

**SEMINAR AND FACT-FINDING MISSION:
WASTE HANDLING IN THE PHILIPPINES**

**MANILA, PHILIPPINES
APRIL 13, 1993 - MAY 9, 1993**

**By: Gordon L. Sutin
Executive Vice President
Energy Answers Corporation/Polydyne, Inc.**

**A PROJECT OF:
THE PHILIPPINE DEPARTMENT OF ENVIRONMENT AND NATURAL
RESOURCES
AND
THE WORLD ENVIRONMENT CENTER**

**WITH SPONSORSHIP BY:
THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT (USAID) THROUGH
WEC'S COOPERATIVE AGREEMENT IN SUPPORT OF THE US-ASIA
ENVIRONMENTAL PARTNERSHIP**



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Smokey Mountain ordered converted into modern residential and commercial area



Carmona folk say no to Metro trash

New forecast: Brownouts till '96



Smokey Mountain closed for good

Manila faces big garbage crisis with Smokey Mountain closure



POWER UPDATE
1 more shutdown
Demand: 2,950 Mw
Supply: 2,263 Mw
Shortage: 687 Mw

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BEST AVAILABLE COPY

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Polydyne, Inc.

DSWD helps Smokey Mountain folk

3-hour brownouts by September

Barricades mounted at Garbage Transfer Station in Las Pinas

Las Piñas trash trucks alert 'willing to shed blood'

MMA assures public on garbage

Sabotage causes 17-hr brownouts

Carmona dump to open May 1; opposition mounts

Carmona folk oppose MMA garbage plan

Metro mayors for landfill use



CAVITE: Protest vs garbage up

WASTE HANDLING IN THE PHILIPPINES

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DISCLAIMER

This project was in direct response to a request from the Philippine Department of Environment and Natural Resources (DENR) to Polydyne, Inc., a management consulting and system engineering service, to conduct a fact finding mission to determine the possibility of developing a waste-to-energy (WTE) facility for Metro Manila. (Please see Appendix xx). Polydyne, Inc. and Energy Answers Corporation (EAC) entered into an agreement to undertake the WTE project in the Philippines. The World Environment Center (WEC) facilitated this initial fact finding mission through its Cooperative Agreement with the U.S. Agency for International Development in support of the U.S. - Asia Environmental Partnership's Environmental Business Exchange Program.

The opinions expressed herein are the professional opinions of the author and do not represent the official position of the Government of the United States of America or the World Environment Center.

The World Environment Center and the U.S.- Asia Environmental Partnership

The U.S.- Asia Environmental Partnership (US-AEP) links U.S. environmental businesses to opportunities in Asia. The program strengthens environmental protection and promotes sustainable development in Asia and the Pacific by mobilizing U.S. environmental technology, expertise and financial resources. An initiative promoted by core funding from the United States Agency for International Development (USAID), the US-AEP program coordinates the participation of 25 U.S. government departments and agencies, numerous businesses, and non-governmental organizations to work with 34 nations and territories in Asia and the Pacific.

The World Environment Center (WEC), which has an established reputation in Asia and worldwide for providing objective access to expertise, information, and technology, is pleased to support the US-AEP as a catalyst, responding to opportunities to strengthen linkages between both the U.S. and Asia/Pacific partners. Specifically, under WEC's Cooperative Agreement with USAID in support of the US-AEP, WEC has begun implementing short-term environmental business exchanges (EBEs) through a series of individually tailored technical visits to Asia and the Pacific by volunteers from U.S. industry, and factory/industry visits and workshops in the United States designed around specific environmental topics for Asian and Pacific Island professionals.

EXECUTIVE SUMMARY

This visit had two primary missions:

1. To provide information to appropriate authorities in the Philippines regarding the Energy Answers Corporation Integrated System approach to disposal of municipal solid waste which includes combustion of portions of the waste to generate electrical energy, composting of organic wastes and recycling of valuable materials. (Please see Appendix A.)
2. To determine the need for an Integrated Waste Disposal System in the Philippines and the possibility for a successful implementation of such a system.

The Problems

There is little doubt that there are two very significant public problems in the Philippines which could be somewhat alleviated by the installation of an EAC system. One is a shortage of electricity which results in daily "brownouts". The other is unsatisfactory dumping of waste in dumpsites which are "on fire" underground and on which citizens scavenge material under dangerous and unsanitary conditions.

Burning Waste to Generate Energy

The combustion of Municipal Solid Waste reduces the landfill space required. If the heating value of the waste is high enough, it is practical to generate electricity to provide power for the operation of the facility and surplus power can be sold to the power distribution system to reduce the tipping fees required. A further potential income stream is from the sale of surplus steam to nearby industries.

Recycling and Composting

Food waste and other organic materials, if collected separately, can conveniently be composted into an excellent soil conditioner. Recycling of other valuable materials can also be accomplished by separation of the metals, glass and plastics into various categories. This, too, is best accomplished by collecting these materials separately. Successful recycling programs need markets for the products and although the scavengers at the dumpsites appear to be able to sell the recovered materials at present, it is not clear how the marketing system functions or how successful it really is.

Meetings and Audience

Local and national governmental agencies, corporate, and non-governmental organizations expressed great enthusiasm and interest on EAC's technology and integrated resource recovery approach. The general reception was that they will do everything within their powers to help develop and implement the project successfully. The highlights of the responses gathered from our meetings are:

1. Willingness of Gov. Juanito Remulla of Cavite to make his province the site of the proposed WTE facility. The site in this province appears to have the best potential due to its proximity to rail transportation and sufficient distance from the metropolitan area.
2. Officials of the Department of Energy (DOE) and the Department of Environment and Natural Resources (DENR) welcome the fact that Mr. Sutin is on a pre-investment mission hoping to implement the project on a Build-Operate-Transfer (BOT) scheme. Being policy-making bodies, the combined support of these two agencies is crucial to a successful implementation of the project. The DENR has endorsed this project for over two years now and has agreed to be the host agency for a feasibility study on WTE and integrated resource recovery program.
3. DOE Undersecretary Bomasang, informed the mission that all power generated from wastes will be purchased by the National Power Corporation (NAPOCOR), creating a ready market for electricity production.
4. NAPOCOR President, Dr. Francisco Viray, indicated that, due to its environmental benefits, WTE-derived energy is entitled to preferential pricing and terms not normally enjoyed by conventional power producers. The preferential pricing might be crucial to the overall viability of the project.
5. Local government unit (LGU) executives gave verbal commitment to cooperate with EAC and Polydyne, Inc. in implementing a sound solid waste management system for the Metro Manila. The LGUs will be vital to public acceptance, source segregation, and waste supply considerations for the project.
6. Congresswoman Socorro Acosta, Chairperson of the Committee on Ecology invited Mr. Sutin as a resource speaker during the Environmental Consciousness Week (May 3 - May 10, 1993). There was apparent consensus that the EAC integrated resource recovery, as highlighted by its successful WTE facility, is more environmentally beneficial and cost-effective than current landfilling of municipal solid waste. Recognizing the importance of environmental issues and the potential of emerging environmental technologies, she promised help via favorable legislation for EAC/Polydyne, Inc. and for investors in Ecology and Environmental projects in general.

7. The Philippine National Oil Company (PNOC) expressed willingness to be the local partners in the WTE venture. PNOC is a leading developer and producer of non-conventional and renewable power and one of the world's leading producers of geothermal energy. Of course, like any business venture in the development stage, the terms and conditions of any partnership will be worked out subsequently.
8. The Office of the President, through its Presidential Management Staff (PMS), invited Mr. Sutin to Malacanang Palace for a forum with the Presidential Task Force on Solid Waste Management. This Task Force is coordinated by PMS and is comprised of representatives from the DENR, MMA, LGUs and the Department of Public Works and Highways (DPWH). The panel was impressed with the innovations at EAC's SEMASS WTE facility and, due to the urgency of current waste disposal problems, requested EAC and its partners for a proposal as soon as possible. Since he was primarily on a fact-finding mission, Mr. Sutin informed the task force he could only submit a proposal after a pre-feasibility study has been conducted.

CLASSIFICATION OF ORGANIZATIONS:

1) Government:

A) National-

Deputy Executive Secretary Dionisio De La Serna
 Undersecretary of the Dept. of Energy, Rufino Bomasang (and staff)
 Undersecretary of the DENR: Mr. Ben Malayang III
 Asst. Sec. of the DENR: Mr. Cirilo Serna
 Congresswoman Socorro Acosta, Chairperson Committee on Ecology, House of Representatives
 Congressman Ceferino Paredes, Jr., Member Committee on Ecology
 Ms. Emmy Reyes, Director, Presidential Management Staff, Office of the President

B) Local-

Gov. Juanito Remulla of the province of Cavite
 Mayor Prudencio Panganiban of Trece Martires
 Mayor Tomas Osmena of Cebu City
 Executives/representatives of the municipalities or cities of Muntinglupa, Pasig, Makati, Manila and Quezon

2) Corporate:

National Power Corporation: President Francisco Viray
 Philippine National Oil Company:
 Samson Javellana - Energy Planning Manager
 Efren Lososo - Finance Manager

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- 3) **Other organizations:**
Foundation for the Philippine Environment: Executive
Director Delfin Ganapin, Jr.
International Recycling and Resource Recovery Network
(IRRREN): President Emma Pujalte

4) **Financing organizations**

We have had initial contacts with the U.S. ExImBank, World Bank/IMF, ADB and G.E. Capital being institutional leaders as well as Philippine lenders like All-Asia Capital, REBS (Retirement and Separation Benefits System of the AFP), and the Security Bank. All expressed interest but would want to have the feasibility study done before deciding to participate in the project. The feasibility study will determine the capacity, cost, and, more importantly, what contributing factors will make the project viable.

Recommendations.

It is clear that there would be an advantage to the community if the waste disposal function could be done on a more sanitary basis. It would also be a distinct advantage if the waste could be burned to produce energy. And an improved salvaging system to be accomplished under better working conditions would no doubt be attractive. But in order to determine the practicability of development of a system, a pre-feasibility study needs to be done to establish the following information:

1. In order to determine its applicability as a fuel, the waste from various districts of Manila would be analyzed to determine what materials are in the waste including moisture and non-combustible content and to determine the heating value of the waste.
2. A search for an appropriate site or sites should be done based on specific criteria:
 - Road Access
 - Closeness to major power lines
 - Location in relation to major source(s) of waste
 - Willingness of local community to accept facilities
 - Availability of utilities (water, sewer)
3. A study of the existing system for marketing of recovered materials is necessary. The study might include a search for additional markets.
4. A follow-up study tour for Filipino officials to allow them to see an integrated waste management approach being commercially implemented in the U.S.

I believe that if the conditions are determined to be appropriate from a technical point of view for the development of some or all of the above-mentioned facilities, an extensive, detailed and honest public information program would minimize, if not eliminate, public objection.

INTRODUCTION

This report presents the purpose, activities and conclusions of a visit to the Philippines as a Volunteer Specialist by Gordon Sutin, Executive Vice President, Energy Answers Corporation (EAC), Albany, New York. The visit was organized by the World Environmental Center (WEC) and sponsored by USAID through WEC's Cooperative Agreement in support of the U.S. - Asia Environmental Partnership. The visit took place from April 23, to May 9 1993.

There were several aims and objectives of the visit as follows:

1. To present the EAC integrated approach to Solid Waste Management including source separation, recovery and recycling of valuable materials, composting, combustion of solid waste with generation of energy in the form of steam and electrical energy and landfilling. This information was to be disseminated in private meetings as well as by means of a seminar to which interested private corporations and key government technical and administrative officials would be invited.
2. To present an approach to implementing these programs on a private enterprise basis whereby merchant facilities would be built by private industry and service of waste disposal would be provided for a fee based on long-term contracts between municipal governments who collect the waste and the facility owner.
3. To determine from information gathered during the visit whether there appeared to be an opportunity for technically successful and financially feasible development of such systems in the Philippines.
4. To investigate on a cursory basis the quality and quantity of waste available with particular attention being paid to the combustibility of the waste.
5. To meet with government agencies and regulators to determine the acceptability of this type of approach as a means of helping to improve waste management practices in the Philippines while helping to at least partially alleviate the problem of regularly occurring electrical "brownouts".
6. To determine the regulations regarding the disposal of solid waste whether in a landfill, at a composting or recycling facility or at a waste-to-energy facility.

Appointments were arranged by Mr. Darius DeGuzman of Polydyne Inc. and he participated in all meetings and site inspections.

Manila is the largest city in the Philippines and has a population of over 7,000,000 producing an estimated amount of over 4000 tons of refuse each day.

PROCEDURES AND ACTIVITIES

During the visit, meetings were held with representatives of various government departments and authorities who had an interest in the problems of solid waste disposal and/or had influence over any decisions regarding solid waste disposal. The initial meetings were with the Philippine office of USAID, and with the Foreign Commercial Service of the United States Embassy in the Philippines. Meetings with Philippine government offices included the Department of Environment and Natural Resources (DENR) (Planning and Policy), the Department of Energy (DOE), the Metropolitan Manila Authority (MMA) and the Presidential Task Force on Solid Waste Management Project. A meeting was also held with the government-owned Philippine National Oil Company (PNOC); this company is responsible for development of alternative energy sources in the Philippines.

Meetings were also held with individuals including the Governor of Province of Cavite, the Mayor of the towns of XIII Martirez and Cebu, the new president of the National Power Corporation (NPC), a government-owned company responsible for power generation and distribution in the Philippines, Director of the Presidential Management Staff of the Office of the President, Congressmen interested in environmental matters and the new Dean of the College of Engineering at the University of the Philippines, (concurrently the executive director of the National Engineering Center).

A seminar was held at the University under the sponsorship of the Dean of the College of Engineering. The seminar attracted about 30 people including representatives from private companies, several local and national government offices, academia, the World Bank/UNDP and others.

At the seminar, a videotape was shown which displayed the operation of EAC's SEMASS facility in Rochester, Massachusetts. Later, with the use of projected slides as well as overhead detail slides, explanations were presented covering the theories and procedures involved in not only the SEMASS Waste-to-Energy facility but also in EAC's wood waste composting facility, its transfer station, its recycling center and its ash processing facility. A question-and-answer period solicited intelligent questions and indicated that the audience was indeed impressed by EAC's Total Integrated System approach to Solid Waste Disposal.

The purpose of the visit was outlined at the various meetings as follows:

1. To educate interested parties in the EAC approach to Solid Waste Disposal, including the proven award winning shred-and-burn system of combustion and energy generation.
2. To determine on a preliminary basis whether there was an opportunity for EAC to develop a system in the Philippines which would provide clean and environmentally advantageous systems of waste disposal to handle at least a portion of the Philippines waste and at the same time to aid in the solution of the present power problem.

The SEMASS videotape was shown and a question and answer period followed at a public meeting of the International Resource Recovery and Recycling Network at the House of Representatives. This meeting coincided with the opening of Natural Resources Consciousness Week sponsored by the Congressional Spouses Foundation Inc., an organization formed by the spouses of members of congress to promote support of government environment and conservation programs.

On May 7, a presentation was made to the Presidential Task Force on Solid Waste Management. This is a committee formed under the jurisdiction of the President's office and is, we believe, very influential. We had previously met with the director of the committee who invited us to attend this meeting. It was explained that the purpose of the trip was to determine whether there was an opportunity to develop an integrated waste disposal system in the Philippines based on the technologies developed and in use in connection with the SEMASS facility in Rochester, Massachusetts. It was stressed that although the Waste-to-Energy facility was a focal point of the system in Massachusetts, nevertheless the entire system included landfilling and landfill operation, composting of wood waste and brush, transfer of waste for trailer transportation to SEMASS and railhaul of waste.

We explained that the trip was of an exploratory nature and that a report would be made to the EAC Board of the results of the trip and recommendations for future action. It was stated that so far it appeared that there was indeed an opportunity for development of a project and the recommendation to the Board will likely be that we proceed with further consideration in the form of a pre-feasibility study. In answer to a question from the chairman, the committee was informed that should further study be decided upon and financing be allocated, a team to do the work would likely appear in Manila within 6 weeks.

Prior to returning to the United States, the Philippines USAID office was contacted by telephone to update them about our activities. They advised that a meeting with them would not be possible due to their heavy schedule. On May 7 we were able to meet with the Foreign Commercial Service of the US Embassy in the Philippines to update them on the activities of this mission.

FINDINGS

A. The Present Situation... How Solid Waste is Handled.

The responsibility for Solid Waste is divided between two jurisdictions. In general, collection of the waste is a responsibility of the individual municipalities, Local Government Units, LGU's, (approximately 14) which make up the Metropolitan Municipality of Manila while disposal of the waste and operation of transfer stations is the responsibility of the Metropolitan Manila Authority (MMA).

Waste is collected generally in open dump trucks with a staff of four or more people although there are some Japanese-donated packers in use.

The oldest and largest dumpsite being used when the visit began was "Smokey Mountain", appropriately named because it was indeed a "mountain" of waste, having been in use for many years and it was obviously burning underground in several locations because smoke was appearing from several sources in the dump. On May 1, 1993, the President of the Republic of the Philippines declared the Smokey Mountain dump closed to receipt of any further waste.

At the same time he announced the placing into operation of two new landfills, one at San Mateo, northeast of Manila, and the other south of Manila at Carmona. On April 30, the courts issued a temporary injunction to prohibit the opening of the Carmona landfill and the new Transfer Station which was to be used to transfer waste to the Carmona Landfill. The waste was redirected to an existing dump at Payatas near the House of Representatives. This dump is scheduled to be closed. The injunction was subsequently lifted but public blockading of the two facilities stopped any deliveries to the facilities. It is not clear when, if ever, the transfer station and landfill will actually go into operation because citizen objectors continued to blockade the entrances and in subsequent altercations some citizens and police were injured.

According to the newspapers, President Ramos has announced that the material in the Smokey Mountain landfill will be removed and the land will be reclaimed for the construction of low-cost housing. There has been no indication of where the material will be taken or of what will be done to prevent odors and fires should removal of the material take place. It also appears that little consideration has been given to the risks of building on top of an old landfill!

B. Solid Waste Quality and Quantity.

It is quite apparent that the waste of the Philippines is very different from the waste in the United States. Particularly, the waste generated in Manila is likely lower in heating value and higher in ash content; but the actual moisture and ash content is not known. A further consideration is that at the present time, a great deal of material is removed from the waste for recycling before the waste arrives for disposal. Although there have been studies of the waste generation, much of the information, as far as we were able to determine, is rather old (except for a small study done recently in a very small section of Manila). Further, any information we obtained on heating value and moisture content of the waste is rather skimpy. Unless further, more detailed and comprehensive information has been recently generated, there is not enough technical information available regarding quantity and quality of the material to determine the possibility for development of an appropriate waste management system.

C. Recycling.

Most recovery of recyclable materials from the waste stream presently appears to be done by scavengers who separate the materials at the dumpsite. The mixed recovered materials are then further sorted by others who, certainly in the case of the Smokey Mountain Site and apparently at other dumps, live and work adjacent to the landfill. Exactly how the material is subsequently distributed to users of the recycled material was not clear but it seems that there is indeed a commercial network which accomplishes this task. But the working and living conditions of the workers who are engaged in these activities are very undesirable from a socio-economic point of view; crowded, small, sometimes unserved shanty-towns provide makeshift living quarters adjacent to the dumps. As the present dumps are not lined and piped to contain and collect leachate, there is little doubt that leachate is seeping into the groundwater. At least once, we saw groundwater being pumped for use in the shantytowns adjacent to the dumps.

Although no official information was obtained on water quality, it is likely that the water from wells so close to a an unlined garbage dump is not up to drinking standards and probably, at least in some cases, contains many pollutants which are harmful to human health and life.

At the two new "sanitary landfill" sites just now being put into service it does not appear from a cursory view that the cells have been prepared in accordance with the latest acceptable international technical standards.

The dumps which were inspected were all smoking providing ample evidence of underground combustion taking place. This causes not only severe air pollution but also indicates the risk of explosion of areas of the site as occurred recently in Turkey with extensive loss of life and property. (See Appendix B,...Newspaper Clippings).

D. Electricity.

Each day, there are "brownouts" in various sections of the city of Manila and in other areas of the Philippines. This is apparently due, at least in part, to a shortage of effective electrical generation capacity. Any electricity which could be generated by the burning of waste would be welcomed by the authorities in the Philippines. The present retail price of electricity appears to be about 2 pesos per kilowatt/hour, about 8 cents at the present exchange rate.

E. Local Reaction.

Virtually everyone to whom information was provided about our integrated approach was enthusiastic about the possibility of EAC/Polydyne providing facilities which would improve waste disposal systems and generate energy. The government agencies are primarily interested in a "BOT" approach, that is to say, the supplier will **BUILD** and **OPERATE** the facility(ices) and at some predetermined date in the future **TRANSFER** the facility(ices) to the government (about 25 years after going into service). It is apparent that the government also intends that the financing of a facilities would be done by the developer. It is not clear whether federal government guarantees would be forthcoming to guarantee performance of communities who contract with the developer to provide waste and pay tipping fees.

CONCLUSIONS

1. There is a public recognition that the present systems of collection and disposal of Municipal Solid Waste in Manila needs dramatic improvement.
2. In any development of alternative methods of collection and disposal, there needs to be a recognition of the fact that apparently thousands of people are making a living from scavenging of recyclable materials from the waste. If possible, provisions should be made in new systems to make use of the talent for separation and distribution of recyclable material which has been developed by those presently engaged in these activities. If possible, continuation of the scavenging might be appropriate but under more organized and sanitary conditions.
3. There is a public outcry because of the continuing power shortages which result in "brownouts" (really blackouts) for extended periods each day.
4. The widespread use of diesel generators to provide power to office buildings, hotels, commercial buildings and private facilities aggravates the already intense air pollution in Manila caused by the heavy traffic and the burning of coal and oil to generate electricity.
5. The waste generated in Manila may have a comparatively low heating value due to high moisture content and a high non-combustible percentage in the waste.
6. Any facilities for the handling of waste will likely be required to meet standards set by the United States Environmental Protection Agency.
7. Because of the nature of the waste, it will be necessary when considering solutions to the two problems, waste disposal and electrical generation, to look not only to waste-to-energy but rather to consider integrated systems which may include waste-to-energy but may also include composting, separation and recycling. In all cases, it will be necessary to have landfill available to backup the other facilities on occasions when due to a planned or unplanned event, certain materials must be landfilled. A landfill is also needed to accommodate material which cannot fit into any of the processes or facilities which make up the integrated waste handling system.
8. If there is a technical solution to the problems of waste disposal in the Philippines, EAC's integrated approach is most likely to be best able to determine such a solution. EAC's extensive experience in composting, transfer and transportation, waste-to-energy and landfilling enables EAC to take a broad view in designing a system which will provide clean sanitary disposal and may also provide electricity for distribution to the public.

9. There appears to be an impression in some quarters that Waste-to-Energy is too expensive for the Philippines. The installation of a different system of waste disposal than that presently in use must be justified on an economic as well as social basis. In order to determine the value to the society of an Integrated Waste Disposal System, it is necessary to examine the costs of both the present and proposed systems. The following items must be considered:
- i) What is the true cost of the present system, not only in cash outlay but also in environmental damage to health and property?
 - ii) Is a modern project "financeable"? If the project proves able to generate income sufficient to provide for repayment of capital borrowed and to provide for payment of operating costs then funds can likely be raised from sources outside the Philippines government to provide the capital needed to build and operate the new system.
 - iii) What is the value placed on the major environmental and health benefits which accrue with the installation of a sanitary and non-polluting method of waste disposal?
 - iv) Although odor from landfills is readily apparent, an often unrecognized disadvantage of landfills is that they give off gases which are combustible and which are damaging to the ozone layer. Further, any heavy metals in the waste (lead, cadmium, etc.) can be absorbed into the groundwater and emitted as vapor into the air. What will it cost to correct pollution damage if the present methods of disposal are continued? What is the cost of ultimately closing a landfill properly in order to avoid fires and explosions after the landfill is no longer in use? And what are the ongoing maintenance costs after a landfill is "closed"?

RECOMMENDATIONS

The discussions held with government authorities indicated a strong interest in assisting us in developing facilities in the Philippines. It is apparent that this assistance will not necessarily be direct monetary investment but rather political activity which will help in our efforts. It appears that we could count on some changes in collection systems which might be needed in order to make our system economically viable.

There is also a strong possibility that property may be made available under generous terms and it appears that tax holidays may be offered as an enticement to us to proceed with a project.

However, much more information is needed before we would agree that a project could be successfully developed in the Philippines. **But I believe from what was learned on this visit that the possibility for successful project development exists.** Such development may require imaginative solutions based on proven systems and equipment and will ultimately require input from not only engineering sources but others as well, financial advisors, sociologists, public, planners and other appropriate professionals

It is also apparent that a key part of the strategy necessary for success is an extensive public information program in order to avoid the difficulties encountered at the Carmona transfer station and the landfill site.

It is therefore recommended that a two-stage Feasibility Study (pre-feasibility and full feasibility) be undertaken to gather information regarding several key items:

1. Determine the quality and quantity of waste available.
2. The waste to be examined should be taken from different areas of the city in order to determine if there is any significant difference in waste generated in different districts.
3. A preliminary heating value of the waste needs to be determined.
4. From the information gathered, a preliminary process flow should be established to determine the technical practicability of a proposed system.
5. If the process design establishes that there will be surplus electricity for sale, meetings should be held to determine the price and terms for the sale of electricity generated by the project.
6. Preliminary economic and financial analyses, to include cost and income estimates need to be prepared to determine the tipping fee required.

7. **The pre-feasibility study should include a life-cycle cost analysis which evaluates all the components of present methods and compares these costs with net life-cycle costs of the proposed new system.**

If the indications from the information obtained in the pre-feasibility stage are that a successful facility could be accomplished, then the next stage would be a full-blown feasibility study which will examine in detail not only the above items but all other issues which affect the project including but not necessarily limited to traffic, utilities, potential sites, transportation corridors, backup landfill, public concerns, detailed cost studies, income projections and environmental impact.

Study Tour Follow-up for Filipino Officials.

While the general public awareness on proper waste disposal has to be raised via education programs, the local decision- and policy-makers who are grappling with the waste and energy problems need to be exposed to the **philosophy in action of integrated resource recovery and waste management. These officials have to see the integrated approach being commercially implemented in this country as a long-term and cost-effective paradigm for waste management, in particular, and environmental management in general. Without exposure to the working and profitable integrated and WTE systems in this country, most notably EAC's SEMASS Facility, the Philippine decision-makers are vulnerable to quick fixes to their environmental program, which will cost more in the long-run.**

Therefore, a follow-up study tour for Filipino officials is recommended. The tour will include a presentation detailing the EAC integrated approach, a tour of the SEMASS waste-to-energy facility, a tour of the woodwaste composting facility, a tour of the Braintree transfer station, a tour of the SEMASS backup landfill and a tour of the SEMASS Material Recycling Facility (MRF). In addition, local government officials and a representative from the Department of Environmental Protection of the Commonwealth of Massachusetts will be brought to SEMASS to meet with the Filipino representatives.

The main purpose of the tour will be to satisfy the visitors that the EAC/Polydyne team is highly qualified to provide the best solution to the solid waste problems facing Manila and environs.

CONTACT

This ends the report of the visit of Gordon Sutin to the Philippines by virtue of an agreement with the World Environment Center. If further information or clarification is required, Mr. Sutin can be reached at the following address:

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Appendix A

THE EAC INTEGRATED APPROACH TO WASTE HANDLING AND DISPOSAL

EAC was formed in 1981 by Patrick Mahoney, president of Smith and Mahoney, Consulting Engineers, of Albany, New York, U.S.A and Gordon Sutin, President of Gordon L. Sutin and Associates Limited, Consulting Engineers of Hamilton, Ontario, Canada. At that time the primary purpose of the company was to finance, design, build, own and operate Waste-to-Energy facilities based on the shred-and-burn technology used in Hamilton Canada in 1972 for the first time in the world for the combustion of municipal solid waste and the generation of energy. In 1980, the ANSWERS project was built in Albany based on the Hamilton technology with improvements.

The following are excerpts from the EAC 1987 business plan:

"EAC's corporate philosophy is to conduct its affairs in a morally responsible manner, acting as a good corporate citizen wherever it conducts business. EAC is committed to:

- "* working toward a total recovery solution to solid waste including recycling, composting, energy recovery and materials recovery and reuse;
- "* developing each business opportunity in accordance with sound environmental practices;
- "* engaging in research and development activities in the pursuit of improved resource recovery technologies within the limits permitted by sound financial planning;
- "* working toward the improvement of the economic and social quality of life in the communities in which it conducts its business within the limits of sound financial planning;
- "* engaging in the education of the public and the dispensing of constructive information regarding resource recovery issues"

Since that time, in compliance with these aims, EAC has developed the SEMASS project in Rochester, Massachusetts. This is a waste-to-energy facility designed to receive 1900 tons of municipal waste per day and to generate some 50 megawatts of electricity for distribution in the existing utility grid. In 1993, a 50% expansion of SEMASS was completed.

As the majority owner of the project, EAC is the managing General Partner of the SEMASS Partnership and manages the project. EAC also operates a transfer station which brings waste to SEMASS, a landfill which provides for backup disposal and for disposal of unprocessable materials (about 1.6% of the incoming waste) and a wood waste composting facility in Cape Cod, some 30 miles from SEMASS. Following its corporate philosophy, EAC also owns and operates a composting facility in Florida and has been responsible,

under contract, for the final environmentally-sound closing of several municipally-owned landfills.

During the company's development, it has become clear to management that waste disposal must be approached from various points of view and that no single system can adequately solve the problem. The need for public acceptance is paramount. And economics play an important role in the decision making process.

In short, EAC has developed its "Integrated Approach" in which the aim is to provide appropriate solutions which take advantage of all the potential methods which can be used for waste disposal.

The protocol set forth by the United States Environmental Protection Agency for waste disposal is that disposal methods should be prioritized in the following order:

- First Reduction of waste quantities at the source by reuse of the materials for their original purpose; returnable and reusable beverage containers are a good example. This is usually done by government legislation which requires returnable bottles to be used for beverages.

- Second Reuse of the waste material but for a different purpose than originally used; after burning of waste at SEMASS, EAC recovers all metals in its proprietary on-site Ash Processing Facility. The Ash Processing also recovers Boiler Aggregate™, a granular aggregate which has been used for the manufacture of concrete and asphalt as well as for fill beneath roads and sidewalks.

- Third Burning of waste for the generation of energy in the form of steam and electricity. SEMASS does this.

- Fourth EPA protocols recognize landfilling of waste material as a last but often necessary resort.

As described above, EAC is experienced in all of the above procedures (except, of course, number the first which occurs before disposal occurs).

In 1992, EAC began an update of its business plan. Although the plan is not finalized, the following are pertinent excerpts from that document:

- "1. To develop and operate waste-to-energy and resource recovery facilities.
- "2. To develop and operate profitable ancillary businesses in the solid waste industry.
- "3. To make EAC a recognized leader in providing economically, technologically and socially acceptable solutions to solid waste problems.
- "4. To continue research into and development of sound technical and marketing systems for total recovery and reuse of materials normally classified as waste, within the constraints of sound financial planning."

An examination of EAC's objectives and its activities describes EAC's "Integrated Approach" to waste handling. Not only is it clearly a declared objective of the company, but history demonstrates that EAC has in fact pursued these objectives in its diversification of activities as demonstrated.

An objective which is not clearly enunciated but which is by inference an obvious objective of the company is to eliminate landfill of materials normally considered to be waste. At SEMASS, the percent of incoming waste which is ultimately landfilled is the lowest of any waste-to-energy facility in the nation. And each year since the plant started in operation, that percent has reduced.

Thus, EAC's "Integrated Approach to Waste Disposal" can be summarized as follows:

The landfilling of waste is the least desirable method for disposal of waste. Proper waste disposal requires a combination of many systems. An Integrated System can include all or some of Composting, Reduction, Reuse, Recycling, Waste to-Energy and Landfilling. In the design of a system, all of these systems should be considered so that a proper combination of systems which are appropriate will provide economically, environmentally and complete solutions to disposal of waste.

Appendix B

Photographs List of Names Business Cards

During the visit to the Philippines, a seminar on waste disposal and the EAC Integrated Approach was conducted at the University. In addition, presentations were made to other large gatherings of people interested in waste disposal, solutions to environmental problems and improvements in electricity supply. I also met with individuals and small groups from specific government departments at both city, county and federal levels. At many of the meetings, photographs were taken of the participants and business cards were exchanged. These photographs are included in this appendix, as well as a list of names and positions of those from whom this information was obtained, and copies of business cards.

**Report on Visit of Gordon Sutin
To the Philippines
April 23, 1993 to May 8, 1993**

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METODIO A. PALAYPAY, M.D.
(FAMILY MEDICINE)
LIC: 31150

7-2 PM
7:30-7:45 AM

University Health Service
UP Campus, Diliman
QUEZON CITY, TEL: 993608
Mon-Sat 8:00-12:00pm; 1:30-5:00pm
995071-8 L 2690

No 1 Laurel St
Purok Sumakwel, Area 2
UP Campus, Diliman
QUEZON CITY, TEL: 988130
Mon-Sat (Outside office hours)

ER2848

App/Gen

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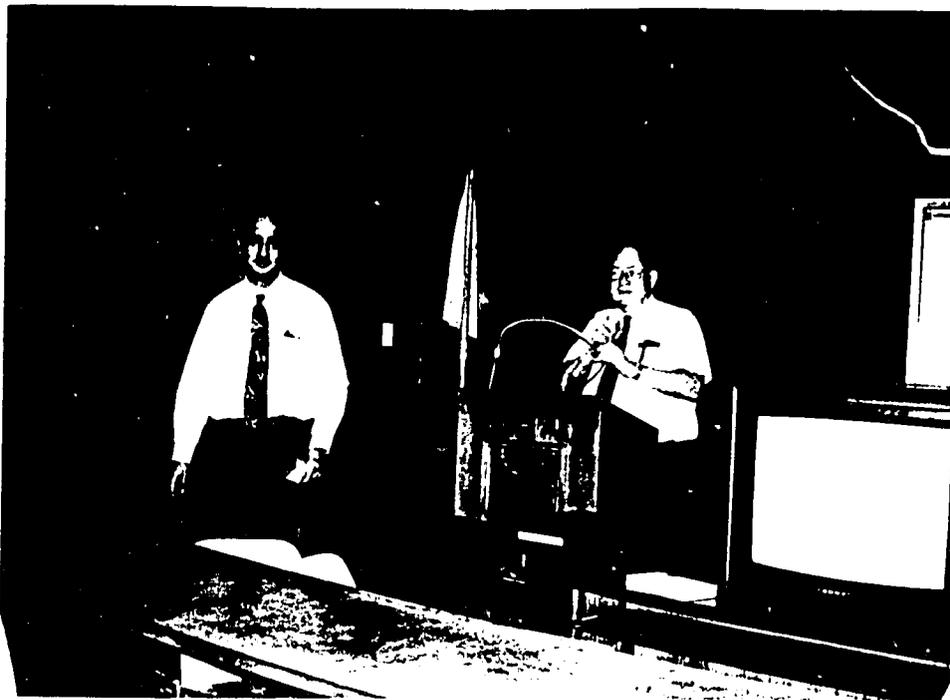
BEST AVAILABLE COPY Seminar at the University of the Philippines

(Left to right: Mr. Anthony Clemente; representative of Metro Manila Authority Chairman Ismael Mathay, Jr.; Attorney Cesar Ramirez, Quezon City Government; Darius DeGuzman, Polydyne Inc.; Gordon Sutin, Energy Answers Corporation; Susan V. Garcia, Polydyne Inc.; Editha Valenciano; James Diaz, Filsonics)



Seminar at the University of the Philippines
*Dean Reynaldo Vea of the College of Engineering
welcomes Gordon Sutin, Energy Answers
Corporation*

28



Seminar at the University of the Philippines
Darius DeGuzman, Polydyne Inc.; Gordon Sutin,
Energy Answers Corporation

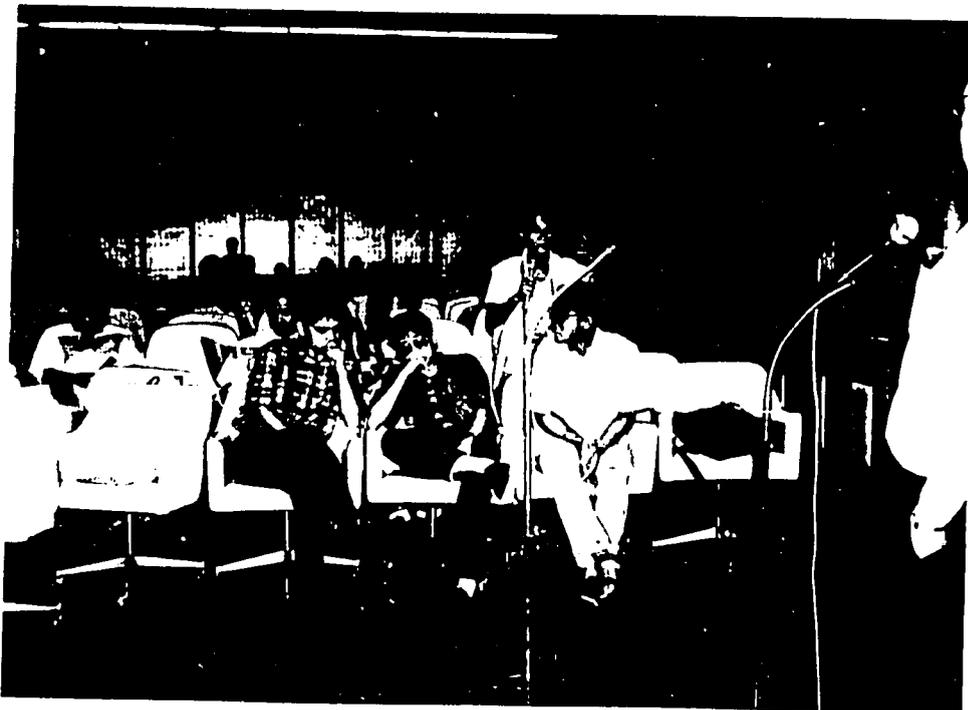
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Seminar at the University of the Philippines



**Public Meeting Sponsored by the
Committee on Ecology of
The House of Representatives**



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**Mr. Cirilo Sema, Assistant Secretary of the
Department of Environment and Natural Resources
with Gordon Sutin of Energy Answers Corporation**



**Gordon Sutin of Energy Answers Corporation with
Ben Malayang, Undersecretary of the Department of
Environment and Natural Resources**

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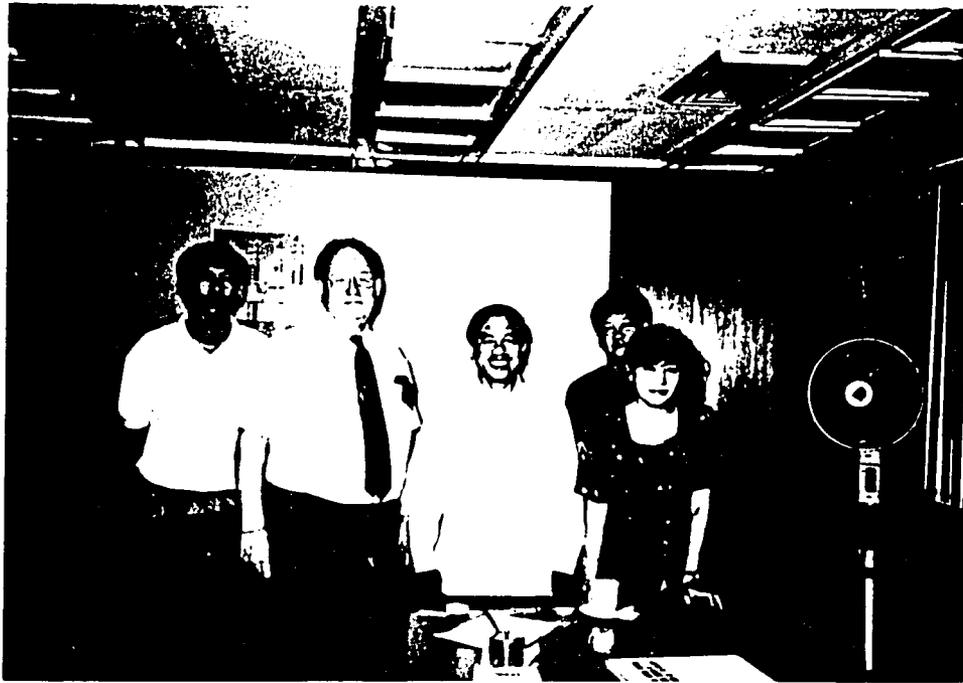


Agnes DeJesus, Environmental Manager, Philippine National Oil Company; Efren Lososo, Finance Manager, Philippine National Oil Company; Gordon Sutin, Energy Answers Corporation; and Samson Javellana, Manager, Energy Planning, Philippine National Oil Company



The foreman of the New San Mateo Landfill with Gordon Sutin of Energy Answers Corporation.

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Meeting with the Department of Energy (*Left to right: Engr. De La Cruz, Department of Energy; Gordon Sutin, Energy Answers Corporation; Undersecretary Rufino Bomasang, Department of Energy; Mr. Boado, Department of Energy; Ms. Gesmundo, Department of Energy*)

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Appendix C

Newspaper Clippings Landfill Photographs

During the period when I was in the Philippines, virtually every newspaper every day printed at least one and often several articles relating to waste problems, landfill, public concerns and electricity shortages. During the visit, I visited the three existing major landfills in Manila and the two new landfills.

I collected many of these newspaper clippings and took photographs of the landfills. This appendix includes selected copies of the newspaper clippings and the landfill photographs.

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Carmona folk oppose MMA garbage plan

By DEL VILLANUEVA

CARMONA, Cavite — Concerned residents and local officials here expressed yesterday apprehension over the plan of the Metropolitan Manila Authority (MMA) to start operating the sanitary landfill project in this town on May 2.

The landfill project is located in a 50-hectare land in sitio Paligawang Matanda, barangay Lantic, this town.

Since last year, local residents have denounced the project which, according to them, would adversely affect the environmental sanitation of the town.

They said that the dump, which is bounded by the Mename River and Carmona River,

will cause pollution not only in these rivers but also in Laguna Lake.

The residents said that the project will contaminate the water supply in the town because most of them rely on deep wells.

Aside from this disadvantage, the garbage site will attract rats, flies and other disease-carrying animals and insects.

Municipal Secretary Lina Manarin said that landfill project was objected to in two studies conducted by the Cosser Townsend and Associates, a foreign consultant of the MMA, and the UP Institute of Environmental Science and Management.

Manarin said that municipal officials led

by Mayor Rolando Rosas are opposing the project but they could not do anything because the MMA had told them that the project was approved by Malacañang.

It was reported that the landfill project will serve as the final dump for the millions of tons of garbage that will be collected from all over Metro Manila and then compacted at the Refuse Transfer Station in Las Piñas.

The operation of the transfer station located on the Manila-Cavite coastal road is also being opposed by Las Piñas residents and businessmen because of the stench and the inconvenience it will cause.

Operation of Las Piñas garbage station defended

By FELIX MEDIAVILLO

Metropolitan Manila Authority Chairman and Quezon City Mayor Ismael Mathay Jr. yesterday defended the existence of the Las Piñas garbage transfer station, saying he is only implementing the order of President Ramos.

In Makati, Mayor Jejomar Binay clarified his position on the restructuring of the MMA and said that his stand, similar to those of the other Metro mayors, "is not intended to be against the person of the President."

"This (transfer station) is a project of the national government from the directive of the President. As the new MMA chairman, I am just implementing what was ordered to me by the President," Mathay said during a dialogue with Las Piñas residents.

Mathay is set to hold a series of dialogue with Las Piñas residents and MMA officials on the operation of the P120-million project located along Coastal Road in Las Piñas.

Las Piñas residents have since opposed the operation of the transfer station on the ground that it would cause air pollution in the area.

Construction of the facility started before the creation of the MMA in 1990 and no less than Binay, then two-time MMA chairman, inspected the site.

Mathay is also set to visit within this week the Carmona (Cavite) sanitary landfill where garbage compacted from the Las Piñas transfer station will be dumped.

Mathay urged the Las Piñas residents to "keep an open mind" about the project which, he said, would benefit other Metro Manilans.

He cited the transfer stations in other countries like Singapore and Hong Kong, which are even located in the center of residential and commercial areas and are carefully monitored by their governments.

The Philippine Star
April 28, 1993

Garbage incinerators sought for urban areas

Air pollution can be minimized and a more effective waste disposal and collection can be realized in urban centers with the installation of environment-friendly incinerators, Rep. Manuel Sanchez (LP, Rizal) said yesterday.

Sanchez said such an incinerator will be installed in his district next month at a cost of only P10 million.

"I think P10 million is a relatively chief investment considering the contributions of the incinerator to a cleaner environment," Sanchez said.

The incinerator, built by a Washington-based firm, conforms with US and Canadian standards with 99.9 per cent clean air emission and 100 per cent incineration of all objects, including aluminum.

The equipment will be installed at 2,000-square meter lot between the Rizal towns of Angono and Binangonan. Sanchez said the in-

cinerator in his district will be only the second of its kind in the country, the first being that in Cebu City.

"I will ask all five towns in my district to agree to a waste disposal and collection system so that the incinerator could be put to maximum use," Sanchez added.

He stressed that the environment-friendly equipment will not be effective if residents continue to throw garbage into river systems and vacant lots. He pointed to industrial and human waste as among the main sources of air pollution and of various diseases.

The fund for the project will come from a non-government organization.

"Had I waited for the government, it would have taken a much longer time before the project could get off the ground," Sanchez said.

—Efren L. Danao

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The Philippine Star
April 29, 1993

PH. STAR 04/28

Bad fuel mix, drought blamed for power crisis

By JOEL LOCSIN

A "bad fuel mix" for oil-fired power plants of the National Power Corp. and a two-year drought that rendered Napocor's hydroelectric plants ineffective are mostly to blame for the present power crisis, Energy Secretary Delfin Lazaro said Monday.

Because of this, he said, private sector efforts to harness "viable alternatives" such

as geothermal power and "clean-coal technology" are highly encouraged.

Lazaro, who appeared with businessman Raul Concepcion on the television talk show "Firing Line," also noted that the present power crisis is the worst experienced by the country, even worse than in the summers of 1990 and 1992

when eight-hour brownouts were a daily occurrence.

He said a "bad fuel mix" for the power plants, which run mostly on imported diesel fuel, as well as a drought which rendered hydroelectric plants ineffective, are largely to blame for the crisis.

But he added that until 1996, when several power

projects are expected to be completed, there is nothing much the nation can do except pray that oil prices worldwide do not rise, and that the peso does not weaken against other currencies.

Lazaro's statement was prompted by Concepcion's warning that since the country has been forced to rely mainly

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The Philippine Star
April 28, 1993

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on diesel for its power needs, "we are now vulnerable to the world prices of oil and the strength of the peso."

Meanwhile, Concepcion criticized the Napocor for its poor rehabilitation and maintenance work on its power plants.

"Only a small nucleus of workers is doing the job of supermen," he noted, referring to the small crews that maintain Napocor plants.

The chairman of the private sector task force on energy reiterated that P400 million is lost daily by the economy every time brownouts exceed four hours a day.

Lazaro said shutting down Napocor plants for maintenance is simply not possible, pointing out that "a plant needs a 150-day shutdown for rehabilitation or maintenance."

He said the recently approved staggered working hours for employees further raised demand for power, which was another reason why the plants cannot be fully rehabilitated at this time.

"We came to a deliberate decision to operate the plants, but not at their full capacity," Lazaro said.

He encouraged the private sector to look into "viable power alternatives" such as geothermal and coal-fired technologies.

He also encouraged further drilling to tap geothermal power, saying that while this is not cheap and will take a long time to develop, "it is still a relatively competitive source of power."

As a short-term measure, Lazaro proposed the building of coal-fired plants that could generate a total of 2,000 megawatts. He stressed the use of "clean coal" technology in building these plants to keep from polluting the environment further.

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Purefoods profits down 18.7% due to continuing power crisis

A weaker consumer spending and the spate of brownouts pulled down the profits of Purefoods Corp. last year.

Jaime Zobel de Ayala reported to stockholders that the Ayala group's food manufacturing are trimmed its net income by 18.7 per cent last year to P174.02 million from the previous P221.46 million.

But Purefoods net sales posted at 12.9 per cent jump to P5.21 billion from 1991's P4.61 billion.

Zobel de Ayala said "Purefoods could not sustain profit growth alongside sales growth for a second year basically because of anemic consumer spending."

He added that the "fundamental weakness in the market was aggravated by the continued severe power shortage which curtailed the sales and purchase of our products."

But given Purefoods diversified business portfolio, 1992 produced both losers and winners, Zobel de Ayala said.

Purefoods meat and flour businesses both registered an improvement in net income while other divisions declared flat profits.

Tuna export and the ice cream division posted net losses. Purefoods processed meat division posted sales growth of

20 per cent to P2.19 billion in 1992 because of its strong market dominance and what Purefoods officials described as "consumer loyalty."

In fact, the processed meat division gained market share with the introduction of various product and packaging innovations, including the launching of the Spanish Iberice line delicatessen.

Purefoods flour division made sales of P917 million on its first full year of capacity utilization, making it the second largest profit contributor last year.

Sales of poultry inched by six per cent to P1.62 billion, dropping to the third slot in the largest profit consumer category. Poultry contributed the most profit in Purefoods in 1991. -- Dolly Aglay

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The Philippine Star
April 29, 1993

Las Piñas trash trucks alert 'willing to shed blood'

(FOLPHA), reacted to the report and announced that they will form barricades to prevent the entry of more garbage trucks in the transfer station, noting that the reactivation of the garbage compacting station on Coastal Road is scheduled by midnight today.

Earlier, MMA Chairman and Quezon City Mayor Ismael Mathay said that he has to beat

a presidential deadline instructing him to operate the trash transit station by May 1.

Dazo said they will split into two groups with one flank manning the barricade at the Parañaque-Las Piñas boundary on Coastal Road, while the others will try to stop the other incoming MMA trucks at the Muntinlupa-Las Piñas border on the Zapote-Alabang Road.

Local fishermen led by Melquiades Mayuga promised to lie down and sleep in front of the garbage station's gate as a way of stopping the transit plant's reactivation should the 229 MMA trucks succeed in entering Las Piñas.

"We are willing to shed blood if need be, anyway, we are sure to die of hunger later," Mayuga said.

The rallyists were earlier given a permit to hold a vigil at the site by Las Piñas Mayor Gabriel Casimiro.

Policemen belonging to the Las Piñas police station under Supt. Rodolfo Sison have likewise posted themselves at the garbage station's gate.

The Manila Bulletin
April 30, 1993

Carmona dump to open May 1; opposition mounts

The Philippine Daily Enquirer
April 30, 1993



CHILDREN of Carmona, Cavite, stage protest as workers rush completion of giant dump site slated to open tomorrow, May 1. BETOY JOHNSON

By JINKY JORGIO

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CARMONA, Cavite -- Residents of Cavite and Laguna provinces are planning to ask the Supreme Court to stop the Metropolitan Manila Authority (MMA) from dumping garbage in this town starting May 1.

But Cavite Gov. Juanito Remulla and the Cavite provincial board members approved in principle the existence of the "sanitary landfill" in this town.

The Department of Environment and Natural Resources is set to grant an environmental compliance certificate (ECC) for the controversial dumpsite today, DENR Undersecretary for Environment Ben Malayang III said yesterday.

Remulla asked Caviteños to give the project a chance but promised he will lead the protest if the landfill turns out to be unsanitary and hazardous to the health of the people here.

"For the best interest of all people concerned, let us not be parochial in our thoughts and outlook... Let us give the sanitary landfill project in Carmona a chance," Remulla said.

Meanwhile, MMA governor and Quezon City Mayor Mel Mathay assured the people of Carmona the landfill will not be used until all the problems raised by the townsfolk have been addressed.

But Albert Lesaca, consultant of the Presidential Management Staff for the waste disposal program, said the opening of the dump will proceed as scheduled despite the protests.

Lesaca said he was ordered by President Ramos to speed up the project so it will be ready tomorrow.

"I will go on with the project and only an order from the Supreme Court can stop me. Smokey mountain will be closed on May 1 and we have to rush this project," he said.

Mathay and Lesaca tried to explain to the Carmona residents about the technical and scientific process they are using to ensure that the garbage will not emit hazardous odor and will not attract swarms of flies and insects.

However, the protesting residents did not heed their explanation and vowed to put up barricades to block the garbage trucks from Metro Manila.

Carmona councilor Eloisa Tolentino said they opposed the project based on three studies made by the Consoer, Townsend and Associates, Test Consultants, and UP feasibility study, which showed the place is not a suitable landfill site.

Laguna Rep. Roy Almoró also warned the dumpsite will scare away investors since Cavite and Laguna as part of Calabarzon are highly industrialized places.

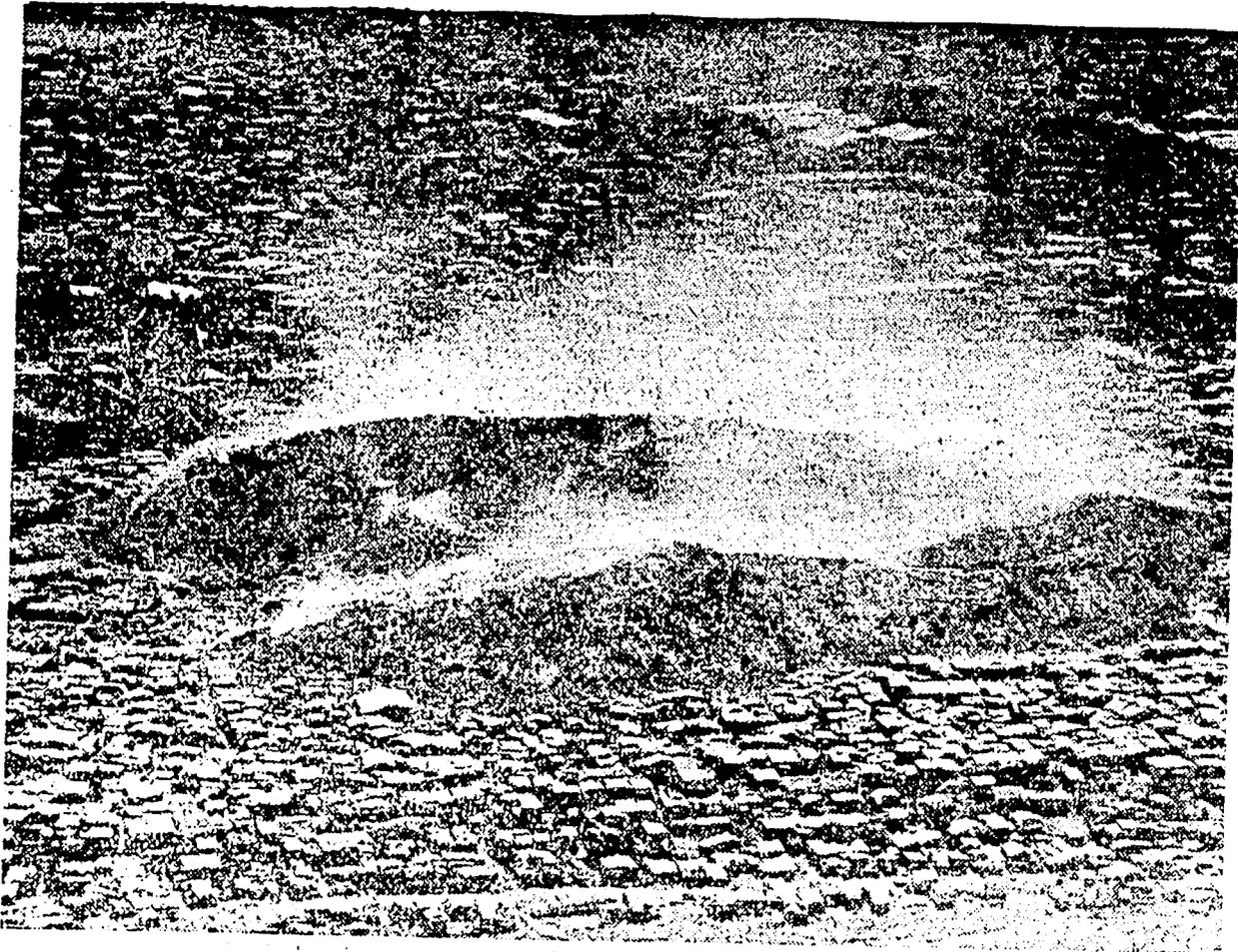
The Coca-Cola Bottlers, Phils., represented by Jesus Bulaon, chief of finance department of the Sta. Rosa, Laguna plant, said the firm's lawyers are studying the grounds for a petition to stop the use of landfill before the high tribunal.

Bulaon said the landfill threatens to pollute their plant's water source.

"Hindi na maganda ang tubig kung gagawin ang landfill. Affected nito ang produkto namin kung saan ang tubig ang main source," he said.

He said the Sta. Rosa plant produces 70 percent of softdrinks for Metro Manila.

He cited the case of the Coca-Cola plant in Tondo which closed down because of the Smokey Mountain dumpsite.



Dumping ground no more

Smokey Mountain will be off limits effective May 1, 1993. President Ramos has directed Metropolitan Manila Authority chairman and Quezon City Mayor Ismael Mathay Jr. to assure the closure of Smokey Mountain as a dumpsite. Thousands of scavenger-squatters in the area will suddenly find themselves jobless. They live in shanties, as seen in an aerial photo taken on board a PAF helicopter piloted by Capt. Jorge E. de Jesus and Maj. Saide W. Gadjali of the 205th Helicopter Wing, around the site. (Louie Perez)

The Manila Bulletin
April 30, 1993

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Carmona landfill

Metro Manila Authority Chairman and Quezon City Mayor Ismael Mathay Jr. (top photo) explains to Carmona residents why the MMA is using a lot in the Cavite town (photo below) for a landfill project after the closure of Smokey Mountain in Tondo, Manila, on May 2. He assured that safeguards have been taken to protect their health when the project begins May 1. (Nick Sagmit)

Goodbye, Smokey Mountain

MMA to open Carmona dumpsite

By BRENDA TUASON and ELENA ABEN

The Smokey Mountain, Manila's open dump site for more than 20 years, comes to an end on May 1 as the government opens a 65-hectare dump site using the sanitary landfill system in Carmona, Cavite, to absorb the

more than 2,000 tons of daily wastes in the metropolis. (See related story on P-12)

Metro Manila Authority (MMA) Chairman and Quezon City Mayor Ismael Mathay Jr. said yesterday that the govern-

ment is ready to move garbage daily out of Manila and Las Piñas to its new dumping site in Carmona as he allayed fears by concerned residents of pollution as the landfill station starts operating.

(Turn to page 8, col. 6)

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TURKEY: 16 dead, 15 missing in garbage avalanche

UMRANIVE, Turkey (AFP) -- Sixteen women and children died and some 15 people were still missing late yesterday after an explosion of methane gas at a garbage dump in this Istanbul suburb buried slum dwellings in an avalanche of rubbish, officials said. Some 1,500 firemen and army rescue workers aided by helicopters dug through the trash in search of those buried beneath a 25-meter (75-foot) thick layer of garbage that covered a dozen shacks, they said. Rescue efforts continued into the night with the help of powerful arc lights, but were then halted till daylight, at the request of relatives who feared the excavating machines being used in the search would chop up the bodies of those still buried, assistant Istanbul region governor Ruhi Paker said. The relatives feared those inside were now dead. "Nobody could stay all those hours since morning under that mass exuding toxic gases," Paker said.

The Philippine Star
April 30, 1993

The Philippine Star
April 30, 1993

Ramos exempts 5 power plants from ECC

President Fidel Ramos has approved the exemption of five power firms from the Environmental Compliance Certificate (ECC) process imposed by the Department of Environment and Natural Resources (DENR) on all other environmentally-critical projects in the country.

However, Ramos' approval is subject to the conditions set by the DENR on each of the projects.
-- Aurora Alambra

Manila faces big garbage crisis with Smokey Mountain closure

MANILA (AFP) -- The Philippine capital is in danger of being overwhelmed with garbage after President Ramos ordered the closure of Smokey Mountain, the city's main dump, Metropolitan Manila Authority (MMA) Chairman Ismael Mathay Jr. said Sunday.

Fifty truckloads of garbage lay idle on Manila streets on Saturday after a lower court ordered MMA to temporarily stop the delivery of refuse at a planned sanitary landfill in Carmona town south of here,

Mathay said in a radio interview.

He said the problem was temporarily solved when the MMA decided to take the garbage to Payatas, an open dumpsite near the House of Representatives complex in northern Manila.

But he said the situation is untenable because the Payatas site is already scheduled for closure.

Ramos on Saturday ordered the shutdown of Smokey Mountain on the Manila foreshore,

which has come to symbolize Philippine poverty, and ordered it converted into a housing estate to serve as a symbol "of the renewal and the rebirth and the rise of our nation."

Another open dump site beside the National Heroes' Cemetery here, which is used by residents of the international financial district of Makati, has also been closed, Mathay said.

This city of over seven million people produces 4,000 tons of refuse every day.

The Philippine Star
April 30, 1993

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4/c

New forecast: Brownouts till '96

The Manila Chronicle
May 1, 1993

System not up to it, says Napocor boss

By Katherine Espina
Staffmember

METRO Manilans will have to live with brownouts for three more years.

That is the forecast of Francisco Viray, who will be sworn in today as the new president of the National Power Corp. (Napocor).

Viray's prediction is far bleaker than that of his predecessor, Pablo Malixi, who promised full relief by September.

Viray told the *Chronicle* yesterday there was no assurance the daily six- to 10-hour brownouts would be over by September, since Napocor's transmission lines might not be able to handle the load from the fast-track power projects.

Reliable and affordable power will only be available in 1996, he said.

"I have information that there may be a 'stability problem' wherein if one of the major transmission lines will be out, it's possible that the remaining lines will not be able to carry the load," Viray said.

The former dean of the University of the Philippines College of Engineering said that one of the first things he would do as Napocor president would be look into the status of the transmission lines associated with the fast-track projects.

Viray said that, despite the projects, there might still be occasional brownouts by September.

Malixi had said that by that time, Luzon will have a cumulative additional capacity of 899 megawatts.

Viray said the present power shortage came about because Napocor had overestimated the reliability of its plants. He said he would make the overhaul of the plants a priority.

It is unlikely, he said, that any plant will be retired between now and 1996.

He said he based his projection of reliable and reasonably priced power by 1996 on estimates that the big plants would be put on stream by 1995. They include the 300-Mw Calaca 2 coal-fired plant in Batangas and the 700-Mw Pagbilao plant in Quezon, and the 600-Mw coal-fed plant at Masinloc, Zambales.

Energy Secretary and Napocor Chairman Delfin Lazaro has said that if Calaca 2 and the Pagbilao plant are finished on time, electric rate will even be lower in 1996 than it is now, which is P1.84 per kilowatt-hour.

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The Manila Chronicle
May 1, 1993

Smokey Mountain closed for good

By Daniel Agoncillo
Staffmember

SMOKEY Mountain, the open dumpsite in Balut, Tondo, which has gained international notoriety as a powerful symbol of poverty, will be permanently closed today to give way to the construction of a P2.7 billion residential, commercial and industrial area.

The closure will come as a relief to government officials and even ordinary citizens who have long looked at Smokey Mountain with disdain.

30-meter high, 21.2-hectare dumpsite every day for scraps. The dumpsite has collected five million cubic meters of garbage, according to the NHA. Others earn their living as vendors, carpenters or some other low-earning jobs.

Documents from the NHA showed that Smokey Mountain's total "labor force" is 7,843 people, a figure likely to be conservative considering the estimates of the local parish.

Interviews with sources at NHA, parish workers, and Smokey Moun-

tain residents themselves, however, showed that the government was not fully prepared to provide alternative jobs and homes to those who would be displaced.

But the change will not come easy for thousands of people who have called it their home during its 40 years of existence.

As of last count by the National Housing Authority (NHA), 13,458 people, or 3,059 families, were dependent on Smokey Mountain for their livelihood. But the Parish of the Risen Christ, which does its pastoral work right at the dumpsite, puts the population figure at a much higher 20,000 families.

Most of Smokey Mountain's residents are scavengers who scour the

"The livelihood and employment plan has yet to be approved by President Ramos," an NHA official who did not want to be identified said when asked whether there were any concrete plans for Smokey Mountain residents.

According to records, the government is prepared to help employ only

Continued: Page 6

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The Manila Chronicle
May 1, 1993



A scavenger making his last round at Smokey Mountain yesterday before it becomes the site for a housing project

DANTE PERALTA

4/5

Sabotage causes 17-hr brownouts

MINDANAO yesterday suffered 17 hours of brownouts after a transmission tower was bombed Wednesday night by a group believed to be Muslim fundamentalists, a top National Power Corp. (Napocor) official said.

Josue D. Polintan, Napocor officer-in-charge, told the *Chronicle* yesterday that 85% of the power would be restored in the Mindanao grid with the installation of a temporary line last night.

Polintan said Napocor would have to spend no less than P3 billion to repair the blasted Abaga-Lugaet 138-kilovolt (kv) line located at Mandalug, 15 km from Iligan.

The line will be repaired in 10 days. Before the tower was bombed, Mindanao had been brownout-free since January because demand was lowered by the shutting down of all the ferro-alloy companies in the region, Polintan explained.

In a letter to Executive Secretary Edelmiro Amante, Polintan said there was a 70% shortage of power in Mindanao, except in Zamboanga, General Santos and the Lanao area, because of the downed transmission line.



POWER UPDATE

1 more shutdown

Demand: 2,950 Mw
Supply: 2,263 Mw
Shortage: 687 Mw
Brownouts:
4 hrs for Napocor customers
2 hrs for Meralco customers

METRO Manila and the rest of Luzon will have up to four hours of brownouts today with the shutdown of the 300-Mw Malaya 1 oil-fired thermal plant in Pili, Rizal.

A Napocor source said the Malaya 1 which was contributing at a limited capacity of 100 Mw prior to its shutdown will be brought down for cleaning of its generator exciter. It is expected to be back on operation by Monday along with the 30-Mw Malaya gas turbine shutdown for repair Thursday.

The 200-Mw Sucat 2 oil-fired thermal plant which was recommissioned Thursday would again be brought down today for "minor adjustments."

The Philippine Star
May 1, 1993

On its 3rd year of Industrial Peace & Productivity

Cavite industrialization running full steam ahead

Veep Estrada leads rites at Trece Martires



PROSPERITY BEGINS WITH JOBS. A decade ago Caviteños crossed the historic Zapote Bridge to hunt for jobs in Metro Manila and Central Luzon provinces. TODAY, the situation is reversed. Throngs of Metro Manila residents cross the same bridge towards Cavite where they have found jobs of prosperity. (Photo courtesy of PLDT and Basic FCB, Inc.)

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FOR 'FAST TRACK' PROJECTS

Alcala proposes adoption of 'energy crisis policy'

Environment and Natural Resources Secretary Angel Alcala has proposed to President Ramos the adoption of an Energy Crisis Policy that would cut short the standard environmental certification procedures for fast-track power projects.

In a letter to the President last month in which he expressed his views on each of the five power projects which the

By AURORA ALAMBRA
National Power Corporation (Napocor) wanted exempted from his department's Environmental Compliance Certificate (ECC) process, Alcala stressed that an energy crisis policy would "compel the abbreviation of the environmental certification procedures for projects designated by the President as 'fast track'."

Alcala explained that under such a policy, fast-track projects will still have to be issued ECCs but this time, proponents or contractors will be asked to submit only the project and site descriptions.

The Department of Environment and Natural Resources (DENR) will assume the responsibility of estimating the potential hazards the project will cause on the environment; and the identification, in consult-

ation with the host communities, of the necessary measures that would mitigate the hazards and ameliorate costs to the residents.

The above processes are usually required of project proponents.

The mitigating measures listed by the DENR for fast-track projects will be validated by a review committee composed of representatives from the health, social welfare and science departments, the non-government members of the Philippine Charity Sweepstakes Office and the academe.

Upon the DENR's issuance of an ECC, the Department of Energy (DOE) will obtain any or all of the required indications of social acceptability and to satisfy all the listed ECC requirements.

The Philippine Star
May 1, 1993

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The Philippine Star
May 1, 1993

Barricades mounted at Garbage Transfer Station in Las Piñas

Hundreds of Las Piñas residents yesterday continued to mount barricades in front of the Garbage Transfer Station's entrance and exit gates to block its scheduled operation with the Carmona Sanitary Landfill today.

Reports reaching Metro Base, a 24-hour monitoring office of the Metropolitan Manila Authority, indicated the barricaders even put up barbed wires into the gates to block the entry of 40-footer vans, fuel supplies and equipment needed in the station's operation.

The facility is set for a dry-run today in preparation for a full-blast operation simultaneous with the landfill in Carmona, Cavite.

As of 6 p.m. last night, the

By FELIX MEDIAVILLO

barricaders spearheaded by the Las Piñas Alliance, a multi-sectoral confederation of local residents headed by Dr. Bonifacio Dazo, remained around the facility.

Hundreds of policemen were seen in the area to help maintain peace and order, and to help guard against possible infiltrators and trouble-makers.

The barricaders, who included a Catholic priest, had come in 10 vehicles to protest the opening of the station which, they claimed, could be a major source of air pollution in the area.

A spokesman of Las Piñas Mayor Gabriel Casimiro said the mayor is "with the will of the majority" opposing the

transfer station.

Casimiro was earlier directed by President Ramos to support the garbage transfer station and rally his constituents to understand and recognize the importance of the project.

The transfer station is where garbage is compacted and treated before being dumped into the sanitary landfill, which will service most local government units of the metropolis, especially Manila and the South Metro area.

The opening of the Carmona landfill would require the operation of the transfer station and enable the government to close the Smokey Mountain open dumpsite in Tondo.

4/8

OPINION

SOLIVEN

Metro Manila Authority Chairman (concurrently Quezon City Mayor) Ismael "Mel" Mathay, Jr., warns that there will be a garbage gridlock if Las Pinas Mayor Gabriel Casimiro and his "People Power" demonstrators don't lift the barricades they set up a few days ago on the coastal road leading to the MMA "Transfer Station" in their town for garbage destined to be trucked to the final dumpsite in Carmona, Cavite.

Casimiro and his supporters claim that the "Transfer Station" in Las Pinas provokes an awful stink and would pollute the air in his town, while Mathay insists that the modern methods he is implementing prevent any such thing from happening.

Obviously, Mathay points out, we cannot have a daily procession of 500 garbage and dump trucks clogging the highway enroute to Carmona, so it is imperative that these trucks offload their trash and other debris into sealed silos in a Transfer Station, located in Barangay Tabon, Las Pinas, with the trash later transferred into 22 forty-footer "compactor" vans. Mathay insists that since the garbage is chemically treated before compaction, there is "absolutely no smell".

He revealed that Metro Manila's 8.6 million residents produce 4,000 tons of solid waste DAILY. Of this amount, 20 per cent is "unaccounted for" — meaning that either it vanishes into thin air, or as more likely is dumped into drainage systems, canals and *esteros*, or is buried in "open spaces".

Right now, Mathay — who studied the matter as early as 14 years ago (when he was vice-governor of Metro Manila) — believes that a "sanitary landfill" plan for the disposal of metro garbage is the most feasible. Under a 1985 study which was later confirmed by the World Bank, such areas as Antipolo and San Mateo (Rizal province) and Carmona (Cavite) were identified as acceptable "landfill" sites for garbage.

Mel says that a US\$125-million loan can be secured from the World Bank for this purpose. A sanitary landfill, if properly prepared, obviates the danger poised by explosive methane gas (created by the fermentation of highly-piled garbage) and this gas can moreover be conducted by underground pipes to treatment ponds. The gas can then be converted into *ethanol*, he said, usable as fuel for vehicles or utilized for the generation of electric power.

Mayor Mathay hopes that the President will intervene in the current impasse, especially since FVR was so concerned about closing down the malodorous Smokey Mountain in Tondo that he sent several urgent fax messages to Mathay from Beijing and Shanghai. The Chief Executive's deadline for shutting down Smokey Mountain was May 1 (yesterday), but I doubt that it was met.

Mathay flew over the notorious Smokey Mountain last Friday and found smoke and gas fire streaming up from its edges, a phenomenon which, unless curbed, could explode into a conflagration which would threaten the Tondo district itself.

He didn't dare suggest it, politician that he is, but I could read his mind when he beseeched me to help prod FVR into action: What about Garbage Emergency Powers on top of the Energy Emergency powers the President already has? *Sana-magan, Manong*, what about *Overall Powers* and have done with it?

When this appears, I'm afraid, it will provoke the alarmed liberal-thinkers and anti-Martial Law doomsayers into full cry.

Oh well, it's too late for politeness. As for the action we need — even if belated — I can only commend the words of Frederick Oliver: "If a thing's worth doing, it's worth doing late."

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The Philippine Star
May 2, 1993

Smokey Mountain ordered converted From Page 1

Ex-Smokey residents will not be neglected

By FELIX MEDIAVILLO

The government will transform the Smokey Mountain garbage dumpsite in Tondo, which was finally closed yesterday, into a P2.7 billion residential, commercial and industrial project.

Government officials said a development plan is now under way for the former Tondo dumpsite to address the needs and welfare of affected families in the area.

Listed as priority in the plan is the provision of permanent shelters, means of livelihood and other social and economic needs for the residents, said Dionisio de la Serna, Cabinet Officer for Regional Development (CORD) for Metro Manila.

De la Serna met officials of the Metropolitan Manila Authority, led by General Manager Robert Nacianceno, to monitor the closure of the Smokey Mountain and the thwarted opening of the Las Piñas garbage transfer station.

The Smokey Mountain was closed upon the directive of President Ramos to MMA Chairman and Quezon City Mayor Ismael Mathay Jr.

In his directive, issued during his six-day state visit to China, the President ordered the activation of the Las Piñas garbage transfer station and the operation of the Carmona sanitary landfill.

"This is an inter-agency effort based on the political will of the national leadership," De la Serna was quoted as saying, referring to the closure of the Tondo dumpsite and the development of the project in its place, which has been a garbage dumping ground for 39 years.

Under the development plan, the Smokey Mountain will be cleared of some five

million cu.m. of garbage accumulated throughout the years, reclamation of part of the Manila Bay foreshore area across it, and fencing of a five-hectare area for an incinerator plant for Manila.

government agencies such as the National Housing Authority will see to the relocation of affected families before a medium-rise tenement for some 3,500 families will be built.

Nacianceno said the closure of the Tondo dumpsite put an end to an open-dump system, boosting the MMA's solid waste management modernization program.

With the closure, garbage dumping into the area shall be totally banned, according to Rogelio Uianza, director of the MMA environmental sanitation center.

Uianza said the government laws on anti-littering will be applied against those caught dumping their garbage in the area.

In Las Piñas, however, the garbage transfer station there was stopped for operation by a restraining order issued last Friday by a Makati Regional Trial Court judge.

The restraining order was issued by Makati RTC Judge Salvador de Guzman upon the petition of Las Piñas residents headed by Dr. Bonifacio Dazo, president of the Confederation of Las Piñas Homeowners associations, he claimed that the operation of the transfer station was "in violation of the fundamental and human right of residents."

Caloy Mansucto, a spokesman for Las Piñas Mayor Gabriel Casimiro, said the mayor was summoned to Malacañang yesterday over the controversial opening of the transfer station.

Casimiro appeared to have defied President Ramos's directive when he failed to convince the residents to support the operation of the transfer sta-

tion.

Ramos assures affected Las Piñas, Carmona residents

President Ramos yesterday allayed fears of air and water pollution in the vicinity of the Las Piñas garbage transfer station and the Carmona sanitary landfill when these are operational.

The President made the statement after he ordered the closure of the Smokey Mountain dumpsite in Tondo, where he rallied for support for the two garbage management projects.

"Some sectors have expressed oppositions but I would like to give the assurance of the national government that all safeguards will be instituted," the President said during closure ceremonies at the dumpsite.

Ramos said the Department of Environment and Natural Resources is closely monitoring the operation of the garbage transfer station and the landfill to ensure that environmental and health safeguards are complied with.

The President, who arrived yesterday morning from his state visit to the People's Republic of China and Hongkong, stressed the importance of teamwork between government agencies to ensure the success of the garbage management program.

"*Doon sa Shanghai at Guangdong, kahit crowded, walang Smokey Mountain,*" the President said during the simple ceremonies.

Accompanying the President to the dumpsite were MMA Chairman Mathay Jr., Manila Mayor Alfredo Lim, Leonora Vasquez de Jesus of the Presidential Task Force on Solid Waste Management, DENR Secretary Angel Alcala, Public Works Secretary Edmund Mir, and MMA top officials.

The President and party were welcomed by members of the Alyansa ng Sambayanang Kristiyano led by Fr. Ben

Beltran, who placed a huge streamer on the stage with the words: "Smokey Mountain — Today a Scar, Tomorrow a Star." — Felix Mediavillo

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ROSES AND THORNS

By DR. ALEJANDRO R. ROCES

Smokey Mountain

In Europe and the United States, the most familiar Philippine landmark is not the Rice Terraces in the Cordilleras or Mayon Volcano. It is Smokey Mountain. This is because everytime there is some news about the Philippines, the television stations show scenes from Smokey Mountain.



In his best-seller *Earth in the Balance*, American Vice-President Al Gore has this passage on Smokey Mountain: "In the Philippines, growing mountain of garbage — called Smokey Mountain — in a suburb of Manila has become a kind of waste city, with 25,000 people living in cardboard huts perched on top of still stuck into the giant heap of garbage. According to Uli Schenker of the *Chicago Tribune*, they stake out territories in the midst of waste, even though their children are choking in smoke from the fires fueled by decomposition. Ten people squeeze into a hut the size of a bathroom. There is no shrub, no tree, just the stink of rotting refuse, day and night. And the methane gas produced by the compost. And these waste mountains are rising in the Third World not only because of the pressures of population growth; equally responsible is the pattern of conspicuous consumption that has been exported to these countries along with Western culture and its consumer products."

Now, in the words of President Ramos, "From an object of shame and derision, Smokey Mountain can become a symbol of renewal and the rebirth and rise of Metro Manila. Smokey Mountain will be flattened and developed into a new residential and commercial area with 3,500 housing units."

We would also like to commend the Metro Manila Authority chairman for his broad vision of establishing a sanitary landfill garbage disposal dump in Carmona. A landfill is a better system of disposing garbage than oven incinerators. When you incinerate garbage, you don't actually get rid of it; you change it into gaseous form and spread it out to a much wider area, possibly even to other countries — just like the ashes of Mt. Pinatubo.

We are glad that the government has finally decided to tackle the issue of garbage disposal frontally. Smokey Mountain undoubtedly has contributed greatly to Manila's pollution. To see it transformed into a low-cost housing area to serve its former residents is an indication that the administration truly cares for the under-privileged. The methane gas that keeps Smokey Mountain in perpetual smoke is still a threat because an underground fire in the old dumps could cause an explosion.

When they say that Smokey Mountain will be levelled, what they are actually saying is that they will have to transfer the existing garbage there elsewhere. Where will they put the dirt without creating another mountain of garbage? We do not have too many accessible landfills.

The ultimate solution to the garbage problem is to produce less waste and recycle more. In garbology, the three Rs that used to stand for reading, writing and arithmetic stand for reduce, reuse and recycle. Eventually, we will all have to classify our garbage. We will be putting wet garbage in one container, glass in another, plastics in another and so on. So much of our paper consumption can be recycled. It is better than cutting down trees.

If MMA chairman Ismael Mathay Jr. can make the Carmona landfill system a success, it would mark a progressive transition in the way we handle our garbage disposal system. Garbage disposal, by the way, is not a local problem. It is worldwide. The Swiss National UNESCO Commission recently published a study entitled *Urban Waste: A Global Problem*. The story ends with these words: *Our garbage continues to accumulate.*

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3-hour brownouts by September

MANILA (PNA)-- Power consumers could look forward to shorter brownouts lasting only three hours for five days each week by September this year, according to the National Power Corp. (Napocor).

At a briefing sponsored by Asia Trust Bank in Quezon City, Napocor president Francisco Viray said it is possible to plan the frequency and duration of power failures in the metropolis.

Primarily, Viray said, a simulation of the crisis assumed that the fast-track power generation projects run on schedule even if the power barge projects now bidded out by the government had not been considered.

Viray said that for purposes of planning and using only data not necessarily that of Napocor, the frequency of brownouts and its duration in a given week could be predicted.

But first, Napocor power plant efficiency rating should be stabilized from a fluctuating 60 to 20 per cent to a stable 80 per cent.

He said the reliability of Napocor's existing plants is well below this target "and their frequency of failure is very high."

The Philippine Star
May 5, 1993

Viray admitted that at present, he did not possess the hard data necessary to make solid assurances, saying that all he knew so far regarding Napocor's gravest problems "are boiler tube leaks."

Viray said it is possible that there will be days without brownouts beginning September this year, adding that this could be sustained only until June 1994.

He also said that on these assumptions, Napocor could give some predictability to power failures on a weekly basis, and power outages for one whole week could be of constant duration.

The Napocor president admitted that the Bataan Nuclear Power Plant could provide relief to the country's dire need for a stable power supply, but added it may not be wise to debate about it in the next four or five years "because we may not be able to solve the current power crisis."

"I would rather spend efforts to make sure that the fast-track power plants are finished on time," Viray said.

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Carmona folk say no to Metro trash

CARMONA, Cavite -- Who wants Metro Manila's daily dose of 4,500 tons of garbage?

Not the 22,000 residents of Carmona. Since April 30, residents have been taking turns barricading the entrance to a landfill site in Lantio village here.

President Ramos ordered Smoky Mountain, Manila's largest dumpsite closed May 1.

About nine dumptrucks and

graders and a truckload of 50 scavengers have been turned away by residents since Day 1 of the barricade.

At 3 p.m. Monday, policemen led by Maj. Jessie Castillo of the Mobile Assistance Security Group ordered the dismantling of the barricade.

Reports as of presstime indicate that yesterday, some 20 Cavite policemen tried to dismantle the barri-

cade and allow a Metro Manila Authority truck into the site. The truck contained construction materials.

About 20 barricaders mostly students and youth were reportedly hurt. Two of their leaders including James Asuncion, secretary of the Alyansa ng mga Samahang Kabataan were reportedly hit by a tricycle. Asuncion had allegedly asked the police to wait the go-signal of the mayor.

Carmona's Sangguniang Bayan, led by Mayor Rolando de Rosas supporting the residents' barricade, declaring a stance counter to that of Cavite Gov. Juanito Remulla.

At an emergency meeting on Monday, the town council led by the committee on the sanitary landfill prepared measures to maintain a 24-hour watch if the Metro Manila Authority (MMA) forces its way into the landfill.

PNP

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The Philippine Star
May 5, 1993

MMA assures public on garbage

All safety measures will be undertaken in the operation of the Las Piñas garbage transfer station and the Carmona, Cavite sanitary landfill, Metropolitan Manila Authority (MMA) Chairman Ismael Mathay Jr. assured the public yesterday.

Mathay, who is also Quezon City mayor, made the assurance following the lifting by the Makati regional trial court of a temporary restraining order for the operation of the Las Piñas garbage facility.

But the Las Piñas garbage station and the Carmona landfill remained inoperational yesterday, with residents continuing to block the entry of garbage contractor trucks.

Reports reaching Metro Base, the 24-hour monitoring agency of the MMA, indicated that the oppositors refused to lift their barricades around

the Las Piñas facility and into the Carmona landfill site in defiance of the court order.

Rogelio Uranza, chief of staff of the office of MMA General Manager Robert Najanceno, said that despite the lifting of the restraining order, government authorities continued a peaceful dialogue with the oppositors.

The oppositors managed to secure a restraining order from the courts last Apr. 30 on the ground that the Las Piñas transfer station will pollute the air in the area.

In lifting the restraining order, Makati RTC Judge Salvador de Guzman gave weight to the contention of Mathay that the operation of the transfer station would benefit a greater number of Metro Manilans.

In assuring the public of safety measures, Mathay said that no spillage or scattering of garbage will occur at Las

Piñas because the garbage collected will be sealed in 40-foot compactor vans.

From the Las Piñas facility, the compressed garbage will be brought to Carmona for burying under layers of sand, gravel and earth to prevent pollution of the air and the waterbed level.

Mathay reiterated that the various government agencies will closely coordinate with the Presidential Task Force on Waste Management and the MMA to ensure that all methods involved are hygienic and "environment-friendly."

In addition to the safety measures, Director Jose Rodriguez of the Solid Waste Management Project said some P10 million worth of deodorizing and pollution control system will be used during the process of garbage transfer from Las Piñas to Carmona.

—Felix Mediavillo

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The Philippine Star
May 5, 1993

CAVITE: Protest vs garbage up

Garbage trucks started filing up along the stretch of a barangay road in Bangkal, Carmona town after local residents formed a human barricade leading to the sanitary landfill project of the Metropolitan Manila Authority (MMA) in the town. Claiming they were not properly informed and their side heard in a public forum, the residents accused MMA authorities of arrogance and ignorance of environmental laws. Saying that underground water system supplies in the province and in Laguna could be imperilled, the protesters said dumping garbage in the area could lead to several problems in the future which the government may not cope with. The landfill site was constructed by the MMA after a long search for a replacement for the Smokey Mountain dumpsite in Tondo, which President Ramos ordered closed permanently last week. Last Monday, eight dump trucks that were supposed to make a "ceremonial run" at the site to signal its opening and full operations were blocked by about 300 local barangay and town officials and residents. The number doubled from the initial 150 as residents of nearby towns came to express their opposition to the project.

—Jaime Laude

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The Philippine Star
May 6, 1993

DSWD helps Smokey Mountain folk

Some P4 million worth of food-for-work and cash-for-work assistance is being provided by the Department of Social Welfare and Development (DSWD) to more than 3,000 families affected by the closure of Smokey Mountain in Balut, Tondo, Manila.

"The assistance to the affected families will be good for 23 days," Acting Social Welfare Secretary Corazon Alma G. De Leon told *The STAR* yesterday.

According to Acting Secretary de Leon, an initial 3,000 family packs of assorted goods were turned over to the Manila social welfare office which started distributing them last May 1.

A family pack worth P50 consisting of rice, noodles, sardines, coffee, dried fish, mango and cocoa is given to each family in Smokey Mountain everyday for 13 days, with priority given to those directly involved in scavenging and to those with a family income of P5,000 or below.

— Felix delos Santos

Metro mayors for landfill use

The Metro Manila Council has adopted a resolution pressing for the immediate operation of the Carmona Sanitary Landfill and the Las Piñas Garbage Transfer Station.

The resolution was adopted a day after the Makati Regional Trial Court lifted the temporary restraining order issued for the operation of the P120-million facility in Las Piñas.

The Las Piñas Garbage Transfer Station remains inoperational despite the lifting of the restraining
(Turn to page 14, col. 8)

METRO

(Cont'd from page 1)

order, in the wake of vigorous opposition of residents who have put up a barricade at the gates of the transfer station.

The Carmona Sanitary Landfill has remained inoperational as residents living in the area are also opposing the project.

Aside from Las Piñas and Cavite residents, Laguna residents have also joined the oppositors who have expressed fears of the possible health and safety hazards posed by the two projects.

As this developed, Quezon City Mayor Ismael Mathay Jr., chairman of the Metropolitan Manila Authority (MMA), disclosed that the Department of Public Works and Highways (DPWH) will bring in the necessary equipment for the Carmona Landfill to ensure the implementation of a scientific waste disposal program for Metro Manila.

All 12 mayors attending the council's third meeting voted for the measure endorsing the operation of the Las Piñas transfer station immediately following the closure of the Smokey Mountain dumpsite last May 1.

The local executives who expressed support for the immediate operation of the two projects were Mayors Alfredo Lim of Manila, Jinggoy Estrada of San Juan, Ignacio Bunye of Muntinlupa, Jejomar Binay of Makati, Felipe del Rosario of Navotas, Prospero Oreta of Malabon, Santiago de Guzman of Valenzuela, Vicente Eusebio of Pasig, Ricardo Papa Jr. of Tagig, Benjamin Abalos of Mandaluyong, Jose Capco of Pateros, and Bayani Fernando of Marikina.

Absent during the meeting were Pasay City Mayor Pablo Cuneta and Mayor Gabriel Casimiro of Las Piñas. Caloocan City Vice Mayor Reynaldo Malonzo and Parañaque councilor Jaime Ferrer also attended the meeting.

Meanwhile, Mathay directed Robert Nacianeno, MMA general manager, to monitor all garbage trucks dumping wastes on streets near the Smokey Mountain as he disclosed that Payatas is for the moment accommodating the garbage of Manila pending the full operation of the transfer station and the landfill.

Mathay appealed for the support of media to correct public impressions that the sanitary landfill would pose dangers to the residents' health and safety.

Mathay explained that

the project was a result of a 14-year study by experts and that measures have been instituted to prevent air and water contamination.

"With the sanitary landfill in Cavite, the Calabarzon has already a solid waste improvement program," Mathay added.

The Carmona Landfill and the Las Piñas Transfer Station, were originally scheduled to start operations last May 1 with the closure of the Smokey Mountain open dumpsite in Tondo, Manila.

Mathay is continuously holding dialogues with residents of Las Piñas and Carmona, Cavite on the problem.

He earlier said that "if after three months the two projects will cause air and water pollution, we will close them."
(Elena L. Aben)

Citizens urged to back environment programs

Mrs. Georgina Vera Perez-De Venecia, president of the Congressional Spouses Foundation, Inc. (CSFI), called on all Filipinos to support government's environment and conservation programs during the formal opening of Environment and Natural Resources Consciousness Week held at the House of Representatives yesterday.

Mrs. De Venecia said that it was "the responsibility of individual citizens to help in the preservation of the environment and our scarce natural resources."

Reps. Socorro Acosta and Renap Yap, as well as of noted musical artist Jim Paredes, president of the Green Earth Movement, also spoke at the event stressing the need for a collective vision which would

serve as a basis for action geared towards preserving the country's dwindling resources.

Members of the House of Representatives, led by Speaker Jose de Venecia Jr., also attended the ceremonies which included environment-oriented film shows and lectures and planting of trees in the vacant areas on the House grounds.

Solons Acosta and Yap shared insights on the need to preserve dwindling resources in the Philippines. Paredes, on the other hand, stressed the need for a collective vision for the country where dreams for a better environment should be completed by actions geared toward a specific purpose.

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Mrs. Gina Vera-Perez de Venecia (center), president of the Congressional Spouses Foundation Inc. (CSFI), cuts the ceremonial ribbon at the opening of the Environmental and Natural Resources Consciousness Week exhibits at the House of Representatives. Speaker Jose C. de Venecia, Jr. (fifth from right) leads House personalities who attended the opening rites: (from left) Rep. Socorro Acosta, chairman of the House committee on ecology, Rep. Vicente Andaya, Mrs. Tessje Daza, Reps. Alfredo Abueg, Emmanuel Pimentel, Renato Yap, Jose Yap and Roger Mercado. The House expo also features film showings and mini-lectures.

consumers' POST

By ETHEL SOLIVEN T.

THE MOUNTAIN MUST COME DOWN, be leveled to make way for low cost-housing in a cleaner, healthier environment. Smokey Mountain must also be removed - just as President Ramos ordered - to clean up our country's image, literally. Because the Mountain is better known far and wide abroad than our rice terraces and is outshaded only by Mt. Pinatubo which did its own damage to the global atmosphere.

The US Vice President Al Gore wrote about it in his best-selling book "Earth in the Balance" (which we lifted from Anding Roces' column "Rose and Thorns"):

"In the Philippines, a growing mountain of garbage - called Smokey Mountain - in a suburb of Manila has become a kind of waste city, with 25,000 people living in cardboard huts perched on top of stilts stuck into the giant

heap of garbage...even though their children are choking in smoke from the fires fueled by decomposition."

Gore goes on to describe the devastation and desolation of life on the Mountain with its poisonous, explosive methane gases produced by "rotting refuse day and night."

The President ordered the Mountain "closed" effective May 1. For 35 years, the trucks dumped 1,500 tons of Manila's garbage each day, raising 25 stinky hectares of mountain. The community of scavengers, numbering 3,000 families or a little over 20,000 people who lived off the Mountain ask - what happens now?

Quezon City Mayor Ismael Mathay Jr. has less than six months as Metro Manila Authority chairman to quell their panic and to get the low-cost housing project and livelihood options moving. Already there is a cooperative which



THE KARETON KIDS of Smokey Mountain squat on plastic containers to draw water from the nearest fire hydrant or artesian well.

The Manila Bulletin
May 9, 1993

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parish priest Fr. Ben Beltran helped to organize which operates a fleet of pedicabs, six jeepneys and a massive recycling project.

As MMA chairman Mel Mathay explained it: two dump trucks will navigate some subdivisions and commercial factories to gather "bote garapa at diaryo" for recycling - no longer as an individual enterprise but group effort.

Financing will come from the Presidential Social Fund under

Sec. Leonora de Jesus, who concurrently chairs the Presidential Task Force on Solid Waste Management.

Meanwhile, because the metropolis still spews its 1,500 tons of garbage daily, new dumpsites must be developed. Ergo, the controversial landfill sites in Carmona, Cavite, and Mateo, Rizal. Naturally, the good folks in these areas raised a howl. Who wants somebody else's garbage?

Mathay patiently explains that there will be no Smokey Mountain II or III. Rather, the garbage shall be buried in a sanitary landfill at Sitio Paligawang Matanda which the MMA, then under Vice-Gov. Mathay, bought in 1985. Patterned on international standards, the landfill trench will be lined with a porous material and clay with filter, installed with gas vent pipes, collection pipes and run-off canals to collect and deliver seepage to the treatment ponds.

When the landfill trenches are full, these will be levelled off and sealed and eventually be used as land, possibly for housing.

"Remember, we will be using ravines which would have to be filled up anyway if

they want to build on the area," Mathay pointed out.

Meanwhile, controversy continues to rage in Las Piñas over the transfer station which has already cost taxpayers ₱180 million for the infrastructure and facility. A transfer station is where the garbage trucks will deliver their load into 44 foot trailer van for transfer to the landfill site in Carmona. Obviously, this saves time, gasoline and much more efficient than having the individual trucks travel all the way to Carmona.

As would be expected, the good folks of Las Piñas have raised objections, fearing the stench and litter of garbage passing through their town. Mathay will just have to erase their anxieties by explaining how the thing works.

In case you'd like to know how much garbage we throw each day: Aside from Manila's 1,515 tons..Makati throws 262 tons; Pasay City, 279 tons; Parañaque, 233 tons; Taguig, 76 tons; Las Piñas, 112 tons; Muntinglupa, 91 tons; Carmona, 26 tons; Silang, 20 tons; Dasmariñas, 26 tons; Imus, 20 tons, and Kawit, 23 tons.

Don't you think we considered the three R's - reduce, recycle, re-use?

The Manila Bulletin
(continued)
May 9, 1993

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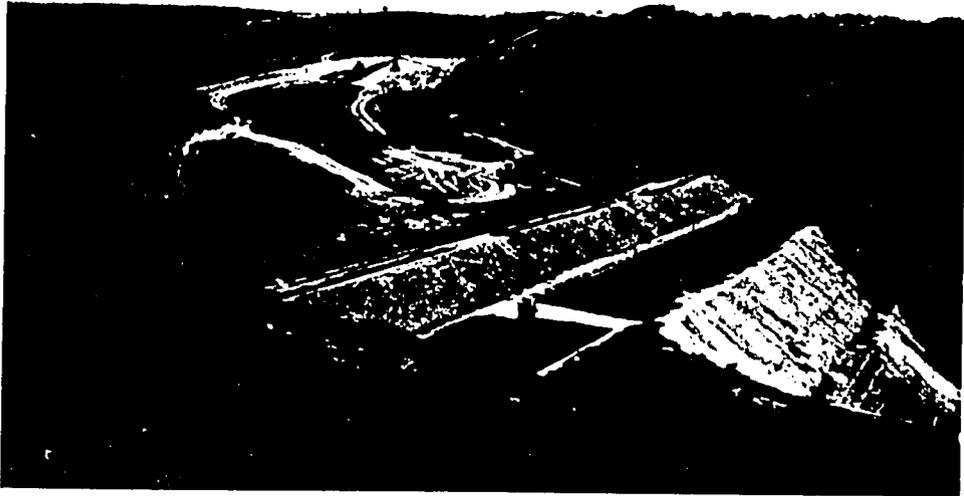
A DIVE into the murky Pasig River is no better than a swim in a cesspool but in the summer heat, the Smokey Mountain kids dive in, anyway.



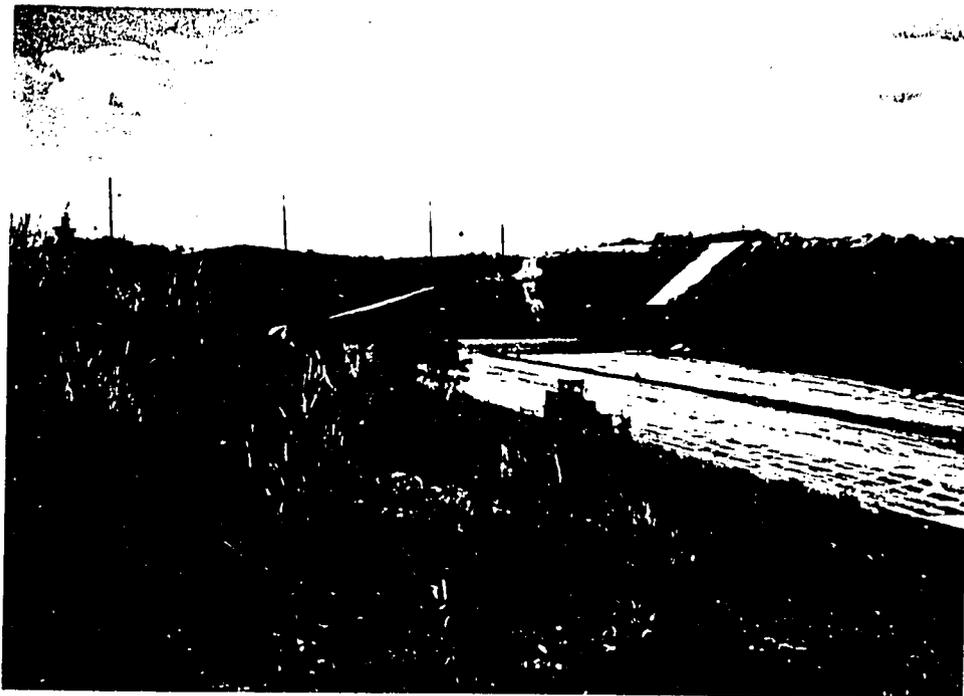
HOME for this boy scavenger is a stinky pile upon pile of the city's trash and refuse...1,600 tons daily.



MMA CHAIRMAN & QC Mayor Ismael Mathay Jr. pleads eloquently with the Carmona residents for the cause of a cleaner environment. Carmona, Cavite, is to be one of the sites for the proposed garbage landfill. All photos by NICK SAGMIT.



The New Carmona Landfill



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The New Carmona Landfill



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The Pasig Dump



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The Smokey Mountain of Tondo



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The Smokey Mountain of Tond



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