





Currently, the "corporate social responsibility" wording is used more and more and is gaining significance. However, for our company, Česká rafinérská, and lots of its activities, the notion of the social responsibility is rather narrow. Over a long period we have been greatly focusing on ecology, cooperation with surrounding communities, work safety, quality of our products, and many other areas important both for our business and all other involved parties in the area, we have adopted "sustainability" as a broader and more relevant term. According to generally accepted definition, sustainable development refers to a mode of human development in which resource use aims to meet human needs while ensuring the sustainability

of natural systems and the environment. Major objectives of sustainable development include sustaining the environment, so that these needs can be met not only in the present, but also for generations to come.

Our goal is to continue paying attention to both our business development and the protection of the environment, our employees' health and personal development and the support to local communities. Publishing of this Report on Sustainability represent a very important part of you cooperation with our surroundings, in which you can find a lot of information to provide you with a comprehensive image on our company's business and its sustainable development.



**Business name:** 

ČESKÁ RAFINÉRSKÁ, a.s.

**Registered office:** 

Záluží 2, Litvínov 7, Post Code 436 01

IČ (Company identification number):

62741772

Incorporated in the Register of Companies maintained by the Regional Court in Ústí nad Labem, Section B, File No. 696

**Registered Capital:** 

CZK 9,348,240,000

**Issued securities:** 

934,824 ordinary registered shares, total issued CZK 9,348,240,000

ČESKÁ RAFINÉRSKÁ, a.s. (hereinafter referred to as Česká rafinérská) is a production company engaged in crude oil processing and operating refineries in Litvínov and Kralupy nad Vltavou. Its main products are various kinds of motor petrol, diesel oil, aviation fuel, fuel oils, liquid petrol gases (LPG), asphalts, raw materials for petrochemical and chemical production, for the production of lubrication oils and substances for other industrial use.

Since August 2003, Česká rafinérská has been a processing refinery, which means that it processes crude oil supplied by its owners, i.e. by domestic business companies. These sell products both at home and foreign markets in proportions corresponding to their ownership share. 2013 was the second year of significant organisation changes aimed primarily to enhance effectiveness and company performance. The company was submitted to many audits whose outcomes resulted in programmes and investment proposals focused to increase the company's market competitiveness. Special attention was paid to issues related to energy efficiency, working performance, utilisation and reliability of the refinery equipment.

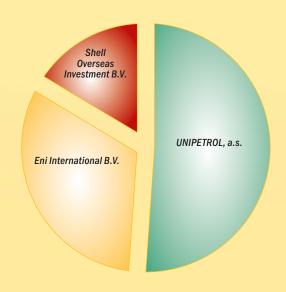
The programmes focused on the company's employees' health care, occupational safety and protection of the work place and the environment were further developed according to the plan.

The company further continued to fulfil its objectives to be a good neighbour and in frame of social responsibility company concept, it also

continued in the development of relationships with surrounding towns and communities in the Most – Litvínov region and in town Kralupy nad Vltavou and its vicinity.

The volume of processed crude oil in millions of tons	8.00
The number of employees to date 31. 12. 2013	635

SHAREHOLDERS	
UNIPETROL, a.s.	51.220%
Eni International B.V.	32.445%
Shell Overseas Investment B.V.	16.335%





Česká rafinérská has established and maintains integrated management system. Integrated system is created by interconnection of occupational safety and health protection management system, quality assurance management system and by environmental protection management system into a single functionally logical unit.

Above stated management systems are in our company certified in accordance with international standards ISO 9001, 14001 and OHSAS 18001. Also area of property protection and serious emergencies prevention are an integral parts of the integrated management system.







The Česká rafinérská integrated management system is based on five fundamental pillars:

# Prevention (Preventing unwanted emergencies from occurring) Observing legal and other requirements Quality products for customers for customers Communication with third parties involved improvement

From integrated management system point of view was in 2013 a recertification audit, which focused on assessment of conformance of all Česká rafinérská processes with above listed quality management system standards, environment protection and safety management system together with occupational health protection. Revalidation of certificate validity according to norms ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007 for another three year period was the result of the audit. Česká rafinérská demonstrated again its high level of management system in the area of business risks management, products quality and employees training (especially operators training).

The fact that certificate was gained again commits us to maintain the present system whereas applies that Česká rafinérská 's integrated management system is mainly about responsibility of each of us and about adhering to set rules, so the "zero accident" status is achieved. Česká rafinérská prefers the proactive approach to monitoring and managing negative impacts of its activities on customers, personal safety and health, serious emergencies prevention, and the environment and property. The process of identification and evaluation of risks helps to implement the above mentioned, including specification of measures to eliminate or minimise them and to strengthen the control mechanisms, by which the risks are managed. Also important is the process set for reporting, recording, and investigating causes of extraordinary events development, including near-misses and risky situations reporting. In 2013, Česká rafinérská continued in implementing process safety process, which plays and important role in preventing development of undesired extraordinary events, being an important part of the prevention pillar.

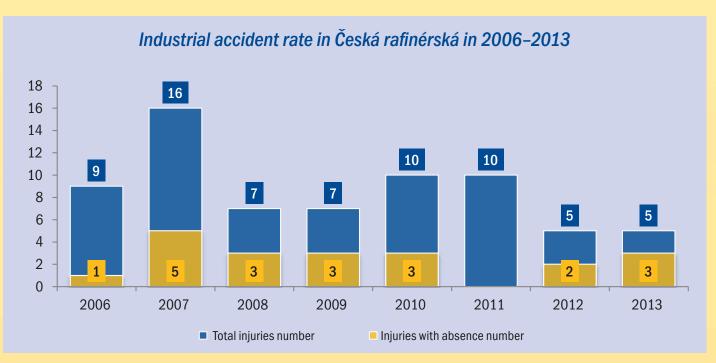
Česká rafinérská commits itself to continue in its activities to meet the goal of the integrated management system, i.e. to ensuring all requirements of customers are met in the highest quality and within the required time with optimum utilisation of all resources, while respecting all the requirements concerning quality, safety and health, serious emergencies prevention, and the environment and property of the company.

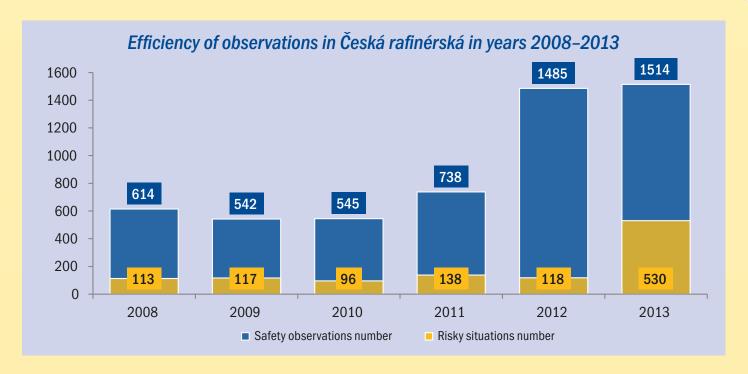


In 2013 in total 5 working injuries were reported, both related to company employees and also external workers forking for the company. From these five injuries than three required several days of being absent from work. Due to planned turn around of the refinery in Kralupy nad Vltavou, which took place at the end of September and start of October and in which 3000 external workers participated, it is a satisfactory result.

New system for reporting risky situations (risky situations, near misses or risky behaviour of company employees or external workers) was introduced and established in the company in course of last year. Thanks to this new system, number of discovered risky situation increased year-on-year by 400 % while carrying out the same number of observations as in the previous year. Due to that, it is possible to accept effective measures, which may prevent later development of more serious extraordinary event. The main advantage of the system is the possibility







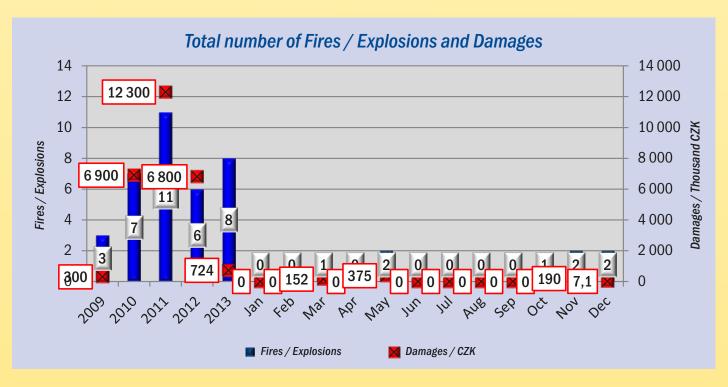
to set responsibilities to concrete persons for fulfilling measures and monitoring fulfilment of these measures.

In this way the company orientates to sustain and continuously enhance safety during company employees and contractors activities being performed. As a result is the improving trend in the area of occupational safety and undesirable events number dropping.



The main aim of the fire protection in Česká rafinérská is to ensure protection of life, people's health against dangerous effects of the fire and material values. So prevention is the significant part and the basic principles or risk prevention. The strategy of preventive fire protection generally derives from the fire and economical risk theory





and is embedded in basis of legal regulations and associated normed requirements within the company organisational and management documentation. Task of the fire prevention is to ensure fire safety, while installations are in use and their operation for the entire life cycle at present fire safety safeguarding of operated activities in accordance fire safety classification. Activities related to production units due to their character and volume of flammable, explosive and toxic substances fall into category with high and increased fire danger, for which consistent adherence to specified requirements applies on basis of worked up documentation. Fire safety of operated facilities is ensured by fire safeguarding equipment system.

Notwithstanding all set up organisational and technical measures, we have in 2013 reported 8 fires for which root causes were analysed according to pre defined LOPC descriptors.

In case of fire development, it is very important to know how to react correctly and react in time. We have verified by setting up prepared scenarios for various situations and via practical training in course of "live" interventions that readiness of operators for emergency situations including communication wit the plant fire rescue squad, other companies within the premises and institutions, is not only a lucky coincidence, but a piece of work of long-term knowledge and skills intensification.

#### **EMERGENCY ALERTNESS**

The prevention of serious emergencies is an integral part of the Česká rafinérská integrated management system. Last year, no emergency subject to reporting pursuant to Act No. 59/2006 Coll., on the prevention of major accidents occurred.



In frame of preparing employees on how to solve emergency situations 41 emergency trainings in total were carried out in 2013, most of them in collaboration with the plant fire rescue squad. The trainings verified emergency and evacuation company plans, no serious shortcomings revealed, not even in course of any training.

Practical training is focused on mastering emergency situations via timely and adequate reaction. Only in this way it is possible to prevent subsequent damages. Česká rafinérská employees in 2013 several times proved very high professionalism while handling these situations.





Process safety is together with a safety and occupational health protection, fire protection, quality management system, crisis and emergency management and environment and property protection part of company integrated management system (TMS).

Process Safety Management represents application of management principles and systems for identification, understanding and process risks management and their prevention. The goal is to set up suitable means (systems, processes, programs), by which occurrence of undesirable events is prevented and impacts of these events are reduced, which are associated with chemical-physical essence of the production process (for example substances and energise leak, facilities failure, over-pressurising, corrosion, material fatigue, control system trips, etc.). Process safety events have high potential risk on health and lives same as on environment and property, whereas may have even character of so called serious industrial emergency depending on the level of control (preventive and corrective (mitigating) mechanisms failure.

Česká rafinérská process safety means are therefore focused on:

- · Design and equipment planning.
- Testing, maintenance, inspection (integrity) of equipment.
- Effective alarm systems.
- Effective inspection and safe production management.
- Safety operational procedures (including start-up, shut down and emergency ones).
- Expert training and employees´ education.
- Process risks assessment.
- Extraordinary events causes investigation.
- · Change management.

Česká rafinérská monitored key indicators for process safety performance assessment (i.e. set up plans and programs) are in conformity with the good practice within refinery industry. Already as of 2008 selected lagging and leading key process safety performance indicators are internally monitored, reported on regular basis as for example number of loss of primary containment (LOPC), numbers and process safety event rate, status of technological/construction changes, numbers of delayed critical equipment revisions, numbers of alarms, emergency training, field checks etc.).

- As of 2011 we register process safety of Tier 1 and Tier 2 in conformity with internationally highly regarded recommended practice ANSI/API RP 754, which represent unplanned or uncontrolled loss (LOPC) of any material from primary containment in the process with defined criteria of thresholds and consequences.
  - In 2013 we register in total 2 events of the Tier 1. The first case concerned LOPC with subsequent work injury (with absence,) in second case the leaked medium amount was exceeded without any other safety impacts.
  - In 2013 we register in total 7 events of the Tier 2, whereas
    in three cases the medium leaked followed by a fire, which
    direct damages exceeded defined criteria. Four other cases only
    concerned defined amount of leaked medium exceeding without
    other safety impacts.
  - Also frequency of these events was monitored (expression of PSE number to total number of worked hours of employees and contractors in given year).
- In frame of established system of field check of process safety execution a topic of a check was announced for each month, whereas in 2013,14 field check was carried out (target was 12).
   Also other 9 specific check of critical process safety activities proceeded.

In frame of necessary awareness and knowledge improvement within process safety, i.e. awareness and knowledge of operational risks,

environment, activities and processes important for safe planning and performance of activities without negative impacts in 2013:

- Training of all employees took place also from topics related to process safety.
- In frame of Safety Day also topics with process safety were part of this event.
- In 2013 several lessons learned were elaborated for employees and contractors from incidents from actual extraordinary events.
- As of 2013 Czech translation of monthly magazine Process Safety
  Beacon is available for all employees of the company, which is
  issued by a non-profit organisation Centre for Chemical Process
  Safety operating in frame of American Institute of Chemical
  Engineers (AIChE), and which on regular basis points out concrete
  issued in process safety, describes gained experience and offers
  practical advise, how to prevent several problem occurrence.

Česká rafinérská in 2013 especially focused on efficient alarm systems, management of temporary technological changes, extraordinary event development causes investigation and maintenance process efficiency improvement continued with help of methodologies for evaluation of risks and training of employees and contractors (including specifics of planned turn around in Kralupy refinery in 2013).

In 2013 several important internal documents was revised and updated (plans, directives), associated with a process safety, especially maintenance working procedures taking into account the best available maintenance practices, directives for risk management, mechanical







During the year 2013, the company continued in accordance with the undertakings specified in Česká rafinérská Integrated Management System Policy, its efforts to minimise negative impacts on environment by its business operations. The undertaking is focused in particular on compliance with legislation and voluntary commitments in the field of environmental protection, but also on the method of operating refinery technologies and equipment, quality of manufactured products, training and motivation and increasing awareness of employees and contractors in regards to environmental protection. In June 2013 the company successfully defended the environment protection integrated management system certificate according to international standard ISO 14001:2004, whereas the first certificate of environment protection management system was already gained in 2001.

# **AIR PROTECTION**

The protection of the air against pollutants by proper operating air pollution sources and devices limiting emissions of pollutants, such as incinerators in sulphur production units, recuperation units to trap and recuperate hydrocarbon gases and vapours, floating roofs with double tank insulation, vapour exhaust system for loading equipment, etc. Operation of all equipment is carried out in conformity with conditions determined in permit to operate this equipment.

The table overview shows the sulphur dioxide and carbon monoxide emissions in Litvínov refinery reduction. The  $\mathrm{SO}_2$  emissions reduction when compared with previous years took place due to extensive repairs of equipment for the production of liquid sulphur and their subsequent failure-free operation. The nitrogen oxides emissions reduction was caused by a lower volume of the ammonia-content gas burned at the flare. The lower

#### Total emissions to air in the Litvínov refinery:

	SO <sub>2</sub>	NOx	со	TL	voc	H <sub>2</sub> S	CO <sub>2</sub>
rok				(t/rok)			
2009	5975,1	1102,9	165,2	4,2	51,6	0,574	401383
2010	2920,8	447,7	146,1	3,6	56,2	0,512	409891
2011	5766,6	769,4	164,2	3,5	54,2	0,585	374148
2012	6113,2	525,6	251,2	3,0	56,4	0,447	392690
2013	2396,2	357,4	171,4	1,6	53,1	0,376	405935

#### Total emissions to air in the Kralupy refinery:

	SO <sub>2</sub>	NOx	со	TL	voc	H <sub>2</sub> S	CO <sub>2</sub>
rok				(t/rok)			
2009	1145,4	155,7	103,3	14,0	59,4	0,012	404882
2010	1313,2	164,7	83,7	10,2	61,1	0,039	473414
2011	1453,6	136,5	74,2	8,9	63,9	0,023	466156
2012	1367,9	139,1	54,5	16,5	64,9	0,026	463962
2013	979,2	175,1	59,3	20,0	66,3	0,017	366165

SS = solid substances, VOC = hydrocarbons

#### Hydrocarbon emissions (VOC):

		Kralupy	(t/year)			Litvínov	(t/year)	
	Tanks	Incineration	Other	Total	Tanks	Incineration	Other	Total
2009	45,0	2,5	11,9	59,4	43,5	4,5	3,6	51,6
2010	44,8	2,7	13,6	61,1	46,3	4,6	5,3	56,2
2011	47,5	2,5	13,9	63,9	44,6	4,6	5,0	54,2
2012	48,3	2,2	14,4	64,9	44,2	4,2	8,0	56,4
2013	50,4	1,95	13,9	66,3	45,3	0,6	7,2	53,1

emissions of  $\mathrm{SO}_2$  in Kralupy refinery are caused by planned equipment shut down. The carbon dioxide emissions in the table below are calculated using methodology of the European trade with the EU ETS greenhouse gas emissions and allowances. Greenhouse gasses emissions are significantly influences by refinery turn around cycles.

Emission data for the last 5 years are stated in the following tables.

# **HYDROCARBON EMISSIONS (VOC):**

The table shows emissions of hydrocarbons vapours into the atmosphere grouped into emissions caused by incineration (furnaces and emergency gas flares), tanks and other sources over the past five years.

Unike the previous years, no significant changes in the volumes of emitted hydrocarbon gases or vapours occurred in either of the refineries operated by the company. The volume of emissions from incineration sources is influenced by the change in method of reporting according to new legislation requirements. The volume of emission from individual types of sources virtually does not change and depends mainly on the transport method of individual products, i.e. their share of their transport by pipelines, the quantity of processes materials, logistic conditions and utilization of storage capacities.

# FUGITIVE EMISSIONS FROM DISPERSED SOURCES - LDAR METHOD

For a long time, the LDAR program has been used as a tool for detecting

leaking devices and reducing losses of volatile hydrocarbons. A systematic search for leaks of operational media from the so called dispersed sources (a general term for leaking components of production, storage and manipulation equipment in refineries) and their immediate repair during the operation has an almost twenty-year-long tradition in the company. It has been applied in the Litvínov refinery even before establishment of Česká rafinérská and in the Kralupy refinery several years later. Detection of fugitive emissions by direct measurement in both company's refineries from the so called dispersed sources continued in the year 2013 too. In the Kralupy refinery production complexes of blending facility including recuperation unit, ethanol and MTBE storage and MTBE production unit were measured before the planned turn around. After the turn around production areas of hydrogenation units were monitored and the success rate of turn around repairs was checked again. 64 thousand various components were measured, more than 600 leaks detected, primarily from the armatures seals and flange fitting and flange joints, from which more than half rectified during the operation. The emissions were reduced by 220 tons per year. In the Litvínov refinery nearly 36 thousand components were measured on the new refinery isomeration production units, visbreaking, hydrogenation chambers including distillation units, material

production unit for petrochemicals, atmospheric vacuum distillation unit, liquid gases production unit and LPG storage including loading devices, 225 leaks detected, of which 89 were rectified during the operation, thus, the emissions reduction by 82 tons per year. Leaks that could not be removed due to technical reasons are scheduled for rectification at the earliest possible convenience.

The trend of leak quantity is monitored by comparing the percentage of leaking components per one thousand measures components and the results of both refineries over the last five years are given in the following tables including emissions from dispersed sources in the current year.

#### Litvínov refinery:

	2009	2010	2011	2012	2013
Proportional representation of leaking components [%]	0,52	0,43	0,35	0,49	0,38
Reduction of emissions from dispersed sources [t/year]	16	153	218	115	82

#### Kralupy refinery:

	2009	2010	2011	2012	2013
Proportional representation of leaking components [%]	0,57	0,61	0,76	0,83	0,43
Reduction of emissions from dispersed sources [t/year]	217	121	129	218	220

#### SURFACE AND UNDERGROUND WATERS

In the Kralupy refinery, the underground water quality protection enhancement, or the reduction of the underground water quality deterioration risk, focused on the equipment containing MTBE, repair of sewer systems and waste water cleaning. After reconstruction of selected part of the sewer system, that treats products containing MTBE, the reconstruction project for the remaining sewer system of the refinery was commenced with planned completion in the year 2015. In the Litvínov refinery, the implementation of measures to reduce the underground water quality deterioration was continuing. Within these measurers, the waste water sewers and slop systems are being repaired, in course of which the original earthen and steel pipes are being replaced by fibre-glass tubes. In 2013, the preparation of the reception drains and pipes was commenced at the atmospheric vacuum distillation units together with preparation of visbreaking unit sewer system repair.

The protection of underground water in Kralupy premises is primarily provided by the underground water-geological protection (HOPV) hydraulic barrier. The operation of northern, the so called HOPV refinery branch is contractually provided by a specialised company guaranteeing

the optimum adjustment and adherence to the technological parameters of the system. Last year also activities continued focused on increased reliability of remediation and monitoring system. The frequency and extent of the monitoring the pollutants in the underground water were optimised. The project of expanding and supplementing the HOPV system with additional active elements, including horizontal drill holes and drains, was included in the investment projects significant from the viewpoint of reducing the risk of underground water quality deterioration and achieving the parameters of the best available techniques in waste water treatment. The operation of extended equipment for pumping underground waters and newly constructed equipment for cleaning part of the pumped underground waters with focus on MTBE disposal, significantly contributed to the underground waters quality improvement. The waste water treatment plant project commenced the phase of new technological equipment construction execution. The project completion is planned in 2015.

The waster water production in both refineries and its volume related to one thousand tons of processed crude oil for the last five years:

	Kra	lupy	Litv	ínov
Year	Waste waters (10³ m³/year)	Specifically to oil (m³/1 kt oil)	Waste waters (10³ m³/year)	Specifically to oil (m³/1 kt oil)
2009	746,5	329,0	1657,3	363,3
2010	769,9	285,8	1750,6	374,2
2011	599,0	226,1	1729,4	421,3
2012	525,2	203,1	1627,4	356,2
2013	690,1	319,6	1681,6	373,2

The increased nominal production of waste waters in Kralupy refinery in 2013 is directly connected with the fact the evaluated year was a turn around period for this refinery. During the turn around, cleaning and other operations resulted in consumption of clear water and production of waste water even at the time when the technological equipment of the refinery was out of operation. The total amount of waste water is also affected by the precipitation amount especially in the Kralupy refinery

where all the water, including rainwater, is drained into the waste water treatment plant.

The table with underground water volumes specified development of pumping underground water from wells of hydro-geological protection in the Krfalupy industrial complex. Pumping of underground water is optimised by the hydraulic barrier operator in agreement of the basis parameters of the system, e.g. the volume and direction of the underground water current, level heights, etc.

Volume of underground waters from Kralupy HOPV:

Year	103 m³/year	Year	103 m³/year
2007	1517,5	2011	1373,8
2008	1406,9	2012	1324,2
2009	1309,7	2013	1352,7
2010	1296,1		

In both refineries, tightness tests are in progress, particularly in sumps and waste water lines, as well as other equipment, where dangerous substances are handled. Inspection of the storage and repairs of the waste water sewage system are performed according to an approved timetable.

#### **WASTES**

The waste management system is based on basic requirements on the waste generation prevention and reduction, and on their sorting, as well as material and energy exploitation. The register of wastes is administered in conformity with legislation regulations of waste management area. The share of waste resulting from investments is proportional to the scope of investment activities in the respective period, earthmoving work scope and projects implemented in frame of refineries turn around in particular. The total volume of waste and shares of wastes grouped into other wastes, dangerous wastes and recyclable wastes is considerably influenced by shutdown activities and activities performed according to long-term plans, for example shutdown and cleaning of storage tanks, etc. The amount of waste, originated by the company, are stated in the following table:

The refinery Litvínov total waste:

		Production			Investment			Refinery	
Year	Total	N	0	Total	N	0	Total	N	0
2009	1210	719	491	255	0	255	1465	719	746
2010	612	187	425	11	0	11	623	187	436
2011	1917	1371	546	306	0	306	2223	1371	852
2012	1378	831	547	316	0	316	1694	831	863
2013	653	179	474	158	0	158	811	179	632

D = dangerous, O = other

The refinery Kralupy total waste:

	Production			Production Investment				Refinery	
Year	Total	N	0	Total	N	0	Total	N	0
2009	1680	944	736	178	0	178	1858	944	914
2010	1803	466	1337	677	425	252	2480	891	1589
2011	1890	565	1325	0	0	0	1890	565	1325
2012	2077	703	1374	40	0	40	2117	703	1414
2013	2115	627	1488	117	0	117	2232	627	1605

D = dangerous, 0 = other

#### Company overall investment and production waste volume:

Year	Total	Investr	nent wastes	Production wastes		
	wastes	Total	Dangerous	Total	Dangerous	
2009	3323	433	0	2890	1663	
2010	3103	688	425	2415	653	
2011	4113	306	0	3807	1936	
2012	3811	356	0	3455	1534	
2013	3043	275	0	2768	806	

#### Production recycled and dangerous wastes:

Year	Litvínov		Kralupy	
	Recycled (%)	Dangerous (%)	Recycled (%)	Dangerous (%)
2009	60,7	59,4	89,5	56,2
2010	76,2	30,5	96,1	25,8
2011	46,6	71,5	97,0	29,9
2012	51,9	60,3	90,1	33,8
2013	91,0	27,5	86,8	29,6

#### **ENVIRONMENT PROTECTION OPERATING COSTS**

The environment protection operating costs are specified in the items used by default in reports on the company impact on the environment. The treatment and discharge of waste waters in the Litvínov refinery represents the highest cost item constituting almost 60% of the total operating costs spent for environmental protection in the entire company. Costs of processing the acid hydrogen sulphide gases by the Claus process and the costs of waste disposal are also important items. The costs of air, water and ground environment pollution monitoring include the costs for detecting gas and hydrocarbon vapour leakage from dispersed sources, authorised measurements of pollutant emissions discharged into the air and surface waters, waste water sampling and analysing, the emission monitoring station operation, etc.

#### **Environment protection operating costs in CZK thousand:**

Claus units operation	21 886,9
Waste water treatment plant operation and maintenance	5 641,4
Waste water treatment and discharge in Litvínov	124 635,4
HOPV operation	3 135,2
Decontamination in Litvínov	746,9
Air, water and rock monitoring	4 479,2
Air and water pollution charges	2 279,7
Waste management	21 509,1
Most and Kralupy Ecological Centres	600,0
Maintenance and repair of equipment	14 186,2
Other	521,0
Total	199 621,0

#### **INVESTMENT**

In 2013, projects were completed mainly in the area of water protection, but also emission monitoring of polluting substances into the atmosphere and energy exploitation efficiency enhancement. In the Kralupy refinery, execution of projects leading to reducing the risk of underground water quality deterioration and achieving the parameters of the best available techniques in waste water treatment continued. This groups of projects includes extension and supplementation of the hydraulic barrier system, treatment of a portion of the pumped underground waters, increased

reliability of the hydraulic barrier, sewer system repair and waste water treatment revamp. The hydraulic barrier was extended with further decontamination elements in the zone between the refinery and Veltrusy community ensuring a more efficient operation, and part of the technical equipment was modified to increase reliability of the system. The equipment for treating pumped underground water will pre-treat some of the underground water pumped by the hydraulic system. The reconstruction of a selected section of the sewer system was completed, and the preliminary phase of the project for repairing the remaining part of the system commenced. The completion is planned for 2015. The waste water treatment plant revamp project will ensure waste waters pollution parameters achievement at the waste water treatment plant outlet on parameters level of the beast available technologies. The project will be completed in 2015. In the Litvínov refinery remediation system optimisation project at the Jiřetín tank farm and on the road terminal commenced. In 2013, preparation of reception channels and pipes on the atmospheric vacuum distillation unit and preparation of visbreaking unit sewers system repair commenced. The project of continual emission measurement installation at the Clasu unit outlet in Kralupy refinery was implemented in course of refinery turn around in 2013. In the Kralupy refinery, the project for modifying burners in the atmospheric distillation furnaces was accomplished.

#### **Environment protection investment costs overall amount:**

Investment project	Thousand CZK
Railway loading platform modernisation	6,6
Reconstruction of oil sewer system in Kralupy	824,3
HOPV extension – MTBE remediation in underground waters	230,8
Waste water treatment plant revamp	45 497,3
Continuous emission monitoring in Claus unit	12 102,9
Underground waters treatment	838,2
NRL flare system modification	5 807,3
Waste water treatment plant balance tank replacement	5 405,5
Claus unit gas flue installation	2 916,5
Other environment protection projects	8 086,4
Total	81 715,8

# **OUALITY OF PRODUCTS**

Česká rafinérská is a company engaged in crude oil processing and crude oil products production in two refineries, located in Kralupy nad Vltavou and in Litvínov. The permanent care for quality of products supplied to the market is one of the company's major priorities. The company's products quality is steadfastly maintained at the level comparable to, and in some parameters even higher than, that of foreign producers' and suppliers' products. In terms of the production volume, as well as potential impacts on the environment, motor fuels represent the most significant production groups. The content of sulphur in all produced motor fuels satisfied requirements for sulphur-free fuels, i.e. fuels containing less than 10 mg/kg of sulphur. The legal obligation to replace part of the fossil motor fuels with bio-fuels was accomplished within the bio-fuel implementation project. The 4,16 % V/V bioethanol proportion was achieved in motor vehicle petrol fuels, and 6,08 % V/V FAME bio-ethanol proportion was achieved in diesel fuel. Simultaneously, the company in 2013 for the first time reported green-house gases emission savings in terms of Act No. 201/2012 Coll., on green-house gases emission reduction from fuels per energy unit contained in the fuel within its complete life cycle. Saving in level of 2.11% was reached in 2013.



In relation to the requirement of our customers, Česká rafinérská decided in 2007 to implement the system and accreditation of laboratories according to the ČSN EN ISO 17025 standard.

In 2008, an accreditation audit by ČIA was performed during which the methods for analysing heating gases composition and heating value of heavy fuel oil have been accredited. Such an accreditation is required by the Regulation No. 696/2004 Coll., to set out the procedure of identifying, reporting and verifying the volume of greenhouse gasses. We have obtained the accreditation from ČIA in 2008.

During inspection visits in 2009–2012, we have extended the scope of accreditation with additional methods in the field of oil, waste water and fuels analysing.

In 2013, the laboratories extended the accreditation scope by another method – Diesel fuel Cloud point assessment in laboratories of both locations, which derived from technology requirement for more efficient production of diesel to safe depressants for the diesel winter quality.

In course of 2013, the laboratories were preparing to extend the accreditation in 2014 by other methods to certify JET A1 on basis of shareholder audit JET A1:

Determination of aviation fuel crystallisation

Determination of aviation fuel flash point via method according to Taag

#### **NEW METHODS**

In 2013, we tested two new methods, which we until the present outsourced to the external laboratory: Determination of thermic stable salts in DEA, which serves for desulphurization process on FCC unit and Determination of total acidity (TAN) in crude oil and crude oil products.

## **INVESTMENT IN LABORATORY INSTRUMENTS**

In 2013, we have invested 14 millions CZK into the laboratories equipment, mainly into the new laboratory devices.

We have purchase modern devices for analysing fuel parameters as determination of octane number in naphtha, device for determination of gasoline hydrocarbon groups, devices for determination of sulphur and

metals in fuels, devices for JET A1 analysis, chlorine determination analyser, laboratory NIR analyser and others.

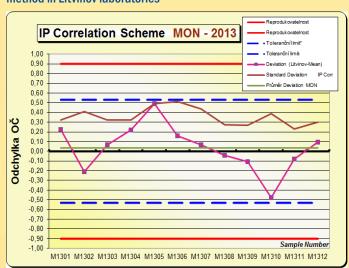
In 2013, we have also purchase a new program for chromatography network Open lab and so replaced a present out of date EZ chrom. Within Open lab system we have implemented data transfer from chromatographs into LISA laboratory system.

#### CORRELATIONS SCHEMES IN LABORATORIES

During 2013, we took part in several types of correlation schemes. We are traditionally included in correlation scheme of fuels organised by a Dutch firm IIS (International Inter-laboratory Studies), in correlation scheme of waste water by ASLAB, CSLAB and Aquacheck, in correlation schemes of asphalts, in correlation schemes for octane and cetane indexes.

Graph below shows octane number determination results deviations via a motor method in frame of the tolerance limits in course of the 2013. In 2013, we performed the correlation scheme in both of the company's locations with the success rate of 93.5%.

# Octane number measurement deviation development via motor method in Litvínov laboratories





In 2013, internal audit also carried out objectively the assuring and consulting activity and thus participated on company targets fulfilment. Close links among employees, the company Management, audit committee, the Board of Directors, the Supervisory Board, Processors and the Shareholders were maintained.

The audit committee and the Shareholder's audit and finance committee continued their activities in 2013. The audit committed members are the company Board of Directors representatives. The Shareholder's audit and finance committee members are representatives of all company's Shareholders.

Audit committee and Shareholder's audit and finance committee meeting schedule:

Shareholders' audit and finance committee meeting	Audit committee meeting
27 March 2013	9 January 2013
	12 March 2013
19 June 2013	5 June 2013
	2 September 2013
2 October 2013	7 October 2013
28 November 2013	4 November 2013



The updated version of Directive No. 802 "Audit execution procedure" was approved and issued, into which some requirements of the International standards for internal audit professional experience were elaborated.

#### **INTERNAL AUDITS**

The internal audits goal is to provide to the company Management assurance, whether strategic targets and company intentions are being fulfilled, whether individual processes risk are managed in corresponding way and are under control and whether they function correctly, practically and efficiently.

The company internal audits plan is always specified for one calendar year and includes audits of primary and supporting processes. Internal audit plan is determined while taking into consideration priorities of the company and on basis of regular risk assessment.

In 2013, according to internal audits plan a total of 8 internal audits were accomplished in the company.

Internal audits accomplished in 2013:

Date	Audited process
April	"Processing" process
May	"Development and modernisation of equipment" process
September	"Personnel services and training" process
October	"Information technology" process
October	"Inspection authority activities-type B"
November	"Accredited laboratories" process
December	"Technical services" process
December	"Technology" process

In November, a workshop has been held for company employees, who participated on the internal audit execution. The workshop focused on two main topics "Audit report and communication" and "Internal inspection from COSO view point".

#### **EXTERNAL AUDITS**

External audits accomplished in 2013:

Date	Auditor	Audited field
February 2013	Český institut pro akreditaci, o.p.s.(Czech Accreditation Institute)	Type B inspection authority accreditation – verification according to ČSN EN ISO IEC 17020:2012
February 2013	Český institut pro akreditaci, o.p.s. (Czech Accreditation Institute)	Laboratory accreditation – verification according to ČSN EN ISO IEC 17025:2005
January/ February 2013	KMPG Česká republika Audit, s.r.o.	Statutory accounting balance and Annual Reports for 2012
June 2013	Lloyd's Register Quality Assurance	Re-certification audit according to ISO 9001:2008, ISO 14001:2004, ČSN OHSAS 18001:2007
July 2013	Representatives of Processors	JET A1 product production and quality
October 2013	KMPG Česká republika Audit, s.r.o.	Pre-audit of statutory accounting balance for 2013
October 2013	KMPG Česká republika Audit, s.r.o.	Pre-audit of statutory accounting balance for 2013

#### **EXTRAORDINARY AUDITS**

In 2013, next to internal and external audits, also several extraordinary audits or investigations were accomplished, on basis of company Management and/or audit committee request.

#### RISK MANAGEMENT

Any business of any company cannot be separated from risks, which accompany all our activities. In many cases they may even prevent or delay our targets fulfilment. The same applies for Česká rafinérská, trying to manage its risks in frame of business activities including their possible impact mitigation. Within our risk management process we are periodically striving to identify threatening risks, to update them and assess their probability and possible consequences. The sstablished control mechanisms are very important for us, especially verification of their continual functionality and efficiency against concrete risks. We are also permanently working with other risk categories, next to business risks are the occupational safety and health protection risks, as well as with risks impacting the environment. All these risks are documented and stored in the company relevant risks registers.

In 2013, the process of business risks management recorded utilisation of significantly re-worked risks register. Many new risks were identified and in frame of the assessment we have dealt with level of their control and possibilities of control environment improvement by determining suitable measures.

In addition to on-going updates, the map of the company's business risks is reviewed in general in annual cycles and it is part f the company Business Plan. The lasting concern, is to work with the risks uniformly and regularly, to updated them concurrently and have available suitable elimination of impacts process.

The road and railway transportation of hazardous items represents a special risk on area of Česká rafinérská management sphere. As the majority of the products falls into this category, the company shares the adherence to all the statutory obligations related to think kind of transportation. Last year, the company was successful to significantly reduce the number of extraordinary event falling into the sphere of ADR European Agreement and RID international set of rules.

#### **ETHICS**

Ethical business operation and ethical behaviour of all employees and management members is a long-term priority of Česká rafinérská interest. To that corresponds continuing efforts to enhance the general awareness of ethical business principles and procedures not only within the company, but also towards the business partners, the contractors and the subcontractors. In concrete, this has materialised in the introduction of series of intensive training on ethics for all employees on risky positions. In total, 150 employees together with new hires participated. The CEO of the company, informed via a letter, at the end of the year, all our main business partners and contractors on ethics area development and asked them for a close cooperation to enhance ethical level of mutual business relationships.

The re-worked, new and significantly extended company code of ethics, became valid in course of the year. The ethical standards and values are explained in a new summarised for, which the company wishes to meet in every day practice m to all participating parties. Code of ethics clarifies philosophy of the company related to health and work protection, the equal opportunities for all employees, the harassment and bullying at the work place, the bribery and corruption, the provision and acceptation of gifts, the potential conflicts of interest and many other sensitive issue of everyday working activities. The area of information and property protection is not forgotten neither. The company created in frame of organisational structure a function of ethical code guarantor.

The established and proven system of annual inspections of adherence to the internal ethical rules for all employees continues. The result provides feed-back on the state and level of the ethical conduct awareness for both of the company management and everybody's self-reflection.

The organisation of the Ethics Day confirmed that efforts of company management and owners representatives are directed towards adherence of ethical behaviour across the entire company were very clear last year. This entirely new activity proceeded successfully with participation of many employees and company management in both locations taking place in December 2013 in both locatons.



Due to tangible and non tangible property concentration, in course of eventual premises threat by inside or outside intruder, damage may take place on production equipment of individual technological complexes, operational emergencies may be caused, ecological damages or subsequent damages on the market caused by production and crude oil products distribution failure.

Therefore Česká rafinérská, applies in the industrial premises in Litvínov and Kralupy nad Vltavou systematic activities directed to ensure protection of buildings and products technical equipment. The permanent inspection of set up safeguarding systems is part of it together with proposal of preventive measures with the target to minimise danger of shareholder property theft.

# INDSUTRIAL ZONES BUILDINGS, AND TECHNICAL EQUIPMENT PROTECTION

The physical security of the Litvínov and Kralupy refinery operations was contractually provided by the industrial zones administrators (UNIPETROL RPA, s.r.o. in Litvínov and SYNTHOS, a.s. Kralupy) through security agencies.

For refineries, this particularly includes the performance of the guard duty, adherence to the passage surveillance regime, company's material passage through the industrial zones' gateways and others.

The technical security of buildings and technology facilities in both locations is permanently supported by a camera security surveillance system making use of 30 cameras. The system of operational security cameras was in Litvínov refinery subject to extensive reconstruction and upgrade.

Selected buildings and constructions in both refineries were under the control of electronic security system; other safeguarding is based in solid barriers (bars, fences, etc.). The fact that within TA 2013 in Kralupy nad Vltavou no damage on property of Shareholders and contractors was reported is a good results of applied preventive measures of technical and physical protection.

#### PRODUCT PROTECTION

Protection of products is secured in both refineries by combination of elements of physical and technical control.

In the Kralupy refinery, a camera surveillance system is used – 18 cameras surveying the spots that are risky regarding possible thefts of oil products, and in the road terminal (SDS) the cameras are monitoring this road tank loading process.

The second phase of camera system renovation was completed this year in this production area, which in total amounted to 10 security cameras. In the Litvínov refinery tank farm zone and the Jiřetín terminal, 30 stationary cameras are in continuous operation to guard the stored fuels and oil and to keep the pumping into road tankers under surveillance. These security systems are under the permanent surveillance of a security agency at the guarding posts or at the centralized security desk.

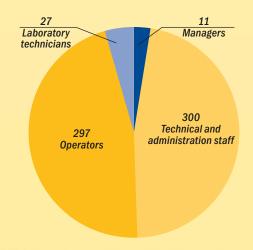
In frame of the industrial zone collaboration in area of property protection, regular contact was maintained with responsible workers of UNIPETROL RPA, a.s. and SYNTHOS, a.s. Regular consultations with specialise departments of Czech Republic Police we held.

Our efforts will be concentrated on enhancing the preventive and control activity by introduction of a new regimen and up-to-date technical and electronic facilities for protection of the company's property also in the period to come. We will in particular focus on the spheres identified by safety risk analysis.



Česká rafinérská is a major employer in two regions, and was such also in 2013. The company reviewed its processes and applied modern methods of human resources management. Care for employees in an inseparable part of the company's strategy and culture.

#### Position related employee grouping as of 31. 12. 2013.



# **TRAINING**

The company realises that educated employee are its key power, which enhances its success and competitiveness. Therefore the company concentrates consistently on developing work skills and training employees. Training employees is realised pursuant to the company's training plans and cross-sectional development projects. In 2013, the company realized 3 significant training projects: Effective manager 2013, Foremen and Operators + panel operators Academy. These projects were focused on the soft skills. In the area of operators training stress is placed on lessons learned from risky situations developed during the production process, for example with the help of sub teams, both in our company, and also in Shareholders companies, on personal experience and the best practices exchange.

In 2013, the company organises 275 individual training sessions, covering 12.238 hours of training.

Competency matrices were drawn to represent the optimal combination of knowledge, skills, and correct conduct for mastering the given work activities. The competency matrices serve as base for training plans, the long-term development of competencies, and employee performance measurements.

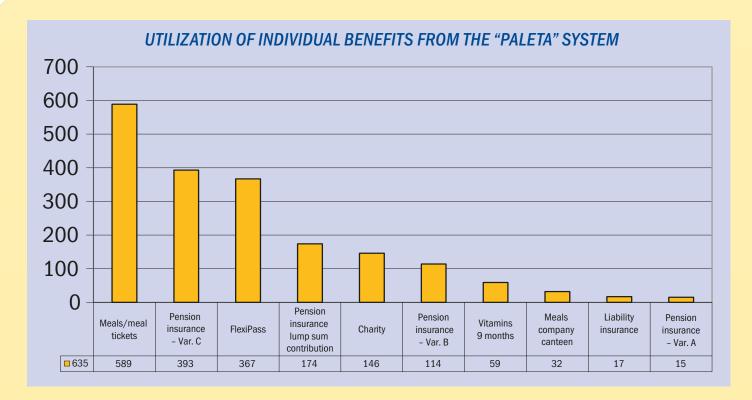
#### TRAINING AND COMPETENCE CENTRE

Training and competence centre (hereinafter referred to as TaKC) ensures training events for operators, laboratory staff and also technical-administration employees. It is an organisation of legal trainings, to get acquainted with changes in the legislation sphere, expert and professional growth of the employees.

TaKC newly started a program of middle management training last year under a title Foremen Academy. The reason being for these changes is the legislation environment update (Labour Code), the effort to improve communication in the area of production and technology, and the targeted management of a working group. The result is evaluated very positively both from the side of the lecturers, where the activity and understanding of given issue from the side of our company and trained employees was assessed, they all acknowledged the method of lectures management with subsequent utilisation in practice and by that by process safety enhancement.

Next long-term task is to ensure gradual generation exchange in the production sphere. Internship of employees recruited on the position of operator in training (hereinafter referred to as OPZ) was introduced in the fourth quarter of. The training process of a new employee joining the position of OPZ is organised in accordance with production section requirements. Entrance and legal trainings, getting familiar with Česká rafinérská internal documentation is necessary and integral part. The consistent studying of refinery minimum and the practice is ensured on all production areas so the OPZ can familiarise with working areas differences. Result is problem-free solution of technical and technological processes and gaining operator competencies throughout the entire year, but also successful solution of TA in Kralupy nad Vltavou.

The not addresses problem of Verifying operator knowledge took place subsequently. This task is being solved via a project called the Cyclic verification of operator's skills, as operator has to demonstrate not only technological and technical knowledge of the given complexes, but also a work team skill, perfect



knowledge of the safety processes, demonstrable familiarization with new technologies, equipment and their application. This is another of the little stones, which create integral part of the refinery practice and that is operational safety.

#### **HEALTH PROGRAMME**

Health care and promotion has been a priority of Česká rafinérská from its very establishment. Our care for human resources includes preventive medical examinations of employees, inspections of worksites in regard of protection, sickness rate monitoring, theoretical and practical first aid training and other activities relating to health protection in production and non-production departments of the company. Also the health care forms guaranteed by the collective agreement must not be forgotten. Providing a vitamin preparation during the three winter months, the social assistance during long-term illness, the contribution for costs compensation for above-standard medical surgeries and medicines, the contribution for children recreations, health stay kindergartens and primary schools visits in the nature is also worth mentioning.

#### **NON-MONETARY EMPLOYEE BENEFITS**

The "Paleta" system of optional benefits has been used by the employees of České rafinérské for 14 years. The employee benefits help balance the work and personal lives of employees and enhance their satisfaction and motivation and are, therefore, considered an effective instrument for human resources management. This system allows choosing from a wide selection of employee benefits according to individual needs and preferences, and extends the offer of leisure activities and health support elements. In 2013, meal allowances, pension insurance contribution, and FlexiPass vouchers belonged among the most selected benefits. Compared to the previous year, thesewas no significant change in the offer of individual benefits and the frequency of their use. Almost 150 employees have also taken the advantage of assistance provided by the Paleta system to the needy and chosen the charity allowance of one of the pre-selected non-profit organisations as one of the benefits.





Česká rafinérská has been paying attention to the principles of social responsibility from its establishment. The company has introduced modern employment standards, and above average care of its employees, and puts great emphasis on health protection, occupational safety and environmental protection, with regard to both the money invested and the coherence in individual system measures. The company has established a system of cooperation with neighbouring municipalities and communities, a system of providing financial donations according to priorities adopted, the company applies open communication with the public and mass media, and is responsive to the needs of neighbouring entities.

A balanced relationship with the municipalities in the surrounding area, cooperation and help in fulfilling the goals of local administration authorities and perception of the needs to the other entities in the region forms the basis of Česká rafinérská external activity in the region. The intensive cooperation with the municipalities and communities in the vicinity of both refineries continued in 2013 in both the information provision and financial support spheres. The company also supported various non-profit organisations and needy fellow citizens with financial donations and, for example, through volunteering or donating computer equipment.

The company provides financial donations to municipalities and communities in virtue of annual schedules to long-term agreements on cooperation. Within these, the company donated 1,900.000 CZK primarily designed for supporting actions and activities organised by the respective municipal authorities or by subject acting in the given town or commune – these include Litvínov, Most, Meziboří, Kralupy nad Vltavou, Veltrusy and Chvatěruby.

Based on long-term cooperation, the company provided in total 170.000 CZK to four subject as follows: Veltrusy Primary school, Veltrusy Nursery school, Alergie o.p.s. Kralupy nad Vltavou, Nadace Solidarity.

The company Česká rafiinérská further released 300.000 CZK as extraordinary donation to towns and villages in surrounding of Kralupy refinery, determined removal of floods consequences; Kralupy, Veltrusy and Chvatěruby. Employees than could devote any financial amount via deduction form a salary or to help by own hands, by work during consequences cleaning. Collected financial means in amount of 15.600 CZK were afterwards transferred to humanitarian bank account SOS Floods 2013 of company Člověk v tísni.



#### **MATERIAL DONATIONS**

Help and assistance by providing material consisted even in 2013 in rendering no longer used but still operable computer equipment to organisations with relatively lower demands on the performance of such devices.

In Kralupy nad Vltavou it was a Primary school Revoluční, Primary school in Veltrusy and Primary school of J. Matiegka in Mělník. In Most location it was especially Středisko volného času (Leisure time centre) and Podkrušnohorské technické museum (Under ore mountains technical museum). Individual pieces of discarded IT devices were provided to sport and interest organisations. Overall, 67 set of computers and accessories were rendered.

Various promotional and material donations were rendered to support events organised by various hobby and leisure organisations active in the region.

# **EMPLOYEE DONORSHIP**

The charity activity in the company has already been a long-term tradition, and a significant number of employees use the opportunities the company offers to them. As already mentioned in the previous chapter, almost one third of the employees waived their benefits in the Paleta system in favour of a selected non-profit organisation. In 2013, thus, 28.350 CZK has been divided among Nadaci Konto Bariéry (Barrier Account Foundation), Hospic v Mostě (Hospice in Most) and Dům na půli cesty (Halfway house) and the Asylum house for mothers with children in Kralupy nad Vltavou.

Several various events were organised during the year with the objective of involving the company's employees in the charity-for instance, the charity whist tournament or the financial collection of employees via purchase of a Christmas decoration. The collection takings were determined for the purchase of a rehabilitation device for Anička, suffering rare genetic defect.

## **VOLUNTEERING**

Voluntary activities are popular among employees as a way of doing something for the neighbourhood and, simultaneously, corroborate the sense of belonging to the company. Last year, Česká rafinérská held another Charity day event in which employees were offered the opportunity to exchange one working day for one day for a non-profit organization.



#### **EDUCATION SUPPORT IN THE REGION**

Česká rafinérská especially cooperates with schools in the regions where it operates, on long-term basis support Secondary chemical apprentice school in Kralupy nad Vltavou, High school Educhem Meziboří, VŠCHT (Chemical-Technological University) Praha. Both refineries are a frequent target for excursions of schools with chemical and technical orientation and hundreds of students participated in 2013. The company also facilitated technical internship in refinery to hundreds of students, arranged for chemicals for the expert chemistry tuition.



Organisation	Location	Voluntary activities
Nadace pro Obnovu Krušnohoří (Ore Mountains Renaissance Foundation)	Lesná, Krušné hory	Outdoor spring cleaning in the Ore Mountains
Children's house and school canteen	Hora Svaté Kateřiny	Outdoor spring cleaning and painting the fencing
Veltrusy Chateau - park	Chateau Park, Veltrusy	Floods after-effects removal
Primary school Komenského	Kralupy nad Vltavou	Floods after-effects removal
Počáplice	Štětí na Mělnicku	Floods after-effects removal

# **PROVIDING INFORMATION**

Openness is the basis for communication among parties involved. The company is very particular about informing its neighbourhood promptly and proactively on doings in both refineries through the a-mail information system, e-mail or mail communication, press releases, or personal meetings. The Ecology Centre Most and Ecology Center Kralupy nad Vltavou pay a significant roles in disseminating information I the neighbourhood.

