Česká rafinérská, a. s.

ENVIROMENTAL IMPACT REPORT 2001

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Caring for the environment is a natural part of Česká rafinérská business activities.

To our shareholders and friends,

Česká rafinérská set a goal to match the best European refineries soon after its formation in 1996. It was a bold plan, and this makes me even more pleased to say today that this objective has already been achieved in terms of our attitude to the preservation of the environment and our results. This was possible thanks to the maximum amount of attention paid to this field at all levels. The period from 1997 to 2001 was characterized by massive investments in upgrading the existing production facilities and in new technologies, as well as control and safety systems that withstand the most demanding comparisons against their world-class counterparts. As far as systematic approach is concerned, this effort culminated in obtaining the environmental management certificate following the ISO 14001 standard. The company obtained the certificate in October 2001, along with the ISO 9001 quality control certification.

2001 was the final year of extensive capital investments on our way to catching up to the world. The following period will be characterized by using the invested capital for further improvements of the environmental management at both company's refineries. Also, the quality of oil products will be subject to more demanding requirements as far as further reduction of the emissions ensuing from their use is concerned.

I am convinced that our company will follow up on the significant progress achieved in this field, which is also documented by the right to use the Responsible Care logo and appreciation from both our shareholders and experts, and will prove its ability to respond to new environmental requirements arising from the application of new and stricter European Union standards in the years to come.

Ivan Ottis
CEO and Chairman of the Board

ENVIRONMENTAL POLICY

Česká rafinérská as the major crude oil refinery in the Czech Republic, considers the environmental protection one of its primary objectives and it shall carry out its industrial activities having in mind the environment and the protection thereof and thus protect the company's future interests.

In terms of the environmental protection, Česká rafinérská undertakes to adhere to the following principles in all of its activities:

1. Adhere to the environmental-protection legislation in force and to other requirements that the company has committed to.
2. Strive to continuously improve in the area of environmental protection.
3. Prefer prevention over removing consequences of ecological impacts in the area of environmental protection.
4. Minimize leakage risks resulting from the refinery operation, strive to prevent occurrence of emergency situations and, if they occur, take such steps so as to minimize the environmental impacts.
5. Seek ways to achieve permanent reductions of consumption of utilities, feedstocks and chemicals, and of producing wastes and encourage employees to minimize negative environmental impacts of their activities.
6. Prior to the final decision on changes and introduction of new products, production facilities, technology and when preparing to build new facilities, evaluate their possible environmental impacts and strive to minimize them.
7. Increase the environmental awareness through training of our employees as well as contractors. Require environmentally sensitive attitude from the company's partners and contractors.
8. Create conditions for removing past ecological impacts on the premises used by the company.
9. Consider opinions of the target groups and prefer open approach to the public in the company's activities.
10. Inform customers about the environmental protection principles in terms of transportation, usage and disposal of refinery products.

All employees of Česká rafinérská are responsible for adhering to the Environmental Policy principles. The Environmental Policy is based on the mission and vision of Česká rafinérská, a.s. and on environmental policies of our shareholders.

ENVIRONMENTAL PROTECTION

The principles of environmental protection, which aim was to introduce, well establish and enhance the Environmental Management System, were approved by the Company Management in 1997. Through acquainting the staff with these principles and publicising them for the general public, the process was initiated of continuous enhancement of the Company's care for the environment during its business activities, which became the starting point on the route towards certification of the Environmental Management System.

The Environmental protection policy is based on the Company's mission and vision and is in compliance with the Shareholders' environmental protection policies. Fulfilling this policy is a subject of regular supervision by the Company Management. The latest review of this kind was carried out during June 2001 within preparation activities for the certification audit. The policy principles comply with the requirements of the international standard for Environmental Management Systems and were accepted by the auditing team.

Through its environmental policy the Company is bound to comply with the requirements of positive environmental legal regulations and other requirements, which the Company undertook to adhere to, and is bound to enhance the Environmental Management System, which is based on the principle of anticipating possible deterioration of environmental conditions and pro-actively developing appropriate mitigation measures.

LOCATION,
PROCESSES EMPLOYED, FEEDSTOCKS PROCESSED,
UTILITIES AND PRODUCTS DISTRIBUTION

Company's refineries are situated in two different administrative districts. Each Site is under administration of different State administration bodies and other relevant authorities and institutions. Climatic conditions also differ, as local social conditions do.

Both Refining Sites depend in terms of energy/utilities supply on neighbouring industrial complexes (i.e. Chemopetrol PLC and Kaučuk PLC in Litvínov and Kralupy respectively). Some feedstock and product streams depend heavily on interactions with the neighbouring companies, where the link to the Litvínov petrochemicals production complex is particularly strong.

The Company's production facilities utilising the technology of deep crude conversion processes were extended with the complex of fluid catalytic cracking (FCC), which complex was completed in 2001 and successfully put into test operation. From that time onwards the original refinery of the hydroskimming type has changed into a complex refinery with high production of motor fuels and liquefied hydrocarbon gases, which are of high demand in the market. This change was at the expense of production of heavy fuel oils. The FCC unit operation means that the overall fuel consumption in the refinery is higher, however, to minimise the air emissions caused by the cracking complex, the complex furnaces are only fired using gaseous, sulphur free fuel.

The total environmental ill effects due to consumption of the refinery products have been decreased due to the fact that, besides conversion of heavy petroleum residues to lighter cuts, the FCC facilities utilise the existing desulphurising capabilities of the refinery whereby the overall amounts of sulphur compounds in the refinery products are significantly reduced.

Further abatement of the environmental ill impacts from hydrocarbon emissions emerging during refinery products lifting has been achieved by completion of reconstruction of road tanks loading stations, where the number of loading bays for bottom loading was extended and, at the same time, any releases of hydrocarbon vapours to the ambient atmosphere have been virtually phased out.

ORGANISATION OF THE ENVIRONMENTAL MANAGEMENT SYSTEM

The control of environmental protection and building of the integrated system of HSE (Health, Safety and Environment) control within the TMS (Total Management System – which is an integrated system comprising the control of quality, environmental protection and safety) is concentrated in the Technology Section.

The Technology Section Head is responsible for the strategy of environmental protection. The employee in the position of administration of environmental issues, reporting to the Technology Section Head, ensures for a methodological a structural control of air quality protection, management of wastewater, waste management, supervision of compliance with legal requirements and contacts with environmental protection bodies, state administration bodies and the general public.

Special cross functional teams headed by appointed champions are involved in the processes of continuous improvement of abatement of pollutants generation/release (air emissions, wastewater, substances with detrimental effects on the aquatic environment and solid waste generation).

The specialist and custodian for TMS implementation, whose main target for 2001 was to complete successfully the certification process, reports also to the Technology Section Head. The team of internal auditors, whose activities in 2001, during certification preparation, were of utmost value, are important assistants to this specialist.

The Company Technical Director, who at the same time is a representative of the Company Top Management, has been assigned to act as a champion for building and maintaining the TMS. The Technical Director is also the head of the HSE Central Team.

Internal audits are an important part of the Environmental Management System. To enable executing these audits, a group of internal auditors have been trained, where, besides staff involved in environmental protection disciplines, also other Company staff in other disciplines are included.

COMPANY'S ENVIRONMENTAL TARGETS

As soon as did the foreign stakeholders joined the Company the specialists from these international companies carried out evaluation of both Refining Sites on the basis of a number of aspects, including, among others, the aspects of occupational health, work safety, fire safety, fire safeguarding systems and the aspect of ill environmental impacts and the needs of environment protection. For benchmarking, standards of these companies were used as well as limits, indicators and requirements of the European Union, which in some instances were even the envisaged ones.

A Due Diligence Study resulted from this effort, which contained a list of needed modifications of the processes and facilities employed by the refineries, including building new facilities. This document was approved by the Company Management - to serve as the basic document for the programme of development of both refineries in the area of HSE.

Individual actions/undertakings were and are being included to annual business plans, in which separate chapters are devoted to environmental protection issues. Some undertakings overlap by their scopes the frameworks of annual plans and are continuously incorporated in the following years' business plans.

Besides activities for which financial means are needed, the Company annual business plan also includes final targets in the area of environmental protection focused on air pollution abatement, protection of surface and underground water, abatement of amounts of solid waste generated and increase in the share of separated and recycled waste (champions' annual targets).

Educational effort aimed at enhanced care for the environment is targeted both to own staff and the contractors' staff. Acquainting the inhabitants in the vicinity of the Kralupy Refinery with the FCC complex was imbedded in the 2001 targets - for the population to be duly informed before commissioning of the complex. During this campaign the public were informed about the monitoring systems, about safeguarding of the unit and about the emergency systems and their functions. All these targets have a common denominator: which is the pledge to continuous enhancement.

INVESTMENTS

The 1997–2001 period was characterised by Company's massive investments in the environmental protection in both Refining Sites. This was unavoidable as the Company had to come to terms with the requirements of the new legislation within the prescribed deadlines – although the Company only became established a few years after the requirements had become effective.

As far as environmental investments are concerned, the year of 2001 was a period characterised in particular by completion of projects initiated in previous year(s), whereas new undertakings were initiated to a lesser extent.

The majority of completed projects contributed to air protection. In both Refining Sites extensive reconstruction was completed of storage facilities in liquefied petroleum gasses (LPG) service whereby major upgrading of these facilities has been achieved. Of completely new design is LPG lifting through rail and road cars in Litvínov Refinery. The second stage of Litvínov road terminal reconstruction was competed whereby the number of loading bays for bottom loading of cars was extended. This manner of loading phases out completely emissions of petroleum substances to the ambient atmosphere. The chapter of this report on air quality protection deals with mitigation of emissions of volatile organic compound vapours from small volume tanks. Reconstruction was also completed of the complex of facilities for processing hydrogen sulphide gases in Litvínov Refinery. After construction of the new incinerator (commissioned in 1999) and Claus IV unit (completed and commissioned in 2000) also the Sulfreen process facility was reconstructed, which capacity now enables to treat all the process tail gasses from Claus units before the residual hydrogen sulphide content is burnt. Within the reconstruction works, the flue gas line, through which the waste gas is introduced to the stack, was replaced.

In the first half of 2001 FCC unit was commissioned and put into test operation. The whole complex was built within a record time of 27 months. Employment of the FCC unit enabled deep conversion of crude, which is of major importance in terms of savings in the consumption of raw materials from non sustainable sources, while the production of motor fuels is increased at the same time. The significance of the FCC unit as a overall desulphurising unit has been referred to above.

All the investment activities were completed for upgrading the wastewater system in Kralupy Refinery, including integration of the FCC unit into this system.

In 2002 further investment projects have been initiated for air pollution abatement as well as some investment projects in the area of waste water management. Within the area of waste water management, automatic draining of crude oil service tanks (abatement of leaks of petroleum substances to wastewater steams) can be highlighted as well as transportation of sludge to the wastewater treatment plant. Integration of process water streams in blocks No. 13 and 23 falls within the same category as do modifications in Litvínov Refinery wastewater systems of tank areas.

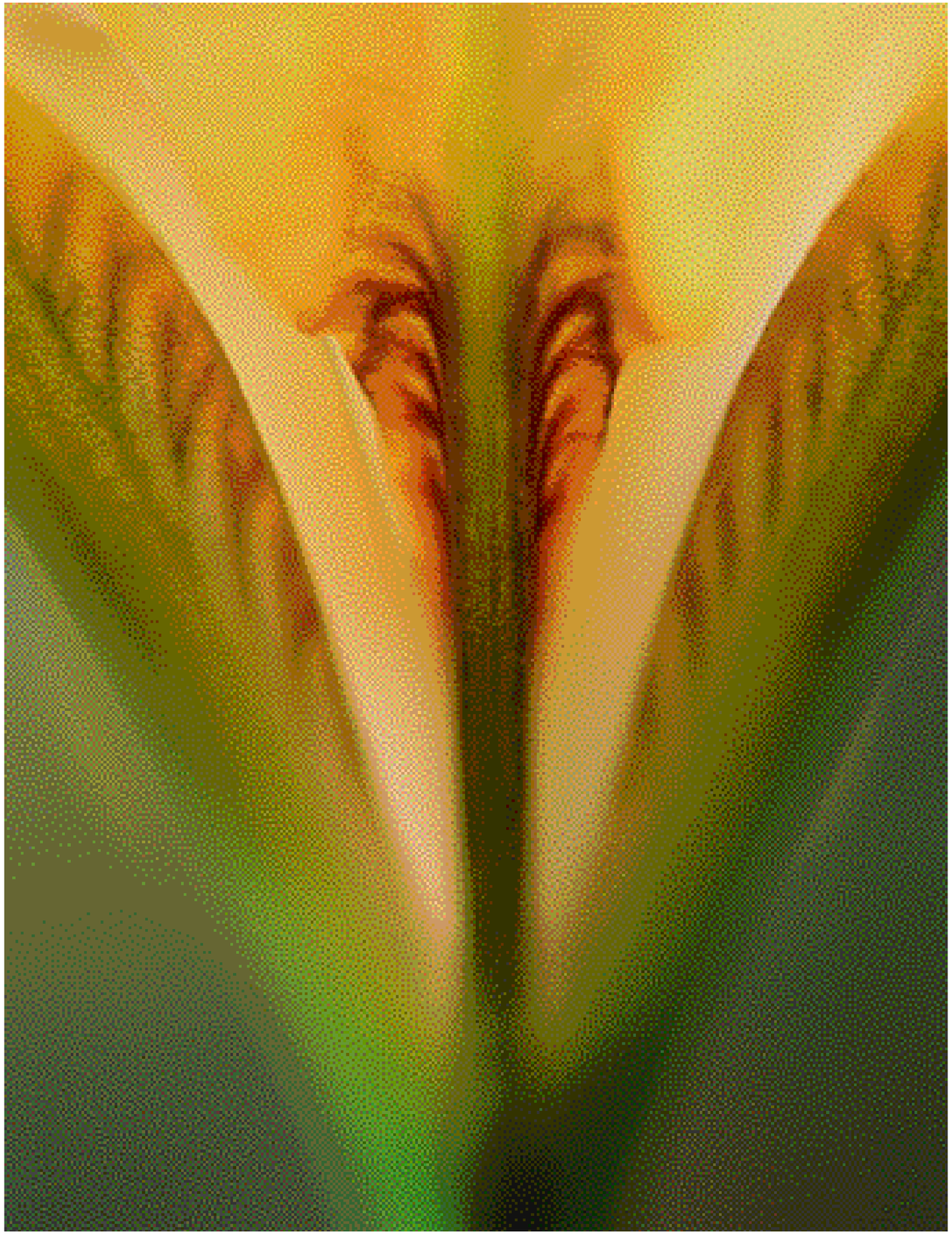
STAFF EDUCATION

In the year of 2001 the instruction/training courses, as were due within the two year cycle of periodical training, took place. The training proper was executed during the first half of the year. The content of training was extended by envisaged amendments of air pollution legislation and legislation in the area of water quality protection and waste management. The training programme was extended also by the basic knowledge concerning the ISO 9001 and ISO 14001 standards – in association with the preparation for certification.

Within the preparation for the certification, separate training concerning the above standards was executed focussing on the standards content and ensuing obligations and on standards of significance for environmental protection. The training also included acquainting with the new environmental policy, which was promulgated in May 2001.

As far as other education efforts for staff focussed on environmental protection is concerned, the entire education system was changed. The staff will refresh and deepen their knowledge and new information will be gained via individual study of materials accessible in the Company intranet network. Examinations to as certain the knowledge will of staff also be through tests carried out using the computer network.

Training of contractors' employees, which also includes environmental protection issues, takes places on the occasions of first entry of the staff to the Company area and is repeated afterwards in prescribed cycles. Separate training sessions for contractors take place before start of each major turnaround. Turnaround manuals also include environmental protection issues and adherence to the stipulated terms is audited in the course of individual turnarounds. Audit findings during turnarounds are evaluated and resulting measures and best practices are then incorporated into the manuals of following turnarounds.



AIR QUALITY

The refineries' production plants and other facilities contribute emissions to the ambient air because of generation of flue gases from process furnaces and emergency flares, generation of hydrogen sulphide emissions from desulphurising processes and generation of hydrocarbon vapours (VOC – Volatile Organic Compounds).

Sources of emissions of hydrocarbons, particularly of light hydrocarbons, from storage and loading operations are referred to as point sources.

Besides point sources emissions, which are subject to fees by applicable legislation, there are also in existence so called scattered sources emissions, which are not subject to charges, which level however may exceed the VOC amount originating from point sources. Scattered sources emissions can also be found outside the refining industry. They occur whenever the tightness of hardware and equipment is compromised or impaired and it happens frequently, if not predominantly, that the relevant leaks can barely be detected by senses.

In both Refining Sites persistent abatement of VOC emissions from scattered courses is subject to such an attention which is second to none within the Czech Republic and special section of this report deals with this issue therefore.

Within evaluation carried out under the Responsible Care initiative, also the amounts of carbon dioxide amounts released are paid great attention to, as this gas is known to contribute to the global greenhouse effect. CEFIC-determined methodology is applied for this evaluation. This methodology comprises the amounts of carbon dioxide both generated by own facilities and its share in the energy purchased from third parties. The relevant data are in the summary table.

COMBUSTION PROCESSES EMISSIONS

The level of employment of combustion processes with regard to air pollution sources that were not newly built remained essentially on the same level compared with previous years. In the furnaces of some of these facilities natural gas is only burned, or a mixture of natural gas and refinery gas – being sulphur-free fuel. Besides being more environmentally friendly, such a mode of operation allows for more careful control of the temperature of processes, of catalytic ones in particular.

n Kralupy Refinery the gaseous fuel was enriched with FCC-generated component, which facilitates abatement of carbon dioxide emissions. In FCC furnaces, gaseous fuel generated by the FCC technology itself is only burned, whereas in the other furnaces of the Refinery a combinedmixture of natural and refinery gaseous fuel is mainly burnt. In the regeneration part of the FCC unit the activity of the recycled catalyst is continuously renewed through combustion of carbon.

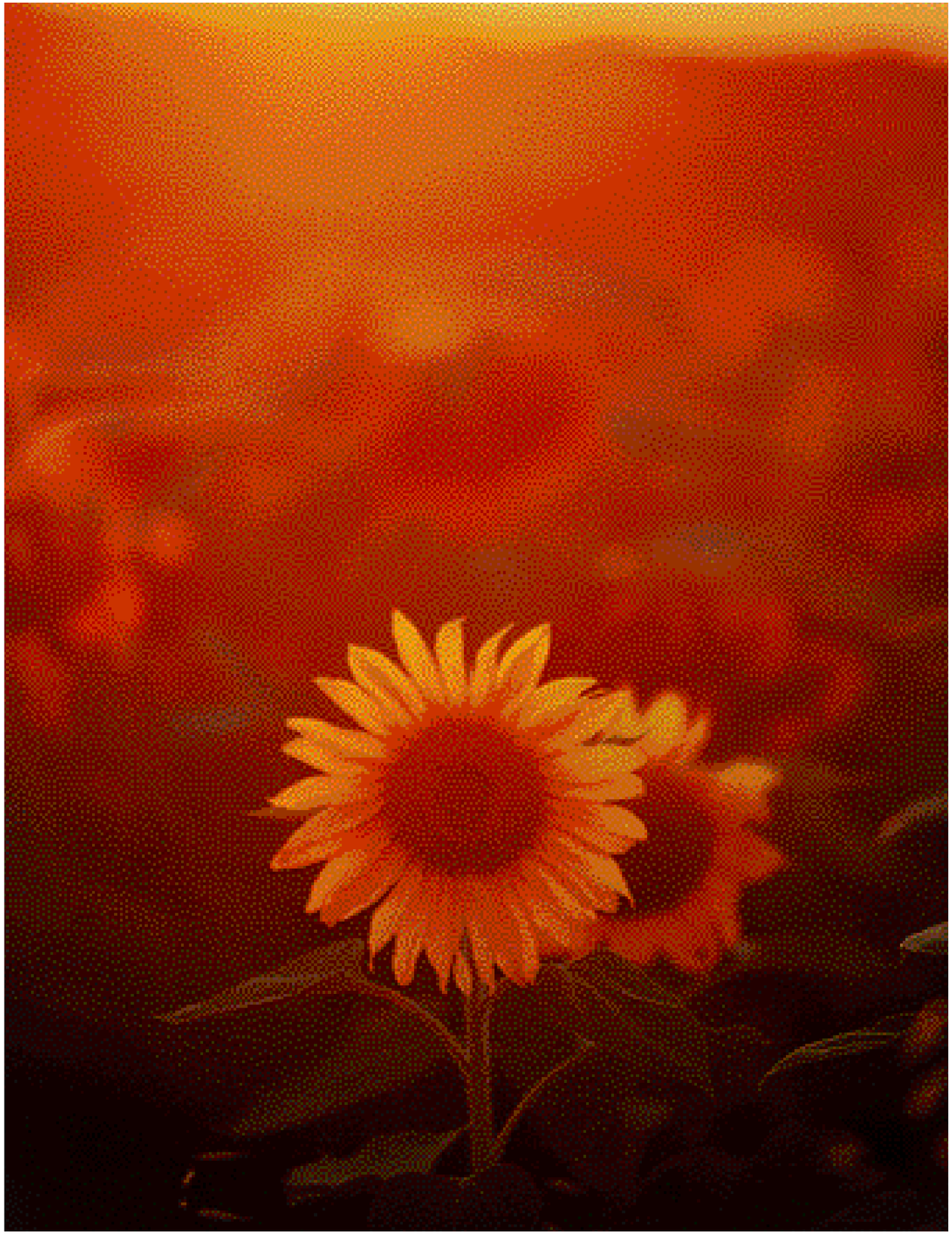
To abate the emissions from Litvínov Refinery hydrocracking units (coded also as "OHC"), reconstruction was initiated of the furnace of the distillation unit of these hydrocracking units.

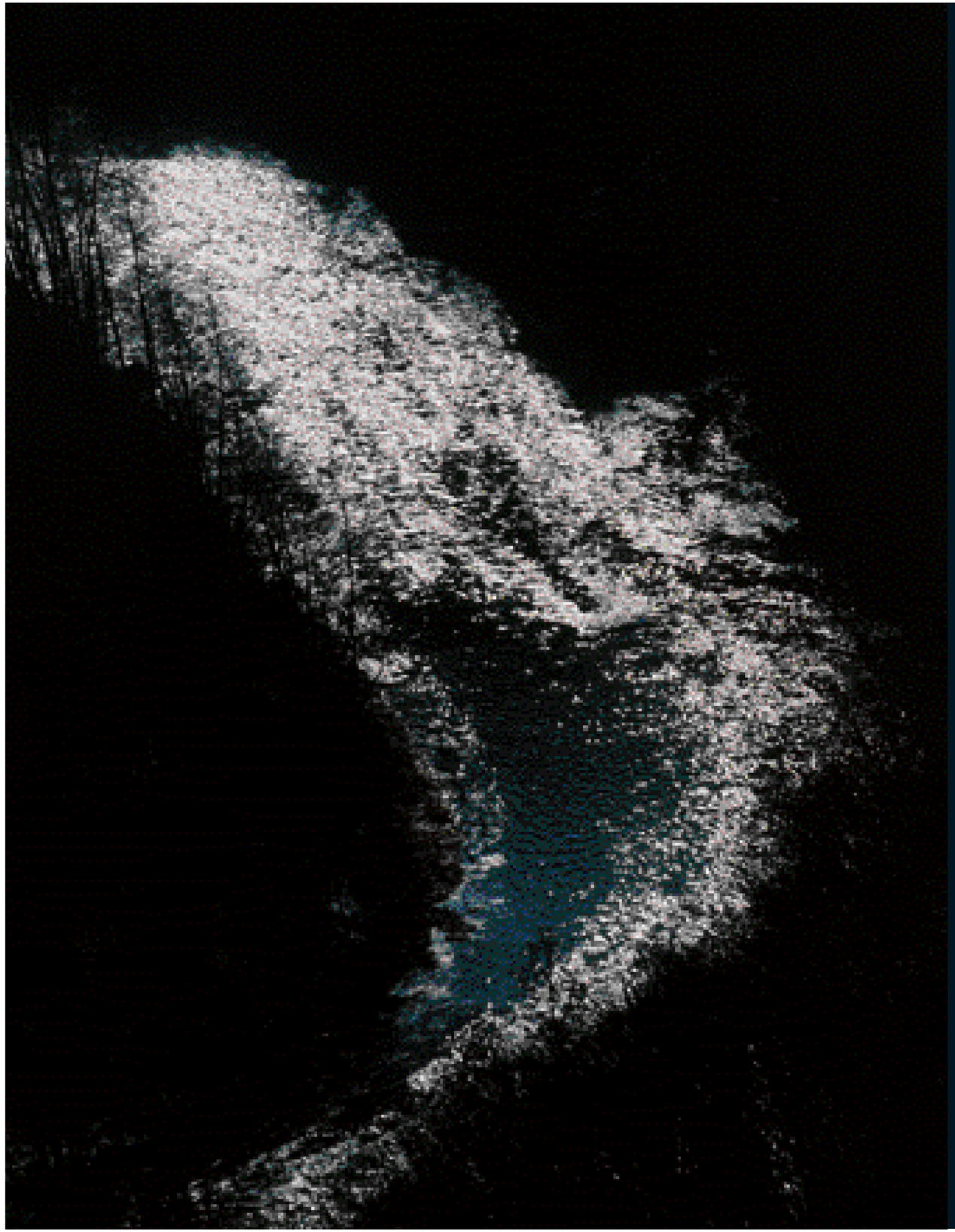
Although Kralupy Refinery has its emergency system, which can be lined up with the Kaučuk emergency system, a separate FCC unit flare was also built.

HYDROGEN SULPHIDE EMISSIONS

In refineries, hydrogen sulphide is a product of refining crude oil and crude cuts employing thermal processes (e.g. distillation) or chemical conversion processes (cracking, catalytic desulphurisation) as well as a product of refinery gases treatment. By employing chemical conversion process, hydrogen sulphide is treated to give innocuous, pure sulphur and the relevant treatment plants must contain sufficient wield such capacities so that all the amount of hydrogen sulphide gases generated might be treated.

New units for deeper conversion of crude (visbreaking and fluid catalytic cracking) increased the amount of hydrogen sulphide gas generated and, therefore, new Claus IV unit (Litvínov Refinery) was built and Kralupy Refinery Claus unit's capacity was increased and Sulfreen process added. During the final phase, which was completed in 2001, installations (Sulfreen in Litvinov) were reconstructed to increase the sulphur yield in excess of the minimum level stipulated by the law. The installations were put into operation after multiple technical teething problems had been resolved, which were gradually encountered during the reconstruction.





LDAR METHODOLOGY APPLICATION

Abatement of emissions through application of LDAR (Leak Detection and Repair) methodology in the Company's refining sites is a unique procedure employed for minimising the sources of leaks of gases and noxious vapours from various components of hardware (e.g. flange connections, pump and compressor packing/seals, sampling valves, relief valves etc.). A sensitive apparatus detects the presence of harmful substance in close proximity to the component checked and, in case there is a response to the occurrence of such a substance, the apparatus will determine the concentration of the substance. The presence of harmful substance testifies to a leak from the component and the concentration discovered is a measure of the magnitude of the leak at the time of measurement. The sum of leaks so discovered is a measure of the magnitude of emissions from scattered sources as well as a measure of the tightness, reliability and integrity of the equipment. This is only a very succinct description of the LDAR methodology principles as this methodology has already been described in greater detail in the previous reports of the Company.

In real life, what proved to be a good practice was to measure the maximum number of components (there are thousands of them in refineries) before plant shutdown so that all leaks discovered might be repaired and removed in the course of shutdown. After the plant is put into operation again, all the repaired points are checked.

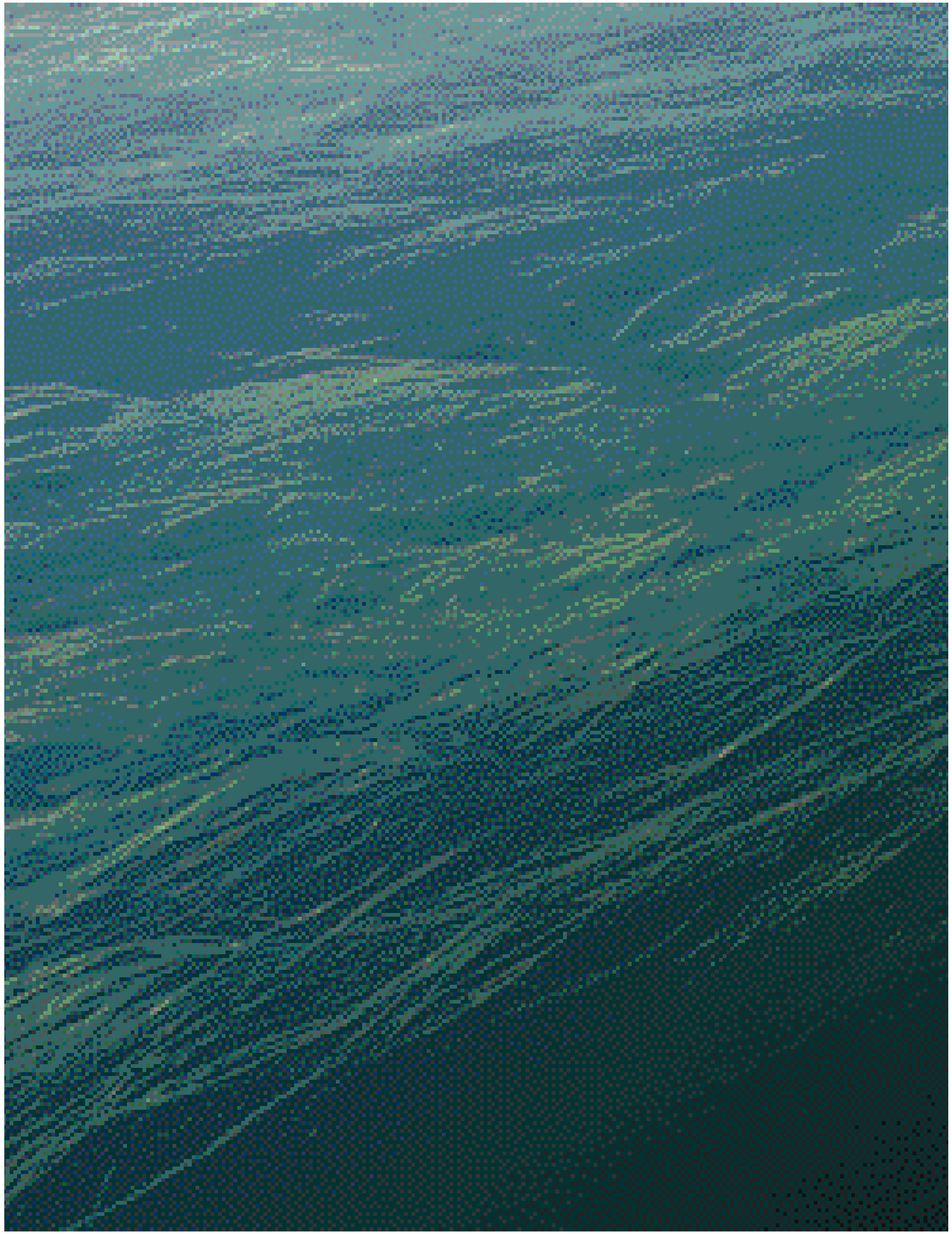
The nine year period of application of the LDAR methodology in Litvínov Refinery and the results of the programme correspond with the results achieved by foreign refineries utilising the same procedure. In Kralupy Refinery it was only after the establishment of the Czech Refining Company that the LDAR programme was introduced, nevertheless already after three years' application its contribution for the environmental protection is without any doubt.

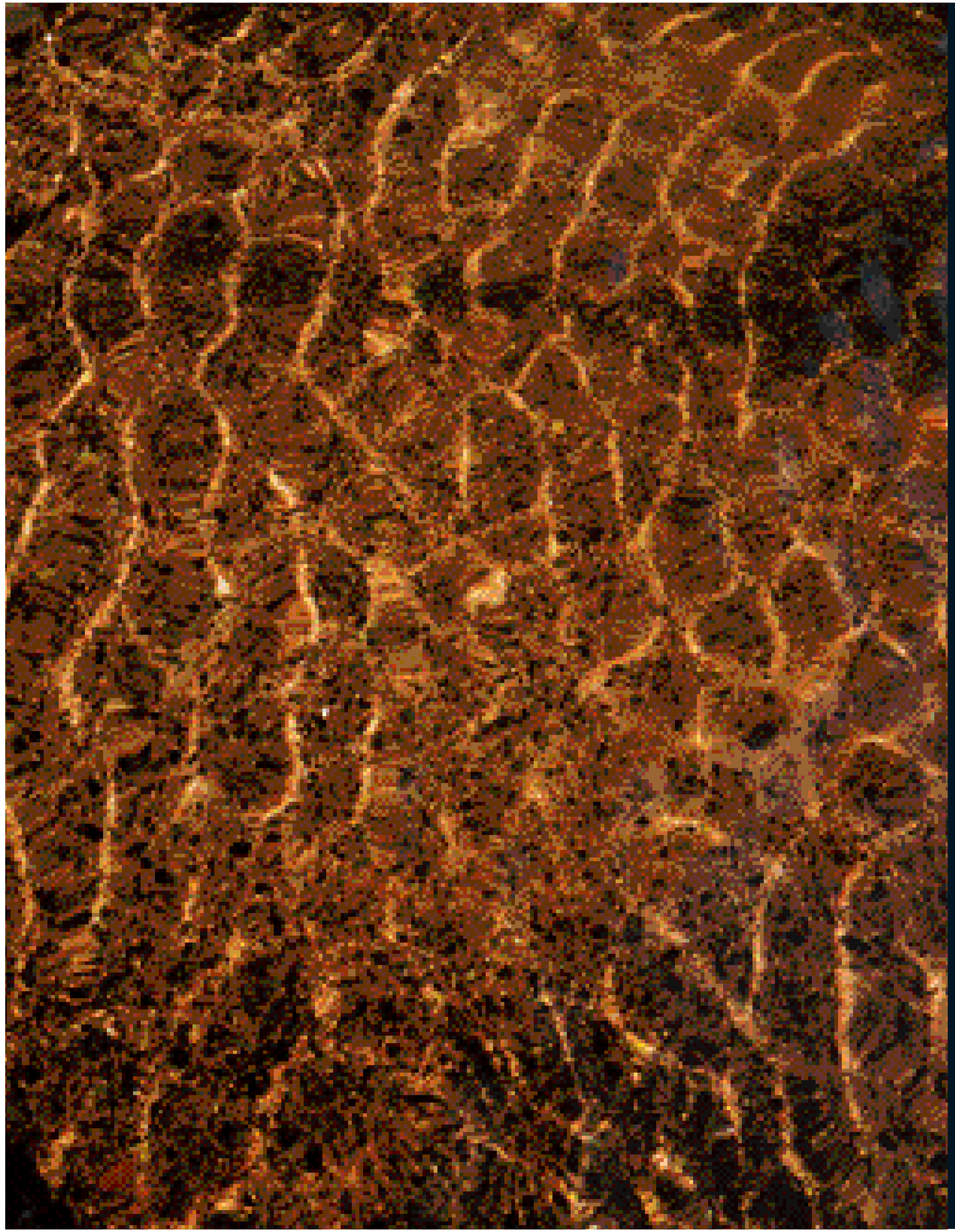
Detecting leaks from plants through application of the LDAR methodology was very much appreciated by the air quality protection authorities supervising the Refining Sites. Monitoring hydrocarbons leaks to the ambient atmosphere from leaky hardware utilising analysers, as is applied within the LDAR programme, was stipulated as a binding condition for the area permit for the FCC unit construction project. Although such procedure is in excess of legislative requirements, it is an instrument testifying that the chosen programme of minimisation of emissions of gases and vapours from the Company refineries' installations is the proper one.

EMISSIONS OF HYDROCARBONS FROM SCATTER SOURCES

Point sources of emissions of gases and petroleum substances vapours were reduced significantly in both refining sites due to installation of vapour recovery units (VRU's). Litvínov Refinery small volume tanks, which are either parts of technological process facilities or are in service for storing special light petroleum cuts, were connected to the VRU in the course of the reviewed year. Thereby, further sources of hydrocarbon substances releases to the ambient atmosphere were deleted and, in comparison with the year of 2001, the leaks from these particular vessels were decreased by 40 tonnes. Current hydrocarbons emissions from the tanks in storage service are in the level of 40 tonnes/year in either refinery. The small differences are due to (1) different numbers of tanks, (2) differences in the numbers of tanks of the same design and (3) differences in the annual turnovers (filling in and emptying).

The current level of VOC emissions from storage and lifting of crude and petroleum substances (intermediate products and final products) reached its historic minimum. This is due to a number of plant changes, which resulted from reconstruction or investments into new equipment. In the coming years it can be expected that the level of VOC emissions from the above sources will fluctuate around this minimum level achieved. Deviations can be expected in both directions depending on those factors that influence the generation of emissions most. In real terms however some relative rise can be expected, e.g. due to prepared legislative changes (reduction of the limit for volatile organic compounds). Moreover, the AP-42 methodology serving for emissions calculation is under constants development and refining. The calculated amounts of emissions can also grow due to upgrading of the level measurement in the tanks whereby the measurement frequencies can be as low as minute's readings. Again, what will happen will be enhanced standard of balancing whereas no actual increases in the emitted amounts will occur.





WATER QUALITY PROTECTION

The amount of Litvínov Refinery generated wastewater pumped to the Chemopetrol PLC wastewater treatment plant remained on the 2000 level. The balance of this wastewater does not include rainwater collecting system water, which stream is introduced direct to the natural streams. The Refinery's share in the overall amount of rainwater collected is determined on the basis of relevant surfaces ratios of the two Sites.

In the year under review no such release of substances detrimental to the aquatic environment occurred that would have resulted in deterioration of the quality of surface and/or underground water environments. Whenever such incidents occurred which caused surface pollution of soil, the contaminated material was excavated and the site reconditioned promptly to prevent from pollution penetration to the underground water level.

Kralupy Refinery wastewater treatment plant was modified to have the capacity to treat wastewater generated during FCC operation. The water management systems incorporated the FCC unit, after it was put into test operation mode. Due to commissioning of the FCC unit the amount of wastewater to be treated in the wastewater treatment plant increased, nevertheless the quality of water discharged to the river after treatment was not affected.

The FCC unit is provided with its own recycle cooling water system, which (apart from the need of making up for losses due to evaporation) is independent of the refinery cooling water circle.

WASTE MANAGEMENT

Smaller volume of capital investment activities resulted in smaller amount of waste generated, hazardous waste in particular. The amount of waste generated by the production activities of the refineries during the year under review remained virtually on the same level as in the previous years. Of the overall amount of waste generated, 27.65% was recycled (2593 tonnes and 277 tonnes in Litvínov site and Kralupy site, respectively).

The decrease in the amount of waste generated was also due to careful monitoring of working cycles of catalysts whereby their lifetimes were prolonged and due to extended cycles of operating equipment between turnarounds.

The Company operates no waste disposal site and nor does it have any facility to liquidate waste and the waste, unless recycled, are disposed of through certified contractors.

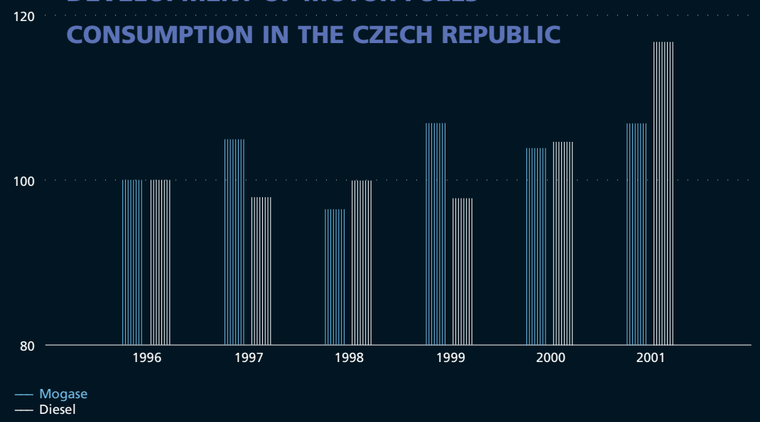
After the new act on waste became effective from 1 January 2002, the Company initiated relevant measures aimed at implementation of changes necessitated by this act.

PRODUCTS AND SERVICES

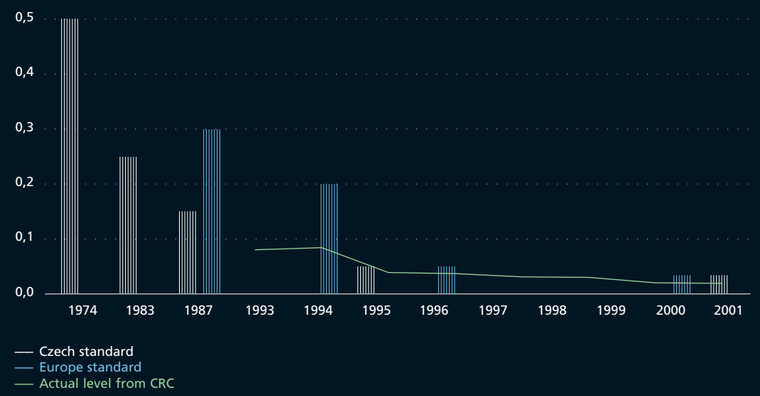
The number of cars is ever increasing as is the overall consumption of motor fuels as a result, which happens in spite of the fact that the design consumption of new engines is ever decreasing. Persistently rising consumption of motor fuels carry along the ill effects on the general environment. Having in mind the least possible ill effects of motoring development on the general environment, ever growing requirements are laid upon the quality of fuels, which concerns not only the process of combustion of fuel but also the entire process of fuels distribution is subject of intervention in this respect.

The Czech Refining Company pays persistently the utmost attention to the quality of motor fuels generated, which are its largest portion of production and have the most significant impact of the environment. The best part of the mogas and diesel fuels generated complied to the stringent

DEVELOPMENT OF MOTOR FUELS CONSUMPTION IN THE CZECH REPUBLIC



DEVELOPMENT OF SULPHUR CONTENT IN THE DIESEL FUEL



requirements of the European directive 98/70/EC specifying the quality of motor fuels. For the year of 2000, the most important parameters of mogas were: benzene content of 1% (V / V) maximum, sulphur content of 150 mg/kg maximum and aromatic hydrocarbons content of 42% (V / V) maximum. As far as diesel fuel is concerned, the most important quality parameters for the year of 2000 were: sulphur content decrease to the maximum of 350 mg/kg, introduction of the concentration limit for the polyaromatic hydrocarbons content, which is 11% (m/m) maximum, and higher specification for cetane number which was increased by 2 units – to 51 level minimum.

Thanks to the attention paid permanently to upgrading its technologies, in 2001 the Czech Refining Company managed to comply with the stipulated sulphur content in both mogases and diesel as is required by the 98/70/EC Directive, which content stayed within the requested range – for the entire volume produced. The same applies for the specification requested for the total aromatic hydrocarbons content and polyaromatic hydrocarbons content in mogases and diesel, respectively.

For the Czech Refining Company to be able to effectively control its production in accordance with ever stricter requirements, it permanently pays great attention to updating the analytic equipment of its laboratories. In the year of 2001 a testing motor set for determination of the cetane number (worth some 8 million CZK) was purchased and commissioned, which is the only testing equipment of its kind to be found on the territory of the Czech Republic.

As far as the production of motor fuels is concerned, the year of 2002 will be marked by total switch to the quality specifications as per the 98/70/EC Directive and, at the same time, it is going to be a year during which the Company will complete so called “Clean Fuels Programme”, under which programme stricter requirements will be put on the quality of motor fuels produced, which concerns the sulphur content in particular, which will decrease to 50 mg/kg maximum, which is the quality specification requested by the above directive for the year of 2005 , and to the level of 10 mg/kg maximum later on. A part of this programme has already been completed, particularly in terms of motor fuels segregation.

Besides motor fuels, the Company produced other products, namely road bitumens, aircraft kerosene, fuel oils, and solvents. With these and other products as well, great emphasis was laid on persistent maintenance of their qualities – in compliance with the legislative requirements and specifications and our customers’ needs.

PUBLICITY

The environmental policy includes the obligation to provide own staff and the general public with information on the environmental protection status and the activities performed to protect the general environment. That is why, within the preparation process for certification, the then existing systems in both Refining Sites were amended with procedures set for managing/comments of/responses to third parties.

At the time when the new FCC technological complex in Kralupy Refinery was put into operation an information campaign was initiated concurrently aimed at the inhabitants of towns/villages in the vicinity of the production complex: Kralupy nad Vltavou, Veltrusy and Chvat_ruby. Dissemination of leaflets to households was combined with verbal information given at public meetings where discussions followed. Before the new production complex was commissioned some municipality representatives had been invited to visit and get acquanted with the site.

At the start of 2001 media campaign culminated in Germany where both companies of Litvínov industrial complex were accused of causing air pollution in some Saxony villages and neighbouring areas of the Krušné Mountains. Adopting open and responsive information policy, both companies provided data needed for identification of the possible source of pollution and invited the relevant members of German Parliament to visit the Site. Though the work of the expert commission has not been concluded yet, no connection has been discovered so far in between the odours occurring in above named German areas and the operation of the Litvínov refining-petrochemicals production complex. When dealing with the complaint of the German citizens the Company co-operated closely with the Krušné Mountains Environmental Centre and with the Krušné Mountains Euroregion Environmental Commission, of which the Company is a member. Besides these two specific cases, open communication went on with State administration bodies and local governments, as well as with media operating within the areas of both refineries and with nation-wide media on topical issues related to impacts of Company's activities and its commercial products on the general environment.

ENVIRONMENTAL PROTECTION EXPENDITURES

Company's environmental performance reports issued earlier discerned between Capital expenditures (CAPEX) and Operating expenditures (OPEX). OPEX was broken down to individual cost items. This structure is also maintained in this report.

OPEX (for Litvinov and Kralupy)	ths CZK/year
Claus units	36 094.6
Wastewater treatment plant maintenance and operation	3 123 .9
Wastewater treatment and discharging	80 915.3
"HOPV" operation	10 468.0
Monitoring of air and underground water pollution	1 221.7
Air pollution fees	3 226.1
Charges for wastewater discharging	623.6
Waste disposal	12 432.1
Emissions measurement and operational records	2 595.2
Other	281.3

CAPEX

Project	CZK (ths) spent in 2001
KRALUPY	
Equipment cleaning area	413
Loading terminal upgrading	1 716
Kralupy EWMP	12 234
Retention pond – upstream the wastewater treatment plant	1 447
Automation of draining of tanks in crude service	1 665
SRU and sulphur degasification	7 677
Sludge transport at wastewater treatment plant	337
LITVÍNOV	
Reconstruction of the Sulfreen unit and sulphur degasification unit	22 668
Integration of process water from blocks 13 and 23	360
Wastewater of blocks 56/57 and 65/67/69	2 101
Loading terminal upgrading	15 987
New flue gas line for Claus units	924
Cleaning area – block No. 35	575
Continuous measurement of emissions (Basic of design phase)	192
TOTAL	68 292

RESPONSIBLE CARE INITIATIVE
HSE RESULTS (AS PER CEFIC)

No.	Indicator	Unit	1996		1997		1998		1999		2000		2001	
Refinery: Kralupy (K), Litvínov (L)			K	L	K	L	K	L	K	L	K	L	K	L
Occupational safety														
1	Number of fatal injuries	Deaths in the year	0	1	0	0	0	0	0	0	0	0	0	0
2	Frequency of lost time injuries													
2.1	Own staff	cases/1 mill. hours worked/year	6.75	7.8	1.64	1.13	0	0.61	0	0.61	0	1.3	0	0
2.2	Contractors' staff	cases/1 mill. hours worked/year	N	N	N	N	0	4.18	3.79	0	0	2.5	0	0
3	Frequency of occupational illness cases	cases/1 mill. hours worked/year	0	0	0	0	0	0	0	0	0	0	0	0
Protection of the general environment														
Waste management														
4	Hazardous waste	t/year	1285.5	1546.5	615.4	20314.6	629.0	14582.4	506.8	3578.7	258.8	1196.8	893.1	5136.5
5	Other waste	t/year	272.9	281.1	85.9	3892.6	717.7	11481.4	434.9	2443.0	4075.9	3739.9	158.8	3830.8
Air emissions														
6	Sulphur dioxide	t/year	710.7	2203.9	493.0	1374.7	596.8	1483.4	898.5	1695.0	648.4	1589.5	1007.9	3072.0
7	Nitrogen oxides	t/year	84.8	775.6	97.2	565.7	109.2	450.7	120.6	472.9	101.5	389.7	215.9	799.4
8	Carbon dioxide	t/year	186130	613916	215365	609337	165536	637965	171829	395904	159125	645699	426334	582736
9	Volatile organic substances													
9.1	VOC	t/year	262.3	2532.7	203.0	633.8	82.2	531.6	40.6	115.4	48.6	112.8	57.4	52.3
9.2	POPC	t/year	54.3	295.0	43.4	204.0	46.3	204.0	50.0	103.0	44.7	122.9	79.3	223.7
Water effluents														
10	Phosphorus compounds	t/year	N	-	N	-	0.248	-	0.087	-	0.19	-	0.06	-
11	Nitrogen compounds	t/year	N	-	N	-	4.0	-	2.2	-	N	-	41.6	-
12	COD	t O2/year	70.0	-	110.0	-	111.9	-	55.7	-	72.3	-	101.0	-
13	Heavy metals - total (EQS factor)	t/year	N	-	N	-	N	-	N	-	N	-	N	-
	BOD5	t/year	N	-	N	-	N	-	N	-	N	-	19.9	-
	Non dissolved matter	t/year	N	-	N	-	N	-	11.6	-	15.3	-	17.5	-
	Petroleum substances	t/year	N	-	N	-	N	-	N	-	N	-	2.5	-
Other potential impacts														
14	Substances with potential impacts on health and the environment													
14.1	Hydrogen sulphide - air emission	t/year	43.9	27.2	5.4	33.7	0.1	53.8	0.0	44.6	0.02	0.435	0.08	0.48
Utilities														
15	Utilities consumption and efficiency of use													
15.1	Energy consumption	TOE/year	72010	130200	87898	138812	64467	149260	66994	154085	60159.6	152682.3	135172.9	137312.9
15.2	Specific energy consumption	TOE/year/tonnes of production/year	0.03124	0.02756	0.03166	0.03442	0.02929	0.03504	0.03651	0.04173	0.03356	0.03993	0.05858	0.03976
Distribution/transport														
16	Accidents during distribution/transport													
16.1	Air	cases/tonnes of material transported	-	-	-	-	-	-	-	-	-	-	-	-
16.2	Rail	cases/tonnes of material transported	-	-	-	-	-	-	-	-	-	-	-	-
16.3	Road	cases/tonnes of material transported	-	-	-	-	-	-	-	-	-	-	-	-
16.4	Sea	cases/tonnes of material transported	-	-	-	-	-	-	-	-	-	-	-	-
16.5	Inland navigation	cases/tonnes of material transported	-	-	-	-	-	-	-	-	-	-	-	-
16.6	Product lines	cases/tonnes of material transported	-	-	-	-	-	-	-	-	-	-	-	-
Reference data														
1	Staffing													
1.1	Own staff (average)		326	952	337	938	356	901	369	873	359	796	353	647
1.2	Contractor staff (average)		N	N	N	N	104	338	124	412	495	557	386	552
2	Hours worked													
2.1	Hours worked by own staff		592587	1693119	608590	1703792	624618	1651483	649408	1643886	629609	1481529	575992	1161575
2.2	Hour worked by contractors' staff		N	N	N	N	221600	716600	262880	873440	1049195	1180537	803670	1147352
3	Turnover – own products/services sale return	mill. CZK/year	11643.1	22131.5	14968.0	23036.1	8762	18101.1	9566.7	21133.3	14331.6	37043.4	13474	31881
4	Products distribution and number of accidents		-	-	-	-	-	-	-	-	-	-	-	-
5	HSE cost													
5.1	HSE capital investment cost - total	mill. CZK/year	61.6	1161.2	193.3	387.7	274.9	180.5	2643.9	1550.6	508	551	144.6	329.1
5.2	HSE capital investment share in total inv. costs	%	40.6	70.6	68.7	53.8	71.6	25.9	97.9	94.7	14.5	36.7	6	13
5.3	HSE OPEX	mill. CZK/year	19.7	156.6	27.1	182.1	36.3	161.9	32.9	107.7	28.7	104.7	27.4	129.9

N – not monitored N/A – or is not generated

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English translation by Zbyněk Zeman, official court & CPE – certified translator

Česká rafinérská, a. s.

Enviromental Impact Report 2001

For Česká rafinérská, a. s.

published by ASCO – vydavatelství spol. s r. o.

Praha 10, K Lipanům 78

in June 2002

Design and Photographs by Bohumír Prokůpek