

Jadual 5.1 Jabatan Alam Sekitar : Stesen Pemantauan Kualiti Air Sungai, 1995-1999
 Table 5.1 Department of Environment : River Quality Monitoring Stations, 1995-1999

Jenis Pemantauan Type	Tahun/Year				
	1995	1996	1997	1998	1999
Pemantauan Manual Lembangan Sungai	115	116	117	120	120
Bilangan Stesen Pemantauan	821	909	909	900	902
Pemantauan Berterusan Otomatik Lembangan Sungai	2	4	6	8	10
Bilangan Stesen Pemantauan	2	4	6	8	10

pelupusan bangkai babi di kawasan wabak JE di Negeri Sembilan, Melaka dan Perak. Sebanyak 10 buah stesen telah ditubuhkan bagi tujuan ini 4 buah di Negeri Sembilan, 4 buah di Melaka dan 2 buah di Perak

Perak. 10 stations were established, 4 in Negeri Sembilan, 4 in Melaka and 2 in Perak.

PROGRAM PEMANTAUAN KOALITI AIR TASIK

Program permulaan pemantauan kualiti air tasik adalah memberi tumpuan pemantauan bagi tasik-tasik dan empangan di sekitar kawasan Lembah Klang. Walau bagaimanapun pada tahun 1999, program pemantauan kualiti air tasik telah diperluaskan daripada Lembah Klang termasuk Tasik Biru, Tasik Kuning dan Tasik Cermin yang terletak di Kuala Kubu Bharu, Selangor. Objektif utama program ini adalah untuk mengesan kemerosotan kualiti air tasik akibat proses eutrifikasi yang akibat dari air permukaan yang tidak terkawal dari aktiviti tanah yang di sekitar tasik. Penemuan peringkat awal pada tahun 1989 menunjukkan kualiti air tasik dan empangan adalah masih baik dan sesuai digunakan untuk berbagai kegunaan termasuk aktiviti rekreasi.

LAKE WATER QUALITY MONITORING PROGRAMME

The programme was initially focused on monitoring of lakes and dams in the Klang Valley. However in 1999, the monitoring programme was expanded outside the Klang Valley to include Tasik Biru, Tasik Kuning and Tasik Cermin in Kuala Kubu Bharu, Selangor. The main objective was to detect possible water quality deterioration due to eutrophication arising from uncontrolled runoff from the surrounding land activities. Preliminary findings in 1999 showed that the water quality in those lakes and dams was still of good quality and suitable for many uses including recreational activities.

PROGRAM PEMANTAUAN KOALITI AIR MARIN

Pemantauan kualiti air marin telah dimulakan sejak tahun 1978 bagi Semenanjung Malaysia,

MARINE WATER QUALITY MONITORING PROGRAMME

Marine water quality monitoring started in 1978 for Peninsular Malaysia, while in Sabah and Sarawak it only took off in 1985. Sampling stations were established at estuarine and coastal areas to monitor changes in the marine water quality as a result of marine-related activities such as navigation, petroleum, fish and island tourism as well as land-



manakala bagi Sabah dan Sarawak program ini bermula pada 1985. Stesen-stesen pemantauan air marin diwujudkan di kuala sungai dan pantai-pantai bagi memantau perubahan dalam kualiti air marin akibat daripada aktiviti aktiviti taut seperti pelayaran, petroleum, perikanan dan pelancongan serta aktiviti daratan. Sehingga kini sebanyak 237 buah stesen pengawasan air marin telah ditubuhkan di seluruh negara. Taburan stesen seperti yang ditunjukkan di Peta 5.2a dan 5.2b dan Rajah 5.0.

PROGRAM PEMANTAUANKOALITI AIRMARINPUIAO-PUIAO

Program ini telah bermula pada Julai 1998 bagi melaksanakan pemantauan kualiti air laut di sekitar pulau-pulau terpilih dan diteruskan pada tahun 1999.

Sebanyak 85 buah stesen pengawasan telah ditubuhkan di 71 buah pulau. Pulau-pulau tersebut dikategorikan sebagai Pulau Taman Laut (38 buah), Pulau Peranginan (25 buah), Pulau Pembangunan (3 buah) dan Pulau Dilindungi (5 buah). Dalam tempoh pelaksanaan program ini, dari Julai 1998 sehingga penghujung 1999, sebanyak 964 contoh air laut telah diambil.

Pengukuran parameter-parameter fizikal kualiti air marin melibatkan cara in-situ seperti suhu, pH, konduktiviti, kemasinan, oksigen terlarut dan kekeruhan dan parameter yang dianalisis di makmal pula adalah jumlah, pepejal teraropai, *E.coli*, nitrat, jumlah karbon organik, minyak dan gris-termasuk logam berat seperti merkuri (Hg), kadmium (Cd), kromium (Cr), kuprum (Cu), plumbum (Pb) dan arsenik (As). Percontohan bebola tar di pantai juga dilaksanakan.

based activities. To date there are 237 marine water quality monitoring stations located strategically through out the country. The distribution of these stations is as shown in Maps 5.2a and 5.2b and Figure 5.0.

ISLAND MARINE WATER QUALITY MONITORING PROGRAMME

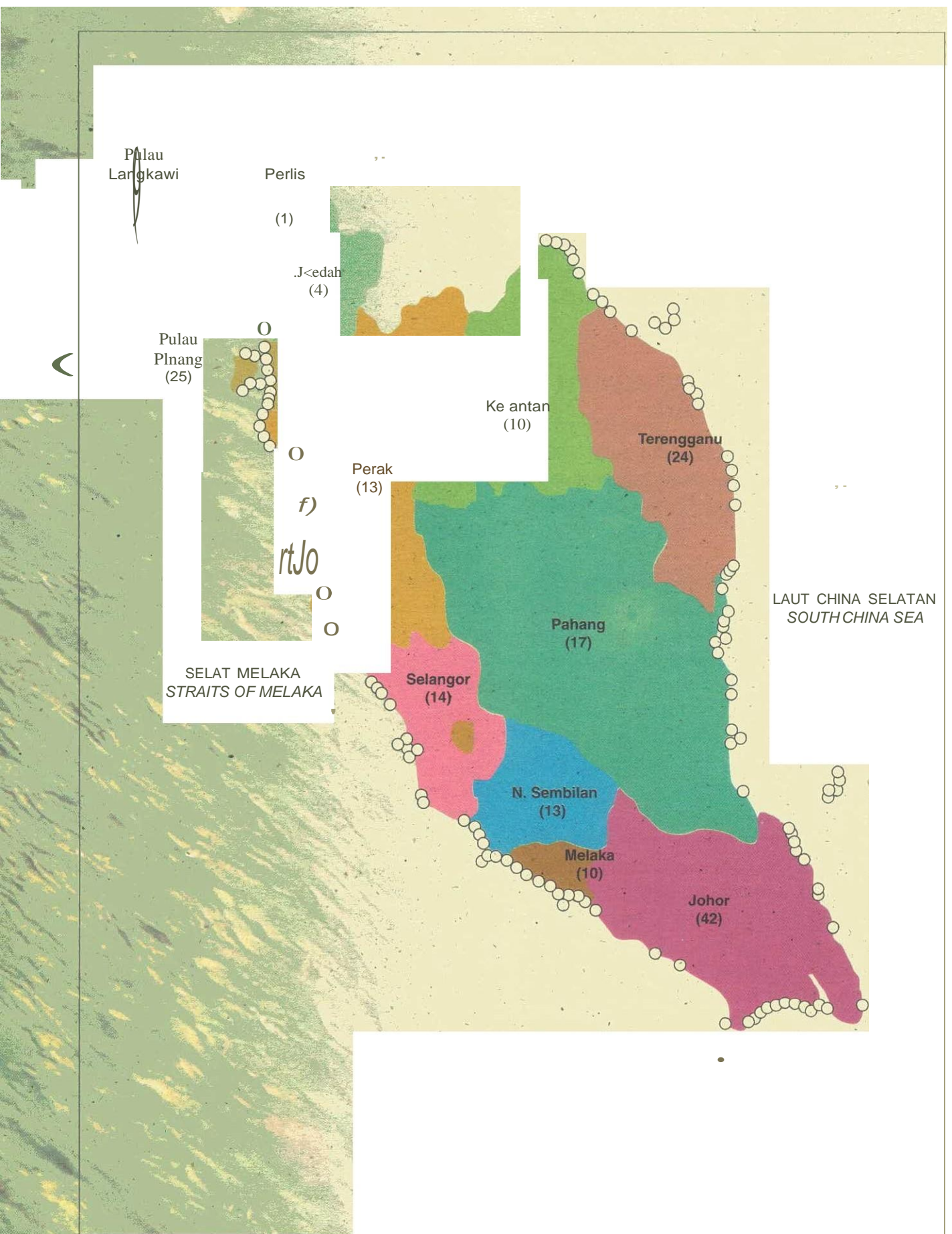
The programme commissioned in July 1998 to monitor marine water quality around selected islands was continued in 1999.

A total of 85 monitoring stations were established around 71 islands. 38 of these

islands were categorized as Marine Parks, 25 as Resorts, 3 for Development and 5 as Protected Islands. Between July 1998 till the end of 1999, a total of 964 samples were collected.

The water quality was analysed in-situ for parameters such as temperature, pH, conductivity, salinity, dissolved oxygen and turbidity, while laboratory analysis were carried out for, total suspended solids, E.coli, nitrate, total organic carbon, oil and grease, and heavy metals like mercury (Hg), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb) and arsenic (As). Tar ball samplings on beaches were also conducted.





Peta 5.2a Semenanjung Malaysia : Lokasi Stesen Pemantauan Marin, 1999
Map 5.2a Peninsular Malaysia: Location Of Marine Monitoring Stations, 1999

LAUT CHINA SELATAN
SOUTH CHINA SEA

Bru

Sabah
(31)

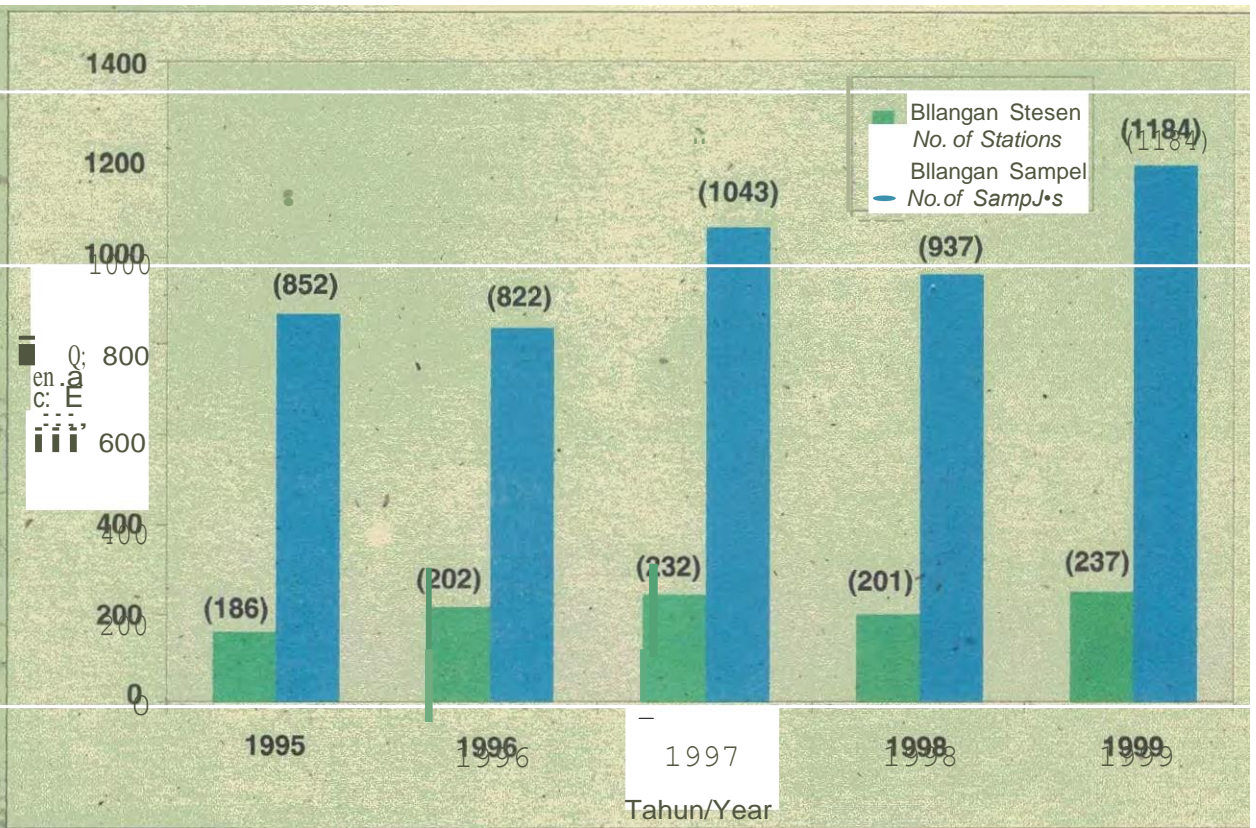
LAUT SULU
SULU SEA

LAUT CELEBES
CELEBES SEA

Sarawak
(17)

Peta 5.2b Malaysia Timur : Lokasi Stesen Pemantauan Marin, 1999
Map 5.2b East Malaysia : Location of Marine Monitoring Stations, 1999





Rajah 5.0 Malaysia: Bilangan Stesen Pemantauan Marin dan Sampel yang Dikumpul, 1995-1999
 Figure 5.0 Malaysia: Number of Marine Monitoring Stations and Samples collected; 1995-1999

PROGRAM PEMANTAUAN KUALITI AIR TANAH

Pada tahun 1999, sebanyak 119 sampel dari 61 buah telaga pemantauan kualiti air tanah di Semenanjung Malaysia telah dianalisis. Telaga pemantauan dibina mengikut kategori gigitan tanah iaitu industri, tapak pelupusan sampah, pertanian, aktiviti luar bandar, padang golf, tapak penyimpanan radioaktif dan kawasan perbandaran. (Peta 5.3).

Kualiti Air Tanah di Kawasan Wabak Japanese Encephalitis (JE)

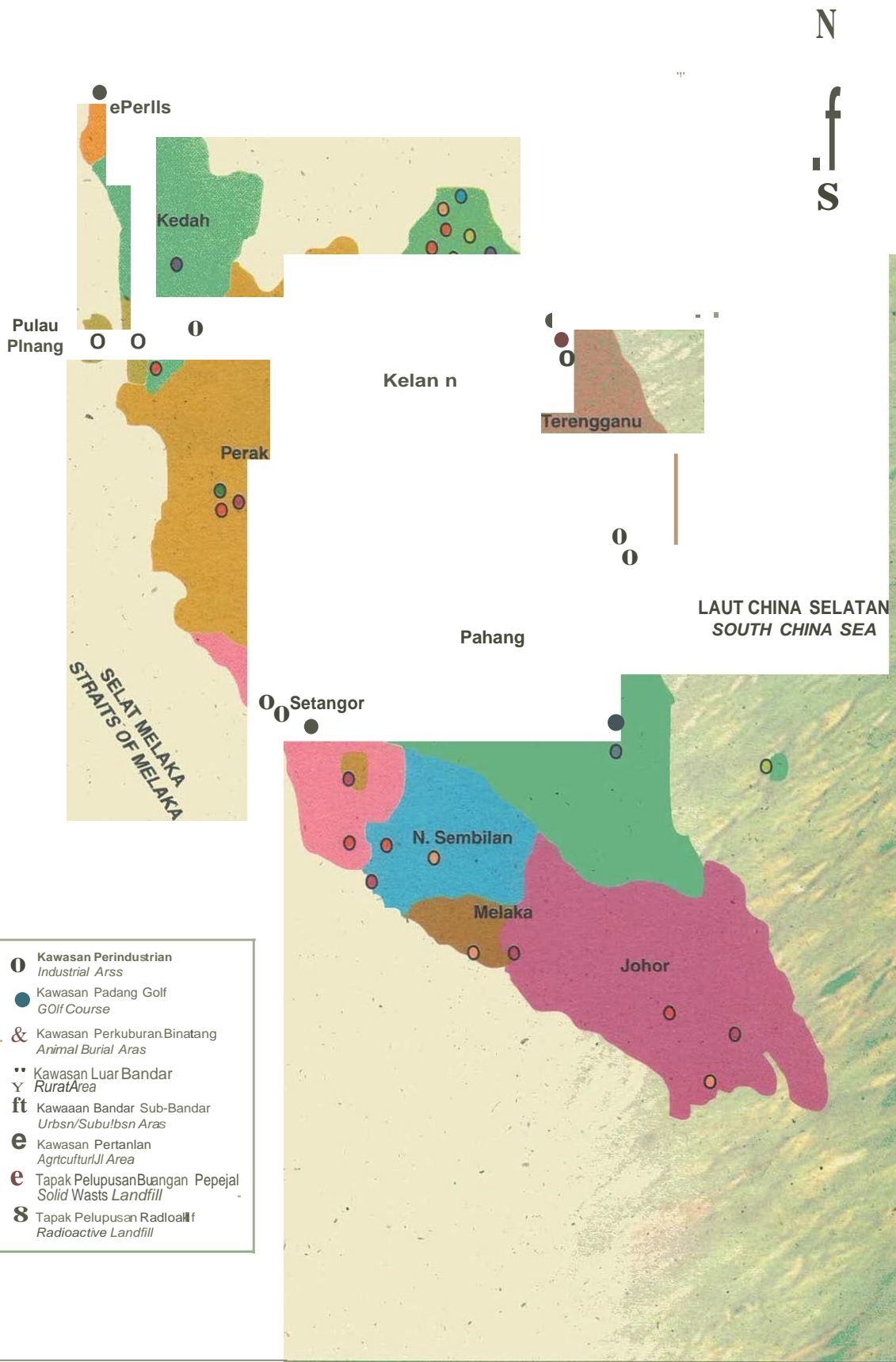
12 buah telaga pemantauan telah dibina untuk memantau kualiti air tanah berdekatan dengan tapak pelupusan bangkai babi di kawasan wabak di Pulau Pinang, Perak, Selangor, Negeri Sembilan dan Johor. 2 buah telaga telah dibina di Negeri Sembilan, 3 buah masing-masing di Johor, Pulau Pinang dan Selangor dan 1 buah telaga di Perak. Kerja-kerja pemantauan untuk telaga-telaga ini akan dilakukan pada tahun 2000.

GROUNDWATER QUALITY MONITORING PROGRAMME

In 1999 a total of 119 samples from 61 groundwater monitoring wells in Peninsular Malaysia were analysed for groundwater contamination. The monitoring wells were sited near surrounding land use such as industrial areas, sanitary landfills, agricultural areas, rural activities, golf courses, radioactive storage site and urban areas. (Map 5.3).

Groundwater Quality Monitoring in Areas affected by the Japanese Encephalitis (JE) outbreak

12 monitoring wells were constructed in 1999 to monitor groundwater quality adjacent to pig carcasses disposal sites in the affected States of Pulau Pinang, Perak, Selangor, Negeri Sembilan and Johor. 2 wells were sited in Negeri Sembilan, 3 each in Johor, Pulau Pinang and Selangor and 1 in Perak. Actual sampling work was expected to begin in the year 2000.



Peta 5.3 Semenanjung Malaysia : Lokasi Telaga Pemanantauan Kualiti Air Tanah
Map 5.3. Peninsular Malaysia : Location of Groundwater Quality Monitoring Wells



Stesen Pemantauan Kualiti Air Tanah
Groundwater Monitoring Station

PENGUATKUASAAN

PREMIS YANG DITETAPKAN

Kilang Getah Asli Mentah (KG) dan Kilang Kelapa Sawit Mentah (KKS) adalah merupakan industri berasaskan pertanian yang diwartakan sebagai Premis Yang Ditetapkan di bawah Seksyen 18, Akta Kualiti Alam Sekeliling 1974.

Kilang Getah Asli Mentah

Pada tahun 1999, sejumlah 114 buah kilang getah asli mentah telah dlesenkan di bawah Peraturan-Peraturan Kualiti Alam Sekeliling (Premis Yang Ditetapkan) (Getah Asli Mentah) 1978. (Rajah 5.1).

Di sepanjang tahun 1999, sejumlah 161 lawatan penguatkuasaan ke atas Kilang Getah telah dijalankan. Hasil daripada lawatan penguatkuasaan, 8 buah kilang telah dibawa ke mahkamah kerana melakukan pelbagai kesalahan di bawah peraturan berkenaan. (Rajah 5.1). Status pematuhan secara keseluruhan bagi Kilang Getah adalah sebanyak 90%.

ENFORCEMENT

PRESCRIBED PREMISES – AGRO-BASED

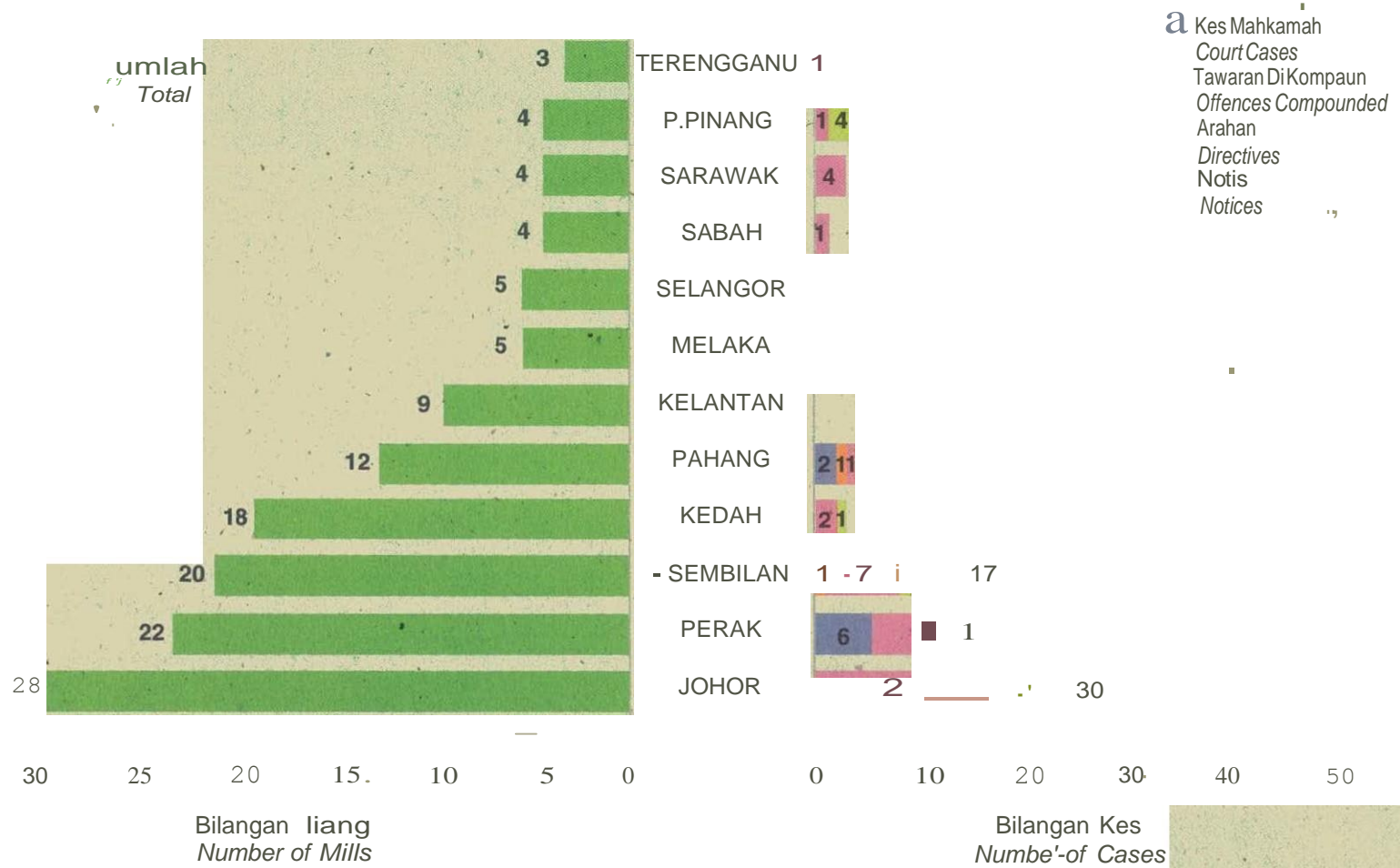
Raw natural rubber factories and crude palm oil mills are agro-based premises prescribed under Section 18 of the Environmental Quality Act 1974 which require licence for occupation or use under the Act.

Raw Natural Rubber

In 1999, a total of 134 raw natural rubber (RNR) factories were licenced under the Environmental Quality (Prescribed Premises)(Raw Natural Rubber) Regulations 1978. (Figure 5.1).

Throughout the year, a total of 161 enforcement visits to RNR factories were conducted. From these visits, 8 factories were taken to court for committing various offences under the Regulations. (Figure 5.1). The overall status of compliance for RNR factories was 90%.





Rajah 5.1 *Malaysia: Legal Factors* (Janda et al., 1999)

Kilang Kelapa Sawit Mentah

Sejumlah 337 buah kilang kelapa sawit mentah (KKS) telah dilesenkan dibawah Peraturan-Peraturan Kualiti Alam Sekeliling (Premis Yang Ditetapkan) (Kelapa Sawit Mentah) 1977. Daripada 337 buah KKS diatas, 186 buah kilang telah dilesenkan untuk melepaskan effluen yang diolahnya ke dalam alurair, 112 buah kilang ke atas tanah dan 39 buah kilang ke dalam alurair dan juga ke atas tanah.

Di sepanjang tahun 1999, sejumlah 493 lawatan penguatkuasaari ke atas KKS dan 22 buah KKS telah dibawa ke mahkamah kerana melakukan pelanggaran; 2 buah digantung lesen beroperasi. (Rajah 5.2). Status pematuhan secara keseluruhan bagi KKS adalah 81%.

SEKSYEN PREMIS YANG BUKAN DITETAPKAN

Status Pematuhan Terhadap Peraturan-Peraturan Kualiti Alam Sekeliling (Kumbahan Dan Effluen-Emuen Perindustrian) 1979

Sepanjang tahun 1999 sebanyak 3,099 punca pencemaran air yang berkaitan dengan pelepasan effluen perindustrian telah dilawatperiksa. Daripada jumlah tersebut didapati sebanyak 2,707 (87%) punca mematuhi kehendak Peraturan-Peraturan Kualiti Alam Sekeliling (Kumbahan dan Effluen-Effluen Perindustrian) 1979.

Premis industri seperti makanan dan minuman, penyudahan logam dan sadur elektrik dan baja ikan dan makanan ternakan, didapati merekodkan peratus pematuhan yang rendah iaitu masing-masing 64%, 63%, dan 55% sahaja. (Rajah 5.3). Sebab-sebab utama industri tersebut merekodkan peratus pematuhan sedemikian adalah ketidakcekan pengendalian loji pengolahan, kekurangan operator yang cekap dan beropentsi dengan tiada mempunyai loji pengolah. Kebanyakan kilang-kilang berkenaan adalah industri kecil dan sederhana.

Crude Palm Oil

A total of 337 crude palm oil (CPO) mills were licenced under the Environmental Quality (Prescribed Premises) (Crude Palm Oil) Regulations 1977. From the 337 CPO mills, 186 were licenced to discharge effluent into watercourses, 112 onto land and 39 to both watercourses and land.

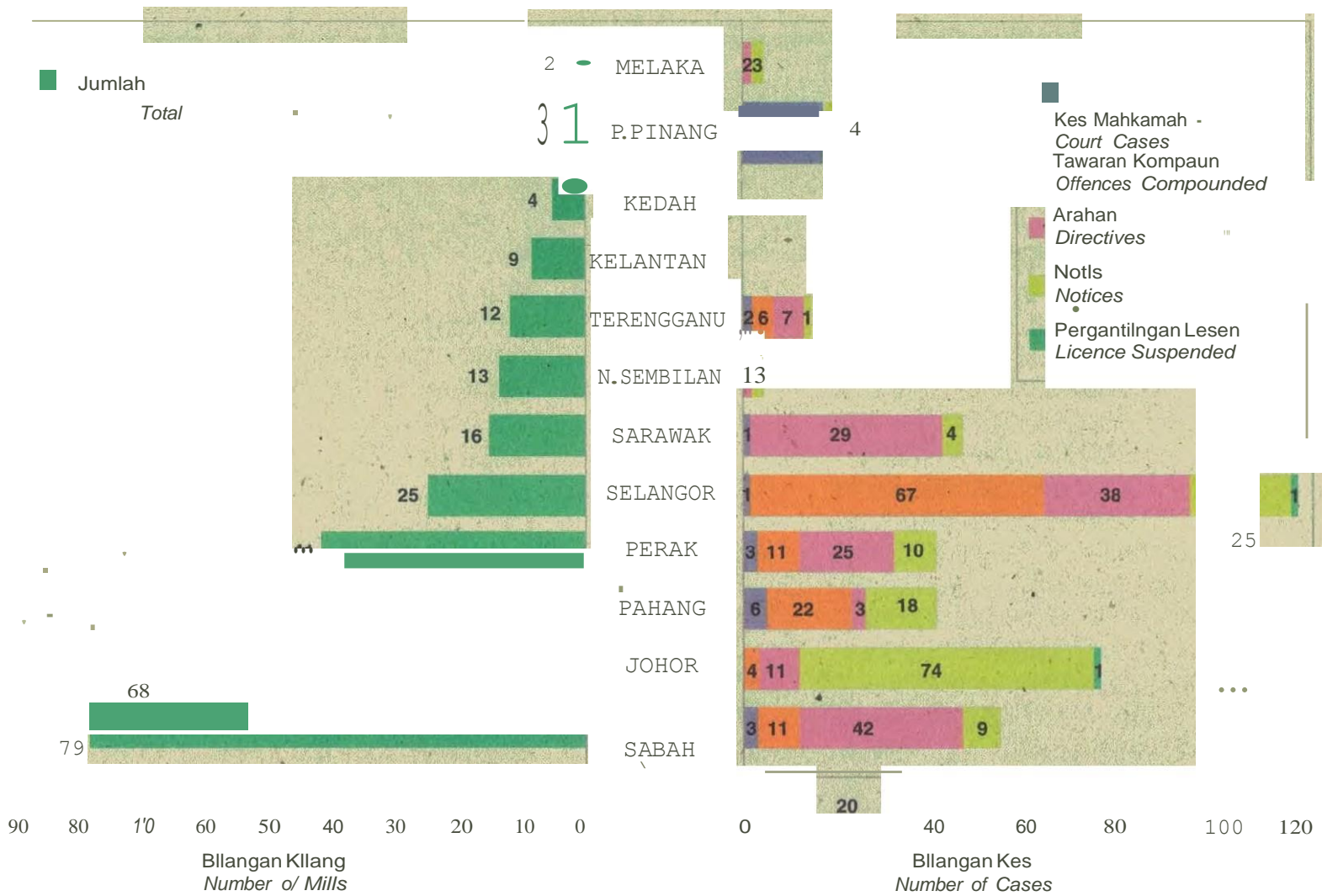
493 enforcement visits were made to CPO mills in 1999, out of which 22 mills were taken to court and licences of 2 CPO mills were suspended for committing offences relating to air and water pollution. (Figure 5.2). The overall status of compliance for CPO mills was 81%.

NON PRESCRIBED PREMISES

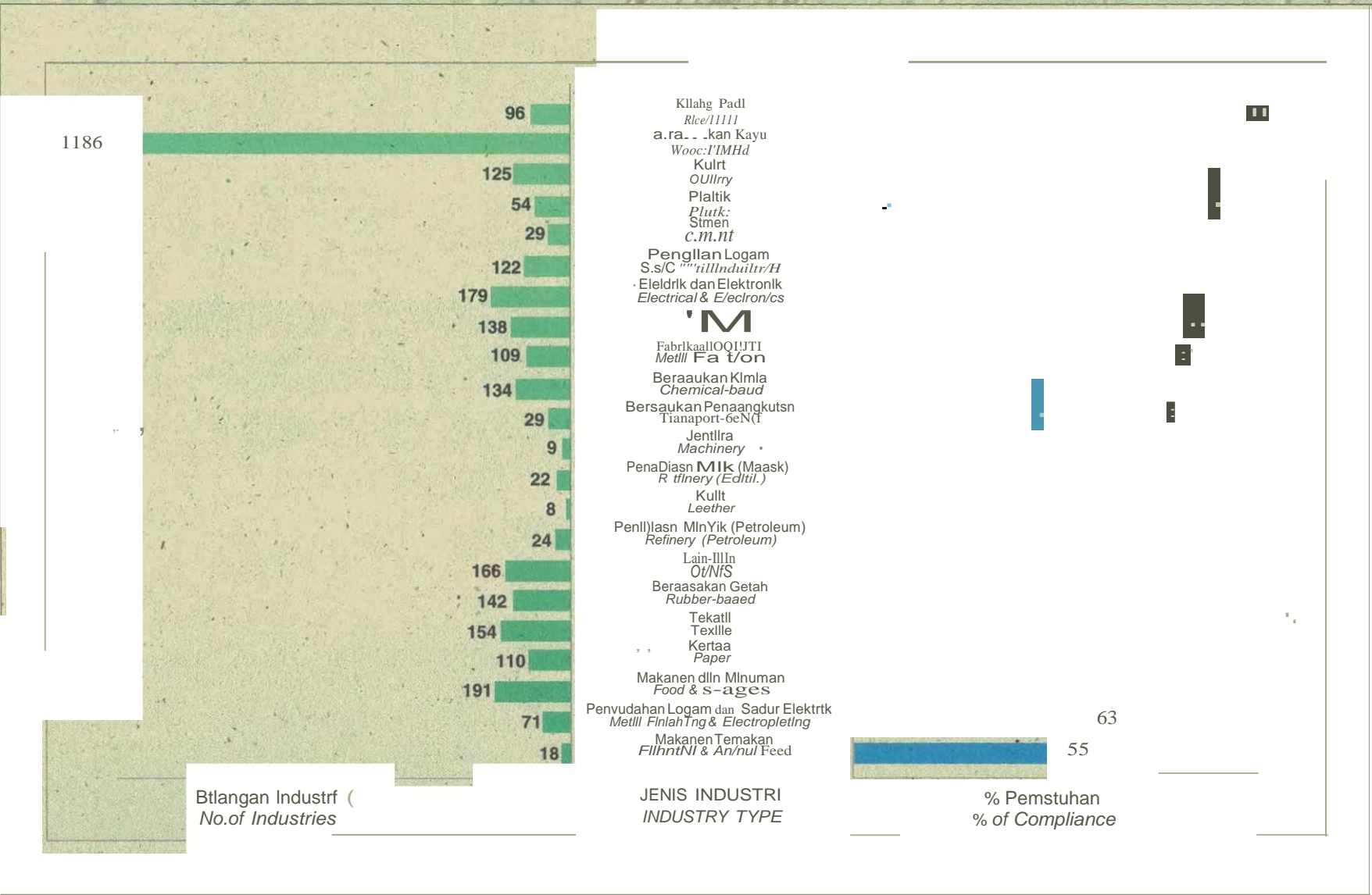
Status of Compliance with the Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979

Throughout 1999, a total of 3,099 water pollution sources discharging industrial effluents were inspected, out of which 2,707 sources (87%) were found to have complied with the Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979.

In respect of industrial premises, namely food and beverage, metal finishing and electroplating, fishmeal and animal feed, a low compliance rate of 64%, 63% and 55% respectively were recorded. (Figure 5.3). The main reasons for the poor compliance were inefficient effluent treatment plants (ETP), Lack of skilled operators and operating without ETP. The majority of these were small and medium-sized industries.



Rajah 5.2 : Bilangan Tindakan Ondang-Undang Terhadap Kuaran Kelapa Sawit Mentah, 1999



Rajah 5.3 Jabatan Alam Sekitar: Peraturan-Peraturan Kualiti Alam Sekeliling (Klimbahan dan Efluen Perindustrian) 1979
 Status Pematuhan Industri, 1999
 Figure 5.3 Department of Environment: Environmental Quality (Sewage and Industrial Effluents) Inspections 1979
 Compliance by Industries, 1999

Status Pematuhan Industri-Industri Pembuatan Terhadap Peraturan-Peraturan Kualiti Alam Sekeliling (Udara Bersih) 1978 bagi Tahun 1999

Pada tahun 1999, 69% dari 2,228 punca pencemaran udara atau premis telah dilawati didapati telah mematuhi Peraturan-Peraturan Kualiti Alam Sekeliling (Udara Bersih) 1978. Didapati industri tekstil mencapai pematuhan yang paling tinggi iaitu 93%, diikuti oleh industri kertas (87%) dan industri berasaskan petroleum (85%), getah (85%), sektor galian bukit logam (57%) dan kilang plastik (51%) (Rajah 5.4).

Kesalahan-kesalahan biasa yang dilakukan oleh premis-premis ini termasuklah tiada kelulusan bertulis daripada Ketua Pengarah Alam Sekeliling bagi pemasangan alat-alat pembakaran bahan api atau cerobong (Peraturan 36 dan 38); pembakaran terbuka sisa-sisa kilang (Peraturan 11); mengendalikan kemudahan tanpa alat kawalan pencemaran udara atau dengan alat kawalan yang tidak berfungsi (Peraturan 40) ataupun pelepasan asap hitam melebihi tempoh yang dibenarkan (Peraturan 14, 15 dan 16).

KEKEMUDAHAN TERJADUAL

Kebenaran Bertulis dan Lesen Premis Yang Ditetapkan

Pada tahun 1999, JAS telah menerima 50 permohonan Kebenaran Bertulis untuk kemudahan pengolahan dan pelupusan buangan terjadual dan 32 permohonan telah diluluskan. JAS juga telah meluluskan 33 permohonan daripada 53 permohonan lesen bagi kemudahan baru pengolahan dan pelupusan. Sebanyak 155 lesen bagi kemudahan tersebut telah diperbaharui untuk tempoh bermula 1 Mei 1999 sehingga 30 April 2000. Sehingga 31 Disember 1999, terdapat 96 kontraktor pengangkutan dan 103 kemudahan pengolahan dan pelupusan yang telah dilisenkan oleh JAS. (Rajah 5.5).

Status of Compliance with the Environmental Quality (Clean Air) Regulations, 1978

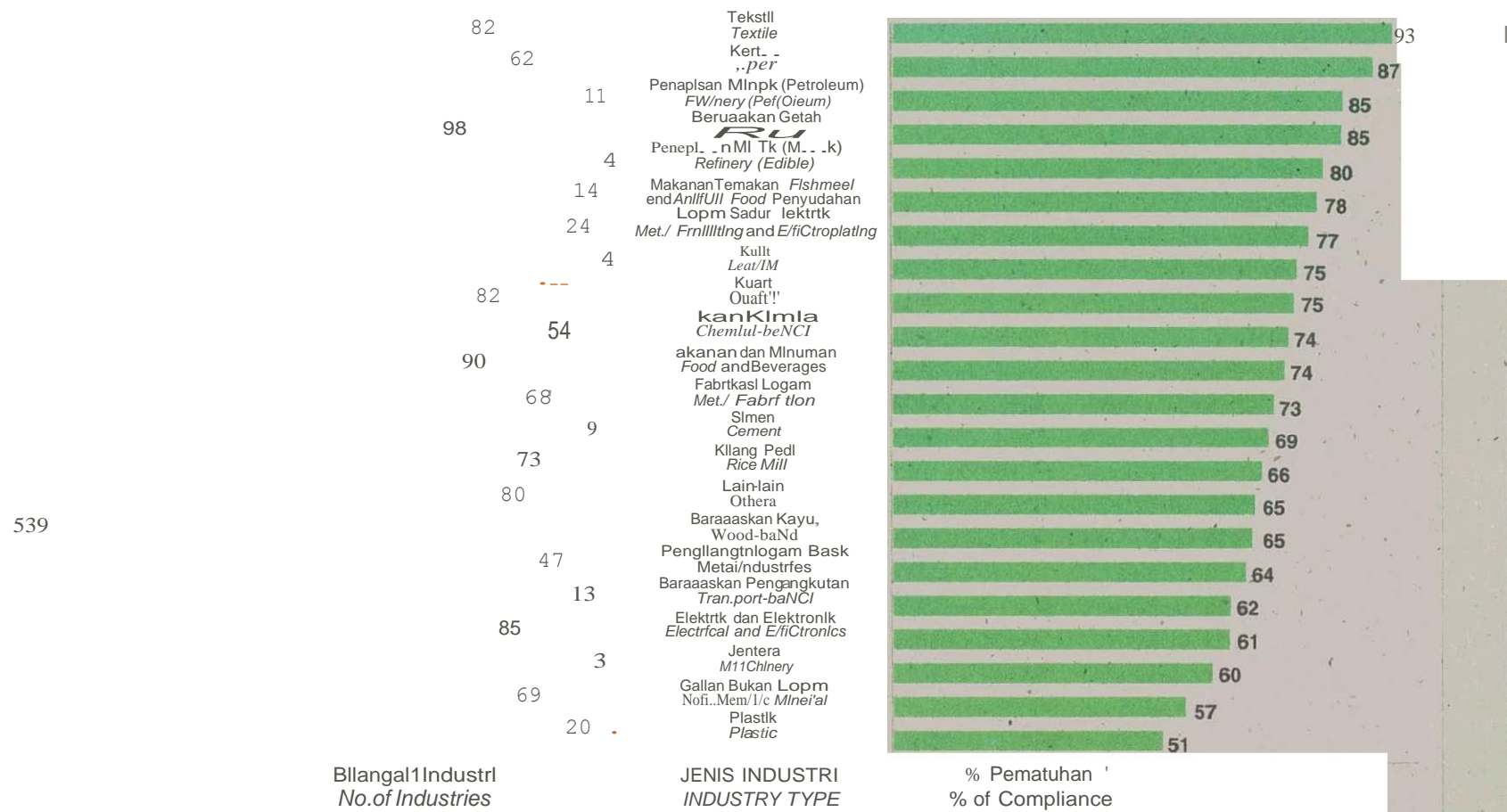
In 1999, 69% of 2,228 air pollution sources for premises visited were found to have complied with the Environmental Quality (Clean Air) Regulations, 1978. Analysis of compliance by industry type showed that textile industries achieved 93% compliance, the paper industry (81%), petroleum refinery (85%), rubber-based industries (85%) non-metallic mineral product sector (57%) and plastic industries (51%) (Figure 5.4).

Common offences for non-compliance included installation or erection of fuel burning equipment or chimneys without prior written approval by the Director-General of Environmental Quality (Regulations 36 and 38); open burning of industrial wastes (Regulation 11); inefficient or absence of air pollution control equipment (Regulation 40) and; emission of black smoke exceeding the allowable limit (Regulations 14, 15 and 16).

SCHEDULED WASTES

Written Permission and Licences for Prescribed Premises

In 1999, 50 applications for Written Permission to construct prescribed premises for scheduled wastes treatment and disposal were received and 32 applications were approved. DOE also approved 33 out of 53 applications for licences to occupy and operate new facilities for scheduled waste treatment and disposal. 155 licences for such facilities were renewed for the period between 1 May 1999 to 30 April 2000. As of 31 December 1999, a total of 96 transport contractors and 103 scheduled waste treatment and disposal facilities were licensed by DOE (Figure 5.5).



Rajah 5.4 Jabatan Alam Sekitar: Peraturan-Peraturan Kualiti Alam Sekeliling (Udara Bersih), 1978. Status Pamatuhan Industri, 1999
 "Figure 5.4 Department Of Environment : Environmental Quality (Clean Air) Regulation 15, 1978. Compliance by Industry, 1999

Import dan Eksport Buangan Terjadual

Pada tahun 1999, sejumlah 5,187.62 tan metrik buangan terah dieksport. Buangan yang dieksport terdiri daripada mangkin terpakai industri dan enapcemar logam berat daripada 22 permohonan. (Rajah 5.6) untuk diolah ke negara lain. Sebanyak 8 permohonan telah diberi kebenaran untuk mengimport 166,328.6 tan metrik buangan untuk tujuan penggunaan sebagai bahan mentah pemrosesan. (Rajah 5.7)

PENGUATKUASAAN TERHADAP AKTIVITI PEMBAKARAN TERBUKA

Penguatkuasaan terhadap aktiviti pembakaran terbuka diteruskan lagi dalam tahun 1999, sebagai langkah berjaga-jaga untuk mencegah berlakunya jerebu akibat daripada punca-punca tempatan. Antara langkah-langkah yang dilaksanakan dan tindakan-tindakan susulan yang dibuat bagi menangani masalah pembakaran terbuka ialah:

- MeAeruskan Operasi Mencegah Pembakaran Terbuka (Ops Bakar) di seluruh negara. Pasukan-pasukan peronda telah dibentuk di semua Pejabat Jabatan Alam Sekitar (JAS) Negeri dan di Ibu Pejabat untuk menjalankan rondaan dan penguatkuasaan setiap hari di daratan.
- Pengawasan melalui udara oleh Unit Udara Polis (UUP) juga diteruskan dalam membantu pengesanan pembakaran terbuka terutamanya di lokasi-lokasi yang tidak dapat diniasukki dengan kenderaan darat
- Kerjasama antara Jabatan Perkhidmatan Bomba dan Penyelamat untuk memadam kebakaran
- Dialog-dialog dengan pemilik-pemilik ladang mengenai keperluan pembakaran sifar.

Sepanjang tahun 1999, sejumlah 972 kes pembakaran terbuka telah dikesan dan disiasat. (Rajah 5.8) Bilangan pembakaran terbuka paling banyak dikesan di premis-premis industri (262), diikuti oleh ladang (238), belukar (160), tapak petupusan (yang diluluskan dan haram) (125), lain-lain (64),

Import and Export of Scheduled Wastes

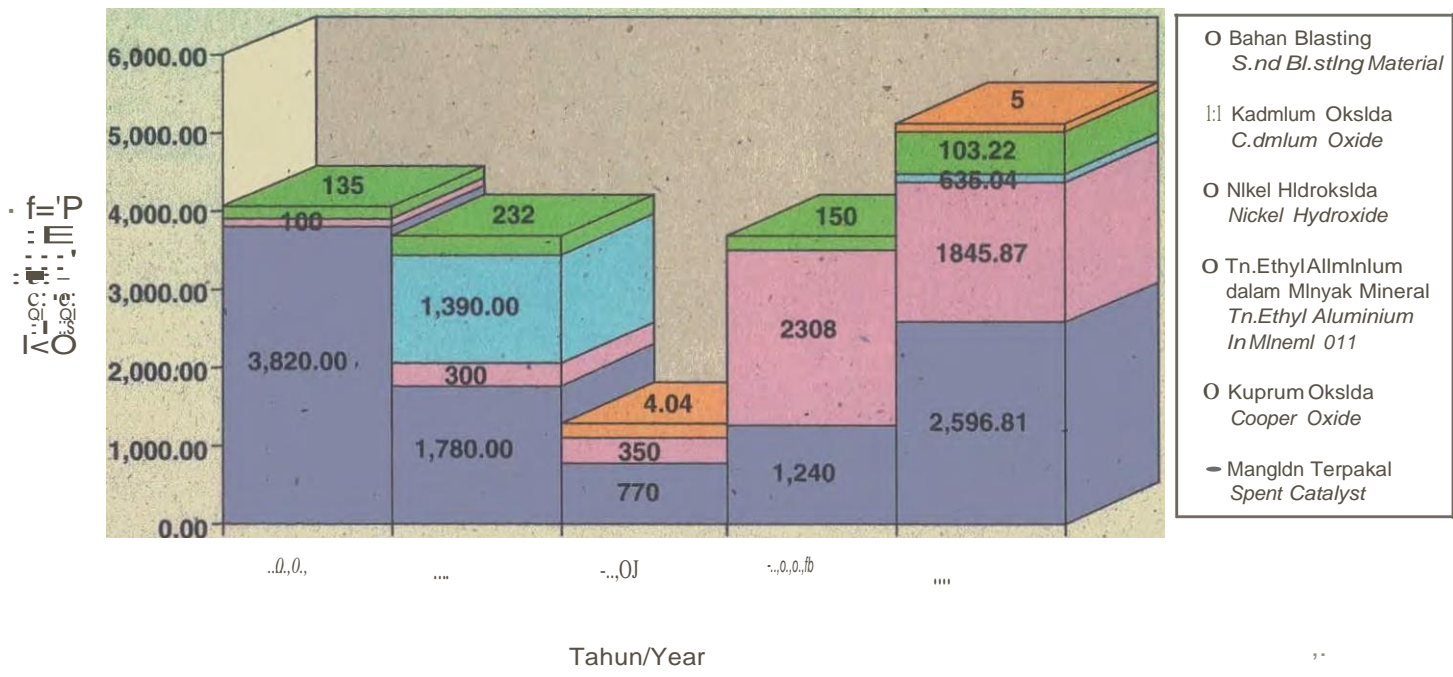
A total of 5,187.62 tonnes of scheduled wastes were exported in 1999. The exports comprised mainly of spent industrial catalysts and metal sludges and were made by 22 applicants. (Figure 5.6). These wastes were destined for recovery in other countries. 8 applicants received approvals to import 166,328.6 tonnes of wastes to be used as raw materials in their processes (Figure 5.7).

ENFORCEMENT AGAINST OPEN BURNING ACTIVITIES

Enforcement against open burning activities was intensified in 1999 as a precautionary measure to prevent the occurrence of haze due to local sources. Among the measures carried out and follow up actions taken were:

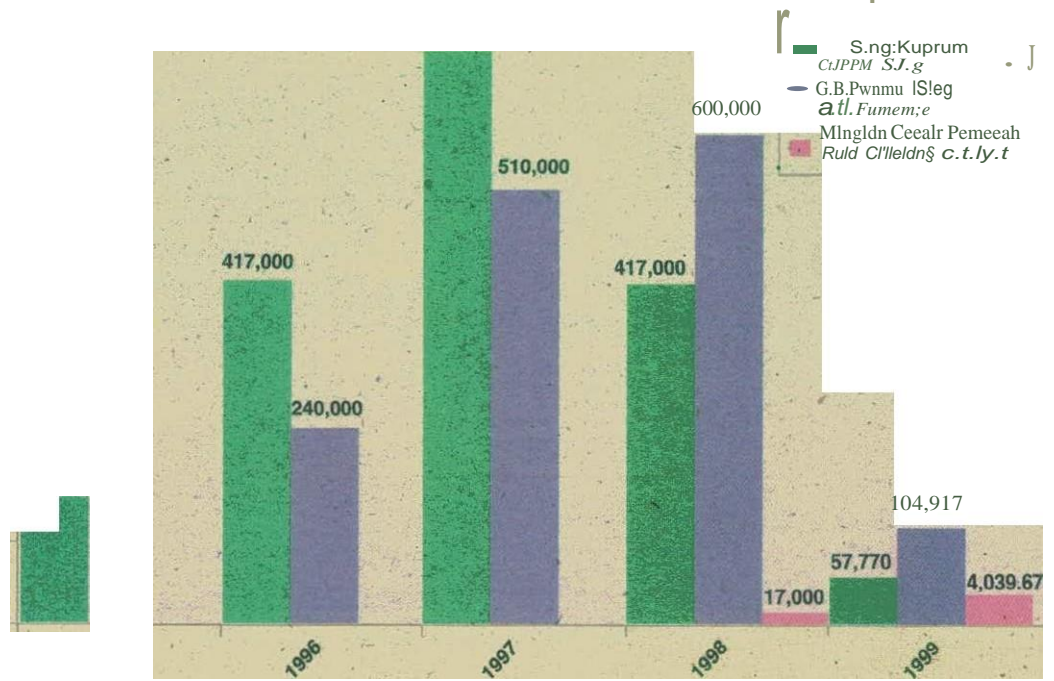
- Reactivation of nationwide "Operasi Mencegah Pembakaran Terbuka (Ops Bakar)" or "Operation to Prevent Open Burning". Patrol teams were assembled in all DOE State Offices as well as the Head Office to undertake daily ground surveillance and enforcement
- Implementation of aerial surveillance by Police Air Wing to assist in the detection of open burning particularly at locations not accessible by road.
- Collaboration with the Fire and Rescue Services Department to put out fires.
- Dialogues with plantation owners on zero burning requirement.

Throughout 1999, a total of 972 open burning cases reported or detected were investigated. (Figure 5.8). The most frequent open burning incidents were detected at industrial premises (262), followed by plantations (238), bushes (160), disposal sites (legal and illegal) (125), others (64), forest (62) and construction sites (61). Of these, 270 cases were compounded, amounting to RM499,450. 4 cases are pending prosecution while 1 factory in Sarawak was found guilty and fined RM6,000. 89 cases are still under detailed investigation. 261 cases were categorised as activities exempted from the open burning prohibition

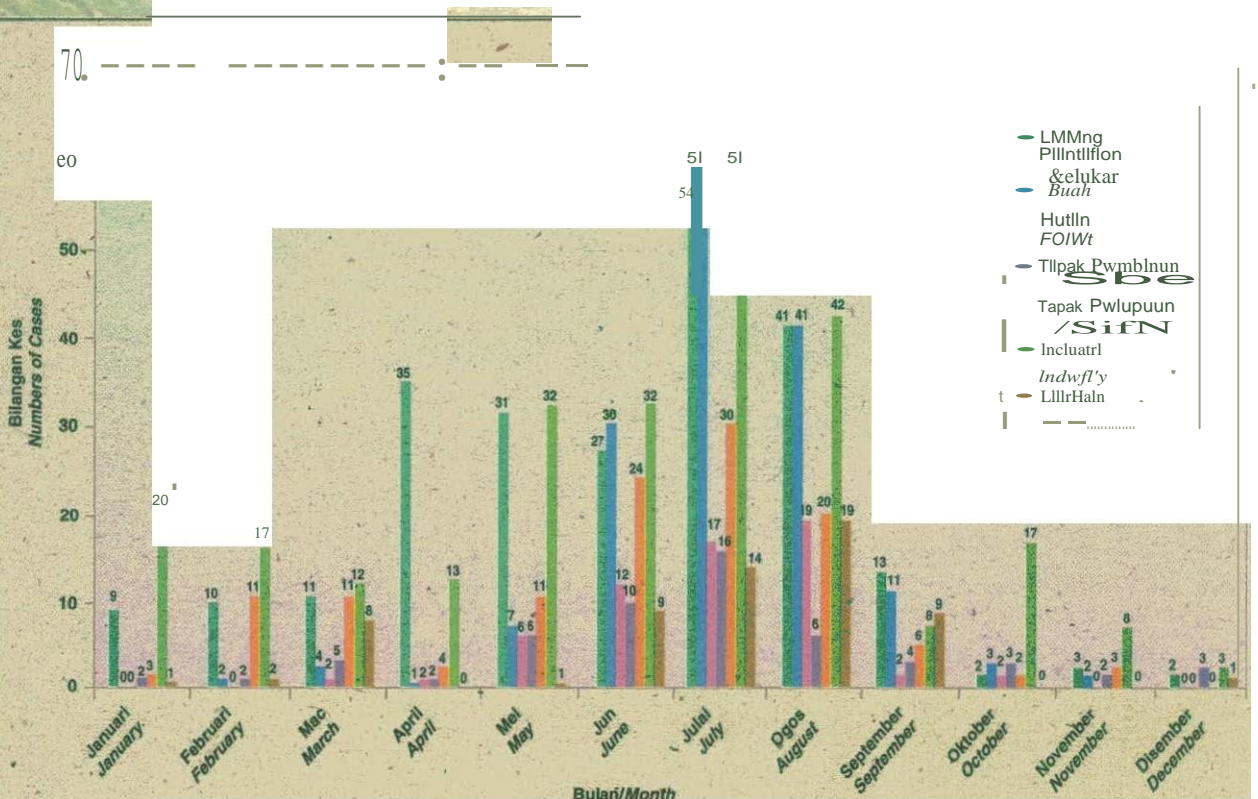


Rajah 5.6 Malaysia: Kualiti dan Jumlah Puncung Terjual Yang Dieksport, 1995-1999

Figure 5.6 Malaysia: Quality and Quantity of Spent Catalysts Exported, 1995-1999



Rajah 5.7 Malaysia : Kuantiti dan Jenis Buangan Terjadual Yang Diimport, t1995-t1999
 Figure 5.7 Malaysia: Volume and Types of Wastes Imported, 1995-1999



Rajah 5.8 Malaysia : Bilangan Kes Pembakaran Terbuka, 1999
 Figure 5.8 Malaysia: Number of Open Burning Cases, 1999

hutan (62) dan tapak pembinaan (61). Daripada jumlah yang dikesan ini, 270 kes telah dikenakan kompaun yang berjumlah RM499,450.00; 4 kes akan dihadapkan di mahkamah sementara 1 kilang di Sarawak sudahpun dikenakan hukuman dengan denda sebanyak RM600.00. Sebanyak 89 kes masih lagi dalam siasatan lanjut bagi mengumpul lebih maklumat dan bahan bukti ataupun untuk mengenalpasti pemilik-pemilik tanah berkenaan, dengan kerjasama Pejabat Tanah dan Daerah berkenaan. Sejumlah 261 kes pula tergolong di bawah aktiviti-aktiviti yang dikecualikan daripada larangan pembakaran terbuka, sementara 192 kes perlu dirujuk kepada Pihak Berkuasa Tempatan bagi tindakan penguatkuasaan kerana ini merupakan tapak-tapak pelupusan haram. Kes-kes lain adalah pembakaran kecil yang boleh dipadam dengan segera selepas amaran keras diberikan.

Jumlah pembakaran terbuka paling banyak dikesan dalam bulan Julai (248 kes) diikuti oleh bulan Ogos (188 kes) dan bulan Jun (144 kes), pada musim panas dan kering. Walaupun bagaimanapun, antara bulan September sehingga Disember iaitu, musim hujan, bilangan pembakaran terbuka yang dikesan berkurangan dengan ketaranya.

LESEN PELANGGARAN:

Bilangan keseluruhan permohonan bagi pelanggaran yang dibenarkan di bawah Seksyen 22(1) dan 25(1) (Rajah 5.9) telah berkurangan kepada 73 pada tahun 1999 berbanding 98 pada tahun 1998. Sebanyak 16 permohonan lesen di bawah Seksyen 22(1) telah diterima di mana 5 permohonan telah diluluskan dan 11 ditolak. Permohonan untuk melepaskan effluen melebihi standard di bawah Seksyen 25(1) berkurang kepada 57 pada tahun 1999 berbanding dengan 94 pada tahun 1998, di mana sebanyak 53 telah diluluskan manakala 4 permohonan telah ditolak. (Rajah 5.10). Permohonan yang paling banyak diterima di bawah Seksyen 25(1) adalah dari industri makanan dan minuman, tekstil dan berindustri getah. (Rajah 5.11).

order under the E.A. while 192 cases were referred to the relevant Local Authorities for further action such as burning at illegal dumping sites. The remaining cases were small fires which were put out immediately after strict warnings were given.

The highest number of open burning cases were detected in the month of July (248), August (188) and June (144) during hot and dry weather conditions. However, during the rainy season between September till December, the number of open burning cases decreased significantly.

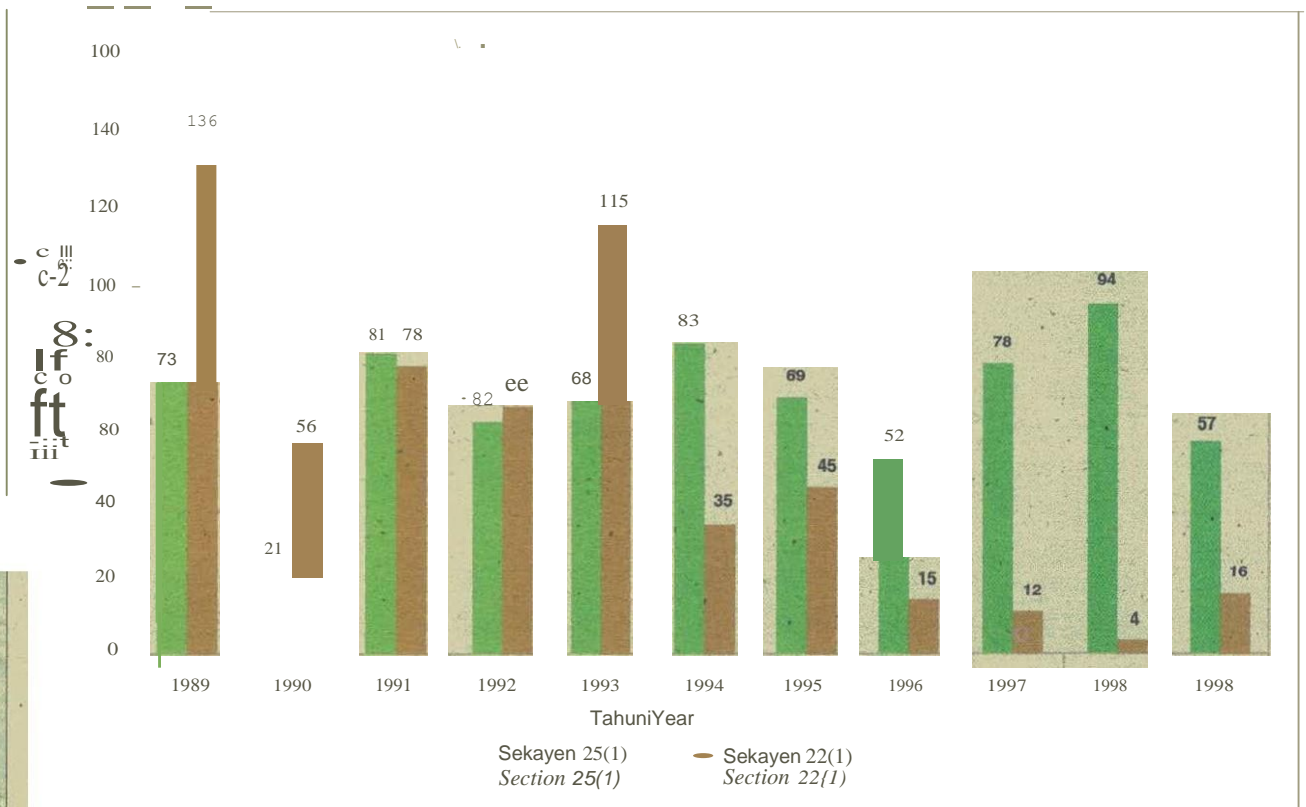
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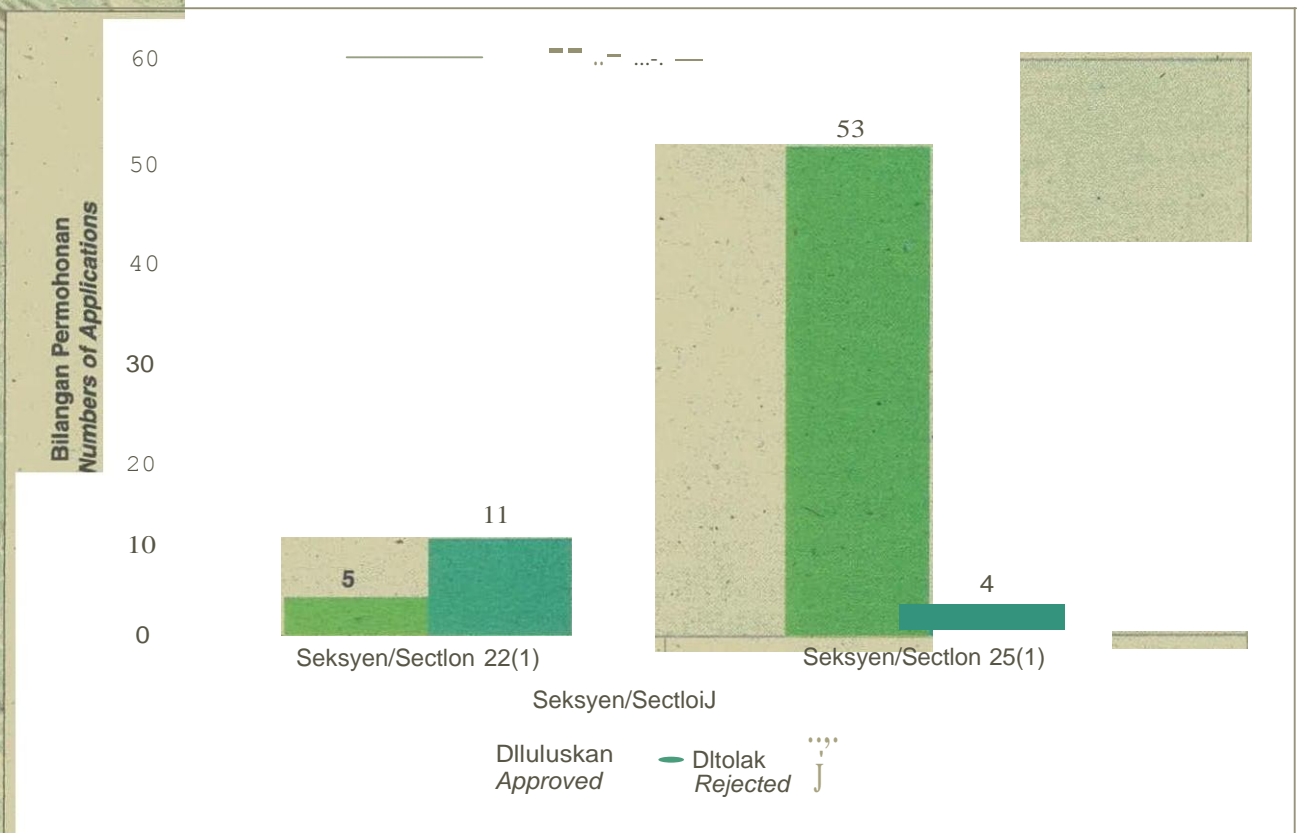
Pembakaran Terbuka Di Tapak Pelupusan Haram
Open Burning At Illegal Dumping Site

CONTRAVENTION LICENCE

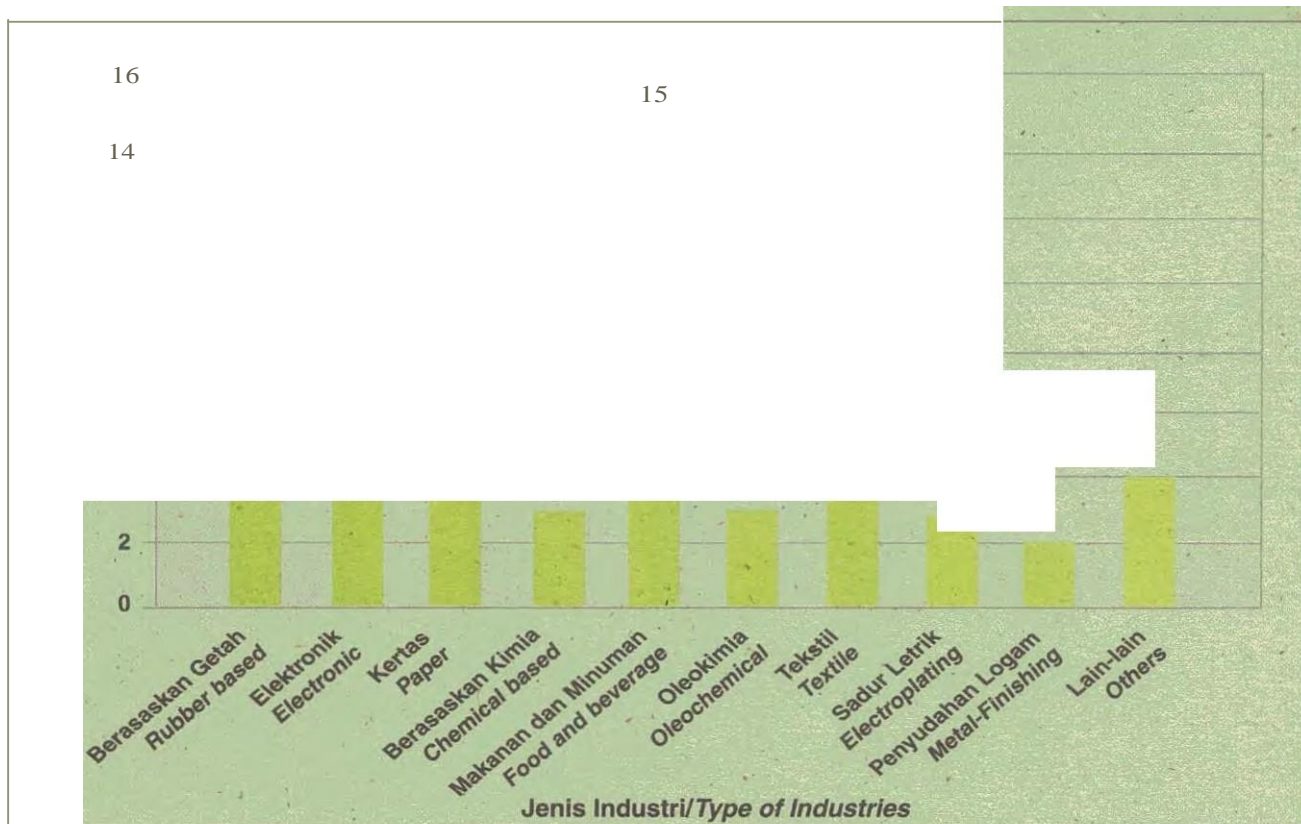
Overall the number of applications for contravention of acceptable conditions under Sections 22(1) and 25(1) (Figure 5.9) decreased from 98 in 1998 to 73 in 1999. In respect of Section 22(1), 16 applications for contravention were received of which 5 were approved and 11 rejected. Applications to contravene effluent discharge standards under Section 25(1) decreased from 94 in 1998 to 57 in 1999, of which 53 were approved and 4 were rejected. (Figure 5.10). The bulk of the applications for contravention under Section 25(1) were from the food and beverage, textile and rubber based industries. (Figure 5.11).



Rajah 5.9 Jabatan Alam Sekitar: Bilangan Lesen Pelanggaran Yang Diterima Di bawah Seksyen 25(1) dan 22(1), Akta Kualiti Alam Sekeliling 1974 (1989-1999)
 Figure 5.9 Department of Environment: Number of Applications for Contravention Licences under Section 25(1) and 22(1), Environmental Quality Act 1974 (1989-1999)



Rajah 5.10 Jabatan Alam Sekitar: Permohonan Lesen Pelanggaran, 1999
 Figure 5.10 Department of Environment: Application for Contravention Licences, 1999



Rajah 5.11 Jabatan Alam Sekitar: Bilangan Lesen Pelanggaran Yang Diluluskan Di bawah Seksyen 25(1), Akta Kualiti Alam Sekeliling 1974 Mengikut Jenis Industri, 1999

Figure 5.11 Department of Environment: Number of Contravention Licences Approved under Section 25(1), Environmental Quality Act 1974 by Industry Type, 1999

PENGOLAHAN DAN PEJUJUSAN KUMBAHAN

Rajah 5.12 menunjukkan bilangan permohonan lesen pelanggaran yang diterima dari Indah Water Konsortium (IWK) sejak tahun 1994. Bilangan permohonan telah berkurangan dari 2,762 pada tahun 1998 kepada 2,475 pada tahun 1999. Daripada sejumlah 2,475 lesen yang dikeluarkan kepada IWK untuk mempertingkatkan loji sedia ada, 93% adalah permohonan memperbaharui lesen manakala 7% adalah permohonan lesen baru dan pindaan syarat lesen (Rajah 5.13).

PUNCA BERGERAK (KENDERAAN SERMOTOR)

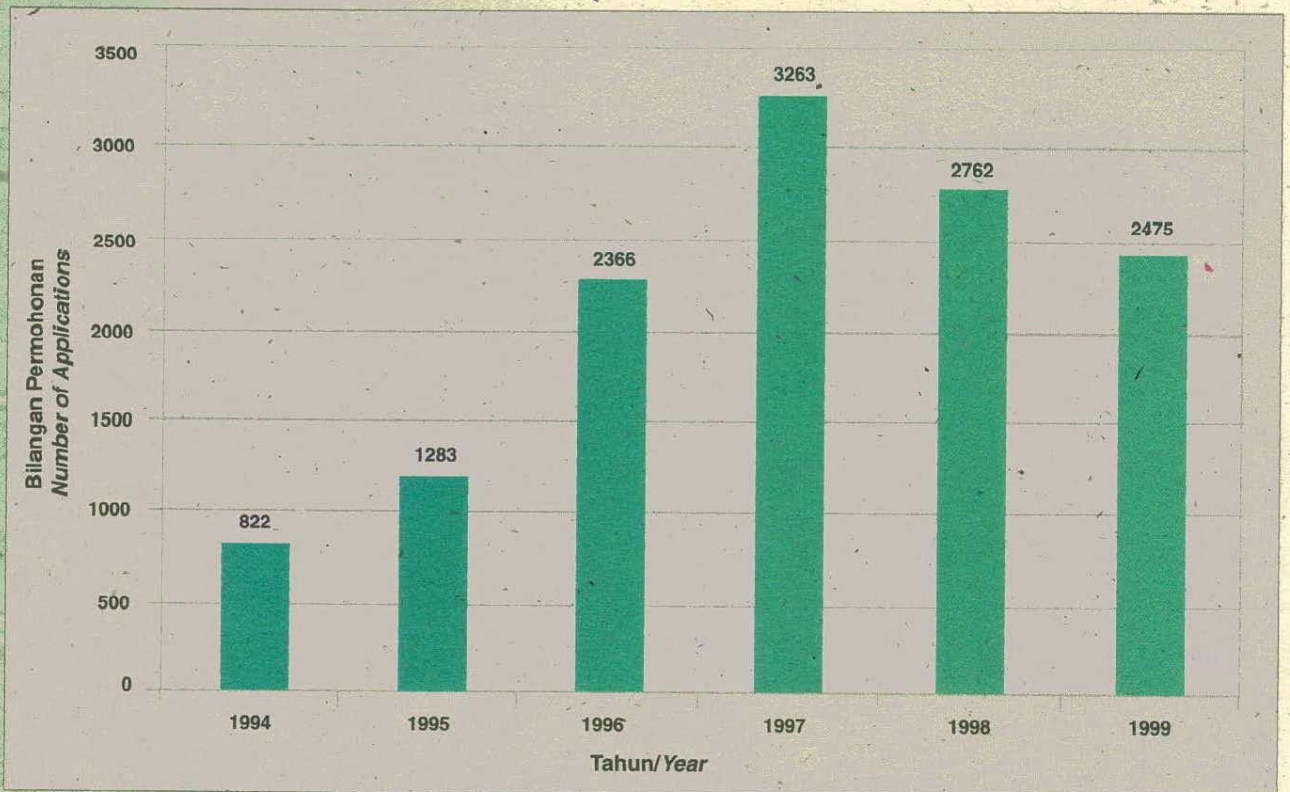
Sehingga akhir tahun 1999, bilangan kenderaan bermotor yang didaftarkan di Malaysia ialah 10 juta 900,000 buah kenderaan (9.8%) berbanding dengan tahun 1998.

SEWAGE TREATMENT AND DISPOSAL

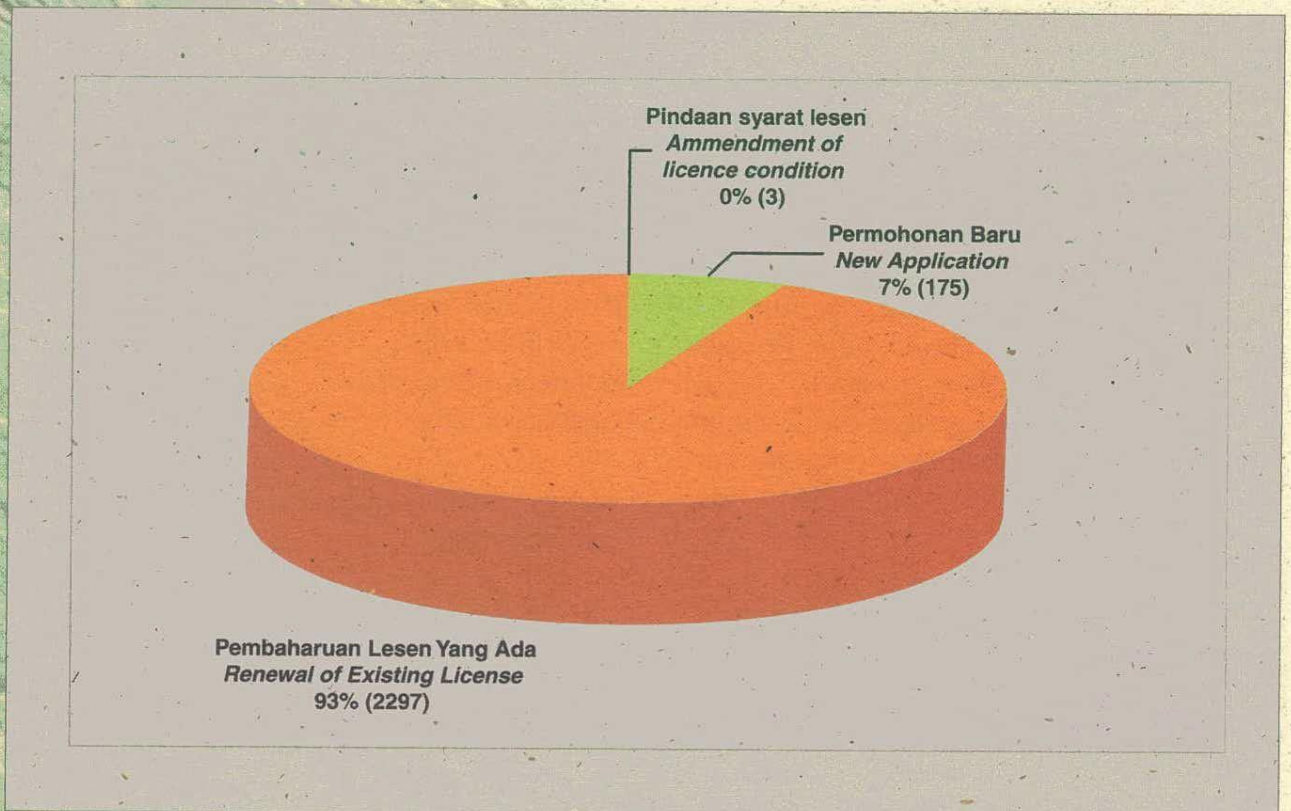
Figure 5.12 shows the number of applications for contravention licences received from Indah Water Konsortium (IWK) since 1994. The number had decreased from 2,762 in 1998 to 2,475 in 1999. Out of 2,475 licences given to IWK, 93% were for renewal to upgrade existing facilities, while the other 7% were new applications and for amendment to licence conditions (Figure 5.13)

MOBILE SOURCES (MOTOR VEHICLES)

By the end of 1999, there were about 10 million motor vehicles registered in Malaysia, an additional 900,000 motor vehicles (9.8% compared to 1998).



Rajah 5.12 Jabatan Alam Sekitar : Bilangan Permohonan Lesen Pelanggaran Di bawah Seksyen 25(1), Akta Kualiti Alam Sekeliling 1974 (1994-1999) oleh IWK
Figure 5.12 Department of Environment : Number of Applications for Contravention Licences under Section 25(1), Environmental Quality Act 1974 (1994-1999) by IWK



Rajah 5.13 Jabatan Alam Sekitar : Jenis Permohonan bagi Lesen Pelanggaran untuk IWK Di bawah Seksyen 25(1) AKAS 1974
Figure 5.13 Department of Environment : Type of Applications for Contravention Licence by IWK under Section 25(1) EQA 1974

Bagi 900,000 kenderaan yang didaftarkan pada tahun 1999, motosikal adalah bilangan tertinggi dengan 400,000 unit (45%), diikuti dengan kereta 335,000 units (37%) dan baki selebihnya 165,000 unit adalah lain-lain jenis kenderaan.

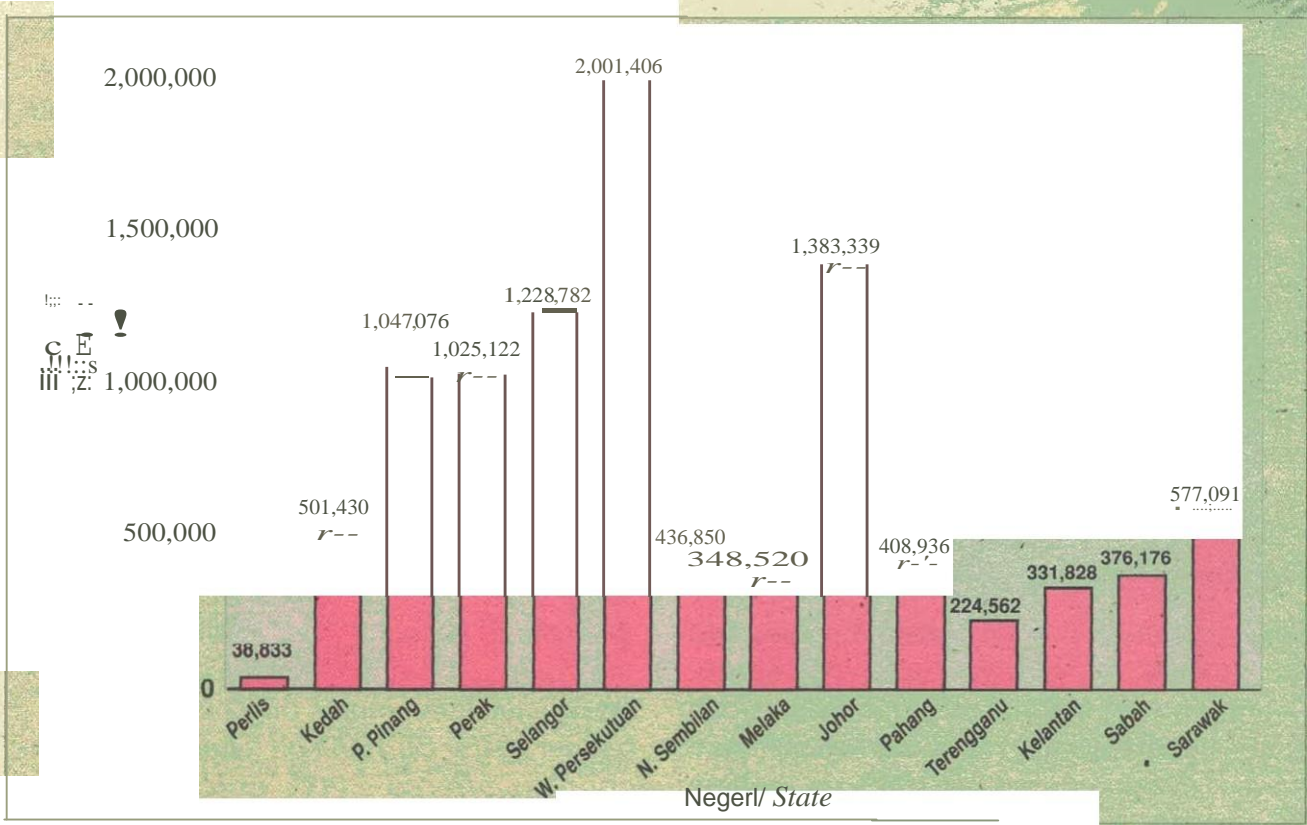
Out of the 900,000 newly registered vehicles in 1999, motorcycles made up the highest share of 400,000 units (45%), followed by passenger cars with 335,000 units (37%) and the remaining 165,000 units (18%) were other types of vehicles.

Taburan kenderaan bermotor mengikut negeri seperti di Rajah 5.14. Wilayah Persekutuan (Kuala Lumpur) mempunyai bilangan kenderaan yang tertinggi, diikuti oleh Johor, Selangor, Pulau Pinang dan Perak.

The distribution of motor vehicles according to States is given in Figure 5.14. Wilayah Persekutuan (Kuala Lumpur) had the highest vehicle population, followed by Johor, Selangor, Pulau Pinang and Perak.

Merujuk kepada inventori beban pelepasan, kenderaan bermotor melepaskan lebih kurang 1.9 tan metrik karbon monoksida, 120,000 tan metrik hidrokarbon, 268,000 metrik tan oksida nitrogen dan 17,480 tan metrik bahan partikulat ke atmosfera terutama di kawasan perbandaran.

According to the emission load inventories, motor vehicles were estimated to emit 1.9 million metric tonnes of carbon monoxide, 120,000 metric tonnes of hydrocarbons, 268,000 metric tonnes of oxides of nitrogen and 17,480 metric tonnes of particulate matter into the atmosphere, especially in urban areas.



Rajah 5.14 Malaysia : Bilangan Motosikal Mengikut Negeri, 1999
 Figure 5.14 Malaysia: Number of Motorcycles According to State, 1999

Kawalan Pelepasan Gas Dari Kerideraan Bermotor

Kawalan pencemar gas yang dilepaskan dari eksos kenderaan bermotor adalah karbon monoksida (CO), hidrokarbon (HC) dan oksida nitrogen (NOx) dikuatkuasakan di bawah Peraturan-Peraturan Kualiti Alam Sekeliling (Kawalan Pelepasan Daripada Enjin Diesel) 1996 dan Peraturan-Peraturan Kualiti Alam Sekeliling (Kawalan Pelepasan Daripada Enjin Petrol) 1996. Di bawah peraturan di atas, model baru kenderaan bermotor yang diperkenalkan pada atau selepas 1-1-1997 memerlukan mematuhi beberapa standard pelepasan yang ditetapkan, yang dinamakan standard pelepasan '91/441/EEC' bagi kereta, '93/59/EEC' bagi kenderaan komersial ringan dan 'ECE R 49-02 (atau EURO 1)' bagi kenderaan berat.

Ujian pematuhan pelepasan bagi kenderaan model baru telah dijalankan dengan cara pemeriksaan ke atas Sijil Pematuhan Pelepasan atau Laporan Ujian Pelepasan dikeluarkan atau yang dilaksanakan oleh pengeluar kenderaan atau makmal ujian kenderaan yang diakreditasi.

Ujian pemeriksaan yang dijalankan oleh JAS pada 1-1-1997 sehingga akhir tahun 1999, sejumlah 46 dari 47 buah kereta model baru didapati mematuhi had standard yang dikehendaki manakala 16 kenderaan komersial ringan model baru dan 30 buah kenderaan berat model baru adalah mematuhi standard pelepasan masing-masing sebagaimana yang dikehendaki oleh undang-undang.

Plumbum Di dalam Gasolin Motor

Sejak 1991, JAS dengan giatnya mempromosi penggunaan petrol tanpa plumbum. Disamping pengambilan percontohan dan analisis petrol secara rawak dari stesen pam minyak di seluruh negara, JAS juga sentiasa menerima laporan dan jualan runcit dari syarikat besar. Sehingga tahun 1999, kesemua jualan di stesen-stesen petrol di seluruh negara menjual petrol tanpa plumbum. 100%. Keseluruhan jualan petrol kenderaan tanpa plumbum dari 1992 hingga 1999 seperti di Rajah 5.15.

'Control of Gaseous Emission from Vehicles-

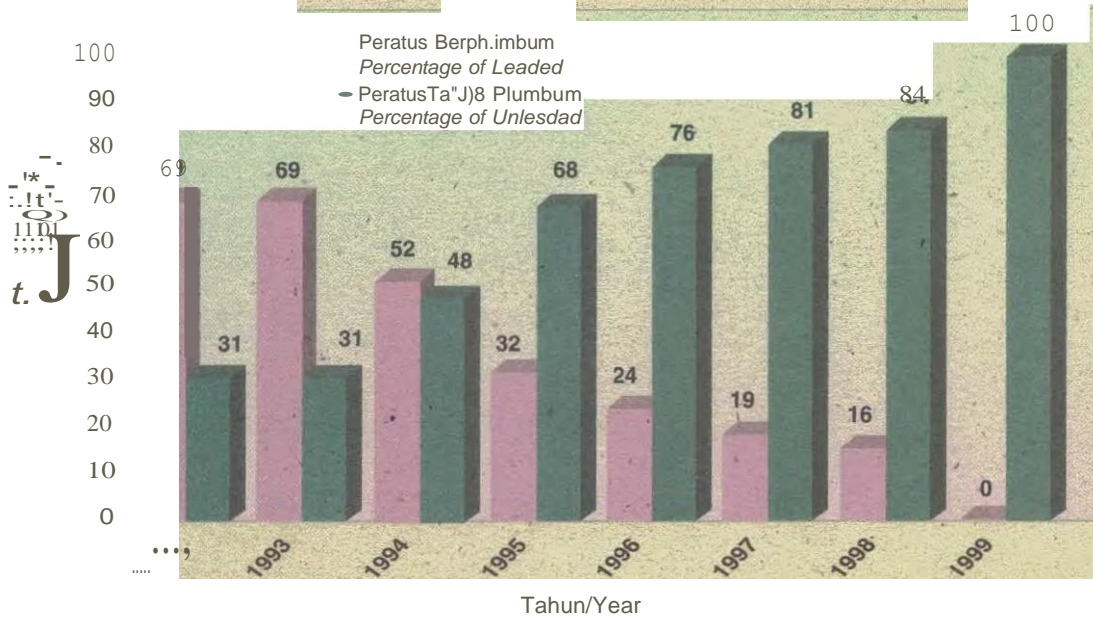
Pollutants emitted from vehicle exhausts, namely carbon monoxide (CO), hydrocarbons (HC) and oxides of nitrogen (NOx) are controlled under the Environmental Quality (Control of Emission from Diesel Engines) Regulations, 1996 and the Environmental Quality (Control of Emission from Petrol Engines) Regulations, 1996. Under these Regulations, new model vehicles introduced on or after 1-1-1997 are required to comply with certain specified emission standards, namely 91/441/EC emission standard for passenger cars, 93/59/EEC for light duty commercials and ECE R 49-02 (or EURO 1) for the heavy duty vehicles.

Emission compliance checks for new models of vehicles involved checking their Certificate of Emission Compliance or the Vehicle Emission Test Reports issued by respective vehicle manufacturers or by established accredited vehicle emission test laboratories.

From the inspections done by DOE between 1997 and 1999, a total of 46 out of 47 new models of passenger cars were found to have complied with the stipulated emission limits, while all 16 new models of light duty and all 30 new models of heavy duty commercial vehicles complied with the respective emission standards stipulated under the law.

Lead in Motor Gasoline

The use of unleaded petrol has been promoted since 1991. Beside random collection and analysis of gasoline from kiosks throughout the country, DOE also received feedback on retail sale from major oil companies on a regular basis. By 1999, all retail outlets in the country offered 100% unleaded motor gasoline. The retail sale profile for unleaded motor gasoline from 1992 to 1999 is as shown in Figure 5.15.



Rajah 5.15 Malaysia: Peratus Jualan Gasolin Berplumbum dan tanpa Plumbum, 1992-1999
 Figure 5.15 Malaysia: Percentage of Sale of Leaded and Unleaded Gasoline 1992-1999

Pelepasan Asap Hitam

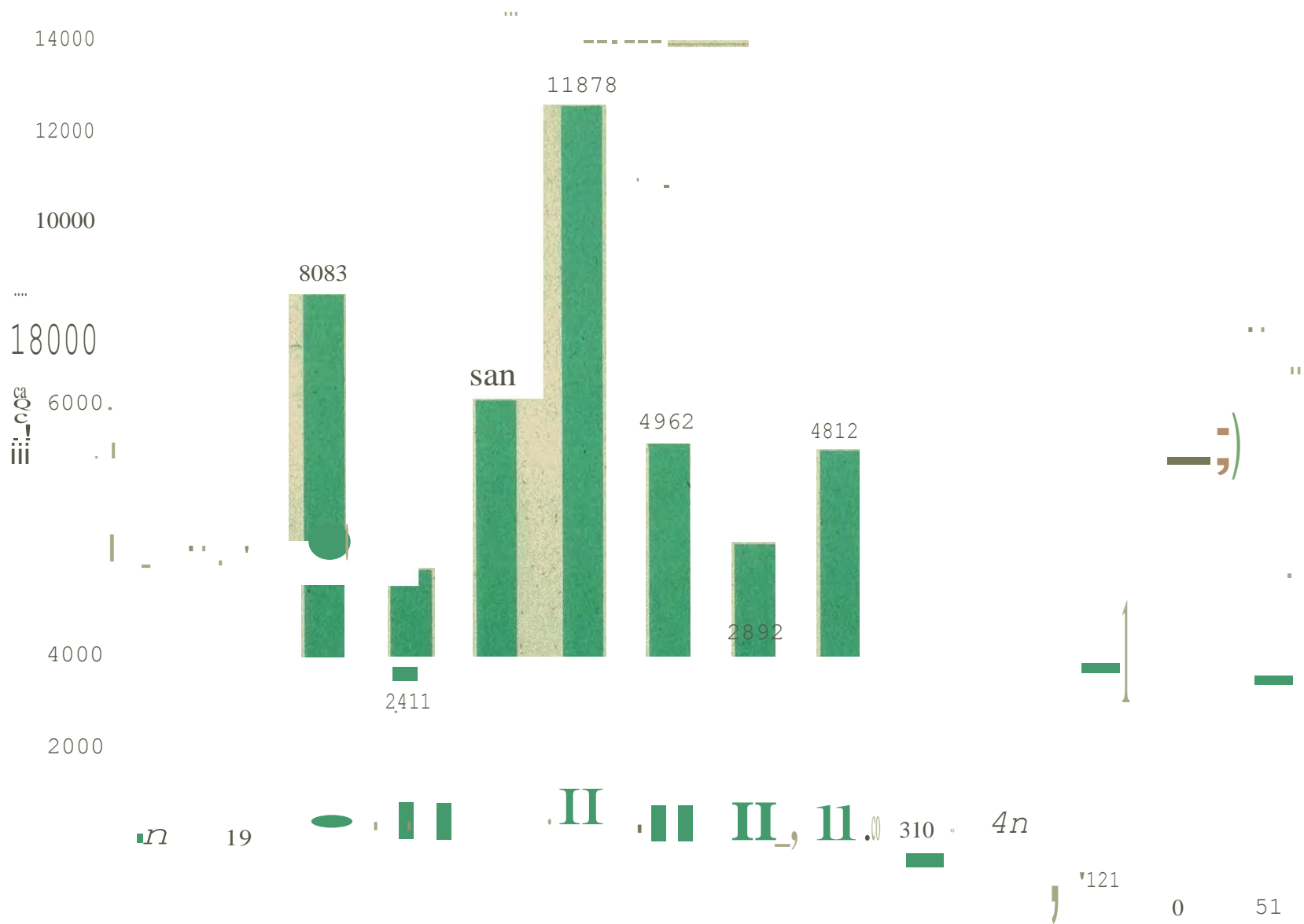
Kawalan pencemaran udara yang berpunca daripada pelepasan asap hitam kenderaan diesel dikuatkuasakan di bawah Peraturan-Peraturan Kualiti Alam Sekeliling (Kawalan Pelepasan Daripada Enjin Diesel) 1996 melalui Program AWASI (Area Watch and Sanction Inspection). Melalui Program AWASI ini, skuad bergerak JAS akan menjalankan rondaan, menahan dan menguji kenderaan yang didapati mengeluarkan asap hitam berlebihan.

Sejumlah 662 operasi penguatkuasaan AWASI telah dilaksanakan di seluruh negara. Dalam operasi tersebut, sejumlah 41,970 buah kenderaan telah diperhatikan pelepasan asapnya secara visual dan sebanyak 1,519 buah kenderaan telah disaman kerana gagal mematuhi had asap yang dibenarkan 50 Unit Asap Hartridge (HSU). manakala 918 daripadanya telah dikenakan perintah larangan beroperasi sehingga dibaikpulih dan lulus ujian asap semula oleh JAS. Pematuhan keseluruhannya pelepasan asap hitam oleh kenderaan diesel adalah sebanyak 96.4%. (Rajah 5.16, 5.17, 5.18 dan 5.19). Sejumlah 17 buah syarikat, tuanpunya kenderaan

Black Smoke Emission

Black smoke emission from diesel vehicles is subject to the Environmental Quality (Control of Emission From Diesel Engines) Regulations 1996. Enforcement of these regulations was implemented through the WASJ (Area Watch and Sanction Inspection) programme and under this programme mobile squad went on patrol and stop smoky vehicle for testing.

A total of 662 enforcement/campaigns were conducted throughout the country. From these campaigns, 41,970 vehicles were visually inspected, of which 1,519 were summoned for violating the permissible smoke emission limit of 50 HSU, and 918 were issued with prohibitions order from further use until rectified and retested by DOE. The overall compliance was 96.4%. (Figures 5.16, 5.17, 5.18 and 5.19). A total of 17 company vehicle owners and drivers were taken to court.





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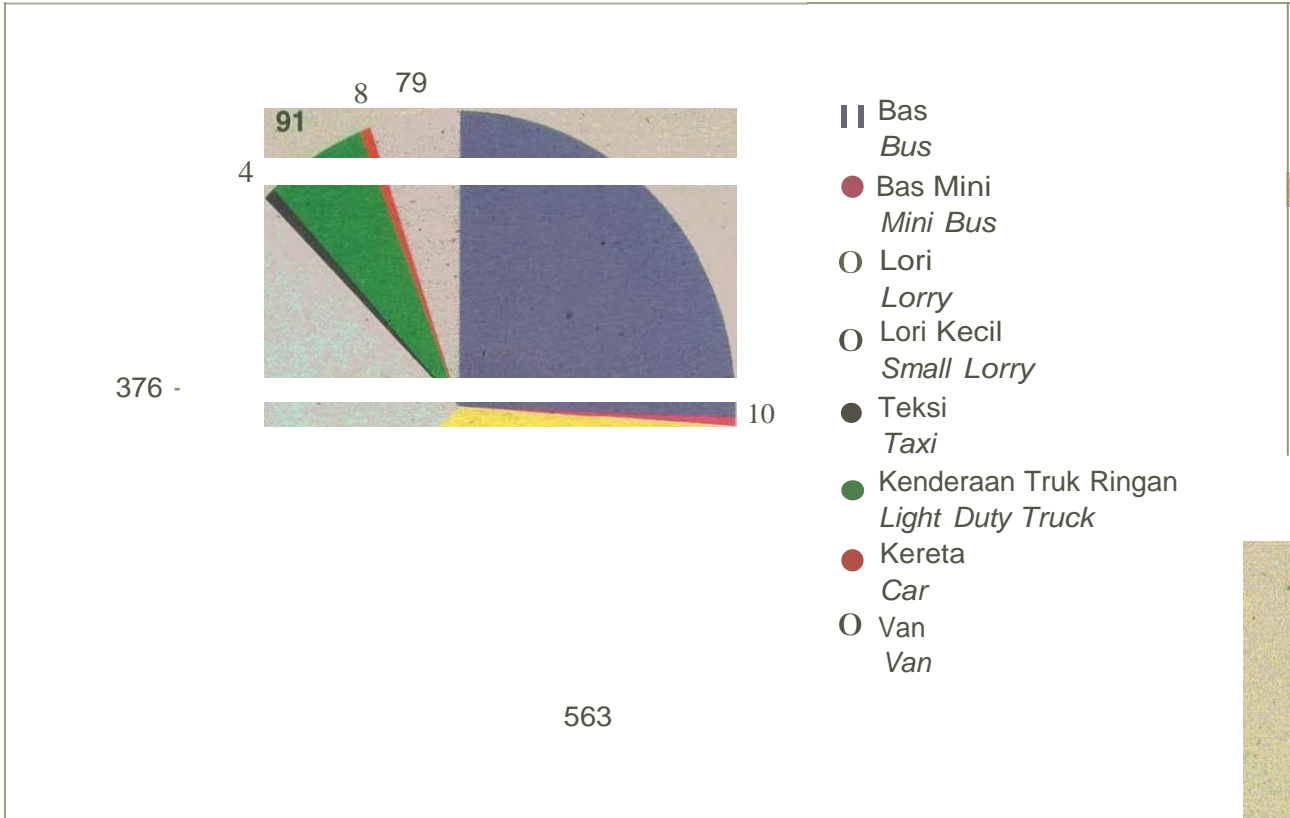
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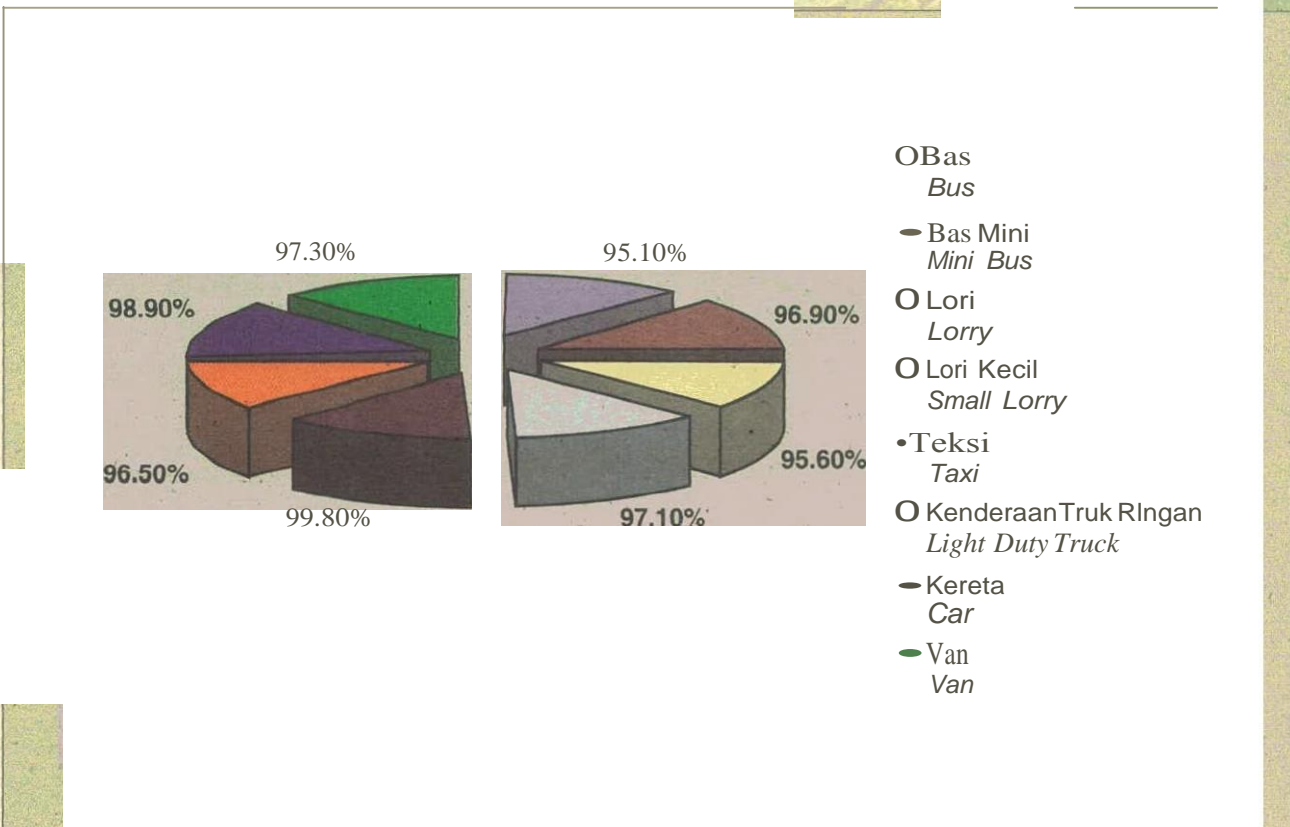
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Negeri/State

Rajah 5.16 Malaysia: Penguatkuasaan (Pemerhatian) Pelepasan Asap Hitam Kenc;leraan (Program AWASI), 1999
Figure 5.16 Malaysia: Visual Enforcement of Vehicular Blade Smoke Emission (AWASI Programme), 1999



Rajah 5.17 Malaysia: Penguatkuasaan Pelepasan Asap Hitam Kenderaan, Bilangan Kenderaan Disamikan Mengikut Jenis Kenderaan, 1999
 Figure 5.17 Malaysia: Enforcement of Vehicular Black Smoke Emission. Number of Vehicles Summoned According to Vehicle Type, 1999



Rajah 5.18 Malaysia : Penguatkuasaan Pelepasan Asap Hitam Kenderaan, Peratus Pematuan Mengikut Jenis Kenderaan, 1999
 Figure 5.16 Malaysia : Enforcement of Vehicular Black Smoke Emission. Percentage of Compliance According to Vehicle Type, 1999.

serta pemandunya telah diambil tindakan mahkamah.

Bunyi Qising Kenderaan Bennotor

Pelepasan bunyi bising daripada kenderaan bermotor adalah dikawal di bawah Peraturan-Peraturan Kualiti Alam Sekeliling (Bunyi Bising Kenderaan Motor) 1987.

Dalam tahun 1999, sejumlah 39 kempen penguatkuasaan telah dijalankan oleh pejabat-pejabat Negeri JAS dengan kerjasama Polis DiRaja Malaysia. Daripada 1,610 buah motosikal yang diuji, 357 buah telah disaman atas kesalahan melanggar had bunyi bising yang dibenarkan di bawah Peraturan di atas. Peratus pematuhan secara keseluruhannya ialah 77.8%. (Rajah 5.20, 5.21 & 5.22).

Srikan pemasangan kenderaan juga telah melaksanakan ujian paras bunyi ke atas model-model baru yang dipasang di Malaysia. Pada tahun 1999, sejumlah 3,050 buah motosikal baru yang meliputi 27 model berlainan telah diuji dan semuanya dapat mematuhi had pelepasan bunyi bising yang ditetapkan oleh Peraturan di atas. (Rajah 5.23).

Motor Vehicles Noise

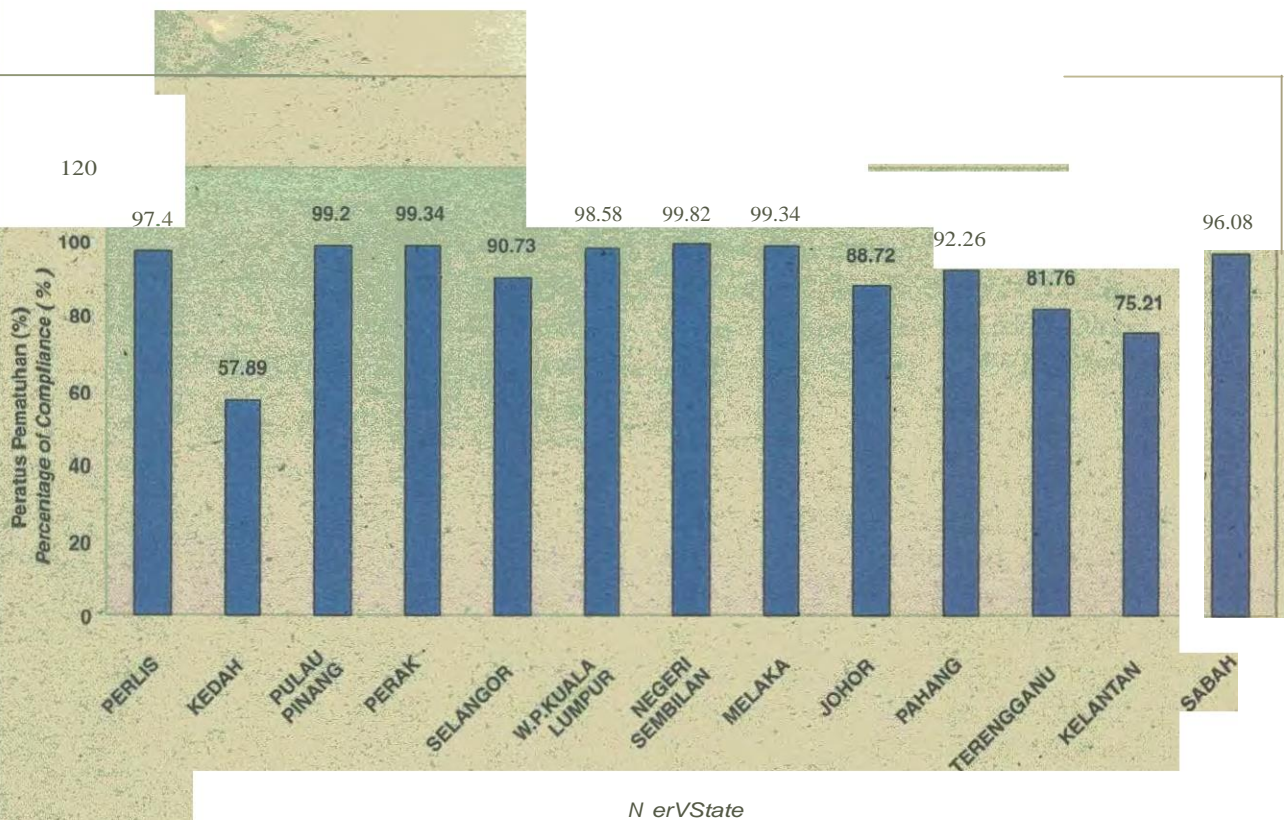
The control of noise from motor vehicles is enforced under the Environmental Quality (Motor Vehicle Noise) Regulation, 1987

In 1999, a total of 39 kerb-side enforcement campaigns were conducted by DOT State Offices with the cooperation of the Royal Malaysian Police. Out of 1,610 motorcycles tested, 357 were...summed from the permissible noise limit; a further 77.8% compliance was 77.8% (Figure 5.20, 5.21 and 5.22).

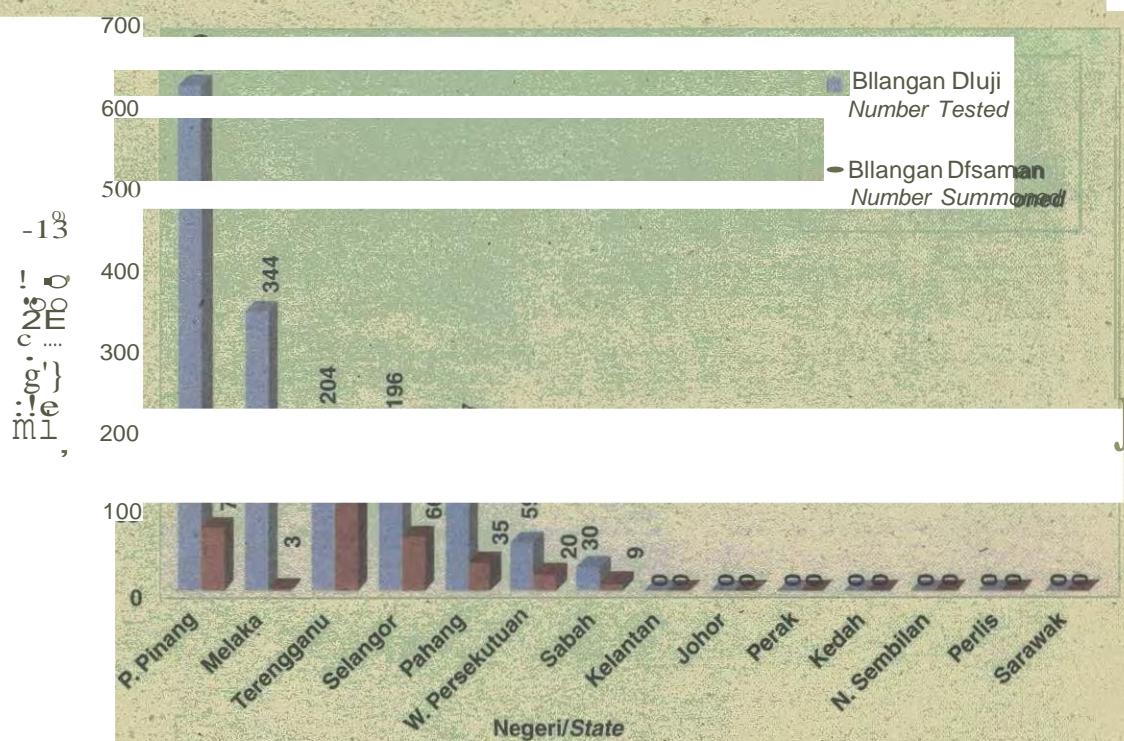
Noise emission tests for new models were also conducted by motorcycle assemblers. In 1999 a total of 3,050 new motorcycles from 27 different models were tested and found to comply with the noise limits as stipulated in the above Regulations (Figure 5.23).



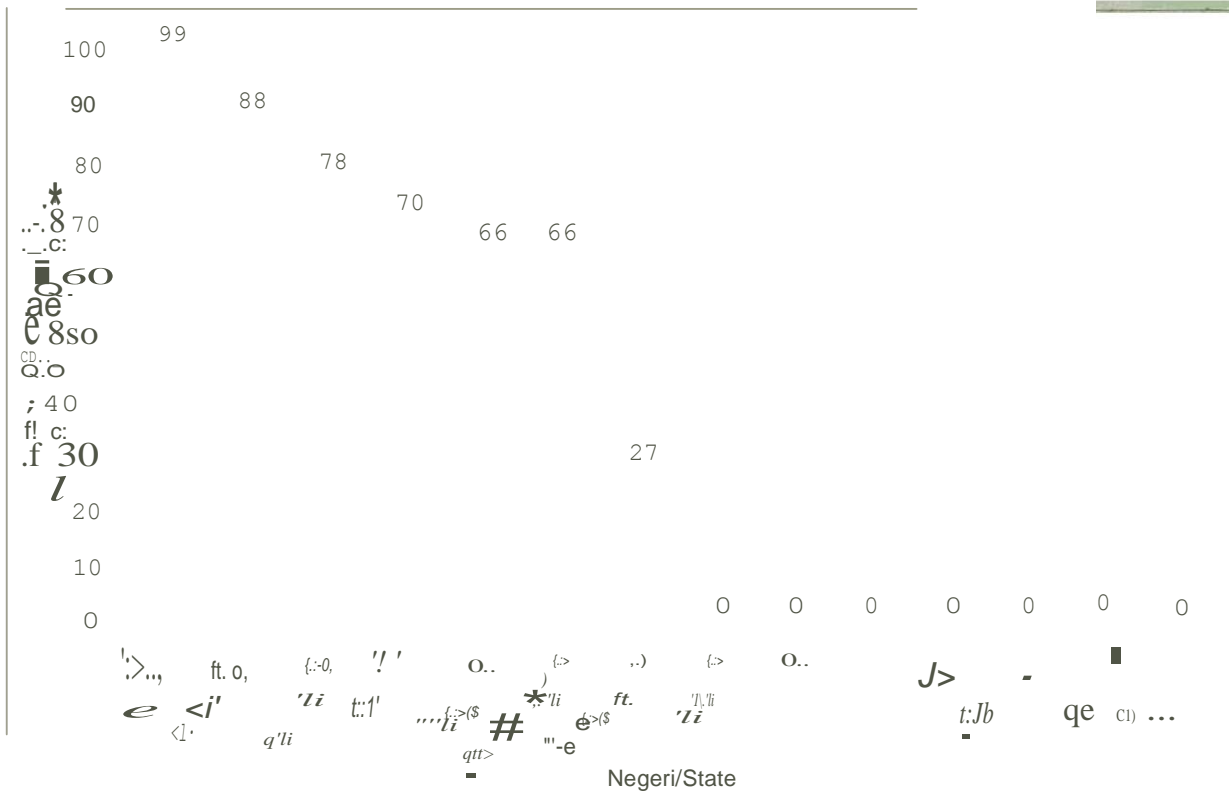
Penguatkuasaan Bunyi Bising
Noise Enforcement



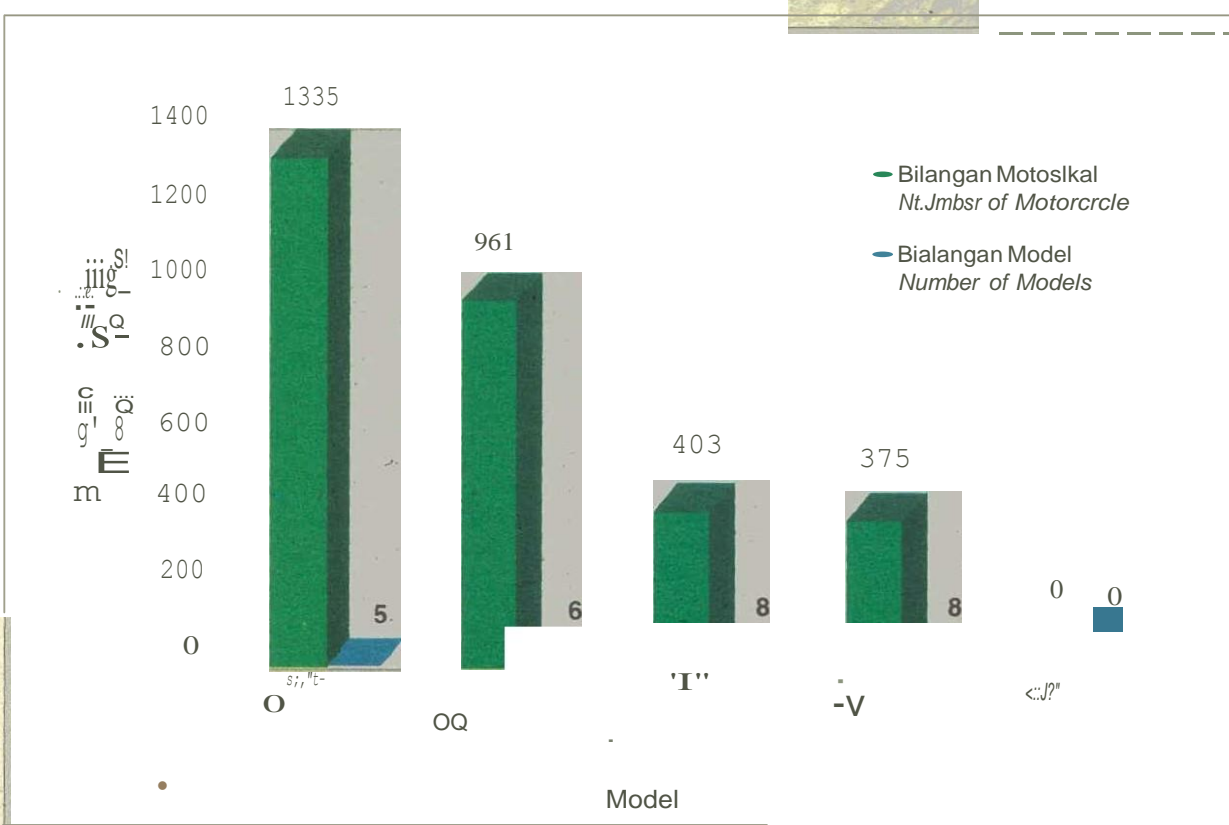
Rajah 5.20 Malaysia : Pamatuhan Pelepasan Asap Hitam Kenderaan, 1999
 Figure 5.20 Malaysia : Vehicular Black Smoke Emission Compliance, 1999



Rajah 5.21 Malaysia : Penguatkuasaan Bunyi Bising Motosikal, 1999
 Figure 5.21 Malaysia : Enforcement of Motorcycle Noise, 1999



Rajah 5.22 Malaysia : Pematuhan Bunyi Bising Motosikal, 1999
 Figure 5.22 Malaysia : Motorcycle Noise Compliance, 1999



Rajah 5.23 Malaysia : Ujian Bunyi Bising Motosikal Mengikut Model, 1999
 Figure 5.23 Malaysia : Motorcycle Noise Testing According to Motorcycle Models, 1999

TUMPAHAN MINYAK

Pada tahun 1999, sebanyak 48 kes tumpahan minyak di perairan Malaysia telah dilaporkan kepada Jabatan Alam Sekitar. Daripada jumlah itu sebanyak 33 kes disyaki berpunca daripada kapal. (Jadual 5.2). Sebanyak 5 kes telah dikenakan denda berjumlah RM265,000.00, sementara satu kes-Jagi, masih di peringkat perbincangan.

Tumpahan Minyak yang Besar • Pelan Kontingensi

Pada 21 Mei 1999, JAS telah menerima laporan mengenai kejadian kebakaran kapal penumpang SS Sun Vista (Pendaftaran: Bahamas) di perairan Negeri Perak. Kapal dengan muatan sejumlah 2,100 tan "bunker oil" telah tenggelam di lokasi 04° 36.2' utara, 099° 52.2' timur, berhampiran Pulau Pangkor, Perak dan pencemaran minyak telah dikesan. Jawatankuasa Kebangsaan Kawalar: Tumpahan Minyak telah digerakkan.

Operasi pembersihan tumpahan minyak telah digerakkan dan telah ditamatkan pada 28 Jun 1999 setelah tiada lagi minyak yang keluar dari kapal berkenaan. Operasi tersebut telah melibatkan kos dianggarkan sebanyak RM704,248.74 dan tuntutan telah dibuat kepada tuanpunya kapal untuk pampasan.

Pembersihan Pantai

Pada 1 Jun 1999, Jabatan Alam Sekitar telah menerima laporan mengenai pencemaran minyak di sepanjang pantai 3 km x 3 m lebar di pantai Sungai Rengit, Daerah Kota Tinggi, Johor. Punca kejadian ini tidak diketahui. Pihak Pejabat Daerah Kota Tinggi, Johor dengan bantuan teknikal dari Jabatan Alam Sekitar Negeri Johor telah menjalankan kerja-kerja pembersihan pantai ini.

OIL SPILL RESPONSE

In 1999, 48 cases of oil spills in Malaysian waters were reported to DOE, of which 33 cases were caused by marine vessels. (Table 5.2). 5 cases were charged in court and fined a total of RM265,000.00. One case is undergoing prosecution.

MC for Oil Spill Incident - Contingency Planning

On 21 May 1999, POE was notified of a passenger ship SS Sun Vista (Registry: Bahamas) on fire off Perak Coast. The ship with 2,100 tonnes of 'bunker oil' cargo sank at position 04° 36.2' north, 099° 52.2' south, near Pangkor Island, Perak and oil pollution resulted. The National Oil Spill Contingency Plan was activated.

The oil spill clean-up was completed on 28 June 1999 when the oil leak from the ship was plugged. Cost of clean-up was estimated at RM704,250.00 and claims had been submitted to the shipowner for reimbursement.

Beach Clean-up

On 1 June 1999, the Department of Environment was notified of oil pollution measuring 3 km by 3 km at the Sungai Rengit beach in Kota Tinggi, Johor. The cause was unknown. Beach clean-up operation was conducted by the Kota Tinggi District Council Office together with technical assistance from the Johor Department of Environment.

Jadual 5.2. Malaysia : Kes Tumpahan Minyak di Perairan Malaysia, 1999

Table 5.2 Malaysia: Oil spills in Malaysian Waters, 1999

Punca Tumpahan of Spills	Sebab Cause	Perairan Waters		Jumlah Kes No. of Cases
		Negara Territorial Waters	ZEE EEZ	
Pelantar Minyak Oil Platform	Masalah Mekanikal Mechanical problem Kelalaian manusia Human error	-	1	1
Saluran paip Pipeline	Pecah Leakage	-	-	-
Kapal Ship	Pelanggaran Violation Tersadai Grounding Letupan dan kebakaran Explosion and fire Pelepasan haram Illegal discharge	24	8	32
Terminal dan Depoh Terminal and depot	Lebihan Overflow Hos pecah Pipe leakage Letupan dan kebakaran Explosion and fire Injap & 'phlange' bocor Valve & flange leak Cud tancik dan 'deballasting' Oil spill and 'deballasting'	1	-	1
Lain-lain Other	Tiada maklumat No information	10	2	12
Jumlah Total		37	11	48

PENGAWASAN MELALUI UDARA

Program pengawasan melalui udara kerjasama antara Jabatan Alam Sekitar dengan Unit Udara Polis diteruskan pada tahun 1999. Program ini dapat memberi maklumat-maklumat berfaedah dan dengan lebih cepat mengenai aktiviti-aktiviti yang melanggar Akta Kualiti Sekeliling 1974. Jabatan Alam Sekitar diperuntukkan sebanyak RM3,240,000.00 bagi penggunaan helikopter dan pesawat kekacaku.

Pengawasan melalui udara dijalankan untuk memantau dan mengesan aktiviti seperti pelepasan haram minyak dan sisa minyak ke dalam perairan Malaysia; pelupusan buangan dan pelepasan asap hitam dari industri, kebakaran hutan, serta aktiviti pembakaran terbuka di tapak pelupusan sampah, di tapak pelupusan buangan haram, di tapak pembinaan, dipremis industri dan dari aktiviti pembersihan tanah. Pada tahun 1999 sebanyak 575 penerbangan telah dijalankan dan 422 kes pencemaran telah dikesan.

AIRBORNE SURVEILLANCE

The Joint Airborne Surveillance Programme between the Department of Environment and the Police-Air Wing continued in 1999. The programme provided useful and speedy surveillance information on violations of the Environment Quality Act 1974. An allocation of RM3,240,000.00 was provided for the use of helicopters and fixed-winged aircrafts.

Airborne surveillance was carried out to detect illegal oily waste discharges in Malaysian waters, waste disposal and block smoke emissions from industries, forest fires, open burning at solid waste dumping sites and illegal dumping sites, construction sites, industrial premises and land clearing activities. In 1999 a total of 575 flights were carried out and 422 cases of violations were detected.



TINDAKAN UNDANG-UNDANG

Pendakwaan

Tindakan penguatkuasaan undang-undang-diperingkat dan ramai pencemar, yang melanggar AKAS dihadapkan ke mahkamah. Pada tahun 1999, sejumlah 307 premis dan syarikat (peningkatan sebanyak 17.6% berbanding dengan tahun sebelumnya) telah didakwa dan disabitkan kesalahan oleh mahkamah. Sejumlah RM2,498,900 denda telah dikutip (penurunan sebanyak 3% berbanding tahun sebelumnya). (Rajah 5.24, 5.25 dan 5.26).

Kompaun

Pada tahun 1999, sejumlah 1711 kompaun dik luarkan kepada premis-premidan syarikat-syarikat disebabkan oleh berbagai kesalahan di bawah AKAS dan sejumlah RM2,838,350 telah dikutip. Daripada jumlah tersebut 65% adalah kes-kes yang melibatkan pelanggaran Peraturan-Peraturan Kualiti Alam Sekeliling (Udara Bersih), 1978 iaitu pembakatan terbuka, sementara b?tkinya ebanyak 35% kesalahan pengendalian bahan b\ngan terjadual (Rajah 5.27 dan Rajah 5.28).

Pmiiltah Lararigan

Di bawah Seksyen 31A Akta Kualiti Alam - Sekeliling 1974 (pindaan 1998), Ketua Pengarah Alam Sekeliling boleh mengeluarkan perintah larangan kepada pemilik atau pendu(Juk kilang perindustrian atau . nienghalang kilang daripada beroperasi dan metepaskan bahan pencemar kepada alam sekitar. Perintah larangan dikena an apabila melepaskan pencemar-pencemar tersebut yang boleh menyebabkan kerosakan kepa alam sekitar atau boleh memberi kesan yang buruk kepada penduduk sekitar kilang tersebut. Pada tahun 1999, sebanyak 2 perintah larangan telah dikenal<an ba.9i kesalahan pencemaran air daratan.

LEGAL ACTIOIY

Prosecution

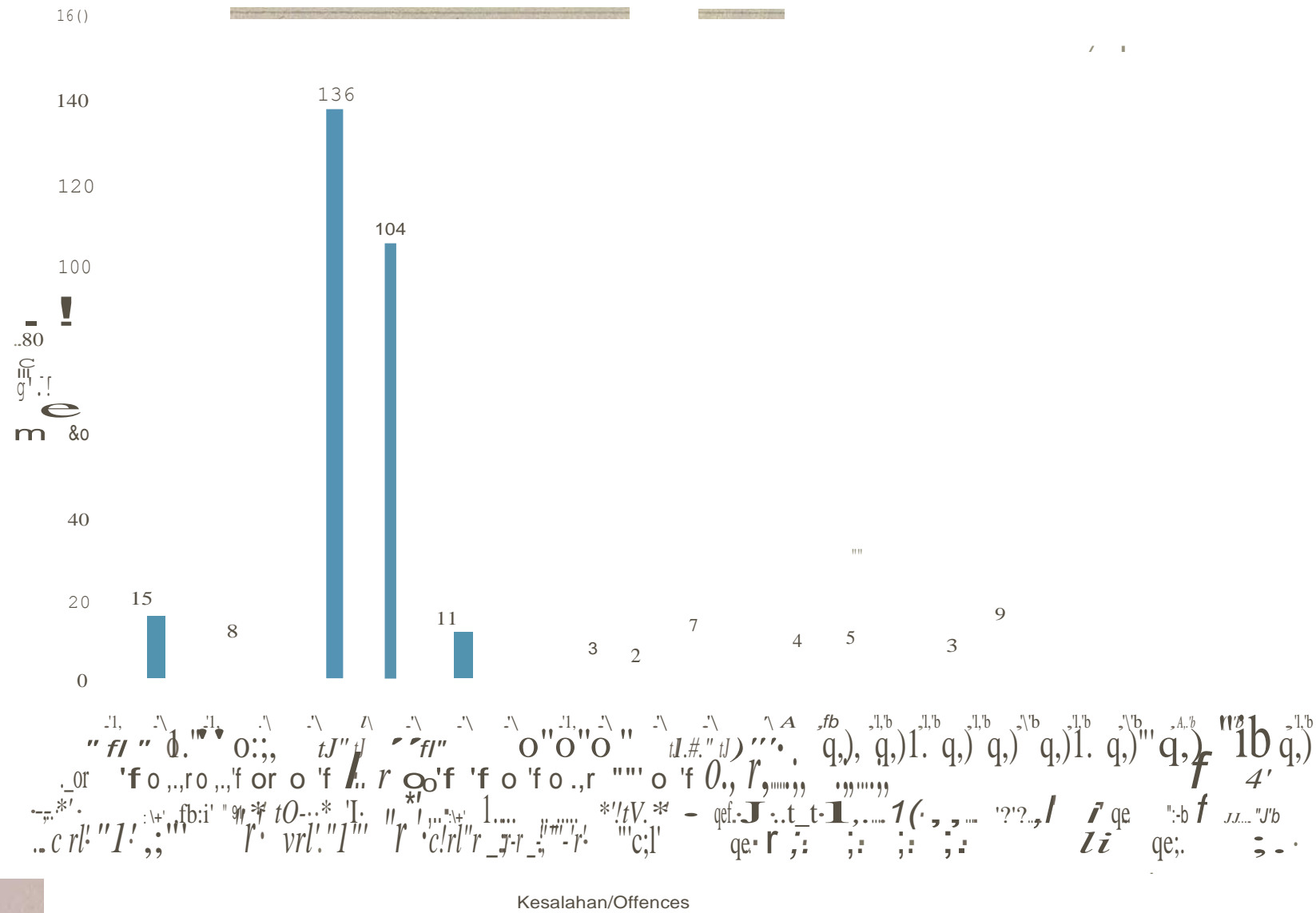
As enforcement ction intensified, more polluters who violated theEQA were taken to court. In 1999 a total of 307 premises and . companies (increase of 17.6% over the previous year) were prosecuted in court and a total of Rf\12,498,900.00 in fines were colleeted (decrease of 3% over previoiy ar). (Figur5.24, '5.25 and 5.26).

Compounds

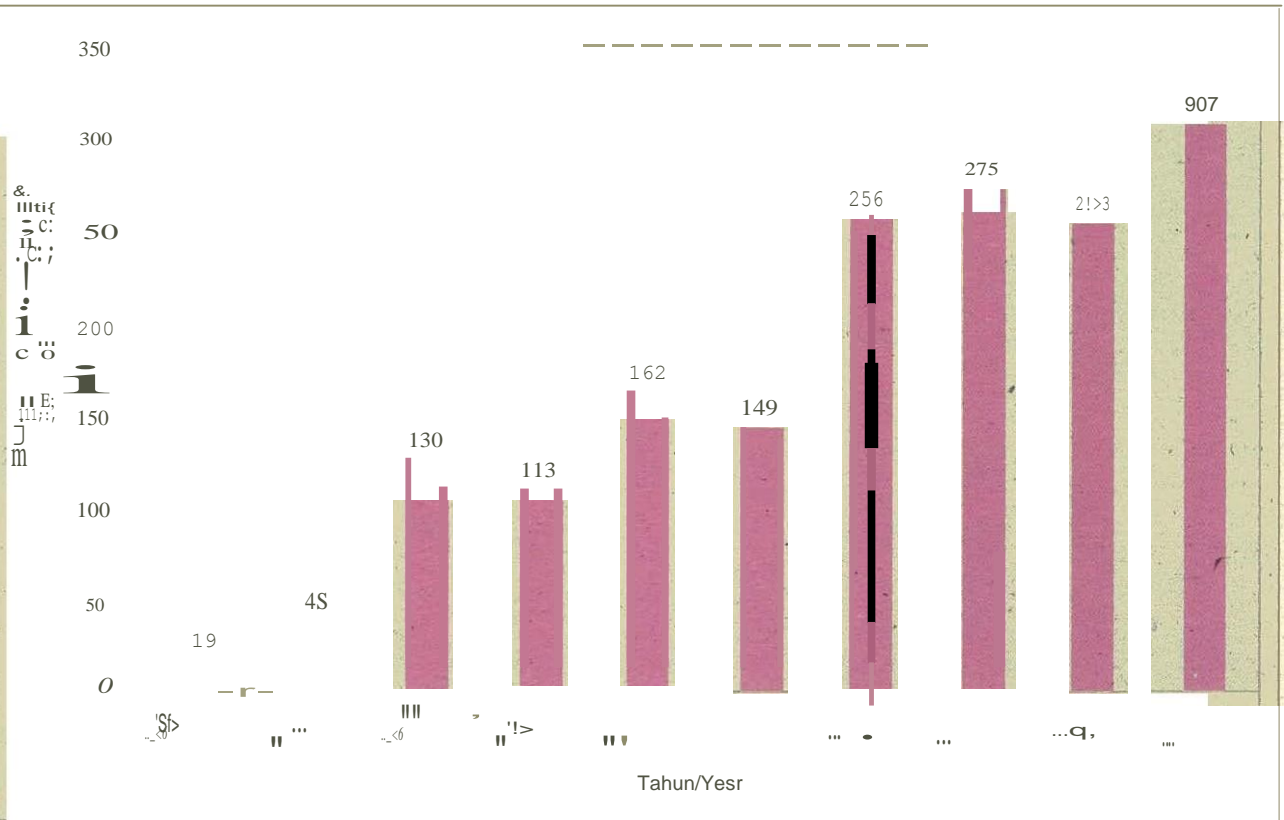
A total of 1711 compounds. were issued to premises and companies..for various offences under the EQA and Rf\12,838,350.00 in comP.ound fines were cOllected. in 1999, 'Of the total, 65% were for offences contravening the' EnvirC?nmental Quality (Clean Air) Regulation:s; 1978 mainly for open bumirrg offences, while the remaining 3?% were offences involving schedu,led waste handling (Figures 5.27 and 5.28).

Prohibition Orders

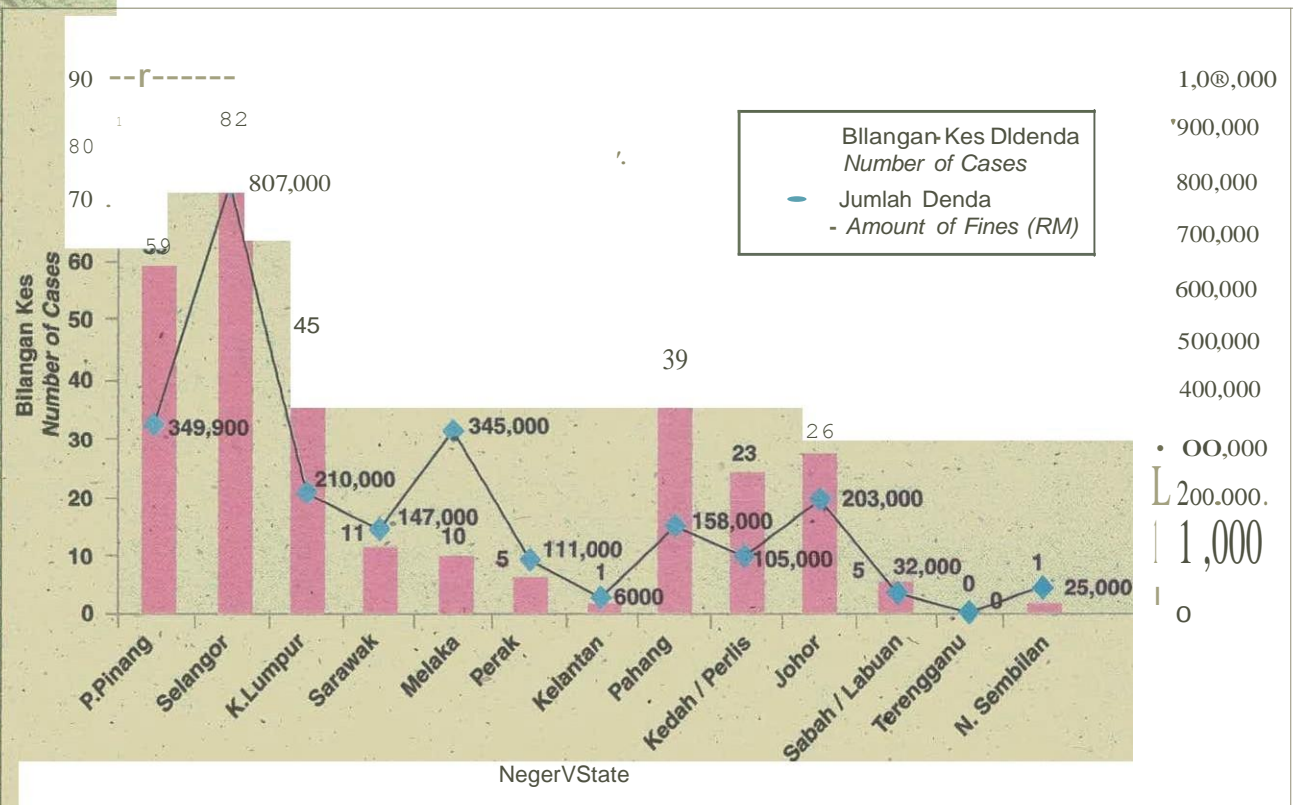
Under section 31A of the Environmental Quality Act 1974 (amendment 1998), the Dire,ctor-General Environmental Quality may . issue prohibition orders to ..owners or occupiers of industrial plants or processes to stop operation and prevent further releifSes of -environmentally hazardous sub tances or pollutants into the .environment. Such prohi/;>ition orders are imposed when the release of such pollutants may pose or caa.se serious damage 'to the environment or may threaten the well being of the public living in the vicinity, In 1999, 2 such prohibition orders were issued for offences pertaining to pollution of inland waters.



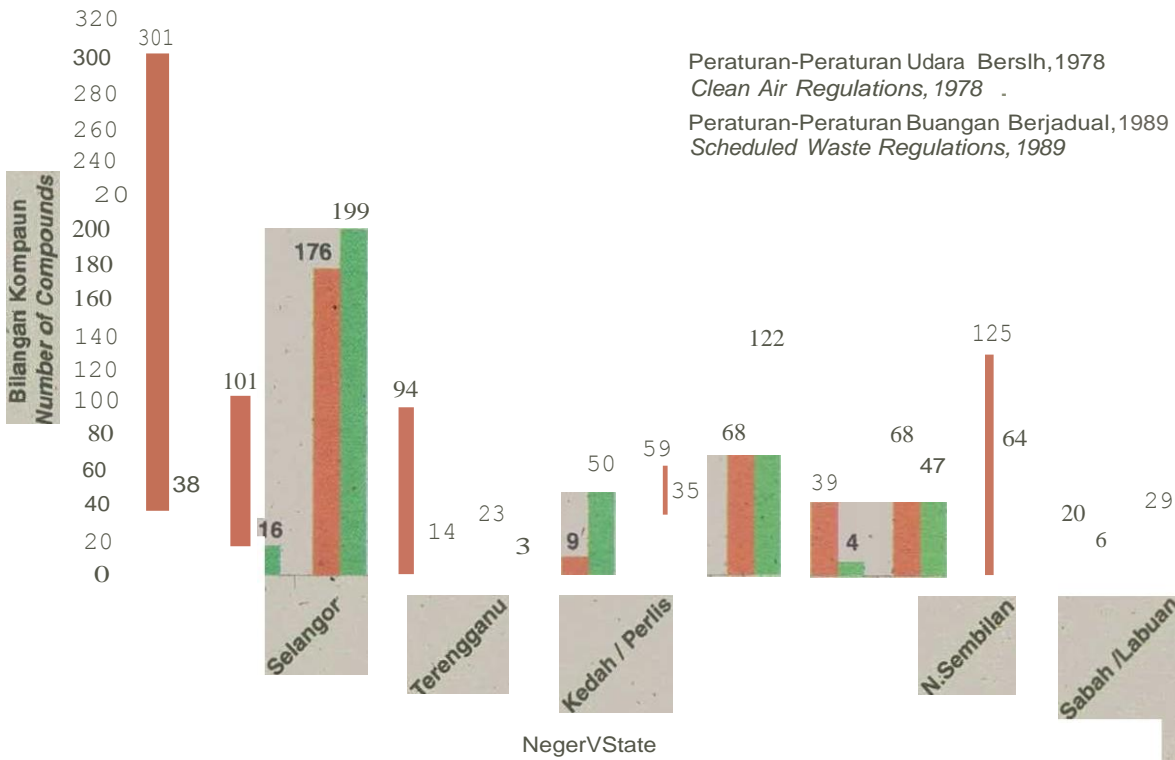
Rt.Jab24.Jabatan am r {B gan Kes Yang Didakwa Mel'glkut Kesalahan, 1999
 Figure 5.24 Department of Erwlo.rment #rr of Cas Prosec d ccdrdipg to Offences, 1999



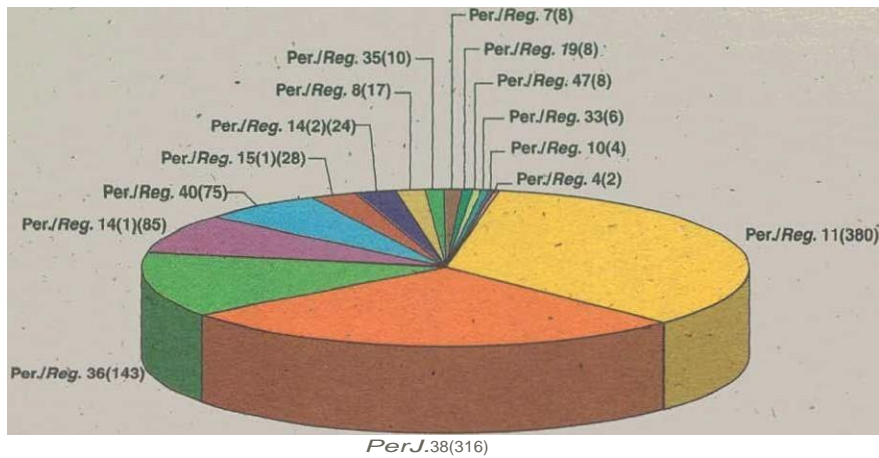
Rajah 5.25 Jabatan Alam Sekitar: Bilangan Kesajaahan Yang Diambil Tindakan Mahkamah Di Bawah Akta Kualiti Aiam Sekeliling, 1974 Dan Perat/iran-Peraturan di bawahnya, 1990-1999 -
 Figure 5.25 Department of Environment : Number of Offences Prosecuted under the Environmental Quality Act, 1974 and Regulations Made thereunder, 1990-1999



Rajah 5.26 Jabatan Alam Sekitar : Kes-Kes Yang Didakwa dan Hukuman Yang Dikenakan; 1999
 Figure 5.26 Department of Environment : Cases Prosecuted and Fines Imposed, 1999



Rajah 5.27. Jabatan Alam Sekitar: Bilangan Kompaun Yang Dikeluarkan Ke Atas Premis, 1999
Figure 5.27 Department of Environment : Number of Compounds Issued to Premises, 1999



Rajah 5.28 Jabatan Alam Sekitar: Bilangan dan Jenis Kompaun Di bawah Peraturan Uda" Bersih, 1999
Figure 5.26 Department of Environment : Number and Types of Compounds under the Clean Air Regulations, 1999

MAKUI MBALAS TERHADAP PENGADUAN AWAM

Jabatan Alam Sekitar (JAS) telah menerima sebanyak 2,451 aduan pencemaran alam sekitar pada tahun 1999 (Rajah 5.29). Daripada keseluruhan siasatan yang telah dijalankan didapati sebanyak 1,932 kes aduan telah diambil tindakan oleh JAS sementara sebanyak 519 kes aduan lagi telah dirujuk kepada agensi lain untuk tindakan selanjutnya.

Selangor mencatat penerimaan aduan yang tertinggi iaitu sebanyak 15% daripada jumlah keseluruhan aduan, diikuti oleh Perak (13%), Kuala Lumpur (11%) dan Melaka (9%). Perlis mencatat penerimaan aduan yang terendah iaitu sebanyak 0.6%. (Rajah 5.30)

Pembakaran terbuka di tapak pelupusan sampah haram, pelepasan habuk dari sektor industri berasaskan kayu dan kaca mengganggu punca-punca bukan industri adalah merupakan aduan yang paling banyak diterima. (Rajah 5.31)

Daripada jumlah keseluruhan aduan pencemaran yang diterima sebanyak 73% berkaitan dengan pencemaran udara, 10% pencemaran air dan 4% kebisingan. (Rajah 5.32).

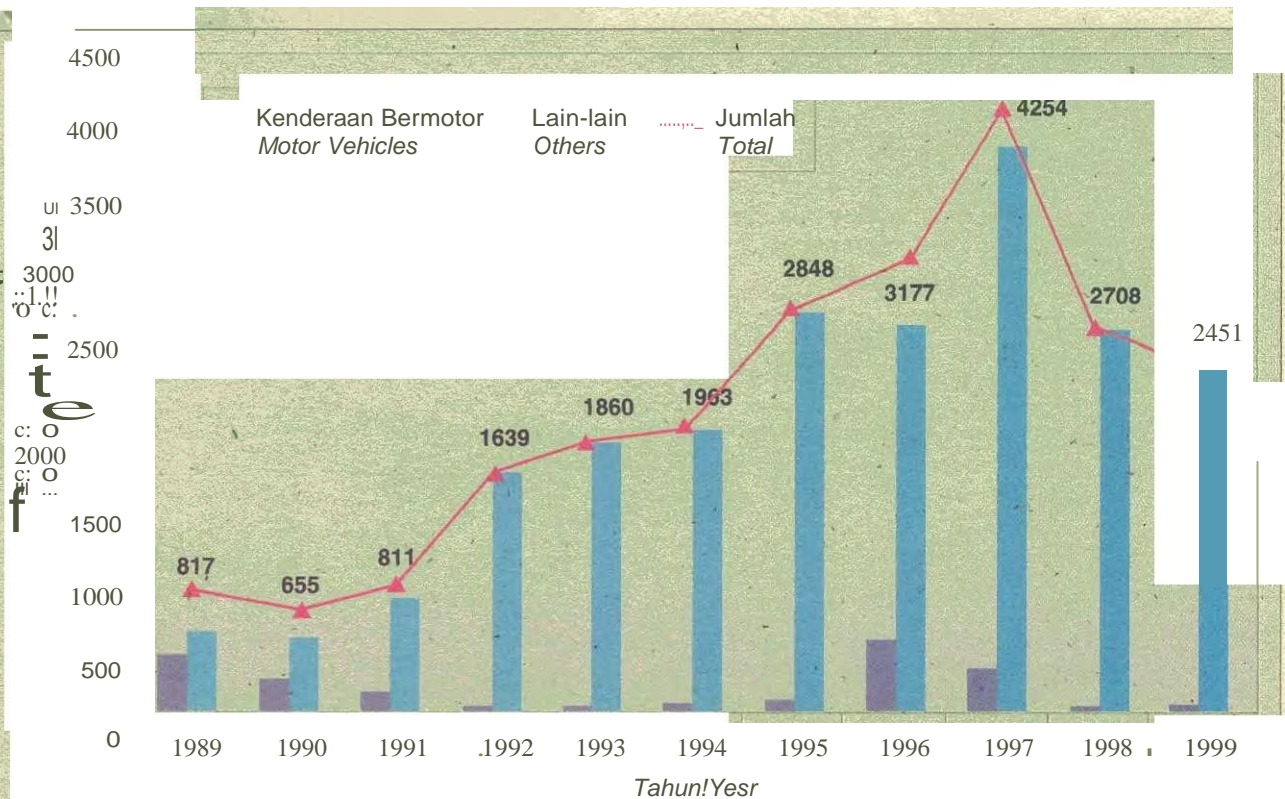
RESPONSE TO PUBLIC COMPLAINTS

A total of 2451 public complaints were received by the Department of Environment (DOE) in 1999 (Figure 5.29), out of which 1,932 cases were investigated and action taken by DOE, whilst 519 cases were referred to other relevant agencies for further action.

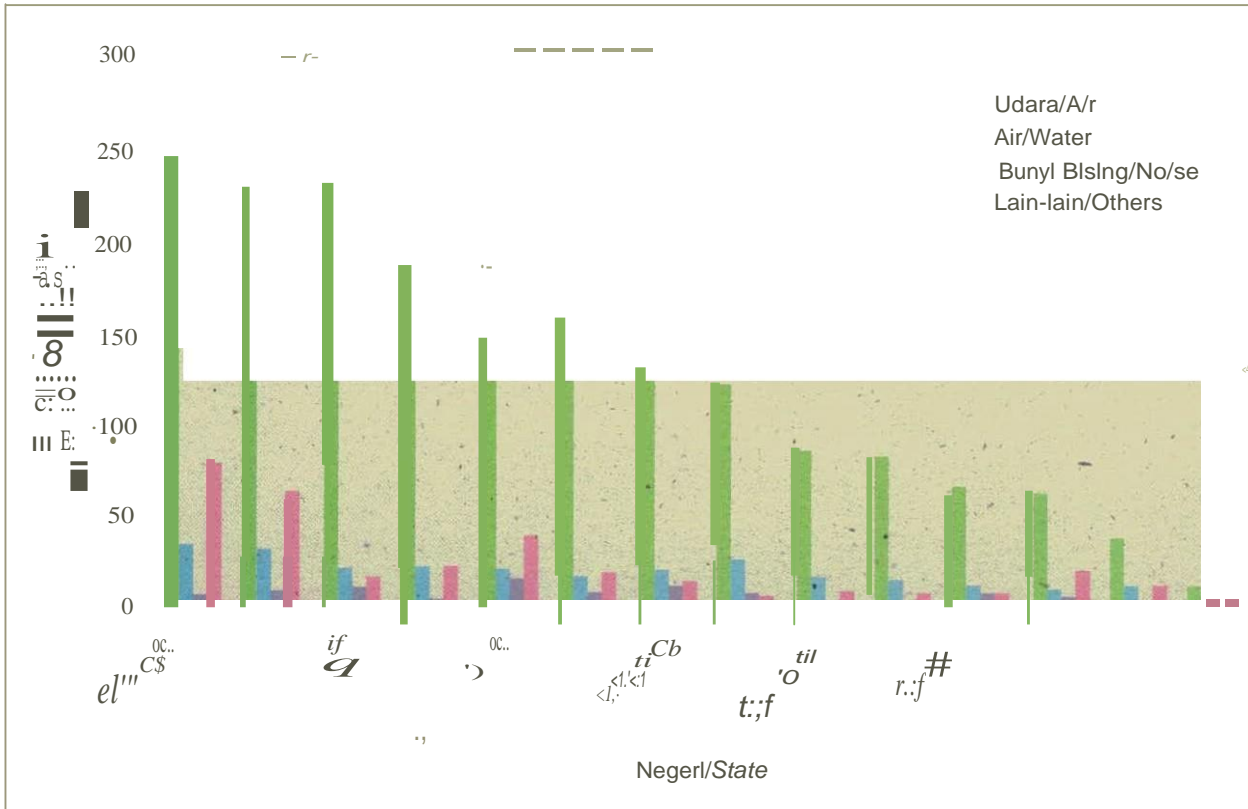
The State of Selangor recorded the highest number of complaints with 15% of the total, followed by Perak (13%), Wilayah Persekutuan (11%) and Melaka (9%). The least number of complaints were received from Perlis (0.6%). (Figure 5.30).

The main causes of pollution complaints included open burning at illegal disposal sites, dust and particulate matter emissions from wood-based industries and nuisance from non-industrial sources (Figure 5.31).

Air, water and noise pollution related complaints made up 73%, 10% and 4% respectively of the total number of pollution complaints received. (Figure 5.32).

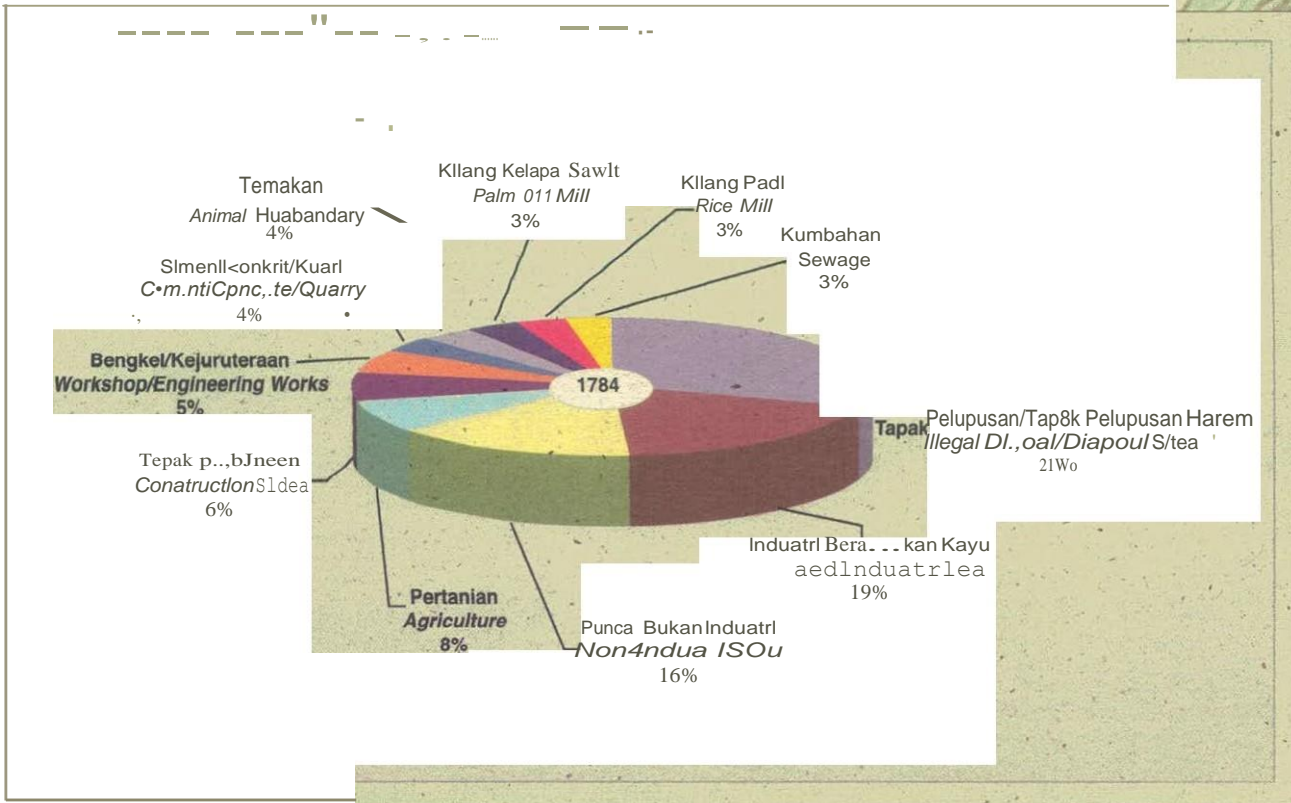


Rajah 5.29 Jabatan Alam Sekitar : Kes-kes Aduan, 1989-1999
Figure 5.29 DOE Complaint Cases, 1989-1999



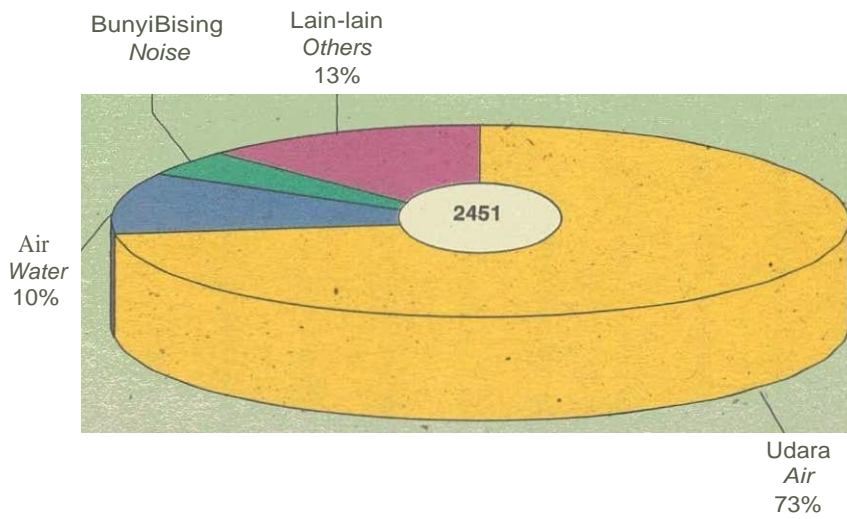
Rajah 5.30 Jabatan Alam Sekitar: Bilangan dan Jenis-Jenis Pencemaran Yang Dladukan Mengikut Negeri, 1999

Figure 5.30 Department of Environment : Number and types of Pollution Complaints by State, 1999



Rajah 5.31 Jabatan Alam Sekitar : Punca-Punca Aduan Pencemaran Udara, 1999

Figure 5.31 Department of Environment : Sources of Air Pollution Complaints, 1999



Rajah 5.32 Jabatan Alam Sekitar.: Jenis-Jenis Aduan Yang Diterima, 1999
Figure 5.32 Department of Environment: Types of Complaints Received, 1999