

The Waste Paper

A NEWSLETTER FOR THE MEMBERS OF THE INSTITUTE OF WASTE MANAGEMENT OF SOUTHERN AFRICA

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NEWS FROM OUR VICE PRESIDENT

As the year draws to a close and the festive season approaches, we are all looking forward to a great festive season for all our members. We as council and branch members also need to ask ourselves what has the IWMSA achieved in 2007 and what are our members expecting from IWMSA going into 2008? These questions are important, as the challenges are different, the country is going through an economic boom, legislation has changed and waste is still dumped illegally in many parts of the country - especially medical waste. We certainly need to ask ourselves where to from here and how best we are able to serve our members, the industry and the SADC countries.

On behalf of the IWMSA, we have achieved important milestones bringing together IWMSA with government parastatals such as DEAT, LGSETA and SALGA and hoping to bridge the gap and address critical issues in the waste industry.



We have also achieved the following:

The establishing of the Lesotho chapter is going well and should be finalised early in 2008.

SALGA and LGSETA will sign a Memorandum of Understanding with the IWMSA in 2008 to strengthen our relationship and accelerate training and capacity building.

I've met 2 MEC in the past month, MEC Mosunkutu in Gauteng and MEC Sibisi in Mpumalanga to discuss co-operations between the IWMSA and the provinces.

SAQA accreditation will be completed next year and we have appointed a person to oversee that the deadline is met which is September 2008.

We are delighted to have recruited 3 new PATRON members for the IWMSA.

An events company has been appointed to organise capacity building sessions for medical waste nationally, dates will be announced soon.

And will be working on:

Addressing the medical waste crisis nationally as dumping of waste by unscrupulous operators who claim to be members of the IWMSA continues to surface in the media.

Intensifying transformation and recruitment of SMME into the mainstream of the waste industry, because waste is dumped illegally by some members of the IWMSA and they do not pay landfill charges, the prices in the market are distorted and the emerging SMME do not filter through into the waste streams.

Our target next year will be to establish a chapter in Swaziland and thereafter in Mozambique.

The branches are working well although some branches need to serve their members, as this has not happened in line with councils expectations.

Branches need to work closer with MEC of Provinces and to build better relationships; many problems could be speedily resolved at province level as they deal with day to day issues.

Some members are using the IWMSA name whilst transgressing environmental laws in the country and these will be dealt with

Branches needs to work closer with hosting cities towards 2010 World Soccer, some cities have appointed CEO to address issues relating to 2010.

On behalf of the IWMSA, we would like to take this opportunity to thank our members for your continued support throughout the year, and we wish everyone an enjoyable and peaceful festive season. Please note this is the last edition of the Waste Paper newsletter for 2007, we will be closed from the 14th Friday 2007 until the 7th January 2008.

Regards



Vincent Charnley

PATRON MEMBERS

EnviroServ Holdings (Pty) Ltd, 600 SA Holdings (Pty) Ltd, Inter-Waste (Pty) Ltd, Roshcon (Pty) Ltd, TFM Industries (Pty) Ltd, DaimlerChrysler SA, Transnet National Ports Authority, Nissan Diesel SA, MAN Truck & Bus, Wasteman Group (Pty) Ltd, DSW Cleansing and Solid Waste, DAEA KwaZulu Natal, Pikitup Johannesburg (Pty) Ltd, ROSE Foundation, East London Development Zone, Plastic Omnium Urban Systems, Govan Mbeki Municipality

INSTITUTE FOR WASTE MANAGEMENT - HEAD OFFICE
Financial Statements for the year ended 30 June 2007

Balance Sheet

| Figures in Rand | 2007 | 2006 |
|-------------------------------------|------------------|------------------|
| Assets | | |
| Non-Current Assets | | |
| Property, plant and equipment | 37,623 | 24,212 |
| Current Assets | | |
| Other financial assets | 68,400 | 347,400 |
| Trade and other receivables | - | 2,527 |
| Deferred expenses | 898 | 2,700 |
| Cash and cash equivalents | 1,402,597 | 915,382 |
| | 1,471,895 | 1,268,009 |
| Total Assets | 1,509,518 | 1,292,221 |
| Equity and Liabilities | | |
| Equity | | |
| Retained income | 1,509,519 | 1,291,531 |
| Current liabilities | | |
| Trade and other payables | -1 | 690 |
| Total Equity and Liabilities | 1,509,518 | 1,292,221 |

A full set of the financial statements is held at Head Office and can be viewed on request.

WMSA ANNUAL FINANCIAL STATEMENTS

Financial Statements for the year ended 30 June 2007

Detailed Income Statement

| Figures in Rand | 2007 | 2006 |
|--|----------------|----------------|
| Operating expenses | | |
| Accounting fees | 7,864 | 9,373 |
| Advertising | 23,147 | 13,245 |
| Auditors remuneration | 7,240 | 8,025 |
| Bank Charges | 5,307 | 4,827 |
| Computer expenses | 6,069 | 13,983 |
| Depreciation, amortisation and impairments | 17,032 | 14,385 |
| Employee costs | 298,708 | 265,110 |
| Entertainment | 7,334 | 4,825 |
| Gifts | 511 | 521 |
| Hire of equipment | - | 3,780 |
| Honorariums | 35,344 | 40,682 |
| Insurance | 7,858 | 8,269 |
| Interest | 30 | 25 |
| Lease rentals on operating lease | 50,207 | 45,233 |
| Legal expenses | - | 844 |
| Manuals- Resource Journals | 33,832 | 52,374 |
| Meetings national council | 125,173 | 111,408 |
| Penalties | 3,912 | 454 |
| President's expenses | 5,442 | 3,666 |
| Printing general | 6,510 | - |
| Printing and stationery | 21,768 | 23,274 |
| Repairs and maintenance | 7,897 | 3,601 |
| Security | 4,816 | 4,302 |
| Skills development levy | 1,126 | 1,517 |
| Subscriptions | 1,597 | 2,841 |
| Telephone and fax | 29,737 | 31,040 |
| Training manuals | 140,317 | 59 |
| Travel | 43,995 | 14,580 |
| Wastecon 2006 | 10,628 | 3,048 |
| Website Hosting | 20,340 | 19,444 |
| | 923,741 | 704,735 |

WOMEN IN WASTE

We have decided to dedicate a section to women in waste, in an attempt for you to get to know them better and we introduce the Chairperson of the Eastern Cape branch.



I am the current Chairperson of the Institute of Waste Management Eastern Cape branch.

I completed my studies at Rhodes University in 1990 and started my working career at S.A. Breweries in 1991 as a Senior Laboratory Technician. In 1994 I joined King Tanning Company in King Williamstown as the Laboratory and Environmental Manager. The responsibilities included implementation of an Environmental Management System as well as the management of the laboratory. In 1999 I joined Amatola Water to become the Scientific Services Manager and here I was responsible for the management of the Scientific Services division as well as the implementation of the Environmental Policy. In 2002 I joined DaimlerChrysler S.A. as the Integrated Management Systems manager and the core duties entailed management of the Health and Safety, Environmental and Quality Management Systems for the production plant located in East London. In January 2007 I joined Arcus Gibb as a Senior Environmental Scientist. My areas of expertise include Project Management; Environmental Auditing; Environmental Due Diligence Auditing, Environmental Management Systems; Sustainability Reporting, Environmental studies, Environmental Impact Assessments, Environmental Management Plans, Public Facilitation, Waste Management studies, Waste Site Identification and Permitting and Health and Safety Management Systems.

I was an Adjudicator / auditor for the National DEAT Cleanest Town Competition 2006 as well as the EC Clean Industry Awards 2007.

My family and my work are my main motivators in life and my motto is "be the best you can be", and always be positive in the face of adversity – perseverance is rewarded in the end.

Deidre Nxumalo-Freeman
Chairperson – EC IWMSA branch

PRESS RELEASE – CLEANEST TOWN COMPETITION



The Govan Mbeki Municipality has won R 1 000 000,00 in the final round of the Cleanest Town Competition in Mpumalanga, which was awarded and evaluated by the Mpumalanga Department of Agriculture and Land Administration.

After winning the semi-final round for the Cleanest Town Competition within the Gert Sibande District, during October 2007, it had to compete against towns such as the Steve Tswete Municipality within the Nkangala District which was the 2006 provincial winner in Mpumalanga. Govan Mbeki Municipality will now compete against the winners of each province on National level. With extra effort we can win the National competition.

The Govan Mbeki Municipality is planning to utilise the prize money to build a weighbridge at the Secunda landfill site in order to manager, levy and control the solid waste entering the site and to rehabilitate the old eMbalenhle landfill site. The rehabilitation of the old eMbalenhle landfill site will not only improve the living conditions and quality of the community residing close to the site but will also have a lesser impact on the physical environment. A job creation project will also be initiated with the main focus on recycled waste.

The adjudicators not only evaluated the physical appearance and cleanliness of the various towns within Govan Mbeki Municipality, but projects such as recycling initiatives, community awareness and educational programmes, and community participation in solid waste projects added to the credit of winning the competition.

Without the co-operation and participation of the community within Govan Mbeki Municipality, to keep the environment clean, it would not be possible to win the competition. Let us all unite to become the cleanest town in South Africa and make a special effort not to litter and to keep our towns clean.

We thank you all.



Please note that Head Office will close from 18 December 2007 and will reopen on 7 January 2008.

SA UNVEILS PLAN TO STREAMLINE EIA PROCESS

Environmental Affairs and Tourism Minister **Marthinus van Schalkwyk** on Monday outlined a set of interventions to streamline the regulations and the general environmental impact-assessment (EIA) system of South Africa.

These interventions ranged from adding capacity at provincial level to amending legislation.

Van Schalkwyk said in a copy of a speech delivered at a conference, that amendments to the National Environmental Management Act (Nema), which was currently in Parliament, proposed a wider set of environmental management tools, which included the creation of environmental management frameworks (EMFs).

He said that using EIAs as the only way of dealing with environmental impact was "severely" limiting and that it was creating "huge system problems". Van Schalkwyk explained that EMFs would proactively look at the characteristics of an area and highlight specific action that land users and planners could use to make their decisions.

"EMFs have huge benefits for development because they embody a proactive approach. EIAs are reactive in the sense that they are only undertaken once a development proposal has been formulated," he said.

EMFs would, however, be an expensive exercise, as a large number of variables would have to be considered, but Van Schalkwyk said that it would lay a proper foundation for all aspects of land use.

The Department of Environmental Affairs and Tourism (Deat) in collaboration with the Interim Certification Board for practitioners, had also started a process to create a registration authority for environmental assessment practitioners - an initiative aimed at improving the quality of work undertaken.

"The fact that the environmental-assessment profession has no single qualification that serves as a common denominator makes the regulation of the industry very difficult," Van Schalkwyk noted.

He added that government officials responsible for environmental assessments would, from now on, also be required to meet the same criteria as that of EIA consultants. This meant that work done by reviewers must also be taken into account during the process.

Further, Van Schalkwyk announced that the Deat had appointed a service provider to evaluate EIA applications in relation to the Municipal Infrastructure Grant (MIG).

"The integration of EIA applications in relation to the MIG process has been an area of concern for some time, and has caused many unnecessary delays and frustrations."

The service provider would identify areas of possible overlap and duplication, and propose a procedure to meet the needs of both sets of requirements in one process. This project would be concluded in this financial year.

Government would also roll out training at five national centres to provinces in dealing with the backlog of EIAs.

The Deat has awarded contracts to the amount of R11,3-million to service providers to assist provincial authorities to deal with the remaining applications under the old 1997 regulations.

Van Schalkwyk reported that the backlog would be cleared by the end of this financial year.

The Deat would also continuously monitor and evaluate South Africa's EIA system, he said.

In this regard, the department has recently put out a tender for a survey to evaluate the efficiency and effectiveness of the EIA regulations.

"The results of this survey will inform further strategies around environmental impact management, which will enable us to apply our resources better, to eliminate unnecessary EIAs, to provide for other tools apart from EIAs which might be more effective in specific cases, and to allow flexibility in order to be more efficient."

By: [Mariaan Olivier](#)

PLASTIC BAG BALONEY

While the plastic bag tax has become a cash cow for government, bringing in R221-million since 2004, the company tasked with promoting the recycling of plastic bags is struggling to get off the ground.

Buyisa-e-Bag, the company in question, has seen a mere R44-million of the funds generated since it became fully operational in 2005, leaving R177-million to churn around in the general fiscus

The treasury says that the funds have not been earmarked exclusively for Buyisa or any plastic bag recycling projects. Instead, how the levy money is spent depends on organisational capacity to spend the funds provided. What remains of the funds generated through the levy goes towards other government concerns, such as health and education

According to the treasury, expenditure at Buyisa has been "slower than anticipated", leading to no transfer of funds being made to the company for 2006/07, although Buyisa has received a total of R24-million for 2005/06. Buyisa gives a different breakdown of funds received. As of the 2007/2008 financial year the company will receive R20-million a year.

While Buyisa was registered in 2004, about the time that the levy was instituted, the company became fully operational only in late 2006, says to CEO Benny Makgoga. According to Makgoga, the company received R12-million for 2005/06 and another R12-million for 2006/07, with a payment of R20-million due for the 2007/08 financial year.

"Considerably more is being collected and kept by treasury than is being put back into the plastics industry cycle," says David Hughes, executive director of both the Plastics Federation of South Africa and Buyisa.

This is against a backdrop of government's considerable financial gain. In the 2004/05 financial year government received R41,2-million from the levy, in 2005/06 it collected R61,4-million and in 2006/07 cash increased to R75,1-million.

The levy was instituted as a "disincentive to the excessive use of the plastic bags". The money, says the treasury, is collected and paid into the National Revenue Fund. From there funds are allocated to Buyisa-e-Bag through the department of environmental affairs and tourism as a transfer payment to the company.

One of the chief obstacles facing Buyisa, says Hughes, is the difficulty the company has in navigating its way through red tape at local government and municipal level. Securing the rights to sites where buy-back centres for plastics can be established and acquiring the correct permits for recycling is a slow process, he says.

Buyisa has utilised pre-existing buy-back centres and enabled small entrepreneurs to formalise their operations. But recycling plastics is still problematic, given that a considerable amount of plastic bags are required to generate sufficient income from collection for recycling. Other waste commodities, such as scrap metal and paper, have a "good value-to-mass ratio", says Hughes. But there is a great deal of education that needs to be done before people begin to register the value of plastics, he says.

One of the key focus areas for Buyisa is low-income suburbs and smaller municipalities where there is little or no waste management. It is here that plastic bags are still a major nuisance. Without concerted "political will" from local government at these levels, tapping into the household plastic waste cycle in these areas is very difficult.

"How do we tap into that stream?" asks Hughes. The remainder of the money generated by the plastic bag levy could possibly be spent on addressing that very question. The levy would be more effective if there was increased focus on "extended producer responsibility". "Keep the specifications on bag thickness, but allow the producers and interested parties in the industry to do the job," he says. "It does raise the moral question: if you tax a bag, should the revenue be spent on the rest of the plastics industry?"

Despite these teething problems, Buyisa is using its funds on a number of projects, including clean-up campaigns involving up to 6 000 participants, five school recycling education campaigns and waste management workshops.

"The plan was for Buyisa-e-Bag to establish 30 multi-recycling buy-back centres by March 2007, but the target was not achieved," says Thoraya Pandey, spokesperson for the treasury. "However, the initial model for the centres has been tested and costed and the first 30 centres should be operational by the end of 2007/08."

Retailers might be another group raking in cash through the levy. Plastics bag manufacturers are required to pay 3c on all bags they produce and make payment directly to the South African Revenue Service. Retailers can charge consumers as much as they see fit for each plastic bag.

"The retail prices of plastic bags are not regulated and therefore any retailer can, as with any other product, charge the price they deem appropriate in a competitive, free market system," says Brian Weyers, marketing director of the Shoprite Group. Weyers is adamant, though, that Shoprite does not make a profit on bags.

"Shoprite Checkers sells both the 12-litre and the 24-litre bag substantially below cost and therefore does not make any money on the sale of plastic bags. The selling prices are 15c and 21c respectively," he says.

Pick 'n Pay also sells bags below cost price and does not make a profit on their sale, says Graeme Laithwaite, procurement director. Prices in store are 20c for a 24-litre bag and 15c for a 12-litre bag, according to Laithwaite.

None of the retailers could give the cost price of a plastic shopping bag.

The department of environmental affairs and tourism was unable to respond to questions from the *Mail & Guardian* by the time of going to press.

GREEN SCORPIONS ARRESTED WOMEN

DUMPING HAZARDOUS WASTE



A female South African national spent the weekend in jail after being caught red-handed illegally dumping hazardous waste on a site in Romeo Street, Hughes, Boksburg.

The Department of Agriculture, Conservation and Environment (GDACE) Branch of the Green Scorpions together with the SAPS effected the arrest on Friday evening after registering a case for contravention of both the local by-laws and the Environment Conservation Act. The environmental legislation provides significantly higher penalties than those provisions that deal with illegal dumping in local by-laws and should the suspect be found guilty of the offence, she could be sentenced to ten years imprisonment or to an equivalent fine or to both such fine and imprisonment.

The hazardous waste that was dumped on site was a resin-like substance that is used in the manufacture of glue-type products. Approximately 50 drums, with a combined capacity of 10 000 litres, had been emptied and left unattended on the site. The area covered by these illegal dumps is approximately 5000 m² and it is clear that some of this waste has been burned. A further 104 full drums (containing the hazardous substance) were seized by the Ekurhuleni Metropolitan Municipality which is assisting the Green Scorpions and SAPS in relation to this matter. Investigations revealed that this waste originated from Rolfes Chemicals (Pty) Ltd which had contracted the female suspect to transport and dispose of the waste material.

In order to mitigate the impacts of the hazardous waste on the environment, the Gauteng Department of Agriculture, Conservation and Environment has issued a directive to Rolfes Chemicals (Pty) Ltd to clean up the site and investigate the detrimental effect of the dumping on the environment. Rehabilitation will need to be undertaken following the investigation. The costs associated with these actions will be much higher than they would have been if the waste had been disposed at a legally authorized facility in the first place. The clean up has already commenced.

Generators of waste (especially hazardous waste) must be very careful when outsourcing the transport and disposal of their waste to contractors who claim to dispose of waste in accordance with legislation. Those who generate the waste will remain ultimately responsible for how this waste is handled and disposed despite contracts they may have with third parties. Those businesses that are selling their waste management and disposal services and then illegally dumping the waste should realize that the authorities are now working together to investigate these matters and ensure the culprits are punished within the full extent of all relevant legislation.

BRANCH HIGHLIGHTS

CENTRAL BRANCH

(Gauteng, Northern Province, North West Province & Mpumalanga)

Chairman: Linda Godfrey Tel. 012-841-3675 / lgodfrey@csir.co.za

Landfill 2007 “Evolution of Landfill Engineering”

After the highly successful Landfill 2005 Seminar held in KwaZulu-Natal in September 2005, GIGSA teamed up this time with the Central Branch Landfill Interest Group (LIG) of the Institute of Waste Management of Southern Africa (IWMSA), to host the two day Landfill 2007 Seminar at Misty Hills Conference Centre in Muldersdrift on the west side of Johannesburg. The theme of the Seminar was “Evolution of Landfill Engineering”, which fitted in with the location of the Seminar close to the Cradle of Humankind. The Seminar was held on the 12th and 13th of September, and was followed up with a short course and technical tour on Friday 14th.

The Seminar attracted 155 delegates, which included 11 international visitors from countries such as Botswana, Germany, England and Wales. There were also exhibitors from some of these countries. The theme appeared to be very appropriate for the rapidly changing and evolving nature of landfill engineering, and the range of highly stimulating papers presented bore testimony to this fact.

All delegates were welcomed by Central Branch LIG and Seminar Chairman Jonathan Shamrock; whereafter IWMSA Vice-President Vincent Charnley officially opened the Seminar.

A current “hot topic” in landfill design is the use of geosynthetic clay liners (GCLs), and it was appropriate to have the first keynote address presented by Professor Abdelmalek Bouazza of Monash University in Melbourne. Malek’s paper entitled “Research on Fluid and Gas Migration through GCLs and relevance to Landfill Design” covered the principles of landfill barrier design, as well as the mechanism of GCL performance. He then looked at various issues affecting hydraulic conductivity of GCLs, covering the problem of cation exchange in detail. Since the predominant use of GCLs in landfill design is in the final cover, Malek also addressed the issue of gas migration through GCLs. With the recent publication of the paper by Meer and Benson on the poor performance of GCLs in landfill cover systems, many people have become rather sceptical about the future use of GCLs in landfill and pollution control barrier systems. In his presentation, Malek addressed the findings of the Meer and Benson paper, and showed that all four landfill cover systems investigated had very site specific conditions that resulted in the poor performance of the GCLs. The overall conclusion gained from Malek’s very thorough presentation was that there is still a place for the use of GCLs in the design of landfill barrier systems, however the designer must be fully aware of the various factors that could affect the performance of the GCL.

The second keynote address was given on the second day by Ray Lombard, one of the pioneers of the waste management profession in South Africa. Again in keeping with the theme of the Seminar, Ray gave a nostalgic history of the advances in landfill engineering in South Africa, from the dumps of the eighties through to the modern sanitary landfills with gas extraction systems that are being developed today.

Another 20 papers were presented during the two days that covered topics such as recycling and landfill scavenging, landfill operations and compaction, landfill auditing, durability issues of landfill barrier systems, landfill gas projects, and leachate treatment. The technical content of the papers was generally of a high standard and provided the delegates with a much broader knowledge of landfill engineering.

The GIGSA Chapter Awards for 2006 were made during the Seminar by current GIGSA President Garth James.

Kelvin Legge and Aquatan received the Award for Development in Technology for development of a system that mitigates the negative effects of heat on geosynthetic materials in a barrier system.

Aquatan received the Construction Award for the Geomembrane Lining System to the Effluent Treatment Plant at Mondi Richards Bay.

Central Branch LIG Chairman Jonathan Shamrock also made two meritorious awards:

To Toni Pieterse of the Ekurhuleni Metropolitan Municipality for "Exceptional Service Rendered to the Waste Management Profession"

To the Ekurhuleni Metropolitan Municipality for "Upholding the standards required to ensure safe disposal of waste's generated in the metro's area of responsibility".

On the evening of day one, a "Potjie" dinner was held in the Boma at Misty Hills, during which the delegates were entertained by the lively strings of the lovely ladies of the Eclipse Duo.

On Friday 14th of September, Malek Bouazza conducted a short course on "Geosynthetic Clay Liners in Waste Containment Applications" at the Maropeng Information Centre. This was attended by 44 delegates. At the end of the course, the delegates drew up a "check-list" of important and critical issues that should be addressed when considering the use of a GCL in a waste containment barrier system. It was felt by delegates that these critical issues should be passed on to all engineers who are involved in the design of containment barrier systems. After lunch at Maropeng, the group went on a tour of the Maropeng facility.

Consensus after the Seminar was that it was a highly successful and enjoyable event, and Jonathan Shamrock and his committee are to be congratulated on the high standard achieved. For my part, it was a pleasure and a privilege to be associated with the Landfill 2007 Seminar. It reminded me why I enjoy landfill engineering.

Peter Legg

KWAZULU NATAL BRANCH

Chairman: Sue Beningfield Tel. 031-902-1526 / sueb@enviroserv.co.za

The KZN Branch held the NQF Level 1 course on 29, 30 and 31 August 2007. The course was well attended.

The Annual General Meeting was held on 25 October 2007.

The Hazardous Waste Course was held on 29 & 30 November 2007.

It has once again been an extremely busy year for the KZN Branch. We would like to extend a heartfelt thanks to our members for their continued support and enthusiasm towards our courses and seminars.

We have no courses scheduled from now until the start of the New Year. Please do however diarise the 4, 5 & 6 March 2008 as we will be running the Health Care Risk Waste Course. Should you require any more details please contact Angie – 031-5642795 / kzniwmsa@mweb.co.za

The KZN Committee will meet again in February 2008 to set dates for courses and seminars for the year. We are also working hard towards WasteCon 2008 which will be held in Durban in October 2008.

We hope you and your families have a wonderful Christmas and until we meet again in 2008.

Best wishes
KZN Committee

EASTERN CAPE BRANCH

Chairman: Deidre Freeman Tel. 043-706-3600 /dfreeman@gibb.co.za

The Eastern Cape Branch has had a very busy past few months with the following happening in our Branch:

MINI CONFERENCE

On the 19 – 21 September 2007 we held our Mini Conference at the Regent Hotel. The Conference consisted of a two-day presentation programme and a half-day site visit. The theme for this year's Conference was "Where is Away" and a presentation was given by two Rhodes University students who originally started this concept.

143 Delegates from all spheres of the Waste Industry registered for the Conference. This year's programme consisted of 15 Speakers who gave presentations on various waste related themes and 13 Internal Exhibitors who set up their exhibitions inside the Conference venue.

The Conference delegates were welcomed by Mr Thando Gwintsa, General Manager: Investor Services at the East London IDZ, who have also just become Patron Members of the Institute.

The Conference was then officially opened by Mr S Mgenyana, acting HOD of the Department of Economic Development & Environmental Affairs in the Eastern Cape. Two very enjoyable social evenings were held where delegates could mingle and network with others in the Waste Industry. From the feedback received from the Delegates, the Conference was informative, interesting and enjoyed by all.

I would hereby like to thank the Conference Organising Committee for their dedication and hard work in organising a very successful Mini Conference.



AGM

We also held our AGM in conjunction with the Conference – 19 September 2007, where the Branch Chairperson, Branch Secretary and Branch Treasurer all gave their 2006 /2007 Reports.

BREAKFAST SEMINAR

A breakfast seminar was held on 15 November 2007 and Liz Anderson of the RCMASA was the guest speaker. The discussion topic was the transportation of dangerous goods including the transportation of hazardous waste. It was very enlightening and the need for more comprehensive training was identified and this will be offered to members early in 2008.

EDUCATION

Liz Anderson of RCMASA held a very successful 3 day Training Course at DaimlerChrysler. The training - Auditor Training for auditing the drum reconditioning industry. The EC branch of the IWMSA is receiving queries with regard to the provision of accredited training. The IWMSA have additionally received an order to conduct NQF level 1 training in the Nelson Mandela Bay area (Port Elizabeth) early next year and we are eagerly awaiting the training material from Head Office for

USD119303. This training to be provided early in 2008 – the EC branch are in discussions with Hennie Neethling and Sue Beningfield to ensure facilitators and assessors from the EC are utilized.

The Eastern Cape Branch will be focussing on training in the Province next year and look forward to a very successful year.

CHRISTMAS DINNER

As has become traditional, the EC committee were treated to their annual EC Committee Christmas dinner on the 21st November 2007 at Grazia's and a very enjoyable evening was had by all Committee Members. The Committee has worked very hard this year with organizing the Mini Conference held in East London in September and this was a token of appreciation for the effort by all members.

EC CLEAN INDUSTRY AWARDS 2007

The culmination of 2 years of active canvassing for a sponsor has resulted in the establishment of the Eastern Cape Clean Industry Awards 2007. The Eastern Cape Department of Economic Development and Environmental Affairs (DEDEA) is the sole sponsor of the Clean Industry Awards in the Eastern Cape. R100k has been sponsored by DEDEA and the money was used to appoint auditors to professionally audit the Industries and adjudicate the Awards – preference was given to IWMSA registered Auditors.

A Project Steering Committee has been established as per the Service Level Agreement with DEDEA and is being chaired by Ms Lulama Macanda from DEDEA. The closing date for the competition was the 15 October 2007. 5 entries were received for this inaugural EC Clean Industry Awards 2007. The Gala Banquet was held on 30 November 2007 at the Fish River Sun as was well attended. A press release will be submitted for these awards to create awareness and a strategy is planned to ensure all industries are aware of the Awards for 2009.



The Chairperson and Committee of the Eastern Cape Branch wish all Members a Blessed Christmas and a very successful 2008.

If you are interested in joining, or need any further information on any of the above activities please contact the Chairperson of the EC IWMSA, Deidre Freeman on 043 706 3644 or at dfreeman@gibb.co.za or contact the Branch Administrator, Jacky Ikin on eciwmsa@vodamail.co.za

WESTERN CAPE BRANCH

Chairman: Claire McKinnon Tel. 021-400-2822/ Claire.mckinnon@capetown.gov.za

IWMSA WESTERN CAPE BRANCH BREAKFAST SEMINAR HELD ON 17TH JULY 2007 AT ENCORE RESTAURANT AND CONFERENCE CENTRE, PLATTEKLOOF



A wonderful morning was had by all who attended the breakfast seminar held at Encore Restaurant and Conference Centre. Encore is a part of the Tygerberg Campus of Northlink College and lends itself to breathtaking views of Cape Town and Table Bay due to its location on Platteklouf Hill.

<http://www.northlink.co.za/businessunits.asp?nav=academics>

Two interesting and exciting speakers presented on the morning, which was followed by a lucky draw where 5 IWMSA members received gifts made out of recycled waste.

Mr Tom McLaughlin, Woolworths' Technical Manager for the Environment, presented this prominent South African retailer's vision for the future of packaging. Food packaging waste takes up over 40% of space in the average household refuse bin and nearly all supermarket packaging is designed to be discarded after using once. Tom presented the 5-year plan whereby Woolworths plans to reduce the packaging to product ratio by 20%, eliminate excess packaging and offer more concentrates/bulk packs. Included in this plan is restricting packaging materials used to those that can and are being recycled locally, put polymer identification symbols on plastic packages, incorporate recyclable materials into packaging wherever possible (so as to close the loop) and to introduce compostable packaging.



Mrs Barbara Jenman, who brought along her worms to join in the fun, took the stage next to inform the audience about Worm Networks and the Earthworm Interest Group of South Africa (EIGSA). She also demonstrated how a tyre can be used to create an environment where earthworms produce compost using organic waste from the kitchen.



For more information regarding the topics of the morning, please contact Mr Tom McLaughlin at TomMcLaughlin@woolworths.co.za or Mrs Barbara Jenman at bjenman@iafrica.com



IWMSA Western Cape Branch

****MOVIE NIGHT****

Article by: Kate Bezuidenhout

The IWMSA Western Cape Branch held their first ever ****MOVIE NIGHT**** on 9 October 2007 at the Independent Armchair Theatre in Observatory, Cape Town. The committee's aims were to share interesting and topical documentaries with the members in a relaxed and socialable environment. The movie was shown after work and members were invited to stay after the movie to enjoy refreshments.

The title of the documentary shown was "*The Power of Community: How Cuba Survived Peak Oil*" and documents Cuba's emergency transition to local organic agriculture, renewable energy and large-scale mass transit. The transition occurred following the Soviet collapse in 1990, when their massive subsidies of imported oil and food to Cuba were halted.

The documentary visits urban gardens and organic farms, explains the relationship between food and fossil fuels and shows how a society can change from an industrialized, global focus to a local, community-based one. Cuba's experience represents a living model for how the rest of the world can respond to the coming peak in global oil production that some experts say will occur this decade.

Movie Night was thoroughly enjoyed by everyone and we're looking forward to the next one.



SO, COME ALONG & JOIN US FOR MOVIE NIGHT!

LANDFILL INTEREST GROUP – WESTERN CAPE HALF DAY SEMINAR HELD ON 25 OCTOBER 2007 AT THE BELLVILLE SOUTH WASTE DISPOSAL SITE

Article by: Richard Emery

Due to increased interest in the seminar, the venue had to be changed to accommodate more people. Richard Emery, LIG Chairman for the Western Cape, opened the proceedings and welcomed everyone to the seminar. Roger Parsons (Parsons and Associates) was the first speaker and gave an interesting talk on “Groundwater contamination studies” relating to the Bellville South disposal site.

Eddie Hanekom (DEADP Waste Management) spoke about the “Postponement of the Bellville South waste disposal site (BS wds) closure and waste management functions of DEADP”. Next up John Coetzee (Jeffares and Green) gave a talk on the “Lining of the new cells at BS wds” based on their extensive knowledge of the site. Richard Emery (BKS) spoke on the final two cells, designed by BKS, due for construction in 2008. Thorsten Aab (WSP) concluded the presentations with his talk on the “Closure, capping and remediation of City of Cape wds”.



Richard Emery closed the seminar with a brief “feedback session” on the LIG seminar held in Gauteng in September 2007. After the presentations, the attendees were able to apply for CD copies of the morning’s proceedings. The site visits to the Bellville South disposal site and composting facility were a great success putting into practice what was spoken about in the seminar.

Future site visits and seminars planned by the LIG Western Cape include: the Vissershok Landfill Site to see the construction of the new cells, the Kaytech GCL and geosynthetic manufacturing plant in Atlantis, poster competition, etc.

Collection and Transport Interest Group Seminar held at Meerendal Wine Estate on 1 November 2007

Article by Stephan Morkel



The seminar was hosted at the Meerendal Wine Estate and attended by over 40 people. Sponsorship for the event was provided by 600 SA and M.A.N trucks.

The sponsors each gave a talk on their product range and specifically what equipment to use for which application.



Stephan Morkel then addressed the attendees on The Collection and Transport Interest Group’s activities during the last few years and what the future holds for this interest group. This was concluded by an election of a new committee for 2008 which is as follows:



Clinton Schweers, Vusumzi Dziba, Anthony Isaacs, John Coetzee, Adrian Conradie, Wimpie Snyman, Nazier Marthinus, Chris Doyle and Peter Jagers (still to be confirmed).

The day’s proceedings concluded with an equipment demo and spitbraai and drinks.

TURN YOUR HOUSEHOLD WASTE INTO "BLACK GOLD" TODAY!!

The Earthworm Interest Group of Southern Africa (EIGSA) was formed in November 2004 to assist all those who are interested in maintaining healthy, fertile soil. The purpose of this article is to give readers some background information about EIGSA and to invite people of all ages to join EIGSA.

Among the main objectives of EIGSA is to provide a forum for anybody with an interest in earthworms to: contribute from their own experiences with earthworms, ask questions, to be put in touch with suppliers of earthworms, their by-products, etc.

Articles of interest are frequently sent to all on the mailing list. Several of these have been contributed by EIGSA members, others by courtesy of magazines, news media and the Internet. Members have already conducted several seminars in various centres throughout the area EIGSA covers.

Membership is free to all who have access to the Internet, but those who need communications to be sent by any other means will be required to pay a small annual fee, to cover the cost of sending by fax or by regular post.

We would like to invite you to join us. To do so, all you need to do is to contact Ken Reid by email at kareid@iafrica.com by fax at 086 672 2958 or by letter at P. O. Box 1577, Ferndale, 2160.



“LIVE” PRESENTATION of [WORMS@WORK](#)

Article submitted by Kate Bezuidenhout

On 17 July 2007 Mrs Barbara Jenman, an IWM member from Bettys Bay, demonstrated a tyre bin wormery system @ work at the IWM breakfast seminar.



The principle is that the worms first start processing kitchen waste in the bottom of 2-3 containers. Worms move up to the next level of fresh food when the lower level is full of vermicast (the “compost”) and is depleted of food. The “farmer” manages a controlled environment - an enclosed system that is moist, dark and has enough oxygen and suitable organic food for the red worms.

Barbara's system utilises old tyres as containers and was designed from the plastic wormery sold overseas, where there are 2-3 shallow containers one on top of the other with a catch basin underneath for worm juice.

There are 2 other venues where tyre bins are being made and sold: Footprints Environmental Centre in Wynberg and Kleinmond Community Garden centre.

Barbara would like to see other towns having similar enterprises and would be happy to assist in setting up such operations as the tyrewormery is affordable compared to others on the market and the products are much needed food for the soil. The worms also work throughout the cold winters experienced in the Cape.

Waste management advantages for Vermicomposting:

There are no major cost overheads – organic food comes free – so it is sustainable

Local old tyres can be used providing income in the preparation and selling

Vermicomposting of kitchen and garden organics saves landfilling

Methane emissions at landfills will be less

Waste management education can be provided at point of sale

There is less refuse collection and transportation costs as the operation is home based and the casts and juice are used for the garden.

Any smelly decaying kitchen organics is taken out of the weekly refuse leaving the refuse fly and maggot free!

Less work for the waste management departments as EIGSA has been set up to provide info and activities around the country!

For more info on worm farming or suppliers of worms, units and products in the Cape Town area and environs contact co-convenor Barbara at bjenman@iafrica.com or 082 338 4109.



EARTHWORM INTEREST GROUP OF SOUTHERN AFRICA



Article submitted by Kate Bezuidenhout

There are very few plants on this planet that can survive without soil. Soil is the basic medium for producing all the food humans and animals need for survival. It follows that proper care of the soil is essential if anything is to grow. It is rather frightening to observe the way this vital element has been degraded by injudicious farming and gardening methods. One of the serious consequences of these practices has been the drop in numbers of the one little creature that is able to rebuild soil, no matter how it has been depleted: The humble earthworm.

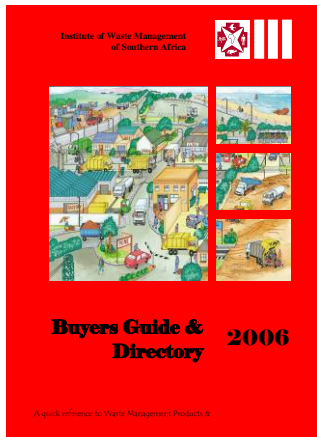
No matter how small a garden is or how large a farm is, the owner is in a position to do something to restore soil quality or to maintain the soil that he is using at a high level of fertility. This can be done by either introducing earthworms into your soil, or by making sure that you provide conditions which ensure not only their survival, but that their population growth is sustained.

Earthworms are being used more and more in the drive to reduce the waste going to landfill. Earthworms rapidly convert kitchen waste to vermicompost and fertile liquid. Vermiculture can be defined as culture of earthworms. Earthworms feed on organic waste, consuming two to five times their body weight. They use a relatively small amount of their intake for their growth and excrete the mucus coated undigested matter as vermicasts.

Vermicasts consist of organic matter that has undergone physical and chemical breakdown through the activity of the muscular gizzard that grinds the material. The nutrients present in the vermicasts are readily soluble in water for uptake by plants. Vermicast is a rich source of macro and micronutrients, vitamins, enzymes, antibiotics, growth hormones and microflora. Vermicompost refers to organic manure produced by earthworms. It is a mixture of worm castings (faecal excretions), organic material including humus, live earthworms, their cocoons and other organisms. Vermicomposting is an appropriate cost effective and efficient recycling technique for the disposal of non-toxic solid and liquid organic wastes.

WELCOME TO OUR NEW MEMBERS

| Central Branch | |
|---|--------------|
| Hattingh Hanlie | Member |
| Mdaka Themba | Member |
| Stiff John Sidney | Member |
| De Coning Pieter | Associate |
| Roopa Satish Mr | Associate |
| Plastic Omnium Urban Systems | Patron |
| Budget Industrial Waste Management | Organisation |
| Govan Mbeki Municipality | Patron |
| Endogistics cc | Organisation |
| Geotextiles Africa | Organisation |
| Mitdon Filtering Trading as Filtafry | Organisation |
| Western Cape | |
| Resource Innovations cc | Organisation |
| Eastern Cape | |
| Hearne, Clarence William | Associate |
| East London Industrial Development Zone | Patron |
| Microbac SA cc | Organisation |



Its time for the next edition of our **Buyers Guide and Directory**

which provides an excellent opportunity for your company to reach a wide audience in the waste industry.

We aim to provide information to individuals and companies who may require a product or service within the broad field of waste management.

Apart from general information on the IWMSA, including a complete list of members, landfill sites, the Guide will carry details on products and services in two sections. Section 1 will show company details, accompanied by a brief description of goods / services offered while Section 2 will list goods / services alphabetically, with each supplier listed by name and cross referenced by page number to Section 1. In addition the Guide offers excellent advertising opportunities.

Entry into the Guide will be only R 600.00 for Members of the IWMSA and R1 200.00 for non-members, including VAT.

This fee will allow you to:

- a) List in Section 1 your company name, physical, postal and e-mail addresses, telephone, fax and cell phone numbers, principal contact and a maximum of 50 words describing the main activities of your company.
- b) In Section 2 your company may list your main services under five free separate categories. Please refer to the list of Products and Services attached. Additional entries in additional categories may be made at R50-00 per insertion.

General distribution will be made to all our members, national, provincial, regional and local government, overseas interests and relevant NGO's as well as WasteCon, seminars and all events.

The costs to place your company in Sections 1 & 2 are as follows :-

| | R |
|------------------------------|----------|
| 1. Member entry* | 600.00 |
| 2. Non-member entry* | 1,200.00 |
| 3. Additional category entry | 50.00 |
| 4. Additional Branches | 110.00 |

**Please note: this fee only covers details of one main address. Any additional addresses or contacts e.g. Branch offices or divisions will be charged at an additional R 110-00 each.*

Advertising:

| | | | |
|------------------------------|----------|---------------------------------|----------|
| a) Outside back cover | 4,500.00 | b) Inside front and back covers | 4,000.00 |
| c) Centre Spread (Left page) | 3,000.00 | d) Centre Spread (Right page) | 3,000.00 |
| e) Inside book (Full page) | 2,500.00 | f) Inside book (Half page) | 2,000.00 |

The above prices are inclusive of VAT.

Complete the Booking Form and email back to us before 31 January 2008
for your entry in the

Buyers Guide 2008 - BOOKING FORM

We would like to enter the 2008 Institute of Waste Management Buyers Guide. We **are / are not Members** of the Institute. ***(Please do not enclose any payment; invoices will be issued on receipt of the completed booking form).***

Section 1 - Details

| | |
|---|--|
| Company Name | |
| Physical Address | |
| Postal Address | |
| e-mail: | |
| Tel. No | |
| Fax No. | |
| Cell No. | |
| Contact Person: | |
| IWMSA Membership No. | |
| 50 words detailing main activities/services of the company: | |
| | |

Section 2 - Alphabetical

We wish to be listed under the following five categories:

| | | | |
|----|--|----|--|
| 1. | | 4. | |
| 2. | | 5. | |
| 3. | | | |

We additionally wish to be listed in the following categories at R50-00 each:

| | | | |
|----|--|----|--|
| 1. | | 4. | |
| 2. | | 5. | |
| 3. | | | |

Advertising: Please make a cross in the appropriate block.

| Yes, we are interested in advertising | | not interested | |
|--|--|-----------------------|--|
| We prefer our advertisement to appear on: | | | |
| the outside back cover | | inside back cover | |
| the inside front cover | | inside of the book | |
| | | | |

Please note: Advertising positions will be provided on a first come, first served basis. Full details of required colours must be provided.

.....
Name of Company Representative

EMAIL BACK TO iwmsa1@telkomsa.net

PRODUCTS AND SERVICES

| | | |
|-----------------------------|-----------------------------|--------------------------------|
| ABSORPTION PRODUCTS | GOVERNMENT ORGANISATION | RECYCLING/RECYCLERS |
| ACTIVATED SLUDGE | GROUNDWATER MODELLING | RECYCLING SYSTEMS |
| AIR DIFFUSERS | GROUNDWATER REMEDIATION | REFUSE RECEPTACLES |
| AIR POLLUTION CONTROL | GROUNDWATER TREATMENT | REFUSE REMOVAL |
| ANAEROBIC DIGESTION | GROUNDWATER/LEACHATE | REHABILITATION AND CLOSURE |
| ANAEROBIC MICROBIOLOGY | SAMPLING | REPAIRS |
| ANALYTICAL EQUIPMENT | HEALTH & SAFETY | RESEARCH & DEVELOPMENT |
| ANALYTICAL SERVICES | HIRE EQUIPMENT | RESOURCE RECOVERY |
| ASBESTOS DEMOLITION | HYDRAULICS | RETARDERS |
| ASSET MANAGEMENT | HYDROGEOLOGY & HYDROLOGY | RESERVOIRS |
| BALING | INCINERATORS | REVERSE OSMOSIS |
| BATTERIES | INDUSTRIAL EFFLUENT | RISK MANAGEMENT / |
| BINS | TREATMENT | ASSESSMENTS |
| BIN LINERS | INDUSTRIAL WASTE | ROLL-ON/ROLL-OFF EQUIPMENT |
| BIOLOGICAL REMEDIATION | INFORMATION SERVICES | SAFE DISPOSAL SERVICES |
| BOILERS/BURNERS | INSTALLATION | SAFETY WEAR |
| BUILDING SERVICES | INTEGRATED WASTE | SALES |
| BUILDERS RUBBLE | MANAGEMENT | SAMPLING |
| CAPPING | ISO 1400 IMPLEMENTATION | SCRAPERS |
| CHEMICAL ANALYSIS | INSTRUMENTATION | SECURITY |
| CHEMICAL TREATMENT | LANDFILL – AUDITING | SEWER CLEANING |
| CHIPPERS / SHREDDERS | LANDFILL - CAPPING | SEWAGE CLEANING |
| CLARIFIERS | LANDFILL - COMPACTORS | SEWAGE MANAGEMENT |
| CLOSURE AND REHABILITATION | LANDFILL - DESIGN | SHREDDERS |
| COMMUNICATION | LANDFILL - MANAGEMENT | SITE EVALUATION / PERMITTING |
| COMPACTORS | LANDFILL - OPERATION | SITE MANAGEMENT |
| COMPOSTING | LANDFILL – PERMITTING | SITE SURVEYS |
| COMPRESSORS | LANDFILL - TRAINING | SKIPS |
| CONSULTING | LAND MANAGEMENT | SLUDGE DEWATERING |
| CONSTRUCTION | LEACHATE | SOCIAL ACCOUNTING & AUDITING |
| CONTAMINATED LAND | EXTRACTION/TREATMENT | SOLIDIFICATION & STABILISATION |
| CONTRACTING/FRANCHISING | LEACHATE SOIL COMPATIBILITY | SOLVENT RECOVERY |
| CONVEYORS & FEEDERS | TEST | SORTING PLANTS |
| COVERS | LEACHATE SUMP LININGS | SPECIALIST COATINGS |
| CRANES / CLAM SHELL BUCKETS | LEAD | SPECIALISED WASTE |
| CRUSHERS | LEGISLATION | MANAGEMENT SOLUTIONS |
| DAMS | LICENSING/PERMITTING | SPILL CLEAN UPS |
| DESIGN | LIFE CYCLE ASSESSMENT | STREET BINS |
| DETECTORS | LININGS/LINERS | STREET SWEEPERS |
| DRAIN CLEANING | LITTER - BINS | SUSTAINABILITY REPORTING AND |
| DRAINAGE | LITTER - CLEAN-UP | ASSURANCE |
| DRIERS | LITTER - PREVENTION | TANKS |
| DRILLING | LITTER - REMOVAL | TECHNICAL ASSESSMENT |
| DRUMS & CONTAINERS | LUBRICATION | TESTING |
| DUST & FUME CONTROL | MAINTENANCE SERVICES | THERMAL TREATMENT |
| EDUCATION/TRAINING | MANAGEMENT SERVICES | TOXICOLOGY SERVICES |
| ELECTRICAL INSTALLATION | MEDICAL WASTE | TRAINING COURSES |
| EMERGENCY RESPONSE/CLEAN | HANDLING/TREATMENT | TRANSFER |
| UP | MEDICAL WASTE CONTAINERS | TRANSPORT EQUIPMENT |
| EMERGENCY SERVICES | METAL RECOVERY | TRUCK/TRAINS |
| ENERGY RECOVERY | MICROBIAL TREATMENT CONTROL | TRANSPORTATION |
| ENGINEERING - CIVIL | MINI-SKIPS | TRUCK SEATS |
| ENGINEERING - ENVIRONMENTAL | MONITORING | TYRES |
| ENGINEERING - GENERAL | MUNICIPAL SERVICES | TYRE SHREDDERS |
| ENGINEERING - GEOTECHNICAL | NEUTRALISATION | VALVES |
| ENGINEERING - MECHANICAL | NOISE & VIBRATION CONTROL | VEHICLES |
| ENGINEERING - PROCESS | ODOUR CONTROL | VEHICLE MAINTENANCE |
| ENVIRONMENTAL ASSESSMENT | OIL RECOVERY | VOC EMISSION CONTROL |
| ENVIRONMENTAL SERVICES | PACKAGING MANUFACTURE/ | WASTE - COLLECTION |
| ENVIRONMENTAL SOFTWARE | RECOVERY | WASTE - DISPOSAL |
| ENVIRONMENTAL AUDITING | PAPER RECOVERY/SUPPLY | WASTE - GENERAL |
| EROSION CONTROL | PIPES | WASTE - HAZARDOUS |
| FACILITATION | PLANNING | WASTE - INDUSTRIAL |
| FILTERS/FILTRATION | PLASTICS RECOVERY/PRODUCTS | WASTE – MANAGEMENT |
| FINANCING | POLLUTION CONTROL | WASTE - MINIMISATION |
| FLAME ARRESTORS | POLLUTION MONITORING | WASTE - ORGANIC |
| FLARE STACKS | POLOKWANE DECLARATION | WASTE - PROCESSING |
| FLEET MANAGEMENT | PRESSURE VESSELS | WASTE - RECLAMATION |
| FLOTATION | PROCESS CONTROL SYSTEMS | WASTE - TRANSPORTATION |
| FLOW MONITORING | PROCESS DEVELOPMENT | WASTE - TRANSFER STATIONS |
| FOOD WASTE DISPOSERS | PROJECT ASSESSMENTS | WASTE – TREATMENT |
| FUEL SYSTEMS / SUPPLIES | PROJECT ENGINEERS | WASTE - UTILISATION |
| GARDEN WASTE / MINI SKIPS | PROJECT MANAGEMENT | WASTEWATER TREATMENT |
| GAS - EXTRACTION & HANDLING | PROTECTIVE | WATER – GENERAL |
| GAS – VENTING | EQUIPMENT/CLOTHING | WATER MANAGEMENT |
| GEOHYDROLOGICAL | PUBLIC | WATER - QUALITY MONITORS |
| GEOPHYSICAL REPORTS | PARTICIPATION/FACILITATION | WATERPROOFING |
| GEOMEMBRANE LINERS | PUMPS | WEIGHING SYSTEMS |
| GEOSYNTHETIC CLAY LINERS | QUALITY CONTROL | WHEELED CONTAINERS |
| GEOSYNTHETICS / GEOTEXTILES | RAIL TRANSFER | WHEELED CONTAINER |
| GLASS RECOVERY/PRODUCTION | RECOVERY | COLLECTION |