LPI have filed to MGB.

## II. DESCRIPTION OF THE EXISTING ENVIRONMENT AND ECOLOGICAL CONSIDERATIONS

### *Baseline Environmental Data*

The island's physical characteristics, location, climate, topography, geological composition, environmental conditions, as well as the socio-economic profile of its people, are cited as reasons why Rapu-rapu is extremely vulnerable to mining's environmental impacts.

The following baseline data gives a general picture of the environment in Rapu-rapu:

Size : 5,589 hectares

Location : Located in the mid-southeastern part of the Philippines, Rapu-rapu island is bounded by Albay Gulf on the west and the Pacific ocean on the east. North of Rapu-rapu is Lagonoy Gulf; south is the province of Sorsogon. The island is part of the Marine Conservation Priority Areas proposed to the DENR in 1997. Priority classification of Rapu-rapu is extremely high because the place is considered crucial in supporting a threatened biological diversity in surrounding ecosystems. Endangered coral and marine species are found between the coasts of Rapu-rapu and Sorsogon. The island lies on the Philippine typhoon belt area.

Climate : Type II – No dry season; very wet esp. Nov. to Jan.

Topography : Steeply sloping

Geological condition: The island is comprised of iron sulfide rocks capable of generating acid mine drainage when exposed to oxygen, water and sulfide bacteria. (Institute for Environmental Education and Research [INECAR], Ateneo de Naga University)

A fault line exists underneath the western part of the island. (Rafael Banzuela, Aquinas University of Legaspi) Landslide events are predicted within six years with huge amounts of silt from loosened soil and tailings washed by rainwater and brought to the sea. (INECAR)

Rapu-rapu is an old island estimated to be 80 million years. It rises at 220 meters above sea level. The Lafayette open pit, on the other hand, is designed with a depth of 140 meters. Explorations conducted by the mining company resulted into several drill holes with depths reaching up to a maximum of 205 meters.

### *Environmental Conditions and Ecological Considerations*

The land is mostly grassland with patches of secondary growth forest interspersed by coconut and abaca farms. Previous underground mining explorations and surface mining excavations are deemed primarily responsible for the depletion of the forest. The island's timber resources were first used to support underground mining. Further forest degradation resulted from kaingin farming. (Dames & Moore)

Copra processing from coconut farming is the main agricultural activity in Rapu-Rapu. Most residents are fishermen. Coral reefs surround the island, with the most extensive of which at the northwestern and southwestern portions of the island. These reefs are, however, considered in degraded condition as manifested in declining fish catches in recent years.

Water is mainly sourced from wells and springs. People in the affected barangays near LPI's mine site are fearful that their water sources may be contaminated by mine tailings, if not at present, in the near future.

Those opposed to mining generally use the term "fragile" in describing the environmental conditions of Rapu-rapu.

The description takes note of the biological diversity and endemism that maybe present in the island, its history of biodiversity loss and current threats to this biodiversity due to mining's continuing effects on the island.

The island has been mined and explored for mining for the past 80 years or more. The first mining ventures were deemed responsible for depleting the island's timber resources. (Dames & Moore, Lafayette EPEP)

Although commercial mineral extraction previous to LPI ended in 1976, the environment continues to experience the ill-effects left by Hixbar Mining, which replaced a Japanese mining firm that operated in Brgy. Sta. Barbara during the Japanese invasion of the Philippines. Acid Mine Drainage in the form of acid leach continues to be observed in the mine site left by Hixbar which also destroyed three rivers, killed aquatic life and left a barren land still incapable of having a sustainable top soil and vegetation after 30 years.

Rapu-Rapu hosts four species of amphibians, 12 reptiles, 48 birds, and four mammals. (Woodward-Clyde, Lafayette EIS) Dr. Emelina Regis of INECAR, however, believes more biological life can be found only in the island because of Rapu-rapu's characteristic as an island ecosystem.

According to a scientific study by Regis co-authored with three other scientists in 2001, the island's name itself originated from a tree that used to grow abundantly in Rapu-Rapu. Wildlife like wild pigs, deer and birds (eagles and hawks) were frequently seen by early inhabitants. Among the findings of the Regis *et. al.* study determined that heavy metal pollution through AMD has already affected water bodies in the vicinity of the Lafayette mine site as early as 2000 during the exploration stage of the Project. This resulted in destruction of rivers and creeks; reduction in biodiversity and threats to endemic species in the island; contamination of water, soil, plants, livestock and fisheries; productivity losses; and health problems to the people.

The RRFFC finds fault and inadequacy with the LPI's EIS, ECC and EPEP for failing to answer apprehensions relating to AMD, its effects on the Rapu-Rapu environment and the people's health and the natural hazards of mining extremely prone in the small island ecosystem. Consequently, environmental hazard prevention and mitigation strategies of LPI as contained in its Environmental Work Program and other guidelines are woefully lacking resulting

into the recent tailings incidents and their consequences for which the people of Rapu-Rapu have been unfairly, unjustly and immorally made to pay dearly.

Lafayette failed to responsibly consider the particular environmental characteristics of Rapu-Rapu in its mining design and operations. There is an effort by the mining company to shield itself, downplay and minimize its responsibilities for the mine tailings incidents.

The dangers on the environment and the people of Rapu-Rapu continue and no sufficient abatement of these dangers is observable from the conduct and attitude of the mining company.

#### *Cumulative Impacts*

From the legal perspective, failure to address cumulative impacts of an environmentally critical project is a ground for revocation of ECC. . As earlier defined, the environmental impacts which should have been addressed by the EIA process were “the probable effects or consequences of proposed projects or undertakings on the physical, biological and socioeconomic environment that can be direct or indirect, cumulative, and positive or negative.”<sup>108</sup>

Towards this end, an essential, preliminary step in a meaningful EIA process is *scoping* which “shall be initiated by the proponent at the earliest possible stage of project development to define the range of actions, alternatives and impacts to be examined.”<sup>109</sup> Explicitly, one of its objectives is to “address issues on carrying and assimilative capacity of the environment.”<sup>110</sup>

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<sup>108</sup> DAO #96-37, Art. I, Sec. 3(j); *underscoring ours*.

<sup>109</sup> *Ibid.*, Art. III, Sec. 1.0.

<sup>110</sup> *Ibid.*, par. d; *underscoring supplied*.

The Commission views this matter of major significance. Among the issues raised by the oppositors of the ECC is that as a fragile island ecosystem, it has a very limited carrying capacity. This was presumably addressed by the EIA Review Committee. However, the Commission finds that what was definitely not addressed notwithstanding the fact that its proponents and MGB were fully aware of such information, was that there was more than just one mining site being planned for the entire island. In other words, the carrying capacity of the island may have been assessed but only for one mining project. As the Commission uncovered, there were a total of four (4) MPSAs and one (1) patented mining claim totaling 4,610.7955 has.<sup>111</sup> covered by existing mining applications.<sup>112</sup> For an island with an area of only 5,589 has., the cumulative impacts of five mining sites and its overwhelming impact on the carrying capacity of the island are serious considerations that demanded to be addressed.

Cumulative impacts have been variously defined as referring to the accumulation of human-induced changes in valued environmental components across space and over time, occurring in an additive or interactive manner.<sup>113</sup> These effects combine and persist to the long-term detriment of the environment<sup>114</sup> and can result from individually minor but collectively significant actions taking place over a period of time.<sup>115</sup> From an economic standpoint, it represents the accelerating losses of ecological capital in economic development that is largely unaccounted for in every economic trade-off;<sup>116</sup> hence, should not be underestimated.

A review of the EIS reveal that the issue of cumulative impacts was never addressed in this Project notwithstanding the fact that this was repeatedly raised in various resolutions and position papers by different groups.<sup>117</sup> Instead, notwithstanding knowledge of their other planned mining activities,

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<sup>111</sup> Letter by MGB to the Rapu-Rapu Fact-Finding Commission, 06 April 2006.

<sup>112</sup> MPSA #192-2004-V covering 2,640.9247 has. was issued only in 2004. However, this was included in the present computation because the application was filed in 1994, hence, was planned.

<sup>113</sup> Spaling, H. (1997), Cumulative Impacts and EIA: Concepts and Approaches. EIA Newsletter, 14. University of Manchester.

<sup>114</sup> Canter, L. (1999), Cumulative effects Assessment. In: Petts J. (ed.), *Handbook of Environmental Impact Assessment*, pp. 405-440. Oxford: Blackwell Science Ltd.

<sup>115</sup> 40 CFR 1508.7 (1978).

<sup>116</sup> Rees 1995.

<sup>117</sup> INECAR/Sagip-Isla/Umalpas Ka/

Lafayette dismissed the allegations by insisting on only one mining operation, to wit:

***“The whole island will be mined”*** – *this is not only wrong, but totally misleading. In fact less than 20 hectares will be mined (i.e. 0.3% of the island). The total area affected by all mining activities will be less than 150 hectares (i.e. 2% of the island). Only three Barangays will be affected at the very eastern end of the Island.<sup>118</sup>*

The Commission has visited the island and witnessed for itself the present operations, limited at that. At 180 has., it was by no means insignificant and certainly leaves an immense and undeniable ecological footprint, or more appropriately, a scar, as the picture shows.



SOURCE: Lafayette PPP.

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<sup>118</sup> LPI Letter to the MGB Director, 31 May 2000; *underscoring supplied*.

Point is, with at least 80% of the island to be potentially affected, were the LGUs and residents made aware of the significant changes in livelihood, health and other socio-economic considerations that these five mines will bring?

Former MGB Director Horacio Ramos chose to downplay this matter by claiming that the final area of the MPSAs will be significantly reduced later once the actual location of the ores have been identified and the mining feasibility declarations have been submitted. The Commission is not persuaded. Not only is this speculative compared to what is already in black and white, more to the point, carrying capacity and cumulative impacts are not dependent entirely on the area covered. As stated, the current operations is only 180 has.<sup>119</sup> and yet, its impact on the landscape is significant.

Secondly, from a legal perspective, what were granted were not mere exploration permits but MPSAs. Ordinarily, areas for exploration are broad and expansive but these are subsequently reduced on a considerable scale to constitute the MPSA area. Under R.A. 7942, there are accessory rights attendant to MPSAs not found in exploration permits such as easement and other surface rights. From ecological to social (e.g., increased volume of wastes, increased migrants, etc.), there will be significant changes in the island that were never disclosed and with cumulative impacts, 1 plus 1 is never just 2. For this reason, the ECC is severely flawed.

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<sup>119</sup> ECC #0011-644-301C, Condition No. 1.

### III. PROBLEMS ON SOCIAL ACCEPTABILITY

#### *Protracted Opposition*

Judging by the list of government permits that the LPI Group has obtained (enumerated in Section I of this Chapter), anyone could be easily misled that it has complied with the procedural requirements of the law. That is far from reality however.

Aside from the findings of irregularities in the obtainment of some of the government permits (discussed in Section II of this Chapter), LPI's mining project in Rapu-Rapu has never been popular and acceptable for a significant number of residents and organizations in the island. There has been a protracted opposition against LPI's mining operations.

In 1999, the Diocese of Legazpi, Albay, issued a pastoral letter expressing social and environmental concerns about the mining project in Rapu-rapu island. The letter signified that all is not well with regards to the social acceptability of the project.

The concern of the Diocese through Bishop Jose Sorra and Auxiliary Bishop Lucilo Quiambao motivated them to request the assistance of the Ateneo de Naga University. This led to a series of research and investigation conducted by the Ateneo de Naga's Institute for Environmental Conservation and Research which validated the bishops' concerns.

Results of the INECAR research exposed urgent concerns about (1) the presence of AMD at the Lafayette minesite; (2) high potential of mining hazards due to the steeply sloping topography of Rapu-rapu coupled by an all-rainy climate in the island; (3) heavy metal contamination of plant, animal and marine life leading to (4) livelihood and productivity losses; and (5) health problems to the people.

From the Bicol region, apprehensions about possible negative impacts of the Rapu-rapu mining project reached the Senate. Senators Gregorio Honasan, Franklin Drilon and Francisco Tatad passed resolutions calling for an inquiry into the project.

On January 22, 2000, the Senate Committee on Environment and Natural Resources concluded that the people's complaints on the mining project are well-founded. It described the project as not socially acceptable and recommended the DENR not to issue an ECC for Lafayette.

On the same date, the Legazpi Diocese firmed up its stand against the project. In a pastoral letter, it called for a stop to mining in Rapu-rapu because it is not environmentally and socially feasible in the island. The pastoral letter cited the INECAR study of Dr. Emelina Regis, saying the people will further be mired in poverty as result of the environmental destruction to be caused by mining.

Meanwhile, upon inquiry by the Albay provincial council regarding the people's apprehensions about the mining project, Lafayette country manager Roderick Watt informed the council that Lafayette is preparing to conduct a series of comprehensive hearings and briefings in the direct and indirect impact barangays.

The following year (2000), public hearings and briefings were conducted in barangays Malobago, Pagcolbon and Binosawan. Some residents of the adjacent barangays of Sta. Barbara, Linao and Tinopan were also separately briefed. But, according to some residents, the hearings were only information dissemination discussions and conducted for the purpose of a third party which had a contract with Lafayette to come out with an EIS for the mining company. The hearings were conducted by Woodward and Clyde, an environmental consultancy outfit.

Shortly thereafter, Malobago residents were made to participate a social development action planning sponsored by the mining company and facilitated by the provincial government social welfare office. The meeting identified livelihood,

sanitation and education concerns of the residents. The residents also raised fears of contamination of their water supply sources once the mining project gets operational.

Before the end of 2000, a DENR-EMB Review Committee conducted public hearings in order to thresh out concerns in the EIS submitted by Lafayette. NGO representatives opposing the project were barred from the public hearing. The review committee outlined conditions for the ECC to be granted to the mining company.

On July 12, 2001, the DENR granted Lafayette's ECC. One week after, a Memorandum of Understanding was signed between the mining company and the provincial government of Albay.

Opposition to the project became more intense. Eight bishops representing the dioceses of the entire Bicol region issued pastoral letters reiterating the issues raised by the Diocese of Legazpi. At the 12th Congress, another Senate resolution was sponsored calling for another legislative inquiry.

More school administrations issued statements expressing apprehensions on the mining project. The Aquinas University of Legazpi appealed to Malacanang not to surrender the Bicol region's "last frontier" to mining. The Catholic Educators Association of Legazpi issued a statement that if the government will not stop the mining project, the people will.

Meanwhile, several barangay councils in Sorsogon sought the national government's intervention to require the mining company to consult the people of Sorsogon. Residents of the different barangays of Sorsogon signed petitions to hold the mining operation in Rapu-rapu. The provincial council of Sorsogon expressed the same sentiment in a resolution.

But this sentiment, as well as the interventions sought, fell on deaf ears.

Until the tailings incidents happened. Now, more people are coming out in opposition to the mining project. The incidents justified the concerns raised by those who opposed the project from the start.

### Lapses

The fact-finding commission found lapses in what the mining company has done and has not done in order to gain social acceptability for its project. For that matter, national and regional government authorities might also be made liable for lapses tantamount to neglecting the people in the region who are directly and indirectly affected by the mining in Rapu-rapu.

Some of the major lapses are:

1. The host communities in Brgys. Malobago, Pagcolbon and Binosawan were not fully informed about the Project. Only 17% among these barangays where residents were surveyed by Woodward and Clyde knew the project involved mining. Not being fully informed, the residents cannot fully appreciate how the mining project can affect their lives. This is not to mention that the quality of consultations failed to adequately discuss the harm that can befall the people and the environment with the mining project and instead limited discussions on Lafayette's promised benefits to the communities;
2. Ignored were indigenous Taboi people in the periphery of the mine site. They were not only not consulted, Lafayette's EIS also failed to mention them. Their exclusion is a grave error not only because the law on mining and indigenous peoples strictly require the free and prior informed consent of indigenous populations to be affected by mining operations, mining also threatens the ancestral land and indigenous traditions of this group of people;
3. NGOs and people's organizations opposed to mining in the island were not included in consultations and were in fact barred from joining hearings and proceedings, like Sagip-Isla and Umalpas-Ka.

4. Lafayette's unclear and evasive response to the research and investigation of INECAR, as well as other church and academic institutions.

### **CHAPTER 3**

## I. SUMMARY OF FINDINGS

### *On the tailings incidents:*

In the first tailings incident, a combination of tailings and process water overflowed from the events pond. As per DENR-approved plant design, the tailings and the process water from the CIL should have been pumped towards the upper tailings storage pond so as not to cause any overflow of the contents of the events pond. The events pond was only for emergency and should have remained dry all throughout the gold processing.

The events pond, however, was being used by LPI not for the emergency purpose it was so designed. Since LPI began operating, the events pond has become its temporary storage of tailings and process water during gold processing. Tailings and process water from this pond were then pumped to the upper pond. By so doing, however, LPI has rendered the events pond useless as a safeguard or emergency infrastructure to an event such as a tailings incident. At the time of the incident, the events pond was already half full to capacity during the night shift and then overflowed by 2:36 in the following morning.

The pump that directs the tailings and process water from the events pond to the upper pond has malfunctioned several times. Thus, another pump, the main pump, has been used by LPI until it, too, malfunctioned, on the day of the tailings incident. An empty bottle of mineral water was found sucked by the main pump believed to be the cause of its malfunction. There was no more back up pump when the two pumps failed. So when the main pump stopped working, the events pond overflowed. LPI has no emergency mechanism to stop or mitigate this kind of incident. The DENR-approved LPI engineering design was operated without the emergency mechanism.

The sample analysis reported by MGB V indicates only cyanide levels because it has no equipment capable of analyzing toxic heavy metals. While it is tasked to monitor the LPI operations for safety purposes, it does not have the capability of monitoring the toxic heavy metals that are always present in mine tailings and that pose long-term adverse impact to human health and environment.

It was wrong of DENR to have approved LPI's resumption of operations six days after the first tailings incident. Most of the recommended measures were unaccomplished despite LPI's commitment to undertake them. When LPI resumed operations on 17 October 2005, only the pump has been repaired, the events ponds reduced to 30% and sandbags installed at Alma and Pagcolbon Creeks.

It was also a negligent conduct for the MGB team who was coincidentally in the area on the day of the tailings incident and who conducted an on-the-spot investigation that the team failed to impose immediate remediation measures on the mining company. It was not until two days after, or on Oct. 13, 2005, that MGB Region V dispatched an investigation team to check the veracity of the initial report and to assess the extent of the damage wrought by the incident.

The second tailings incident was not an unforeseen event. The heavy rain fall on 31 October 2005 was not one in 25 years. In a 10-year rain fall monitor, 125 mm more or less rain fall, is common. It is a usual occurrence in the area as also confirmed by residents and as warned six years ago by INECAR in its study (Regis).

The freeboard capacity of the dam was not enough to contain even the common rain fall volume considering that the DENR-approved design requires 190 meters (EPEP as approved on 26 April 2002) but LPI has only built 127.9 meters at the time the second tailings incident occurred. LPI was already operating, regrettably with DENR consent, despite the freeboard capacity requirement has not yet been complied with.

After the second tailings incident, LPI proposed in its rehabilitation plan to increase the dam height and freeboard capacity from 127.9 meters to 135 meters. The proposal was approved by DENR, again, despite the fact that the proposed increase was still short of 55 meters from the original design requirement (as per EPEP).

DENR has been noticeably consistent in allowing LPI to violate especially the environmental protection requirements of its approved EPEP.

Not only rain water run-off was discharged contrary to LPI reports. A combination of water and effluents was discharged at about 3 pm of October 31, 2005.

LPI engineers claim that it was impossible for the tailings to be mixed with the run-off. It was not impossible. The undisputed heavy rain fall could have ordinarily steered and mixed the rain water and tailings.

The discharged tailings and effluents do not only carry cyanide but other toxic heavy metals as shown in subsequent studies made. (INECAR / CEC studies) EMB V reported only presence of cyanide because it has no capability to analyze other toxic heavy metals. The results of several environmental studies following the tailings incidents thus disproved LPI's claim that it only discharged rain water run off.

LPI commenced its operations, with DENR consent again, while it was yet to complete the construction of its tailings pond according to the required freeboard capacity.

LPI resumed its operations on 17 October 2005 despite the measures to prevent another October 11 incident (as ordered by DENR and recommended by MMT) not having been completely complied with. It has been negligent from the start for not observing the required safety and emergency procedures and infrastructures. It has been continuously negligent when it resumed operations without again adequately and effectively complying with the DENR-imposed measures. Thus, the continuing negligence of LPI caused another engineering

failure aggravated by the act of unauthorized discharging of effluents on 31 October 2005.

Considering that the engineering measures after the first tailings incident have not yet been adequately complied with by LPI, it was negligent for the EMB-DENR to have not anticipated any danger or similar disaster as that of the first incident. It did not give any precaution or warning, and did not order any disaster prevention action given the heavy rain fall on 31 October 2005.

*On LPI's requests to lift the suspension of its wastewater discharge permit and to reclassify Hollowstone Creek into a gully:*

The LPI request of January 4, 2006 for EMB to lift the suspension of the wastewater discharge permit to allow them to build up the tailings dam embankment, was not granted. The EMB reasoned out that the wastewater discharge permit currently held by LPI does not refer to disposal of tailings to the environment; rather, it refers to the disposal of their mill tailings to the tailings pond only.

More importantly, however, it should be pointed out that the construction of the appropriate tailings dam should have been done earlier, before the start of full operations of the mine and mill and LPI should, in fact, be penalized for starting full mine and mill operations without appropriate wastewater impoundment facilities. With this consideration, the discharge of wastewaters from the tailings pond to the environment should be considered only as a last option and, only if, the wastewaters in the pond could be ascertained to be truly compliant with clean effluent requirements.

Also, as to LPI's request to reclassify Hollowstone Creek into a gully, the fact remains that LPI intends to use the area as a channel for their effluents to flow, eventually to the marine environment. There are two issues of concern here: one, is that LPI does not have a water discharge permit at present, to discharge their effluents and/or associated run-off (those that have intermingled with tailings materials) to the land or water environment, and two, their effluents have not yet been established to be truly compliant with all relevant provisions of

the Clean Water Act. LPI need to apply for a separate permit for the proposed use of the Hollowstone area as a discharge channel. More importantly, LPI must ascertain that all their discharges are compliant not only with respect to the gross parameters and cyanide, but also with the levels of toxic heavy metals.

The wastewaters referred to consist of decant of tailings pond as well as the tailings itself, and surface runoff that may have intermingled with the tailings materials. As such, the wastewater parameters of concern are not limited to gross parameters (pH, TSS, COD) and cyanide, but should include levels of toxic heavy metal ions such as divalent arsenic, cadmium, copper, lead, mercury, nickel, zinc, and hexavalent chromium. It is entirely wrong for LPI (or EMB) to state that the wastewater effluent/discharge from the polishing pond to coastal marine waters is acceptable just because the levels of cyanide were found conforming to DENR standards. The wastewaters have not been ascertained to contain acceptable levels of toxic heavy metals and thus, are unacceptable.

*On the immediate effects of the tailings incidents and long-term impact of mining operations in Rapu-Rapu:*

During the first and second tailings incidents, fishes and other marine organisms were undoubtedly affected. That fact was not disputed by even the mining company. What was unclear was the extent of the effects of the tailings incidents on the surrounding seas and fishing industry in the island and the adjacent province of Sorsogon.

In the first tailings incident, LPI reported that only about one to two kilograms (kg) of thumb-sized fishes and small marine creatures were found dead near the mouth of Alma and Pagcolbon creeks. In the second incident, it reported that approximately 15-17 kg of fishes and marine creatures were affected in Barangay Binosawan.

The mining company obviously tried to downplay the fish kill incidents.

Some Rapu-Rapu residents gave testimonies to the RRFFC that they were able to recover more dead fishes immediately after the tailings incidents,

particularly the second. Two sacks of dead fishes were allegedly buried in Brgy. Binosawan on November 1, 2005. Also, fish kills were monitored in September or about a month before the first tailings incident by the multi-partite monitoring team.

After the fish-kill incidents was the fish-scare. Fish buyers stopped buying fishes caught at the Albay gulf near the rich fishing grounds between the island of Rapu-Rapu and the coastal areas of Sorsogon. As much as 80% of the fish trade in Legazpi City was affected.

In Sorsogon, the fish scare caused “unwarranted and untold sufferings” to fisherfolk families, fish traders and the fish consuming public, in the words of Sorsogon Governor Raul Lee.

After its study, the University of the Philippines-Natural Sciences Research Institute (UP-NSRI) reported that Sorsogon’s as well as Albay’s waters, fish and underwater sediments are safe. The NSRI findings have been repeatedly referred to by LPI in declaring that the slurry materials that overflowed in the first tailing incident and the effluents it deliberately discharged in “controlled manner” during the second tailings incident were treated or detoxified waters free from toxic heavy metals and chemicals. The NSRI team that conducted the tests, however, had admitted in several occasions that its findings were not conclusive and need further studies.

The RRFFC chooses to believe NSRI’s own skepticism on its findings and disregards LPI’s reliance on it and in its self-serving declaration of having performed adequate detoxification of the tailings that overflowed in the first tailings incident and discharged in the second tailings incident.

Besides, the NSRI tests were conducted in March 2006 or four months after the tailings incidents. Factors such as dilution effects of heavy metals, dispersion of sediments, and oxidation of cyanide, over time, may have altered the environment compared to that immediately after the tailings incidents.

The NSRI study therefore brought forth more questions than answers. Some things are certain though: There was a fish kill and a fish scare following the tailings incidents. And the UP-NSRI study does not clear LPI from any wrong doing it may have caused for the fish kills and fish scare victimizing the people of Albay and Sorsogon provinces.

While the findings made by different groups may not be conclusive and need further studies to connect to observed immediate effects of the tailings incidents, RRFFC feels that there is a high probability of connection or that the incidents subsequently led to or caused certain negative consequences to health, environmental and economic problems to the people of Rapu-Rapu and nearby coastal municipalities of Albay and Sorsogon.

The groups and individuals which looked into the immediate effects of the tailings incidents are: 1) DENR MGB and EMB Reg. V; 2) BFAR Reg. V; 3) UP-Natural Sciences Research Institute (UP-NSRI); 4) Department of Health and UP Pharmacology and Toxicology Department, UP National Poison Control and Management Department, and UP Dermatology Department; 5) the non-government Center for Environmental Concerns-Philippines in consultation with the UP Engineering Center; 6) Dr. Emelina Regis of INECAR/Ateneo de Naga; and 7) Dr. Teresita Perez of Ateneo de Manila.

Though taken at different periods within five months following the tailings incidents and the samples analyzed were variedly sourced, these different studies yield some telling common results. And these are: significant levels of toxic heavy metals are present in the soil, water, and sediments samples and in the urine and blood of some of the patients coming from the communities near the mine site.

As to the high levels of mercury found in the dead sperm whale and dolphin separately found in Rapu-Rapu, newly-elected Corporate President Carlos Dominguez of LPI, categorically denied that LPI is using mercury in its operations and thus LPI could not be the source of the toxic mercury in the two mammals.

But LPI did not analyze mercury in the ore that it mines because, as justified by Mr. Dominguez, the law does not require it. This omission by LPI, though not legally demandable, is against its moral obligation to the people and environment of Rapu-rapu. It is a mining practice that ore classification is conducted by any responsible miner to determine the target minerals content and at the same time determine the accompanying heavy metal or chemical in the ore that shall be addressed by appropriate environmental protection and management plan.

On the issue of acid mine drainage (AMD), on the other hand, lies most of the worries of groups opposing mining in the island. For the RRFFC, the questions that must be answered: Is LPI able to control AMD? Or is the mining company in fact aggravating AMD and all its harsh effects?

The subaqueous deposition which LPI has adopted among other supplemental actions to prevent AMD and has been proven successful in large mines in flat terrain according to a number of scientific studies is not generally used in hilly terrains.

In a hilly terrain, gradients and flow velocities are too great to achieve stagnant, anoxic conditions. In this situation, subaqueous deposition may be counterproductive and actually enhance the production and leaching of acid products.

Rapu-Rapu is a hilly terrain with steep slope.

In other words, LPI, in its EPEP, committed strategies without yet thoroughly understanding the nature and potentials of AMD in its mine site, in particular, and in the Rapu-Rapu environment, in general.

Far more important, AMD mitigation can be ascertained based not solely on best practices in other countries but based on the particular geo-physical and overall ecological characteristics of the Philippines as an archipelago, with half of its lands sloping at 18 degrees or more, and with vast biological resources and

endemicity to nurture and protect. Even as no mining technology has yet sufficiently addressed or come up with solutions to AMD that should not be an excuse to be less than stringent in preventing AMD.

This will be a strong signal to investors as well as the people who are the real stakeholders in mining projects that the government is dead serious in implementing responsible mining. Compliance to anything less than this standard is irresponsible mining, according to Philippine standards.

*On LPI and DENR accountabilities:*

LPI is guilty of irresponsibility having started operations even prior to the completion of environmental protection infrastructures. The tailings pond, polishing pond and other structures were not yet finished when LPI decided to commence operations, possibly due to the high price of metals at that time. Because the dam structures which were designed to accommodate heavy rainfall events were unfinished, spillage of tailings decant occurred in the second spill incident. The storm drainage infrastructures at the tailings ponds were very inadequate or virtually non-existent.

Twelve of the 29 conditionality in the Environmental Compliance Certificate (ECC) were found violated by the LPI Group.

The RRFFC finds the DENR, its bureaus (i.e., MGB and EMB), its regional offices, including its monitoring team, to be dysfunctional enough to be reliable to prevent the occurrence of the October incidents. They have poor capability of monitoring mining operations in Rapu-Rapu.

Government monitoring of LPI environmental performance was not to best practice standards. It lacked the rigorousness and strictness to properly police an environmentally critical operation such as mining as well as the flexibility to adapt to changing environmental conditions.

*Other findings:*

RRFFC finds LPI's corporate structure, its special economic zone, the several tax incentives that it enjoys, its production reports, export sales and taxes paid for these produced and exported items, as well as the company's social acceptability, are questionable and tainted with irregularities.

1. **Confusing corporate set-up.** There are two companies operating in Rapu-Rapu island with mining-related permits—RRMI and RRPI. The former is the MPSA holder while RRPI holds the mineral processing permit. RRMI sells its ores to RRPI for processing which exports the metals to foreign buyers. RRPI and RRMI share a lot in common in terms of stockholders and directors. To this, the Commission is well-aware that questions have been raised whether this set-up violates the Constitution mandate but this is beyond our reach and we opt to leave this to the proper agencies to determine. What is more relevant is to determine its implications on the two incidents and the corresponding fault and liability. Suffice to state, for legal purposes, RRMI and RRPI were created as two separate entities and it would be error to treat them as one for regulatory purposes but two whenever convenient.

In this context, there were actually two environmentally critical projects (ECPs) operating in Rapu-Rapu. The first was for mineral extraction, the other for mineral processing. However, verification of records reveal that RRPI does not have an ECC and effectively operating without one. Only RRMI holds an ECC as transferee of LPI, the original grantee. The Commission finds that this “confusion” was the direct and necessary result of the intentional and deliberate decision by the Lafayette group to set-up their companies as such and should be held accountable for all its legal consequences.

2. **Irregularities in EIA requirements compliance.** One of the most critical issues is the non-inclusion of Sorsogon stakeholders in the EIA process. Based on the investigation, the ECC in question was consulted only with LGUs and stakeholders from Albay. Sorsogon stakeholders, particularly the marginalized fisher folk of these coastal communities, had every right to be consulted and be heard because they are likely (and was in fact the case) to face the environmental damage from the Rapu-Rapu Project. These rights are protected both in substance and procedure.

3. At the present rate, the government share in the MPSA in the form of excise tax is two percent (2%) both in the case of (a) copper and other metallic products and (b) gold and chromite. And that is all the government gets out of

this whole controversial Rapu-Rapu Polymetallic Project: 2% direct tax in the form of excise tax. By end of 2005, excise tax collections stood at **P2.086 million** out of gross revenues of P134.4 million. The above figure is a far cry from what Lafayette claims to have already paid the government by November 2005 in total taxes amounting to roughly P66.7 million. Upon closer scrutiny, this figure actually takes in account withholding taxes which last year stood at P61.449 million. By the nature of withholding taxes, the different Lafayette companies are just mere withholding agents. In other words, they are simply the means by which the government collects taxes due from the actual taxpayers. In the case of withholding tax on compensation, it is the 1,000 or so local employees who paid the government, not Lafayette, because it was from their respective toil that they received paychecks and from where these amounts were deducted.

4. Out of a total expected \$20.48 million tax revenues over the life of the mine, this was reduced by \$3.77 million to \$16.71 million as a result of the Mining Act. With PEZA, this was reduced further by \$8.68 million to \$8.03 million. In sum, total foregone tax revenues comprise 60.8% or \$12.45 million. Of this figure, PEZA incentives account for \$8.68 million or 42.4%. In peso terms, total expected tax collection is P1.055 billion. However, foregone revenues from the Mining Act (P194.2 million) and PEZA law (P447.0 million) reduce tax collectibles to just P413.5 million. Interestingly, what the government will collect is even lower than what it has waived by virtue of the PEZA incentives.

5. **The excise tax of RRMI for the year 2005 is probably undervalued.** The reason is the underreporting by RRMI of the amount of ore produced as presented and discussed in the previous section. RRMI reported (Verification Report, 2nd sem. 2005) that a total of 67,693 metric tons of gold ore had been mined in 2005. Based on "extracted" evidence from Mr. Villanueva, Geology Manager of RRMI during a Commission hearing at LPI, the amount of mined gold ore is 136,180 metric tons, with grade of gold given as 2.33 g. per ton. The Annual AEPEP for 2006, submitted by RRPI to the EMB gives a slightly higher amount of mined gold ore at 137,349 metric tons. The reported amount given by RRMI which is the basis of the excise tax is less than half the amount of

gold ore given in the sworn statement of Mr. Villanueva and the document Annual AEPEP for 2006.

*On the existing environmental conditions and ecological considerations:*

The RRFFC finds fault and inadequacy with the LPI's EIS, ECC and EPEP for failing to answer apprehensions relating to AMD, its effects on the Rapu-Rapu environment and the people's health and the natural hazards of mining extremely prone in the small island ecosystem. Consequently, environmental hazard prevention and mitigation strategies of LPI as contained in its Environmental Work Program and other guidelines are woefully lacking resulting into the recent tailings incidents and their consequences for which the people of Rapu-Rapu have been unfairly, unjustly and immorally made to pay dearly.

Lafayette failed to responsibly consider the particular environmental characteristics of Rapu-Rapu in its mining design and operations. From the legal perspective, failure to address cumulative impacts of an environmentally critical project is a ground for revocation of ECC.

*On the polymetallic project's social acceptability:*

Prior to its approval and during the public consultations and hearings, LPI's ECC was vehemently opposed, raising, among others, the issues of the fragile nature of Rapu-Rapu's island ecosystem, the potential for acid mine drainage (AMD) and the torrential rain weather pattern in the area. On hindsight, the merit of these contentions have been validated and should be a serious cause for concern for the country on the ability of the EMB and DENR to exercise wise judgment in protecting our environment given how spectacularly they were proven to be wrong at so short a time.

The Commission particularly notes the haste in the grant of the ECC notwithstanding the seriousness of the objections raised and the fact that prior to its issuance, the environmental agencies were well aware of an ongoing Senate committee investigation on the matter. Worse, notwithstanding the

committee recommendation for the DENR not to issue an ECC, it still proceeded to do so.

To be sure, there were other irregularities such as the conduct of the only public hearing right inside the premises of the ECC applicant. The Commission took note of the sheer inaccessibility of the site, the absolute reliance on LPI to reach the premises where the hearing was held within the site and the extremely limited options to travel in and out of the site, so much so that anyone who must have attended this public hearing had to depend entirely on LPI for transportation and accommodations. These circumstances do not augur well for a real and meaningful participation and constitutes a failure of the public hearing process.

Another major flaw in the social acceptability process is the non-inclusion of Sorsogon. Sorsogon stakeholders, particularly the marginalized fisher folk of the coastal communities, had every right to be consulted and be heard because they are likely (and has in fact been the case) to face the environmental risks associated with the Rapu-Rapu Project.

Ignored too were indigenous Taboi people in the periphery of the mine site. They were not only not consulted, LPI's EIS also failed to mention them. Their exclusion is a grave error not only because the law on mining and indigenous peoples strictly require the free and prior informed consent of indigenous populations to be affected by mining operations, mining also threatens the ancestral land and indigenous traditions of this group of people.

NGOs and people's organizations opposed to mining in the island were not included in consultations and were in fact barred from joining hearings and proceedings, like Sagip-Isla and Umalpas-Ka.

Although the failure to consider Sorsogon and other stakeholders is more than sufficient ground to nullify and revoke the ECC in question, it is worth mentioning the other EIA shortcomings if only to prove its inherent invalidity. One of these is the failure to address cumulative impacts. At this point, it is worth reiterating the definition of *environmental impacts* as "the probable effects

or consequences of proposed projects or undertakings on the physical, biological and socioeconomic environment that can be direct or indirect, cumulative, and positive or negative.

## II. RECOMMENDATIONS

1. Set up a People's Health and Environmental Protection fund from the national government to be used for compensation of the health victims and rehabilitation of the impacts of mining operations on the livelihood of those affected by the October tailings spill incidents. Pay the victims directly after an assessment of their complaints/problems.

Although RRFFC recognizes that the LPI Group is primarily liable to the consequences and damages wrought by the tailings incidents and its mining operations in Rapu-Rapu, our present laws, however, do not impose this liability upon the mining firm adequately and expediently, hence, the recourse to action from the National Government.

2. Fund and support the epidemiological study proposed by UP-PGH and DOH. Establish the scientific parameters for the health and safety conditions for the safe food intake of fishes and other aquatic food from the Albay gulf.

3. Cancel RRMI/RRPI PEZA registration on the basis of the irregularities found and for the reason that the Rapu-Rapu LGU has been unduly deprived of local taxes.

4. The BIR should investigate LPI, RMI, RRPI (the Lafayette group) for underreporting of ore/processed dore production and violations of tax laws. The DENR should investigate the bureaus and regional units involved for negligence of duties. For purposes of realistic monitoring by the State, it is strongly suggested that all gold/silver sales of mining firms be given to the BSP as it does with small-scale mining operations – at least for the first four years of a mining company's initial operations.

5. Rescind all financial and economic incentives including PEZA and BOI tax incentives to LPI/RRPI/RRMI (the Lafayette group).

6. Order LPI/RRPI/RRMI (the Lafayette group) to pay back all back taxes equivalent to those waived because of incentives/privileges for the whole duration of their mining operations.
7. Build the capability of DENR-MGB and EMB both nationally and in the regions to be able to manage and monitor effectively mining firms and mining operations. Also democratize this process of managing and monitoring mining firms and operations by engaging LGUs and people's organizations and by building their capabilities for effective engagement.
8. Issue a moratorium on mining in Rapu-Rapu and a suspension of MPSAs in the island pending scientific and experts' favorable resolution of the issue of ecological conservation and the AMD problem in a fragile small island ecosystem.
9. Cancel the ECC of RRMI and RRPI on the following grounds:
  - a. violations of 11 out of 29 conditionality and subconditionality contained therein;
  - b. the cumulative effects of the mining operations to human health, environment, and ecology have not been properly addressed;
  - c. social responsibility and acceptability issues still persist and remain unresolved to this day; and.
  - d. poor capability of DENR, MRFC and MMT to manage and monitor the mining operations of LPI Group.

The current ECC holder shall be allowed to re-apply should they want to continue operations in Rapu-Rapu. However, the scope of the EIS shall be decided not only by the usual review committee but by a bigger panel to include scientists/experts and representatives of people's organizations and NGOs.

10. Review the Philippine Mining Act specifically the provisions on the ownership and management of mining firms and operations to protect the interest of the Filipino people and the Philippine government.

Look to the need for creating an independent mining authority that will focus on the mining industry alone in terms of complete and timely monitoring especially on the impact of mining operations to people's health and environment and on the just share that must go to the government and the Filipino people.

**APPENDICES**