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**Division:** Design  
**Department:** 216  
**Job no.:** 887-30245

# ENVIRONMENTAL IMPACT ASSESSMENT

**Name of project:** Business Complex Vlčovice -  
- Public Utilities

**Client:** Municipal Council in Kopřivnice  
Záhumenní 1152  
742 21 Kopřivnice

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## A. PRINCIPAL DATA

1. **Name of project:** Business Complex Vlčovice -  
- Public Utilities
2. **Character of project:** new project
3. **Project location:** Kopřivnice - part Vlčovice  
cad. district Vlčovice, Kopřivnice,  
Větkovice, Drnholec

### 4. Reasons for site location

The site is located in the close vicinity of the company TATRA, near the road I/58 allowing good transport connection to Příbor, Ostrava, Nový Jičín, Frýdek Místek, Frenštát pod Radhoštěm and Kopřivnice.

The site provides large-size areas for the development of manufacturing activities and utilities and services with good connection to underground services. In the region a sufficient number of skilled manpower is available.

5. **Applicant:** Municipal Council Kopřivnice  
Záhumenní 1152  
742 21 Kopřivnice
6. **Designer:** territorial permit documents  
prepared by: S-projekt plus, a.s.  
tř. Tomáše Bati 508  
762 73 Zlín  
building permit documents and detail design  
to be developed based on a public tender

7. **User:** users of services have not been decided yet

8. **Project commencement:** 9/2000

**Project completion:** 5/2001

### 9. **Brief description of the technical and technological design**

The intention of the applicant is to implement public utilities in the business complex which enable for the town to be developed in the field of business, manufacture and services and bring new jobs to the region and extend utility services of the town.

#### **Division of the project into building works**

SO 001 Roads

SO 002 Drinking water connection

SO 003 Service water and reservoir connection

SO 004 Sanitary sewer and PS

SO 005 Storm sewer

SO 006 HP gas line and regulation station

SO 007 HV line

#### **SO 001 Roads**

The approach to the complex is in the break of Panská street for which a new crossing has been designed. Within the complex a main road (branch A) and service road (branch B) have been designed.

The branch A is the category MO 12/50 (2 x lane 3,0 m, 2 x border line 0,25 m and 2 x parking lane 2,25 m), which corresponds to the width of a road between curbs 11,0 m. Along this branch a single-side right pavement 1,20 m has been designed.

The branch B is designed for the category MO 8/40 (2 x lane 3,0 m a 2 x border line 0,5 m), which corresponds the width of the road between the curbs 7,0 m.

The surface of the road is bitumen-concrete, interpaver pavement.

Drainage is designed via rain outlets into the drainage PVC DN 300 left-running along the road with outlet to the Sýkoreček brook.

### **SO 002 Drinking water connection**

The drinking water connection is with respect to a required water supply connected to the Ostrava region water works DN 500 in Dělnická Street. The dimension is PVC DN 200 and it is app. 1150 m long and terminated over the border of the site. Water consumption metering will be realized in an underground metering manhole located quite close to the water supply line DN 500.

### **SO 003 Service water and reservoir connection**

The service line connection will be connected to discharge pipes from PS Tatry DN 400 running along the approach road to the loading gatehouse of the plant (part of Panská Street). It is made of pressure pipes DN 200-PVC and 970 m long, it passes the complex along the border with Tatra and terminated in the water reservoir located in the highest point of the site. The water reservoir is designed as a mounted double-chamber tank 2 x 1500 m<sup>3</sup> (actual volume 2710 m<sup>3</sup>) with a handling manhole.

### **SO 004 Sanitary sewer and a pumping station**

The sanitary sewer will be connected to the single-pipe municipal sewer DN 700 (near Dělnické Street), discharging waste water to the municipal waste water treatment plant. Pressure pipes PVC DN 150 app. 1160 m long. Sewage water pumping station is designed as an underground reinforced concrete sump with the useful volume of 40 m<sup>3</sup>, with 2 submersible sewage pumps.

### **SO 005 Storm sewer**

Via the storm sewer rain water or treated industrial water from the site to the Lubina brook will be discharged. Gravity line, outlet below the weir, ie below the supply point of Tatra, a.s., with an outlet structure. The piping is designed made of glass-fabric laminate HOBAS DN 100 app. 1070 m long, average slope 13 ‰. Inlet manholes have monolithic bottom part and prefabricated inlet transfer raise.

### **SO 006 HP gas line and regulation station**

The HP connection to the regulation station is connected to the existing HV gas line DN 200 no. 633017. The total connection length is 450 m. The gas line is designed made of steel tubes DN 100 placed in the ground.

The regulation station is of the factory-finished type RS 505-2/1-440 GEMAX with the capacity of 500 m<sup>3</sup>/hod.

### **SO 007 HV line - 22 kV**

The Vlčovice complex will be provided with electric power supply from TATRA Kopřivnice, a.s., from the inlet transformer substation Energetika TATRA. Supply cables VN 22 kV will run on the existing energy bridge in the Tatra complex and underground to the business complex.

route length on energy bridge 1100 m  
in the earth 800 m

## **10. Standard of the technical design**

The proposed technical design for individual building works meet current legislative terms and Czech standards.

**11. Total cost** : 95 700 000 CZK

**12. List of municipalities**

**impacted:** Kopřivnice, Vlčovice

**B. DIRECT IMPACT DATA****I. Input data**

Public utilities are services providing the business complex with water, gas and electric power serving for its transport connection and rain water or other drainage.

**1. Soil**

The technical infrastructure needs permanent agricultural land acquisition sized 1,6835 ha

including:

- water reservoir	0,0600 ha
- regulation gas station	0,0300 ha
- sewage water pumping station	0,0020 ha
- roads	1,5915 ha

Any temporary acquisition is not considered because the construction of underground gas, water piping and sewerage will be completed within 1 year including putting the affected lands into the original state (see § 9 par. 2 Law no. 334/1992 of Code).

Affected agricultural lands have the registered signification of soil 6.47.00, 6.47.00 and 6.48.11 and are classified with the protection grade ZPF class II, III and IV. It is gleization soil on loess-loam medium-heavy without gravel or medium-gravel, with tendency towards temporary waterlogging.

**Protected area**

The project is not located in an extremely protected area in accordance with Law no. 114/92 of Code on nature protection in a protective zone.

The site is located in a protected black coal and natural gas deposit area of the Czech part of the Upper-Silesian Basin. The manager of the black coal deposit is OKD, a.s. IMGE o.z., registered office Smetanovo náměstí 2, Ostrava, and the manager of the natural gas deposit is OKD, DPB Paskov a.s. The site is located in the zone C 2, over the productive Carboniferous system, where exploitation of the deposits by classical methods is not considered. In case parts of the deposit are exploited, no ground deformation is expected.

In addition, in the Cadastral district DP no. 4/0038 Tichá for natural gas is set, the manager of which is OKD, DPB Paskov a.s.

### **Protective zones**

The project affects the following protective zones of:

- state road I/58
- HV line
- HP gas line
- Lubina river
- Sýkoreček brook

The protective zones to be observed.

## **2. Water**

The utilities does not need any drinking and service water. The designed water connection allows that the business complex will be supplied with:

250 m <sup>3</sup> /hour	drinking water
250 m <sup>3</sup> /hour	service water

Drinking water will be supplied from the Ostrava water works through a newly built connection DN 200 1150 m long.

Service water will be supplied from Tatra Kopřivnice, a.s., from the Lubina river. In the highest point a water reservoir with the volume of 2710 m<sup>3</sup> is designed so that the supply Tatra cannot be interrupted.

### **3. Other fuel sources and power supplies**

#### Natural gas

The utilities does not need any natural gas supply. The designed HP connection with the regulation station provides 500 m<sup>3</sup> of natural gas /hour.

#### Electric power

The pumping sewage water station will be provided with submersible pumps which needs 50 MW annual power supply.

The designed HV power line and the reconstruction of the existing transformer station 110/22 kV - Energetika Tatra Kopřivnice provides the following annual supplies

2000	5 000 kW
2001	8 000 kW
2003	15 000 kW
2004	20 000 kW
2005	27 000 kW

#### Building material

Common building material, such as aggregate, coated materials, paving, cement, sand, PVC pipes, steel pipes, cables and others.

#### **4. Transport and other utilities requirements**

A new approach road branching from the road leading to the loading gate of Tatra provides the transport linkage of the business complex with the public road network. When underground services are built, new roads or utilities will not be necessary to be built.

## **II. Output data**

### **1. Air**

#### **a) Main air pollution point sources**

Neither in the course of the construction period nor after realization of utilities (services) any air pollution point source will be appear.

#### **b) Main area air pollution sources**

The site of the approach road and other services where earthwork will be performed may be considered area air pollution sources. The temporarily stripped area of the approach road and trenches for placing water, gas and sewage pipes and the excavated soil deposit will be exposed to wind erosion and erosion of soil fine particles to air.

Furthermore, another air pollution source will be the movement of building machines in the site during the construction (trucks, dredger, bulldozer). The area air pollution source will occur during the construction only, emission will only be random and the amount of it cannot be determined exactly. After the completion of building works the grade in services routes will be put into the original state, areas around the service road will be finished and grassed.

**c) Main line air pollution sources**

The line air pollution source will be personal cars and trucks driving on the approach road to the business complex. Since at present an activity is not known which shall be performed in the business complex, neither traffic density, nor transport emission can be estimated.

The road traffic pollute air by imperfect burning of gasoline and oil during which namely nitrogen, carbon dioxides, hydrocarbon and heavy metals are liberated.

For information unit emission factors determined for the town traffic to 50 km/hour are shown for the estimated level of the technical state of vehicles in 2000.

<b>Harmful substance</b>	<b>Unit emission (g . vz<sup>-1</sup>.km<sup>-1</sup>)</b>
<b>for explosion engines</b>	
CO	19,0
C <sub>x</sub> H <sub>y</sub>	2,1
NO <sub>x</sub>	2,0
<b>for Diesel engines to 3,5 t</b>	
CO	7,00
C <sub>x</sub> H <sub>y</sub>	0,29
NO <sub>x</sub>	1,60
<b>for Diesel engines with load-bearing capacity over 3,5 t</b>	
CO	19,0
C <sub>x</sub> H <sub>y</sub>	0,85
NO <sub>x</sub>	4,50

It can be expected that the stated above unit pollution emission values will be lower owing to the introduction of more advanced engines, better technical state of vehicles and availability of air pollution regulations.

As well the transport of material to the site will be a line air pollution source. Neither this emission quantity of emitted harmful substances can be estimated.

## **2. Water**

### **a) Rain water**

Rain water from the roads and pavements will be discharged via storm sewers to the Sýkoreček brook.

Annual rain water quantity will be approximately 12 400 m<sup>3</sup>.

Rain water from the business complex will be discharged via gravity sewers to the Lubina river. The rain water quantity will be estimated after the clarification of business activities.

### **b) Sewage water**

The utilities will not produce any sewage water due to their character. The designed sewerage is dimensioned for 250 m<sup>3</sup>/sewage /hour.

It will be connected to the separate municipal sewer and waste water treatment plant.

The sewage water quantity to be discharged is not known at present. It will be clarified in the next stage of project documentation after business activities are known.

## **3. Waste**

### **a) Construction period**

During construction works waste will arise which will be classified according to Regulation no. 337/1997 Waste catalogue as follows:

Catalogue number	Waste kind	Category	Way of disposal
170501	soil	0	storage
170201	wood	0	incineration plant
170101	concrete	0	storage
170302	tar-free asphalt	0	storage
170405	iron	0	scrap-yard
170407	metal mixture	0	scrap-yard
170408	cables	0	scrap-yard
170602	other insulating material	0	storage
170203	plastic	0	storage
200201	waste to be composted	0	composting plant
200301	mixed municipal waste	0	storage
200112	paint	N	incineration plant

### Operation period

Catalogue number	Waste kind	Category	Way of disposal
200303	street garbage	0	storage
200199	not determined waste		incineration plant, storage

## 4. Noise and vibration

### 4.1 Noise

#### Construction period

The main noise source during construction will be earthwork execution and building material transport. This noise source will be variable, temporary and hardly specified. For earthwork common building machines will be used (dredger, bulldozer, truck).

Noisiness of the above machines:

- dredger                      LA = 90 dB (A) - 1 m
- bulldozer                    LA = 92 dB (A) - 1 m
- truck                         LA = 89 dB (A) - 1 m

Building machines will move in the site, building material to be transport on state and local roads. With respect to the site location out of residential buildings no noise study has been prepared assessing environmental noise impacts.

#### **b) Operation period**

The noise source will be the approach road connected to the state road I /58 and parking places inside the business complex. Since at present neither the density of traffic to the complex nor the structure environmental noise impacts has not been assessed.

### **4.2 Vibration**

Vibration may appear in the period of construction. It can be caused by the moving and activity of building mechanisms. Environmental impacts are not expected.

### **5. Radioactive and electromagnetic radiation**

N/A.

## **C. COMPLETE ENVIRONMENTAL DESCRIPTION AND IMPACT ASSESSMENT**

### **I. Description of proposed design alternatives**

The location of "Business Complex Vlčovice" allowing the development of the town and manufacturing business activities including technical equipment and services accrues from the revision no. 11 of the territorial plan of the town of Kopřivnice - part Vlčovice, prepared by S-projekt plus, a.s. Zlín. Services routes and approach and service roads depend on the linkage to the existing network of the site.

The submitted documentation assesses therefore two alternatives, an alternative without operation, called the zero alternative, or the preservation of the existing state and proposed intention.

### **Zero alternative - alternative without operation**

The plots indicated for the construction of the business complex and related utilities will still serve for the agricultural production and worked.

The plots may be utilized for other activities as well. Since they are situated quite close to the Tatrov complex, they are not expected to be used for the construction of residential houses.

### **Proposed state**

The business complex Vlčovice sized approximately 80 ha is located in accordance with the territorial plan in the so-called industrial manufacturing zone covering such production or technical equipment whose negative environmental impacts cannot be eliminated, above all in relation to transport. In accordance with binding control conditions of the territorial plan the site of the business centre suits to:

- heavy industrial plants
- electrical and food industry
- building material manufacture and construction companies
- chemical, wood-working, paper, textile, leather industry and printing plants
- large-capacity water treatment plants, heating plants, incineration plants, switching stations
- relevant technical facilities
- relevant roads, handling areas, car parks, garages, sidings
- shops and maintenance shops
- offices and sanitary facilities for employees
- protective, insulation, public greenery
- light industry, stores, manufacturing services
- on certain conditions random utilities for employees, ie a basic shop, services, catering, cultural and social facilities, office and administration facilities
- corresponding number of parking places

- standstills, underground garages

Within the business complex the following facilities are not permitted:

- farms, separate or grouped family houses, apartment villas, blocks of flats, apartments on higher floors
- elementary or nursery schools
- municipal and super-municipal public utilities
- buildings for breeding of small farm animals
- garden settlements, individual recreation buildings, bigger recreation facilities

Conditions and principles of the site arrangement towards the Business Complex Vlčovice

- to take into consideration the future route of the road I/58 including the protective zone to the maximum
- transport linkage of the complex to be preferred from the local road "Panská"
- to determine hygienic protection zones for the WTP based on used technology and for the industrial complex for its individual operation units
- building structures to be three-floor (up to 17 m above P.T.)

to take into account the existing green to the maximum, in the site to found grassed non-paved areas with bushes and trees, which will protect the surroundings against negative building impacts performed within this site.

## **II. Brief description of significantly impacted environment**

## A. Basic characteristics

### 1. Air

The site belongs to the perhumid or very humid climatic region.

The following are data provided by the nearest meteorological stations in Frenštát pod Radhoštěm and in Příbor:

- annual precipitation	791 mm
- average precipitation in vegetation period	532 mm
- average annual temperature	7,4 °C
- Lang's rain factor	106,8

### The existing state of atmosphere

The long-term measurement of air pollution for the Kopřivnice region is performed on a automatic monitoring station in Kopřivnice, operated by the Czech Hydrometeorological Institute - branch office Ostrava-Poruba within the general state network of the automated imission monitoring since 1994 (in the area of the North Moravia and Silesia 21 AIM stations are in operation). The station monitors concentrations of SO<sub>2</sub>, NO<sub>x</sub> and dusty aerosol PM<sub>10</sub>.

Since the start-up of measurement any legal imission limit has not been exceeded for the annual average concentration of all monitored substances. Imission limits for daily average concentrations and maximum short-term concentrations are used to be seldom exceeded, namely those of nitrogen oxide, probably by car traffic impacts. The results of measurement show the tendency of continuous decreased concentration of pollutants in atmosphere (see annual average values 95, 96, 97, 98). Reasons for the continuous improvement of atmosphere purity are: expansion of gas lines in municipalities, strict legal emission limits for big pollution sources since 1 January 1999 (Tatra a.s., remote transmission from the Ostrava agglomeration), elimination of operation of the plants (eg Kotouč, Štramberk).

**1998**

Concentration of air pollutants measured in the CHMI in Lubina - Drnholec (values are in micrograms per m<sup>3</sup>):

**Average monthly concentrations**

<b>Month</b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>PP</b>
January	32	28	32
February	23	34	29
March	15	22	26
April	9	16	21
May	6	13	18
June	6	10	15
July	4	12	15
August	7	17	20
September	9	21	22
October	8	22	18
November	28	45	39
December	23	41	32
1998 average	14	23	24
Imission limit	60	80	60

The imission limit for average annual concentrations have not been exceeded.

**For comparison**

<b>Year</b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>PP</b>
1995	26	32	53
1996	36	38	42
1997	20	32	32
1998	14	23	24

**Maximum daily (24-hour) concentrations:**

Month	SO <sub>2</sub>	NO <sub>x</sub>	PP
January	132	97	143
February	71	100	63
March	52	46	63
April	20	34	47
May	15	25	35
June	17	26	43
July	13	21	33
August	18	30	37
September	23	44	69
October	32	96	48
November	124	153	125
December	65	141	84
Imission limit	150	100	150

The imission limit for 24-hour concentrations of SO<sub>2</sub> and dusty aerosol have not been exceeded.

The imission limit of NO<sub>x</sub> was exceeded in 4 days (November, December)

#### **Maximum short-term (half-hour) concentration (micrograms per m<sup>3</sup>)**

Imission limit                      SO<sub>2</sub> 500                      NO<sub>x</sub> 200                      PP 500

The imission limit of NO<sub>x</sub> has been exceeded in January, February, November and December only.

#### **1999**

#### **Average monthly concentrations (micrograms per m<sup>3</sup>)**

Month	SO <sub>2</sub>	NO <sub>x</sub>	PP
January	18	27	30
February	19	23	25
March	11	21	30
April	9	18	25
May	6	13	18
June	6	14	18
July	5	15	17
August	4	14	14

September			
October	7	21	15
November			
December	no records		

## 2. Water

### a) Water streams

The site belongs to the water basin of the Lubina river (hydrological number of water basin 2-01-01-135) flowing on the east side of the site. The other significant stream in the site is the Kopřivnička brook flowing through the town and creating a left tributary of the Lubina pouring into it in front of Příbor.

Along the Tatra complex the Sýkoreček brook flows in the south-east the Babincův brook.

### Water pollution

#### Lubina

According to the monitoring of water quality in the Lubina river by the company Povodí Odry the values in the profile Vlčovice and Košatka are as follows:

Indicator	Profile Vlčovice (mg/l)	Pollution class	Profile Košatka (mg/l)	Pollution class
O <sub>2</sub>	9,50	I	8,80	I
BSK <sub>5</sub>	4,00	II	8,90	III
CHSK	5,80	II	9,90	II
soluble compounds	307,00	II	419,00	II
insoluble compounds	27,00	II	82,00	IV
Fe	0,73	II	1,93	III
Mn	0,05	I	0,14	III
NH <sub>4</sub>	0,89	III	2,38	IV
NO <sub>3</sub>	5,80	III	7,10	IV

Cl	28,00	I	77,00	II
SO <sub>4</sub>	64,00	I	91,00	II
Ca	62,00	I	67,00	I
Mg	8,30	I	9,20	II

In the Košatka profile water in all indicator groups (except for biological groups with maximum pollution class) is classified by one class worse. This is caused by the discharge of waste water from Kopřivnice and Příbor, which means the increase of the values BSK<sub>5</sub>, ammonium and nitrate ions.

### Kopřivnička

Water quality in Kopřivnička is not regularly evaluated. It is significantly polluted by waste water from the municipal WTP and affects also the decrease of water quality in the Lubina river.

For the assessment of the pollution of Kopřivnička on 26/10/1995 a single sample from the channel of the brook was taken approximately 100 m below the outlet of WTP ČOV. The result of the analysis is as follows:

NL (mg/l)	RL (mg/l)	pH (mg/l)	CHSK <sub>Cr</sub> (mg/l)	BSK <sub>5</sub> (mg/l)	NH <sub>4</sub> (mg/l)
12,00	341,00	7,19	82,00	25,00	34,74

Compared to Regulation no. 171/92 Code on permissible pollution (indicators III - other water streams) the values are increased as follows: BSK<sub>5</sub> 3,1 x, CHSK<sub>Cr</sub> 1,6 x, nitrate 8,8 x, ammonia 13,9 x.

### **b) Ground water**

In the site any hydrogeological survey has not been performed yet. As per available information any breakdown has happened which could affect the quality of ground water

### 3. Soil

Soil in the site is medium-heavy loam-clay and heavy clay-loam, clay-loam, sand-clay and clay with sand. The type of soil - brown soil with soft gleization. It is mostly soil with deep profile, without skeleton, solely with admixture or medium-stony. Under laboratory analyses the chemical composition of topsoil is only satisfactory. In subsoil layers the chemical composition is quite unsatisfactory, the high content of  $\text{Fe}_2\text{O}_3$  shows substantial settlement of subbase horizons and significantly worsened permeability. This soil is mostly fully delimed.

Main soil units occurring in the site as follows:

- Gleization soil on slope loam, medium-heavy to medium-skeleton or slightly stony, inclining to temporary waterlogging.
- Brown gleization soil, gleization redzins and gleization soil on different slates, on shale and silt, lighter to medium-heavy, to medium-gravel or stony, inclining to temporary waterlogging.
- brown gleization soil and gleization "redzins" on slate and settlements of Carpatian "flysh", heavy to very heavy, without gravel to slightly gravel, inclining to temporary waterlogging.

### 4. Environmental geofactors

#### Geological conditions

From the geological point of view the site is created by "flysh" layers arisen from changing positions of grey, green-grey, dark grey, non-lime, irregular shale, partly fine sandy clay. These positions are 1 cm to several meters thick with benches of fine-grained to medium-grained sandstone, exceptionally even rough-grained on the basis of sandstone benches and fine conglomerates, grey, grey-green, glaucotic, in places even clay, slightly lime and micaceous. The separation of rough positions of sandstone will be cubical. Sandstone weathered to grey-green to rust. Layers in the site are partly clay and contain sandstone strips.

Rocks of Carpatian “flysh” are created by settlements of older Tertiary. Mostly Carpatian “flysh” with typical development of changing sandstone and shale occur, mostly slightly lime. They are sediments of a sea origin with the typical changing of rough-grained sandstone layers with fine-grained shale co-layers. Brown soil arises by weathering with a different level hydromorphological development.

The youngest substrates are non-lime mead deposits. They occur in valley positions and arose lately by alluvial fluvial deposits connected with accumulation. The chemical composition and character of deposits depends on petrographic structure of the water basin above the place of settlement. Mead gleization soil arises on it.

### **Seismicity**

The site does not belong according to ČSN 730036 Seismic Load of Buildings to an active seismic area. The maximum intensity of the 5th grade of the international seismic scale is considered for the Kopřivnice region. For such a grade any special provisions are not prescribed and the execution of a building in accordance with relevant building standards is fully sufficient.

### **Radon**

Radon survey has not been performed yet and possible radon occurrence will not affect the realization of the utilities.

## **5. Fauna and flora**

### **Flora**

The site determined for "Business Complex Vlčovice" is free. Lands are today ploughed and used for farming.

Only along Sýkoreček brook in the upper part the new bank growth (willow, alder, guelder-rose) occurs.

On the south-east border of the site there is a valley line planted with trees and bushes. The valley line is shallow, the trough is app. 1 m deep, 1 - 2 m wide, mostly dried. The

growth is 15 - 20 m wide and consists of common domestic trees and bushes (willow, alder, European elder, black-thorn, red dogwood, maple, ash-tree) and a herbal level.

### **Fauna**

Since the lands in the site are ploughed and farmed, no investigation and biological assessment has been performed.

It is supposed that within the site common beasts, such as hare, roe and pheasants, rooks, crown, chaffinch, vole, mouse, shrew, hedgehog etc.

As per available information neither protected plants nor animals occur within the site in accordance with Law 114/92 Sb.

## **6. Territorial environmental stability systems, rurality**

The utilities - services routes and roads - will not reach any territorial environmental system.

The nearest local biocorridor is located in the east and south-east side of the business complex over the state road I/58 as the newly designed local biocentre.

In the south-west side the Sýkoreček brook flows classified according to Law 114/92 of Code on nature protection § 3 par. 6 and § 4 par. 2 and 6 as a significant landscape element.

## **B. Other characteristics**

### **1. Character of town district, functional characteristic of a municipal zone**

As mentioned above Tatra Kopřivnice complex plays the dominant role in this part of the town by its production of trucks. It is a large complex of manufacturing capacities providing jobs for inhabitants of the wide surroundings. The Tatra complex is also the biggest polluting company in the town and affects the quality of environment of this region.

In the north-east side the state road I/58 Příbor - Frenštát pod Radhoštěm runs to which the complex shall be linked

## **2. Landscape**

The business complex including the technical utilities is located on the east border of Kopřivnice. The area is plain, moderately sloped to the north to the Lubina river. In the west it follows the Tatra Kopřivnice a.s. complex. Adjacent lands are used for farming purposes, in the south direction there is a complex of woods.

## **3. Protected areas, nature reserves, national parks**

The assessed project is not part of a protected area in accordance with Law 114/92 of Code on nature and landscape protection. Nearby the assessed site there is neither a nature reserve nor a national park

## **4. Raw material and other natural treasure areas**

The business complex is located on a protected black coal deposit and natural gas area of the Czech part of the Upper Silesian Basin. The complex is in the zone C2 above productive carbon without any current exploitation of a deposit by classical methods. If this part of the deposit is exploited, no surface deformation is expected. There are no limiting provisions taken for the development of the zone C.

## **5. Protective zones**

In the site no protective zones of water sources and extremely protected areas occur.

The protective zones of the state road I/58, HP gas lin, HV line and water streams will be observed.

#### **6. Architectural and historical monuments, archaeological finding-places**

N/A

#### **7. Other environmental characteristics**

N/A.

#### **8. Project site location in relation to the planning documents**

The proposed project is in accordance with the revision no. 11 of the municipal territorial plan of Kopřivnice - Vlčovice part.

### **III. Entire description of expected environmental impacts**

#### **A. Impacts upon inhabitants**

The utilities represented by underground services and the approach road will not impact significantly upon the human health.

Since currently the kind of production and services to be introduced in the business complex are not known, impacts upon inhabitants can hardly be assessed.

To perform the assessment basic input data are necessary, therefore impacts of the operation of the utilities cannot be assessed in fact.

At present traffic density is not known (number and type of vehicles) on the approach road to the business complex so that pollutant quantity caused by exhaust gas cannot be determined and consequently evaluated.

As well noise emission depend on the traffic density. As production activities and a number of employees are not known, demands of individual power kinds and water cannot be calculated and consequently waste and rain water quantity, waste and soil and water impacts.

The above impacts shall be assessed in the EIA of the whole business centre which will be prepared after a strategic client is selected and an approval with the client's manufacturing activity is granted.

This documentation assesses above all impacts at the realization of utilities.

During the construction of the services and approach road inhabitants may be impacted by increased dust quantity caused by earthwork and emission of trucks and building machines moving in the site and transporting building material on public roads. This emission will be variable, irregular and finish after the completion of building works. In fact, it cannot be quantified and assessed.

Noise produced by building work may impact irregularly upon environment. Regarding the project location it will not impact upon inhabitants.

#### **b) Number of inhabitants affected by the project**

The business complex is located out of the housing as the assessed technical utilities.

Only several dozens of inhabitants may be impacted by building works, mostly around material transport routes. It will mean short-term effects only.

#### **c) Social and economic consequences arisen from the project**

The construction of underground services and roads does not need any demolition or purchase of buildings. The construction will bring new jobs to the inhabitants of Kopřivnice and its surroundings.

#### **d) Impacts upon fair weather**

Impacts upon fair weather may solely be caused by building works by travelling of building machines and increased material transport. Inhabitants around transport routes may be affected, their number cannot be calculated.

### **B. Impacts upon environmental systems, their components and functions**

#### **1. Impacts upon air and climate**

As stated above, the emission source affecting the quality of air will be material transport, building machines and earthwork. This source will be short-term and variable and finish after building works are completed. The quality of atmosphere will affect traffic on the newly built service road into the production complex. Since at the time of the preparation of this documentation traffic load is not known, expected air impacts cannot be determined. The project will not be a source of humidity and heat development, no climatic impacts are expected.

#### **2. Impacts upon water**

Neither services nor roads will impact upon surface or ground water.

Sewerage will be watertight and will be connected to the municipal WTP. Storm water from the service road will be discharged through storm sewers to the Sýkoreček brook.

#### **3. Impacts upon soil and geological conditions**

The construction of the road, regulation gas station and water reservoir for service water will need permanent acquisition of 1,6835 ha of agricultural lands. These lands will be withdrawn from the agricultural land fund, the stripping of cultural soil will be performed. Stripped soil will be used according to instructions of land protection authorities. In the services routes (water piping, gas line, sewerage) the ground will be put into the original state after laying down the pipes. The construction of services and the service road will not impact upon the drainage and stability of the area.

Impacts caused by waste deposited are not expected because the project will not produce waste during its operation.

#### **4. Impacts upon flora and fauna**

The site within which the services and the service road are designed are today mostly farmed. On the areas not farmed soil cover will be damaged and this shall be put into the original state after the pipes are laid down. In the piping route grown green may be liquidated, this will be done in the most necessary cases only.

According to available information in the site no protected plants and animals occur in accordance with Law no. 114/92 of Code.

#### **5. Impacts upon environmental systems**

Neither services nor roads for the business complex does not affect any environmental stability system. Neither the designed local biocorridor, nor biocentre over the state roadI/58 will not be affected by them.

The discharge of rain water from the service road to the Sýkoreček brook will not affect outfall conditions. The brook has a sufficient flow profile capable to discharge rain water from the road.

In the case of rain water discharge from the whole business complex to this brook not only the trough of Sýkoreček brook must be assessed from the hydrotechnical point of

view, but also the trough of Kopřivnička brook to the whole length to the outlet to the Lubina river.

### **C. Impacts upon antropogeneous systems, components and functions**

Impacts upon buildings, architectural and archaeological monuments and other human works and upon cultural values of an immaterial character does not exist and are not expected.

### **D. Impacts upon the structure and functional utilization of the site**

#### **1. Impacts upon transport**

As mentioned above, in the time of the preparation of this documentation the density and structure of traffic to the business complex were not known. It is expected that it will not impact significantly upon the traffic on the state road I/58, nor the road leading to Tatra a.s., to which the approach road is connected. Protective zones will be observed.

#### **2. Impacts of related buildings and activities**

The services and approach road will function only if at least some production buildings and services in the business complex are realized. In case planned buildings of the business complex are not realized, the construction of the services and approach road will loose its substantiation.

#### **3. Development of utilities**

Not affected.

#### **4. Impacts upon aesthetic qualities of the region**

If regulations set by the territorial plan of the municipality of Kopřivnice, the aesthetic quality of the region will not be impacted.

#### **5. Impacts upon recreation utilization of the site**

The current recreational utilization of the site does not exist, because the site is used for the agricultural production. The planned project will not change this fact.

### **E. Other impacts**

#### **1. Biological impacts**

N/A.

#### **2. Noise and radiation impacts**

Noise impacts will not be significant with respect to the location of the project. Neither such equipment, nor material is considered to be used which can be a source of electromagnetic or ionizing radiation.

### **F. Large-size impacts upon the landscape**

It is a region with relatively low air pollution with high intensity of agricultural utilization of the landscape. For that reason the construction of the production complex and necessary services should represent increased environmental load.

#### **IV. Description of provisions proposed for the prevention, elimination and minimization or compensation of environmental impacts**

##### **1. Provisions of the territorial plan**

- The project has been designed in accordance with the territorial plan of the municipal council of Kopřivnice
- Design documentation for the building permit proceedings and realization of the project will be prepared. The documentation will be prepared by a Chartered Engineer and will incorporate all comments raised by relevant authorities and institutions in the course of the territorial and building permit proceedings.
- Part of the design documentation will be a hydrotechnical assessment of the existing trough of Sýkoreček and Kopřivnička brooks to the mouth to the Lubina river for the discharge of storm water from the area of the whole complex. If need be, the design will solve the increase of the capacity of the Sýkoreček or Kopřivnička trough, or storm water from the complex will be discharged directly to the Lubina river.
- Hydrotechnical calculations will support the functionality of the whole complex of the existing and designed service water line (Tatra - business complex).

##### **2. Technical provisions**

###### **2.1 Air protection**

- To decrease exhaust the gas emission quantity by the proper and regular maintenance of trucks and building machines
- The services to be realized in stages so that excavation for piping laying down will be opened for the time as short as possible and to decrease dustiness in this way.
- After the completion of building works the ground will be put into the original state. In the business complex landscaping will be performed and non-paved areas will be planted.

###### **2.2 Water protection**

- Separate system for rain water drainage and sewerage will be executed.
- Rain water piping and sewers will be water tight.
- Sewerage will be connected to the municipal WTP.
- Relevant Czech standards will be observed to the built civil structures.
- For the operation of services operational rules must be prepared.

### **2.3 Soil protection**

- Topsoil will be stripped and subsoil will be excavated in the site. After the piping laying down this soil will be used for backfilling. The ground will be put into original state.
- Topsoil and subsoil stripped in the route of the service road will be used in accordance with instructions of the soil protection authority.
- Waste arisen during the construction and the operation of the project will not be deposited on adjacent lands (except for excavated soil), but it will be disposed in accordance with Waste Law 125/1998 of Code and related regulations.

### **2.4 Grown greenery protection**

- Trees and bushes will be disposed in the most necessary cases only.
- The disposal will be executed after approved by the nature protection authority.
- Cutting may be performed in the time of a vegetation pause.

## **V. Description of safety operation risks**

Risks caused by the proper operation of the project are minimum. Upon the traffic on the approach road a crash of vehicles may happen with consequent escape of oil, gasoline or oil to subbase. This is a common risk arising in road vehicle traffic.

Oil substances may escape also from building machines and trucks during the construction period.

## **VI. Conclusion**

In the submitted documentation an assessment of environmental utilities impacts is provided (roads, water, gas and electrical connections, rain water drainage and sewerage).

As mentioned above, the environmental impact assessment is very difficult because the subject is services providing water, gas, power supply for the whole complex, sewerage and rain water drainage and transport connection. They lose their substantiation without the realization of production buildings, plants or facilities.

The impact assessment has been performed based on input data provided by the representative of the client - the municipal council of the town of Kopřivnice. In addition, investigations and measurements ČHMÚ, Povodí Odry in the site and a ground survey of the site by the assessor were used.

From the viewpoint of the project location and building design the EIA was prepared for one alternative only.

After the assessment of all available input data and results of investigation and measurement it can be stated that environmental impacts caused by the realization of utilities will be minimum..