

“ZapSibNeftekhim”, LLC

Non-Technical Summary

Western-Siberian Complex for Crude Hydrocarbons Advanced Processing with Conversion into Polyolefins of 2.0 MTA Including UI&O Facilities Tobolsk town, Tyumen Region

April, 2014

www.erm.com



Delivering sustainable solutions in a more competitive world



"ZapSibNeftekhim", LLC

Non-Technical Summary

Western-Siberian Complex for Crude Hydrocarbons Advanced Processing with Conversion into Polyolefins of 2.0 MTA Including UI&O Facilities

Tobolsk town, Tyumen Region

April, 2014

ERM Eurasia Ltd confirms that this Report has been prepared with all reasonable skill, care and diligence and in conformity with the professional standards as may be expected from a competent and qualified consultant acting as Environmental Consultant having experience in providing services for projects with similar scope of work, complexity, issues and scales.

This Report has been prepared in accordance with the terms of the contract concluded with the *"ZapSibNeftekhim", LLC* and the generally accepted environmental consulting practices and for intended purposes stated in the Contract. The conclusions and recommendations made in this Report are based upon information obtained directly by *ERM Eurasia Ltd*, as well as information provided by third parties, which we believe to be accurate.

This Report has been prepared for the *"ZapSibNeftekhim", LLC* and we accept no responsibility for third parties whatsoever who may use all or portions of the information contained in this Report.

CONTENT

1	INTRODUCTION	6
2	PROJECT BACKGROUND	8
2.1	<i>SUMMARY OF PROJECT DESIGN SOLUTIONS</i>	8
2.2	<i>PROJECT IMPLEMENTATION SCHEDULE</i>	12
3	COMPANY'S ENVIRONMENTAL POLICY AND SOCIAL RESPONSIBILITY	13
3.1	<i>ENVIRONMENTAL POLICY</i>	13
3.2	<i>SOCIAL RESPONSIBILITY</i>	13
4	IMPACT ASSESSMENT METHODOLOGY	14
5	PROJECT ALTERNATIVES	20
6	ENVIRONMENTAL AND SOCIAL BASELINE	22
6.1	<i>COMPLEX LOCATION</i>	22
6.2	<i>ENVIRONMENTAL BASELINE</i>	22
6.3	<i>SOCIOECONOMIC BASELINE</i>	27
6.3.1	<i>Population and Demography</i>	27
6.3.2	<i>Local Economy</i>	28
6.3.3	<i>Employment and living standards</i>	29
6.3.4	<i>Social Infrastructure</i>	29
6.3.5	<i>Transport and Communal Infrastructure</i>	30
6.3.6	<i>Community health and safety</i>	30
6.3.7	<i>Sanitary and hygiene conditions</i>	30
6.3.8	<i>Cultural and archaeological heritage</i>	31
7	ENVIRONMENTAL IMPACT ASSESSMENT	32
7.1	<i>OVERVIEW OF ENVIRONMENTAL IMPACTS</i>	32
7.2	<i>IMPACT ON AMBIENT AIR QUALITY</i>	32
7.3	<i>GHG EMISSIONS</i>	33
7.4	<i>NOISE POLLUTION</i>	33
7.5	<i>IMPACTS ON GEOLOGY AND GROUNDWATER</i>	33
7.6	<i>IMPACTS ON SURFACE WATER</i>	34
7.7	<i>IMPACTS ON TOPSOIL</i>	34

7.8	<i>IMPACTS ON VEGETATION</i>	35
7.9	<i>IMPACTS ON WILDLIFE</i>	35
7.10	<i>IMPACTS ON SPNA</i>	36
7.11	<i>VISUAL IMPACTS ON LANDSCAPES</i>	36
8	<i>SOCIAL AND ECONOMIC IMPACTS</i>	37
8.1	<i>OVERVIEW OF SOCIOECONOMIC IMPACTS</i>	37
8.2	<i>MAJOR POSITIVE SOCIOECONOMIC IMPACTS</i>	37
8.3	<i>POTENTIAL NEGATIVE SOCIOECONOMIC IMPACTS</i>	39
9	<i>OCCUPATIONAL HEALTH AND SAFETY</i>	42
10	<i>WATER PIPELINE</i>	43
10.1	<i>GENERAL</i>	43
10.2	<i>IMPACTS DURING THE WATER PIPELINE CONSTRUCTION</i>	43
11	<i>ROUTINE ENVIRONMENTAL MONITORING</i>	46
12	<i>ENVIRONMENTAL AND SOCIAL ACTION PLAN</i>	47
13	<i>STAKEHOLDER ENGAGEMENT AND INFORMATION DISCLOSURE</i>	48

LIST OF ACRONYMS

ACRONYM	FULL FORM
APG	Associated petroleum gas
BFLH	Ethane-rich broad fraction of light hydrocarbons
BV Certification	Bureau Veritas Certification Rus
CO ₂ e	CO ₂ equivalents
ECU	Ethylene Cracker unit
ESAP	Environmental and Social Action Plan
ESIA	Environmental and Social Impact Assessment
FEED	Front-end engineering and design
GHG	Greenhouse gas
HDPE	High density polyethylene
HIV	Human immunodeficiency virus
CHPP	Central Heat and Power Plant
IFC	International Finance Corporation
IFIs	International Finance Institutions
LLDPE	Linear low density polyethylene
MPC	Maximum permissible concentration
NTS	Non-Technical Summary
OEM	Operational environmental monitoring
OHSAS	Occupational Health & Safety Assessment Series
OH&S	Occupational Health & Safety
PM	Particulate Matter
PP	Polypropylene
RF	Russian Federation
RR/RUB	Russian roubles
RTA	Road traffic accidents
SEP	Stakeholder Engagement Plan
SPNA	Specially protected natural area, e.g. regional SPNA “Abalak Natural and Historical Complex”
SPZ	Sanitary protection zone
SVI	Sensitivity/Vulnerability/Importance
UI&O	Utilities, Infrastructure and Off-site

LIST OF FIGURES

- Figure 2-1 General Location of the Project Area*
- Figure 2-2 Location of the Complex within the industrial area of Tobolsk*
- Figure 2-3 General process and production flowchart*
- Figure 4-1 Overview of ESIA Approach*
- Figure 4-2 Impact Significance Assessment Procedure*
- Figure 4-3 Evaluation of Impact Significance*
- Figure 5-1 Project site location alternatives*
- Figure 6-1 RF Seismic zones*
- Figure 6-2 Surface water of the Project area*
- Figure 6-3 Functional plan of the SPNA "Abalak Natural and Historical Complex"*
- Figure 6-4 Population dynamics in Tobolsk and in Tobolsk District in 2008-2013 (as of 01.01.2013)*
- Figure 6-5 Sex and age structure of the population in Tobolsk (left) and in Tobolsk District (right)*
- Figure 6-6 Investments in the economy of Tobolsk and Tobolsk district*
- Figure 6-7 Total morbidity per 1,000 residents in Tymen region, Tobolsk, and Tobolsk District in 2012*
- Figure 8-1 Schematic diagram of potential social impacts on the receptors in Tobolsk and Tobolsk District*

1 INTRODUCTION

This Non-Technical Summary is based on the results of an Environmental and Social Impact Assessment (ESIA) of the construction of the Western-Siberian Complex for Crude Hydrocarbons Advanced Processing with Conversion into Polyolefins of 2.0 MTA including Utilities, Infrastructure, and Off-site (UI&O) Facilities (hereinafter collectively referred to as “the Complex”).

“ZapSibNeftekhim”, LLC is a subsidiary production unit of SIBUR Holding, a leading Russian gas processing and petrochemical company, and is the operator of the project for construction of the Western-Siberian Complex for Crude Hydrocarbons Advanced Processing (*the Project*) located in Tobolsk town of Tyumen Region, Russia. The decision to start the Complex design was made at the SIBUR Holding Investment Committee meeting on June 6, 2011.

The main raw material for the Complex will be the products of processing broad fraction of light hydrocarbons (C2 - C6) with the total methane and ethane content of up to 5% (BFLH 'B'). BFLH is a product of APG processing. BFLH will be delivered to the Complex from Western Siberia via the SIBUR pipeline system.

The main objectives of the Project are:

- to receive additional economic benefit from the development of West-Siberian deposits;
- to satisfy national demand in polyolefins;
- to enter the international market of polyolefins.

SIBUR Holding will make the final investment decision on the Project during the first six months of 2014, upon the FEED process completion.

According to the applicable international criteria and the accepted methodology (International Finance Corporation (IFC) Environmental and Social Review Procedure, 2012), the Project is categorized as a Category A with regard to its scale and potential environmental impacts. It is required for Category A projects to prepare a set of environmental and social documentation including an Environmental and Social Impact Assessment (ESIA) report.

The set of documents including the ESIA in accordance with IFIs requirements was developed by ERM Eurasia (ERM) on behalf of “ZapSibNeftekhim”, LLC.

ESIA objectives were to:

- assess potential environmental and social impacts of the Project;
- evaluate the adequacy of the impact prevention, minimisation and compensation measures provided for by the Project design;
- propose additional measures to minimise environmental and social risks and impacts, including compensation if required.

This *Non-Technical Summary* (NTS) has been developed to provide all stakeholders with a brief overview of key environmental and social risks and impacts associated with the Project. NTS reflects the findings and conclusions from the ESIA process and contains the following:

- Project description and environmental baseline conditions within the Project area;
- assessment of the key potential environmental and social impacts of the Project activities considering current baseline conditions;
- mitigation measures aimed at prevention and minimization of adverse impacts.

2 PROJECT BACKGROUND

2.1 SUMMARY OF PROJECT DESIGN SOLUTIONS

The Project will be implemented within the industrial zone of Tobolsk town, which is the administrative centre of Tobolsk District of the Tyumen Region. The Project site is located 210 km northeast of Tyumen and 8.5 km east of the residential areas of Tobolsk (*Figure 2-1*).

The total area of the Complex land plot is 460 ha. It is located near operating petrochemical facilities “Tobolsk-Neftekhim” LLC and “Tobolsk-Polymer” LLC and Tobolsk CHPP (*Figure 2-2*).

The Complex will process broad fraction of light hydrocarbons (BFLH) to produce linear low density and high density polyethylene (LLDPE and HDPE) and polypropylene (*Figure 2-3*).

Hydrocarbon feedstock will be delivered to the Tobolsk-Neftekhim site via pipelines from the Western Siberia gas processing plants owned by SIBUR Holding and other companies.

The main processing/ production units of the Complex are:

- combined ethylene/propylene production unit (Ethylene Cracking unit ECU-1500);
- linear low density polyethylene / high density polyethylene production unit (LLDPE/HDPE unit);
- high density polyethylene production unit (HDPE unit); and
- polypropylene production unit (PP unit).

Primary BFLH separation will occur in the de-ethanizer unit within the Complex area. The overhead from the de-ethanizer column will go directly to the Ethylene Cracking Unit (ECU) and the underflow will be treated in gas fractionation units of Tobolsk-Neftekhim to separate hydrocarbons. After separation, propane and n-butane will be delivered to the ECU.

Ethylene and propylene from the ECU will go to polyethylene (LLDPE/HDPE and HDPE) and polypropylene production (PP) units for further processing into polymer products. Both polypropylene and polyethylene powders will be then pelletized. Polypropylene and polyethylene pellets of different density will be the commercial products of the Complex.

The finished product is transferred into the pellet storage silos and then to packaging and shipping facilities, where it is loaded into transport constrainers in bulk or packed in bags for shipping by rail or road transport.

The Project design provides for the planning of the Complex site in accordance with specific function of production and infrastructure facilities based on current RF safety regulations and guidelines.

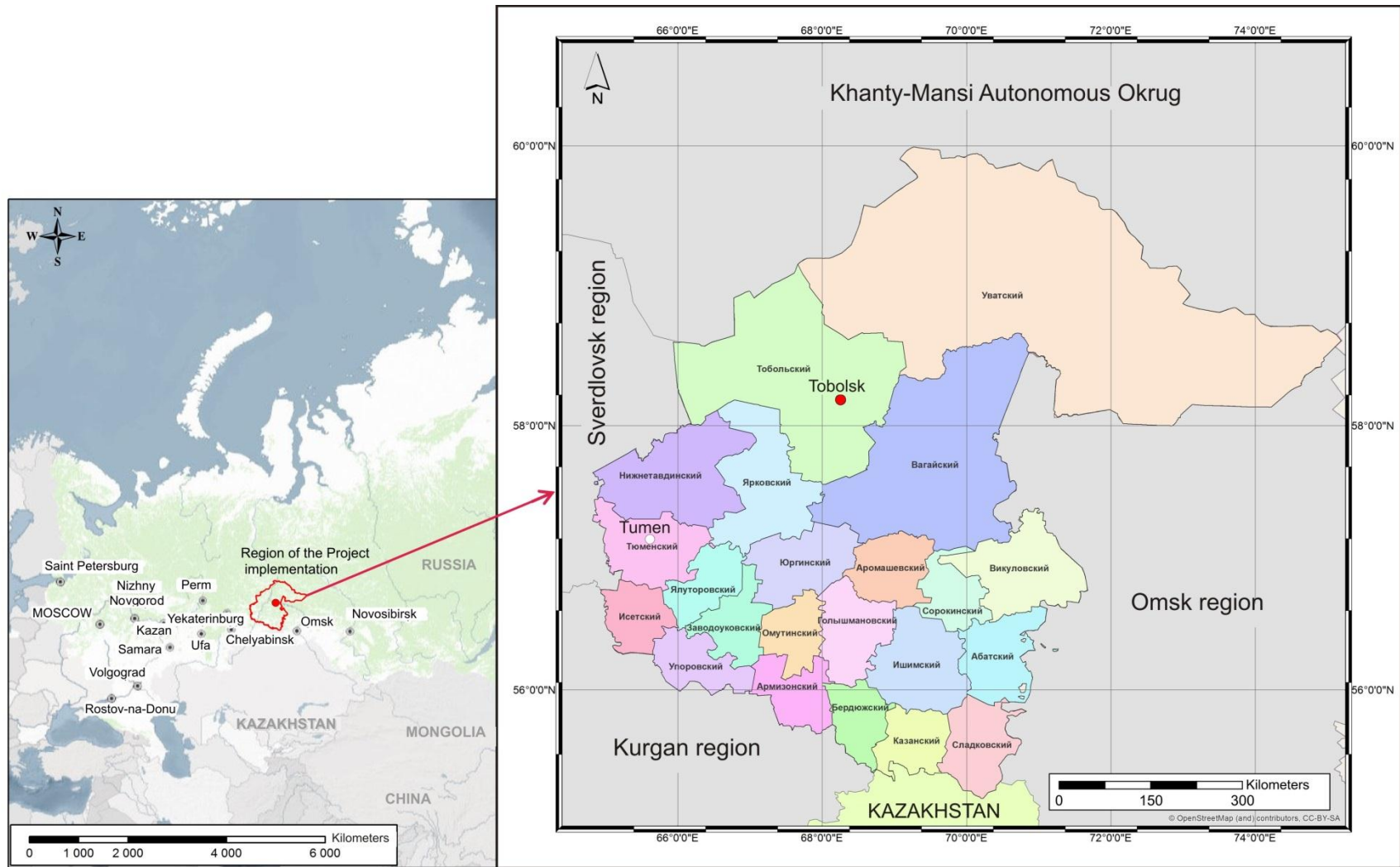


Figure 2-1 General Location of the Project Area

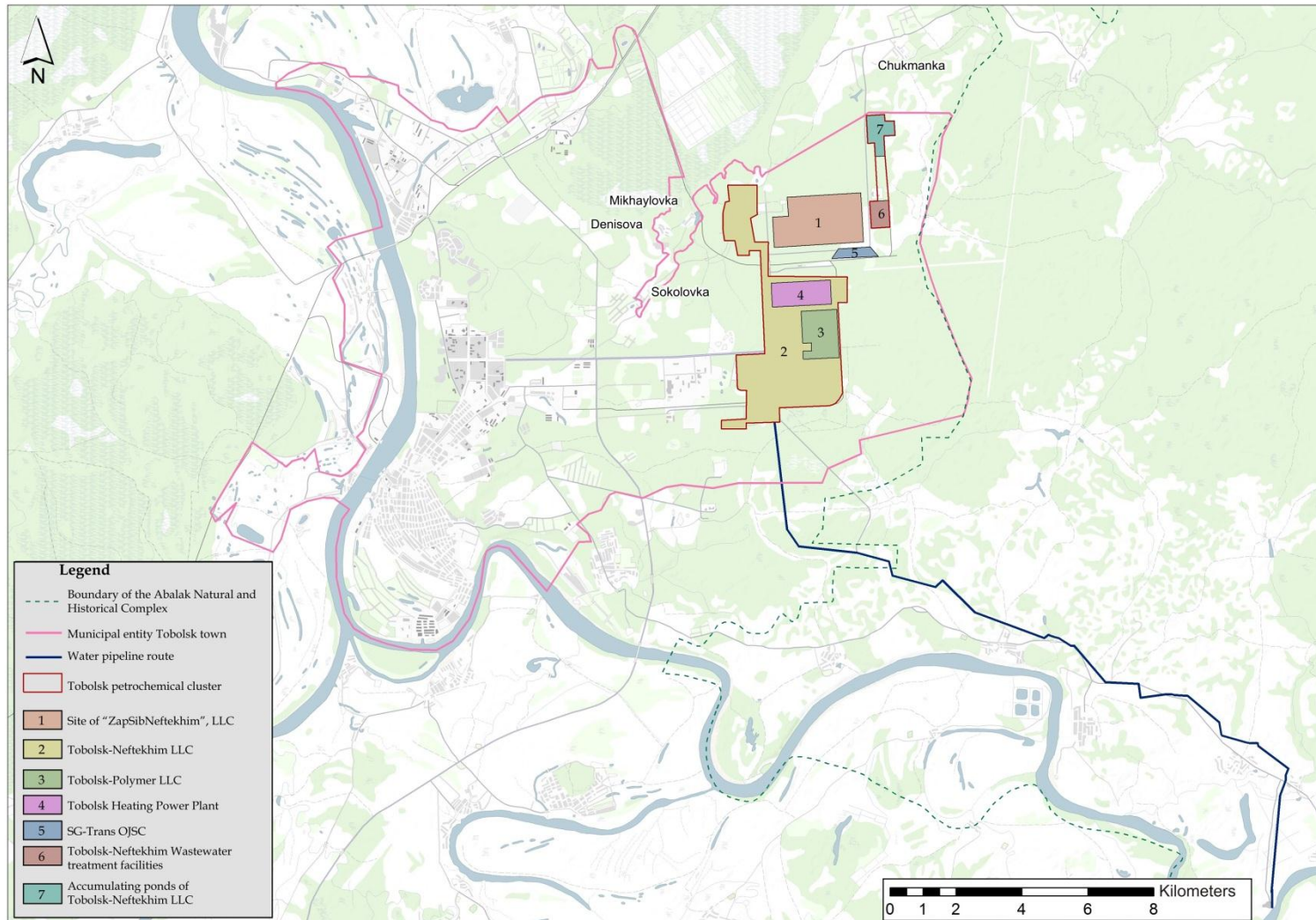


Figure 2-2 Location of the Complex within the industrial area of Tobolsk

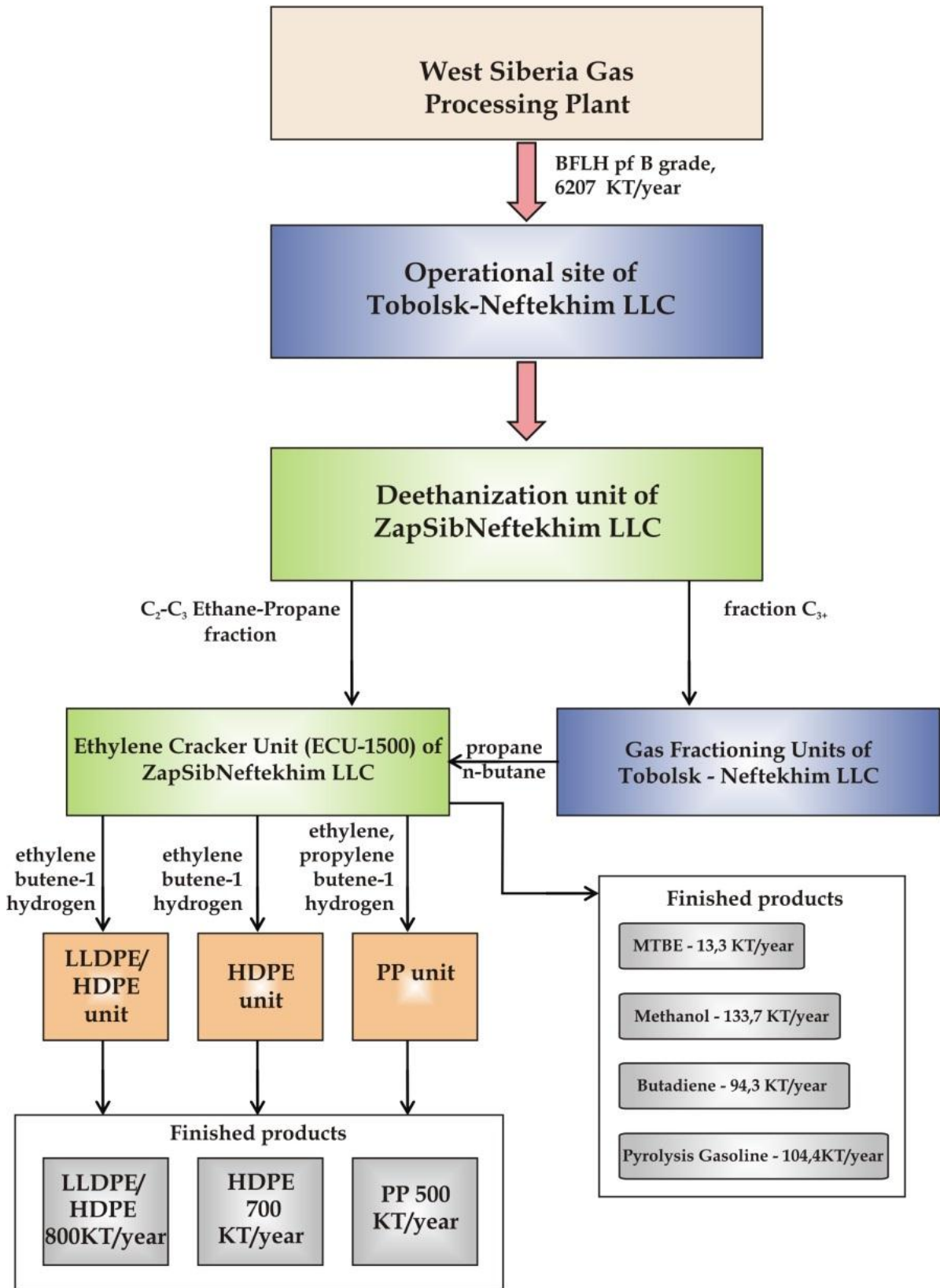


Figure 2-3 General process and production flowchart

The Complex site is sub-divided into the following areas:

- an offsite area (office building, offsite facilities, and central gatehouse);
- production area (production units and auxiliary facilities);
- storage and logistics area.

A water pipeline located outside the Complex site for water supply of the Complex (please refer to Section 10 of the NTS) also relates to the Project.

According to RF Sanitary Regulations and Norms¹ the Complex belongs to 'Hazard Class I' facility with a recommended size of a Sanitary Protection Zone (SPZ) of 1 000 m. The boundaries of the calculated SPZ for the Complex contained in the design documentation correspond with the recommended SPZ which confirms the compliance with the Russian norms and standards.

2.2 PROJECT IMPLEMENTATION SCHEDULE

The Project will be implemented in several stages:

- 2012 – 2013: development of the project design documentation, obtainment of the required approvals and permits;
- 2014 – 2018: preparation works, construction of production and UI&O facilities;
- 2018: start-up, pre-commissioning and commissioning of the Project to reach the designed capacity by the end of the year.

¹ SanPiN 2.2.1/2.1.1.1200-03

3 COMPANY'S ENVIRONMENTAL POLICY AND SOCIAL RESPONSIBILITY

3.1 ENVIRONMENTAL POLICY

As a subsidiary of OJSC "SIBUR Holding", "ZapSibNeftekhim", LLC shares Holding's environmental and social responsibility principles, and considers industrial safety, environmental protection and occupational safety as integral elements and highest strategic priorities of the Company.

On 29 March 2011, the Board of Directors adopted the Corporate Environmental Policy as an integral part of the SIBUR Holding mission and development strategy.

The main objectives of the Corporate Environmental Policy are as follows:

- Implementation of the most advanced scientific ideas and technologies;
- Providing priority to environmental impact prevention rather than remediation of adverse effects;
- Compliance with the environmental safety performance of the world's leading petrochemical companies.

In 2008, the Company was certified for compliance with the requirements of ISO 14001:2004 for a three-year period. This has since been confirmed by annually by independent compliance audits. In 2013, the Corporate Environmental Management System successfully passed the second independent compliance audit conducted by "Bureau Veritas Certification Rus" (BV Certification).

In 2010 the Environmental code was adopted for all employees of SIBUR Holding which is effectively followed.

3.2 SOCIAL RESPONSIBILITY

OJSC "SIBUR Holding" acknowledges the social responsibility as an integral part of a successful and sustainable business. Target audiences of charity programs run by SIBUR are kids, young people and retirees. SIBUR contributes to the development of medicine, education, culture and sport.

SIBUR Holding develops and implements the following programs to support and motivate the employees:

- **Programs for kids** («I am a "SIBUR kid");
- **Sport programs** (SIBUR's chess, volleyball and football teams);
- **Social support program** (social benefits and guarantees for the employees);
- **Voluntary Medical Insurance Program** (out-patient, in-patient and dental care);
- Corporate Health Centre.

4 IMPACT ASSESSMENT METHODOLOGY

The aim of the ESIA process is to identify measures that the Project will take to avoid, reduce, mitigate, offset or compensate for adverse impacts, and also to provide benefits, to the extent these are technically feasible and cost effective.

The ESIA is carried out in parallel and in coordination with other processes, including design documentation development and making decisions related to the Project (*Figure 4-1*).

The ESIA process includes the prediction of significant impacts with embedded control consideration. The assessment provides for determination of the following:

- the nature of alterations (what is affected and how, i.e. *sensitivity/vulnerability/importance of a resource/receptor*);
- the intensity of alterations (*impact scale*);
- *duration, frequency and extent of changes*;
- likelihood of impacts resulting from unplanned events or emergency situations, where appropriate.

The principle of **Impact Significance** determination considering the above listed impact characteristics is illustrated in *Figure 4-2*.

The **Impact Scale** is the intensity (vigour) of environmental/social impacts and impacts on human health; depends on the amount, level, and other characteristics of impacting factors and related to the properties of the affected object (subject) (resistant state, subjective sensations, etc.). The impact scale can be '**negligible**', '**small**', '**medium**' or '**large**'. The Scale is determined for abiotic components of the environment (atmospheric air, surface waters and groundwater, geological environment, soils, and physical impacts). As a rule these are numeric values, such as water and air MPC ratio, percentage of polluted land area, percentage of water abstraction, etc.

The *frequency* of impacts on and effects for receptors is categorised as '**single**', '**occasional(ly)**', '**regular(ly)**' or '**continuous**'.

The impact **duration** assessment criteria are different for environmental and social impacts. **Duration** is categorised as '**instantaneous**', '**short-term**', '**medium-term**', '**long-term**' or '**permanent**'.

The **extent** assessment is also impact-specific (environmental and social) and is categorised as '**site**', '**local**', '**regional**', '**national**' or "**transboundary**".

As shown in *Figure 4-2*, the **magnitude** is a function of scale, frequency, duration, and extent of impact.

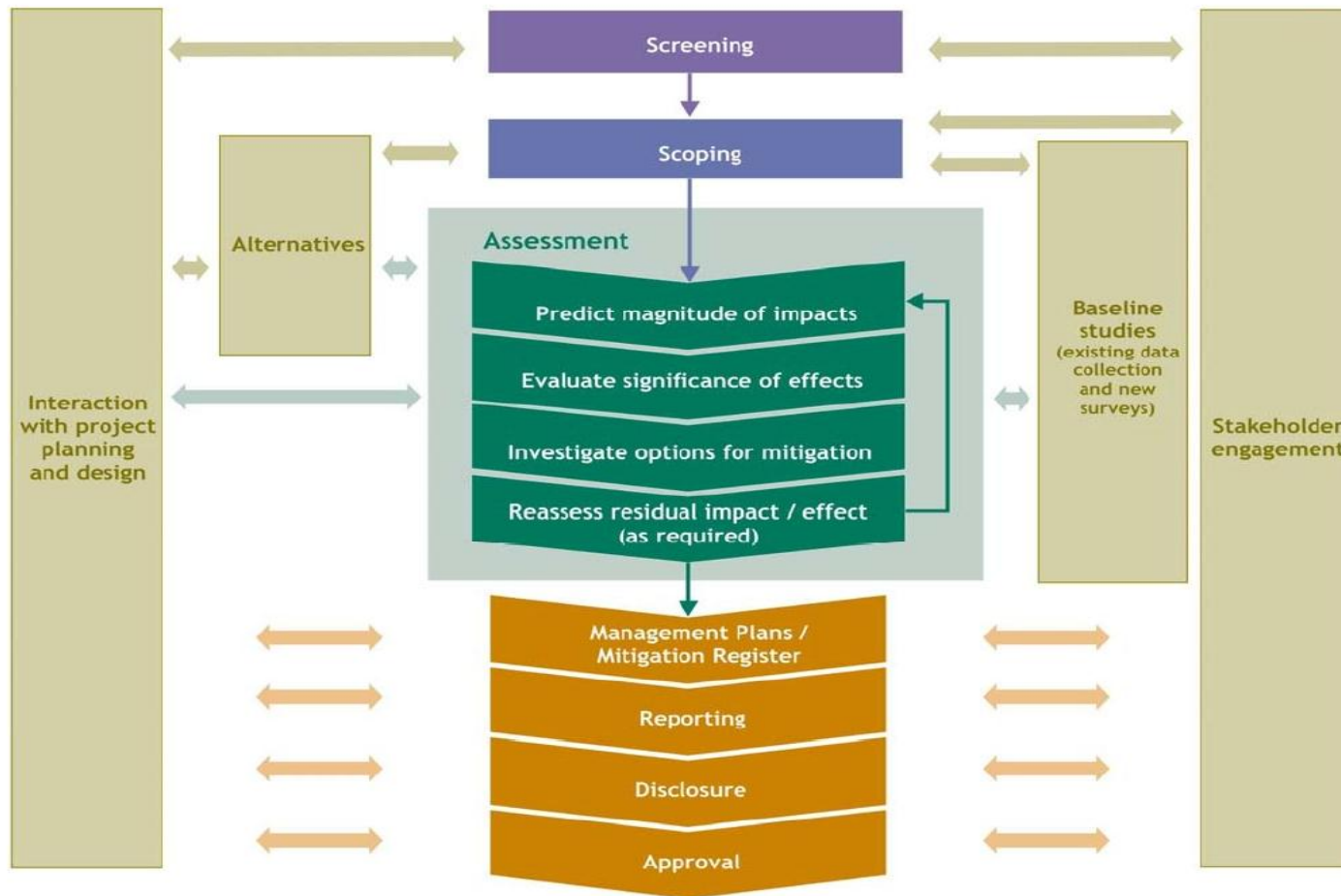
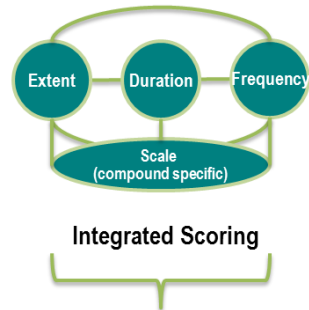


Figure 4-1 Overview of ESIA Approach

MAGNITUDE OF IMPACT



Score yields the Magnitude of Impact

- Negligible
- Small
- Medium
- Large

SENSITIVITY / VULNERABILITY / IMPORTANCE (SVI)

The above factors are evaluated based on a qualitative approach

- Low
- Medium
- High

IMPACT SIGNIFICANCE

		Sensitivity / Vulnerability / Importance of a Resource of Receptor		
		LOW	MEDIUM	HIGH
Magnitude of Impact	NEGLIBIBLE	Negligible	Negligible	Negligible
	SMALL	Negligible	Minor	Moderate
	MEDIUM	Minor	Moderate	Major
	LARGE	Moderate	Major	Major

Figure 4-2 Impact Significance Assessment Procedure

Bio resources and people within the Project impact area are the receptors of changing abiotic conditions and, therefore, are described mainly in terms of *sensitivity/vulnerability/importance* based on the expert judgment resulting from understanding the natural environmental baseline and analysis of impact-specific magnitudes.

Significance of impacts is determined by a combination of the designations of Magnitude of impact and Sensitivity / Vulnerability / Importance of Resources / Receptors using the matrix presented in (Figure 4-3).

		Sensitivity/Vulnerability/Importance of Resource/Receptor		
		Low	Medium	High
Magnitude of Impact	Negligible	Negligible	Negligible	Negligible
	Small	Negligible	Minor	Moderate
	Medium	Minor	Moderate	Major
	Large	Moderate	Major	Major

Figure 4-3 Evaluation of Impact Significance

The definitions used to evaluate environmental, social and health impact significance are presented in Table 4-1 Table 4-2 u Table 4-3, respectively.

Table 4-1 Evaluation of Environmental Impact Significance

Impact Significance	Description
Negligible	Impacts practically do not change the environmental baseline conditions, local in extent and temporary or short-term in duration.
Minor	On-site, local and regional impacts which are not accompanied by long-term degradation of sensitive resources; effects are usually reversible and minor (do not require special mitigation measures); usually do not exceed the applicable standards (criteria) in relation to the less sensitive resources.
Moderate	On-site and local, usually long-term impacts on the environment; impacts which do not affect critical media, but lead to irreversible loss of biodiversity and habitats; impacts with a regional effect of one to five years in duration. Require development of appropriate technically and financially feasible and cost-effective means of mitigating.
Major	Significant impacts of regional and of the larger scale; medium-term, long-term and permanent impacts resulting in irreversible changes and degradation of baseline conditions; usually having adverse effects exceeding national environmental standards or associated with transnational environmental issues; involving effects of toxic substances

	and associated with potential emergencies affecting critical resources and sensitive receptors.
--	---

Table 4-2 *Evaluation of Social Impact Significance*

Significance of impact	Description
Negligible	Impacts practically do not change the social baseline conditions, local in extent and temporary or short-term in duration; impacts do not observable affect the local community.
Minor	Short-term inconveniences caused by Project implementation, but with no consequences to long-term change of livelihood or quality of life. Receptors either easily in part adapt to changes brought by the Project or proceed with previous livelihood.
Moderate	Direct and indirect impacts on livelihood and quality of life of the local community. Receptors may undergo some difficulties to adapt to changes and they will be able to return to their former livelihood under condition of some support (for instance, compensation or involuntary economic resettlement).
Major	Widely spread adverse direct and indirect impacts which are practically cannot be mitigated or compensated. Affected receptors are not able to adapt to changes or proceed with previous livelihood.

Table 4-3 *Evaluation of Health Impact Significance*

Significance of impact	Description
Negligible	Diseases that do not require special treatment, do not go beyond the baseline conditions according to statistics, or limited, temporary impact on public health, when the treatment does not cause difficulties for local practitioners and medical institutions ¹
Minor	Widespread short-term or limited medium-term impacts, which, nevertheless, can be eliminated, diseases can be treated, and do not cause permanent harm to human health
Moderate	Medium-term or localized long-term impacts that cause permanent negative, but not a fatal effect
Major	Widespread, long-term, irreversible changes in the regional (or higher level) population's health status

The most important step after the impact significance assessment is to identify measures needed to reduce impacts. In some cases, mitigation measures have already been provided in the Project design, in other cases, the necessary measures have been recommended by ERM consultants in this ESIA process.

The following mitigation hierarchy has been used for significant impacts:

- elimination of the source of impacts;
- reduction of impacts from the source;
- abatement of impacts on receptors;
- repairing the caused damage;

¹ Predetermined by RF Public Healthcare system - on municipal level only specialists of general practice are serving, regional level provides for the full range of medical specialists

- compensation / replacement with the same or other resource, but of the same value.

Additionally recommended mitigation measures are included in the Environmental and Social Action Plan (ESAP).

5 PROJECT ALTERNATIVES

The site for construction of the Project production and infrastructure facilities was selected on the basis of the review of feasible alternatives, with due consideration of existing facilities' location and with the aim to minimize the impacts of the Project on the environment and local population.

The selection of the site was determined by the Russian national regulatory requirements, environmental, technical-economic parameters (fire and explosion hazards, proximity to existing services and infrastructure, environmental impact, total cost, etc.).

Based on the review of three potential site location options Alternative C has been selected as the most suitable one (*Figure 5-1*).

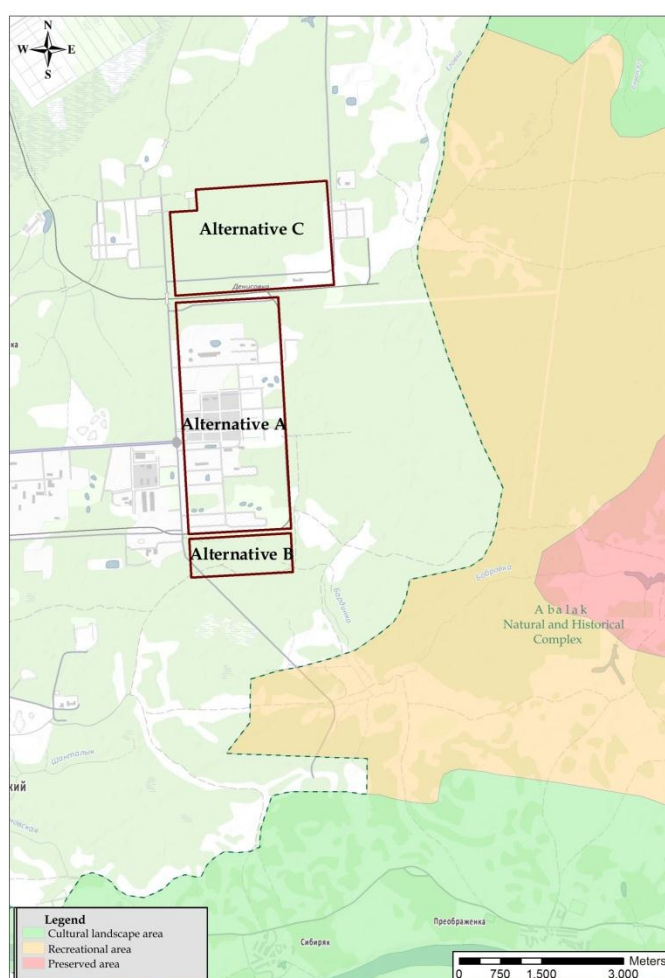


Figure 5-1 *Project site location alternatives*

Selection of process licensors was based on the criteria of minimal emissions into the environment, maximum energy efficiency, and low raw material consumption. The following licensors were selected:

- Linde AG (Germany) for combined ethylene/propylene production;
- INEOS (UK) for PE; and
- Lyondell Basell (Italy) for polypropylene (PP) production.

“Zero alternative”, i.e. no Complex construction was not considered to be reasonable due to overall low expected environmental impacts and significant positive economic effects and increase of efficiency of petrochemical industry of the region.

6 ENVIRONMENTAL AND SOCIAL BASELINE

6.1 COMPLEX LOCATION

The Project will be implemented within the industrial zone of Tobolsk town, which is the administrative centre of Tobolsk District of the Tyumen Region. The Complex will be located 8.5 km east of the residential areas of Tobolsk (Figure 2-2). The nearest rural settlements are the villages of Mikhailovka (2.2 km), Denisova (3.1 km), Sokolovka (3.8 km), and Chukmanka (3.8 km).

The total area of the land plot allocated for the construction of the Complex is 460 ha¹. The area is currently free of buildings and utilities.

The following facilities are located in the immediate proximity to the Complex construction site:

- 'Tobolskaya' Gas Distribution Station 270 m northeast of the Site;
- 'Severnaya' Raw-material Base of Tobolsk-Neftekhim 650 m west of the Site (located along the 500 KV power transmission line);
- Tobolsk-Neftekhim Wastewater Treatment Facilities 203 m east of the Site, followed with 110 KV power transmission line;
- "SIBUR-Trans" industrial site and 'Denisovka' railway station southeast of the Site;
- 'SG-Trans' test area 235 m southwest of the Site;
- Tobolsk CHPP, Tobolsk-Neftekhim with the 'Yuzhnaya' Base, and Tobolsk-Polymer south of the Site, beyond Denisovka' railway station and 'SG-Trans' test area.

The feedstock will be delivered via a pipeline from the BFLH metering station located at the Yuzhny Balyk – Tobolsk-Neftekhim product pipeline (near the 'Severnaya' Base). Natural gas will be supplied from the existing gas pipeline passing west of the Site. Water to the Complex will be supplied via a specially constructed water line from the Epanchinsky water intake facilities of Tobolsk-Neftekhim at the Irtysh River (please refer to Section 10).

6.2 ENVIRONMENTAL BASELINE

The climate in the Project area is continental, characterised by a severe winter and a short warm summer. South-westerly winds prevail throughout the year (blowing direction is from the residential areas of Tobolsk). According to long-term observations data of the Tobolsk weather station, the level of air pollution in the Project area can be characterised as 'low'.

The Project area occupies a high terrace above the flood-plain of the Irtysh River. Absolute elevation marks vary between 94 m and 96 m above sea level. The area is characterised by low seismicity, i.e. less than magnitude 6 (Figure 6-1). Radiation level does not exceed natural background values.

¹ Lease Contract with the Tobolsk Town Administration, No. 0205/526-12 of 03.12.2012
ZAP/SIB/NEFTEKHIM, LLC

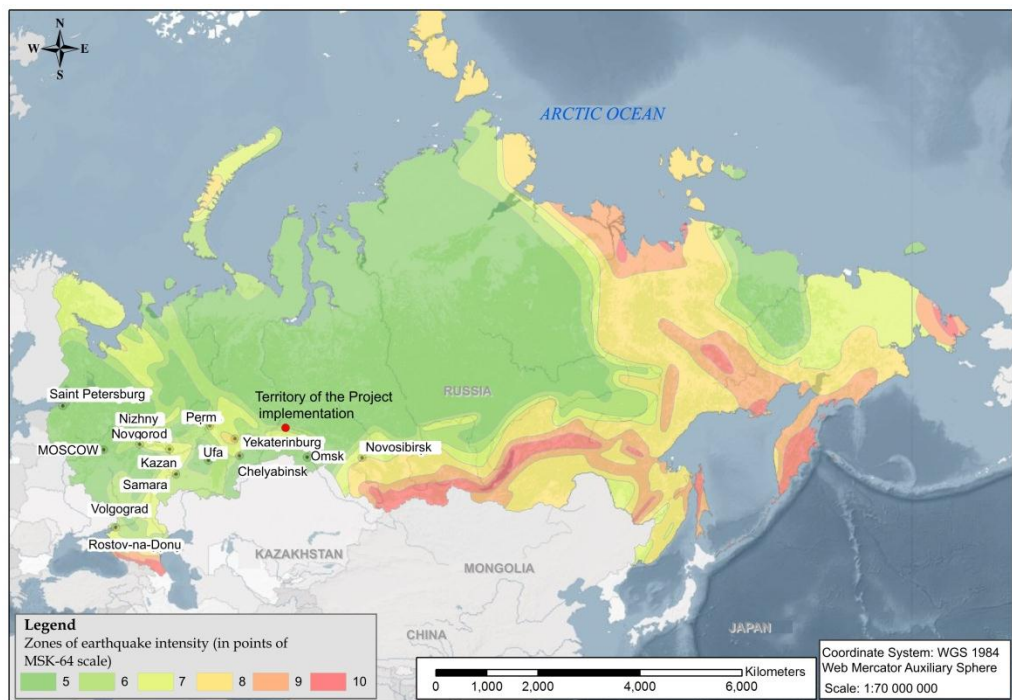


Figure 6-1 RF Seismic zones

Adverse physical impacts within the site (noise, vibration, electromagnetic fields) are either absent or below permissible values.

Most widespread quaternary deposits are covering and lacustrine-alluvial deposits predominantly composed by clay and loam. Potential adverse geotechnical phenomena are soil heaving, seasonal freezing and thawing, and groundwater underflooding.

The groundwater flow direction is from north to the south, with the groundwater level varying from 8 m to 10 m. Groundwater within most of the site area is protected from surface pollution with a massive layer of impermeable loam deposits. The groundwater quality is satisfactory and generally meets the established criteria. Groundwater is not used for water supply.

There are several natural and artificial water bodies within the Project area (Figure 6-2). The Elovka River flows two kilometres away from the Complex site. A nameless artificial creek and two water ponds are located immediately on site.

Surface water is characterised by high concentrations of manganese and iron that are predetermined by physical- geographical conditions of the runoff formation in Western Siberia.

In terms of flora the Project area is located at the boundary of the southern and middle taiga subzones of the boreal coniferous forests. Due to historical man-made influence, the biodiversity of the Project site is 15% to 20% lower compared to the natural background level. The vegetation cover of the site is comprised by several vegetation types (meadow, wetland, aquatic, and weed vegetation). Within the site and designed SPZ area there were identified rare species listed in Red Data Book of Tyumen region, i.e. 6 plants, 1 lichen, and 2 fungi species.

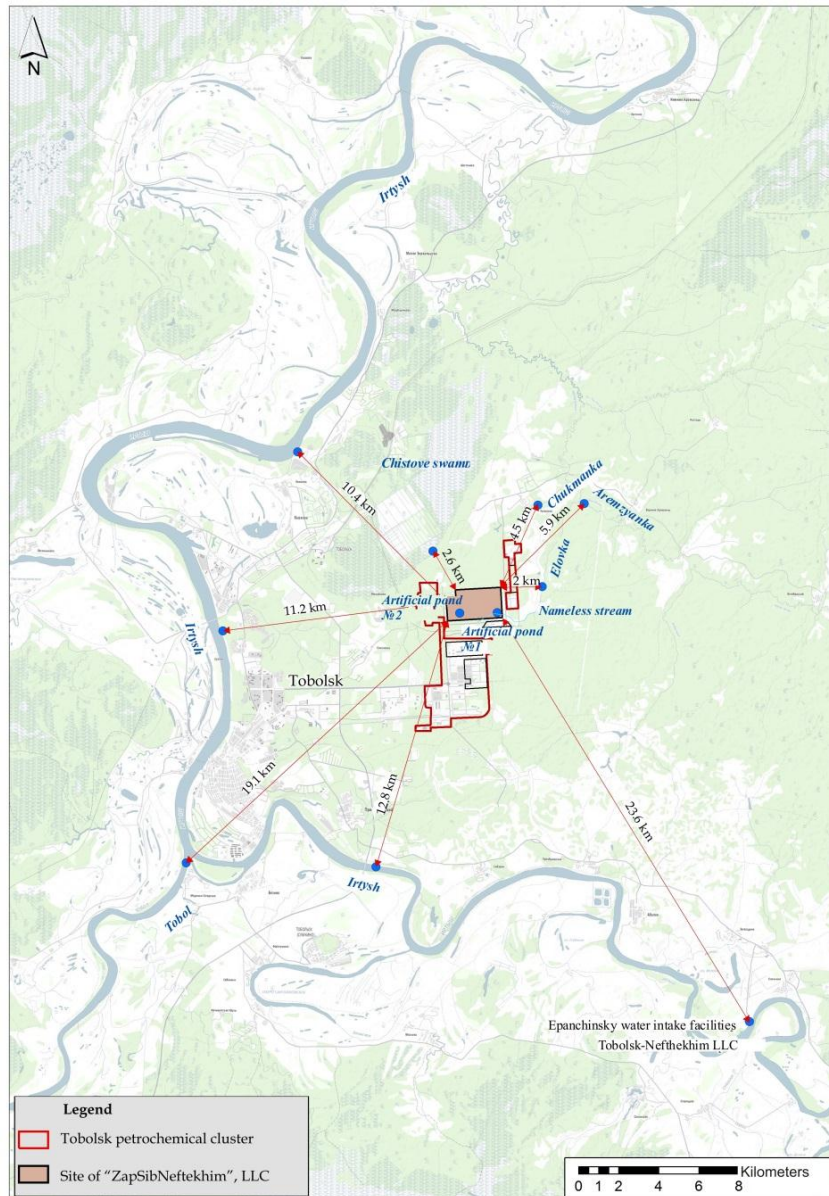


Figure 6-2 Surface water of the Project area

The fauna of the Project area is relatively diverse. Typical southern taiga species are represented by hazel grouse, sable, squirrel, ermine, brown bear, lynx, marten, mink, wood grouse, ground squirrel, mountain hare, weasel, elk, heath grouse, wolf, badger, harvest mouse, and red-backed mouse.

Given the site location within the industrial zone, the fauna diversity within the proposed site area is lower compared to that of the region.

The Site is located at a considerable distance from the Irtys River, therefore bird migration routes pass outside of the site boundary (however, individual flocks may enter the subject area).

Two species listed in the Annex to the Tyumen Region Red Book were identified within the Project site area. Six protected bird species may have transitory habitats on the Project site during seasonal migrations.

No protected animal species were identified within the Project site area.

Common fish species occurring in the Irtysh River and its tributaries (Elovka and Armezyanka rivers) are burbot, pike, ide, dace, roach, perch, and ruff. Among valuable species, sterlet was identified in Aremzyanka during the feeding period.

The Project site is located outside of specially protected natural areas (SPNA). The nearest SPNA is the “Abalak Natural and Historical Complex”, a natural reserve of regional significance. The distance from the reserve’s boundary (recreational zone) to the Project site is 1.7 km (*Figure 6-3*).

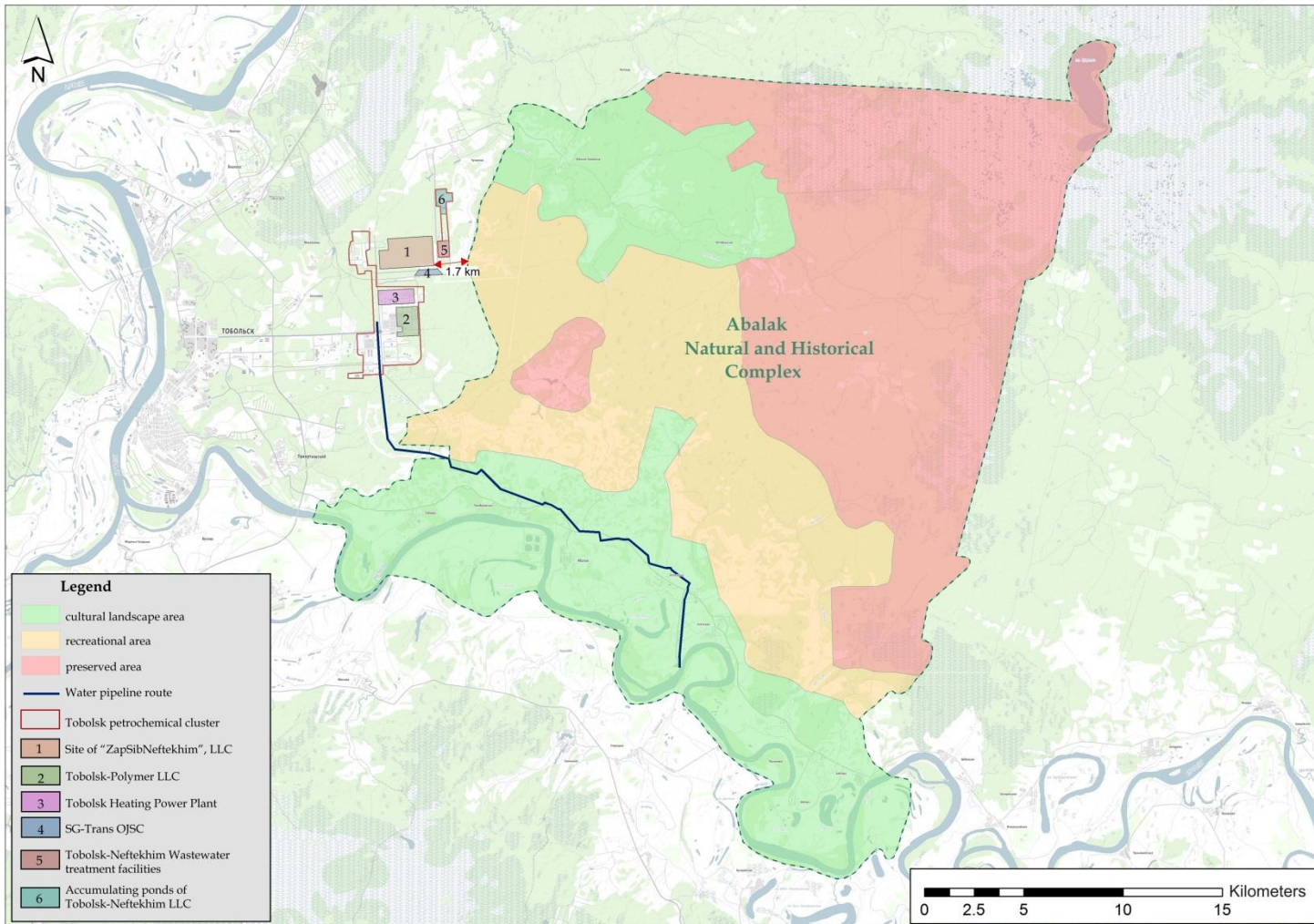


Figure 6-3 Functional plan of the SPNA of regional significance "Abalak Natural and Historical Complex"

6.3 SOCIOECONOMIC BASELINE

The Project will be implemented in the industrial zone of Tobolsk, the administrative centre of Tobolsk District of Tyumen region. The area of the district is 17,200 sq. km.

6.3.1

Population and Demography

The population of Tobolsk town is 101,700 people. The Tobolsk District population is 21,700. All district population is rural residing in 119 rural settlements.

Both the town and the district are characterised by stable negative dynamics of population. In 2008-2013, the population of Tobolsk decreased by 2% and that of Tobolsk District dropped by 5.7%. The main reason for the decrease of the population is the emigration. Migration losses have been just partly compensated by the natural population growth (Figure 6-8) (Figure 6-4).

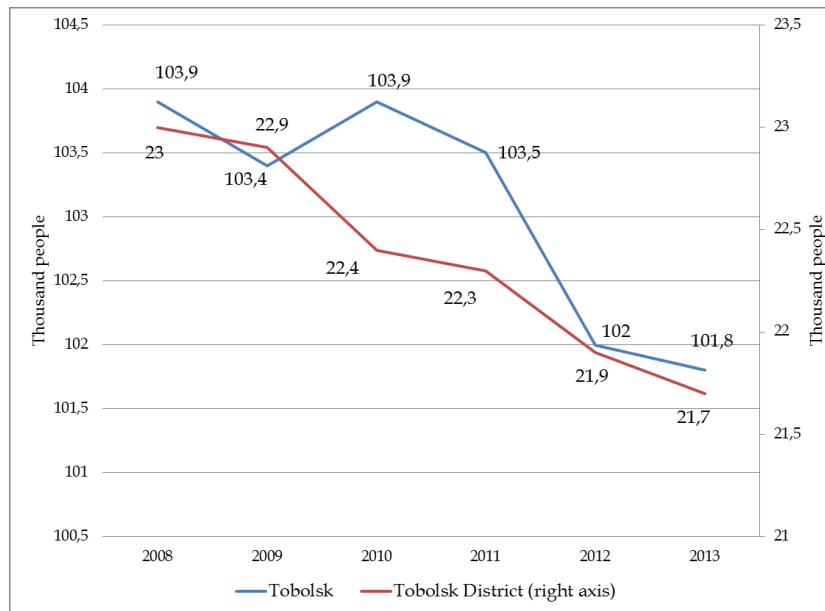


Figure 6-4 *Population dynamics in Tobolsk and in Tobolsk District in 2008-2013 (as of 01.01.2013)*

The age structure of Tobolsk and Tobolsk District generally corresponds to the national age structure with a prevalence of the older age groups over the younger population (Figure 6-5). Between 2008 and 2013, the part of aged population continued to increase.

The Russian population prevails. The tartars are the second largest ethnic group both in Tobolsk and in the District (one third of the total population).

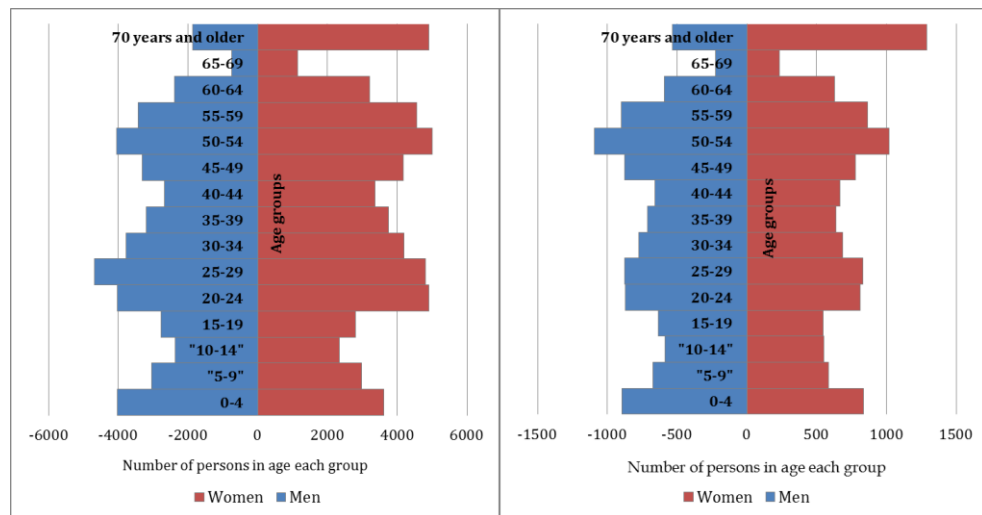


Figure 6-5 Sex and age structure of the population in Tobolsk (left) and in Tobolsk District (right)

6.3.2 Local Economy

Tobolsk is the second largest industrial centre of the Tyumen Region after the city of Tyumen. It accounts for 6% of the industrial output of the Region. The core industries in the local economy are petrochemicals and power generation (Tobolsk CHPP). The industrial complex of the town has been constantly growing since 2009.

The largest company is Tobolsk-Neftekhim LLC. Tobolsk-Polymer LLC, a polypropylene production complex, was commissioned in October 2013. Both companies are part of an oil producing and processing chain of the SIBUR Holding.

The district is a predominantly agricultural area. There are over 40 agricultural enterprises in Tobolsk District. More than 7,600 household plots provides for substantial input of the agricultural sector. Most agriculture enterprises specialise in crop growing.

Small and medium businesses in Tobolsk are characterised by a high degree of diversification and considerable level of employment. In addition to traditionally prevailing retail and wholesale trade, there are developed construction and processing/ manufacturing industries. Small agricultural enterprises are numerous in the district.

Investments per capita in Tobolsk are rather high, i.e. more 200 thousand RR per capita. This is primarily determined by the construction of Tobolsk-Polymer LLC and initial investments in the ZapSibNeftekhim Project. The reverse situation is observed in Tobolsk District (Figure 6-6).

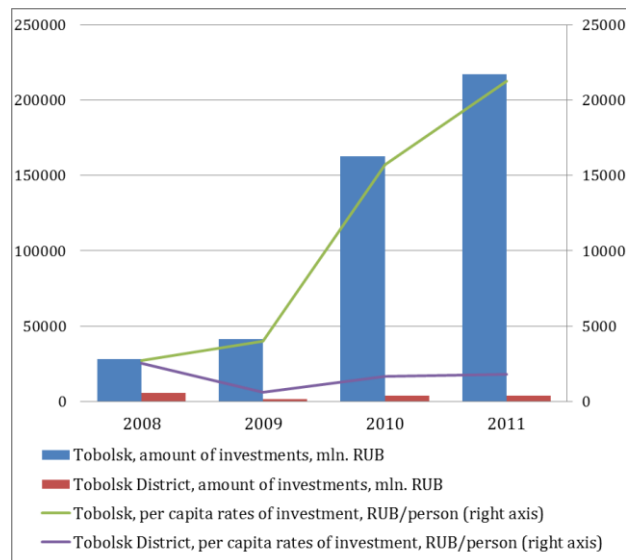


Figure 6-6 *Investments in the economy of Tobolsk and Tobolsk district*

Due to its urban status, Tobolsk is characterised by an extensive development of the services sector (retail sales, availability of personal/ domestic services, etc.). These performance indicators are 3 to 5 times lower in the Tobolsk District. Tobolsk is one of the biggest centres of educational tourism in Western Siberia. The town and its surroundings have good historical and cultural potential for development of tourism.

6.3.3 *Employment and living standards*

Approximately 63% of the economically active population in Tobolsk are employed by local companies and only 39% in the district. The majority of the occupied population work in the public sector, both in the town and the district. The role of the real economy has been steadily declining. The registered unemployment level in Tobolsk and Tobolsk District is very low (0.73% and 0.99% respectively). Latent unemployment also exists.

The presence of large petrochemical industries affects for comparatively high level of average worker earnings; the average wages in Tobolsk is 32.1 thousand RR, i.e. 22% higher than the Region’s average. The highest income level is registered among the workers of the petrochemical complex.

6.3.4 *Social Infrastructure*

Tobolsk is characterised by a well-developed social infrastructure, including a network of healthcare structures. There are three hospitals and several specialised medical practices. The rural population is serviced by district hospitals, rural outpatient clinics, and medical and obstetrical stations.

The educational system of Tobolsk and Tobolsk District consists of pre-school and school educational structures. There is a lack of child day-care centres in the district. The vocational training system consists of elementary, secondary, and higher vocational education institutions.

The major cultural place is the Tobolsk Historical and Cultural Museum (Tobolsk Kremlin). The “Abalak” tourist complex is located near the village of Abalak in Tobolsk District.

6.3.5 *Transport and Communal Infrastructure*

Tobolsk is an important rail, road, and river transport hub of the southern part of the Tyumen Region.

The federal highway passes through the town connecting Tyumen, Tobolsk, and Khanty-Mansiysk. The Tobolsk railway station is a big junction at the Tyumen section of the Sverdlovsk Railway. It provides transit to the north of the Tyumen Region and takeover loads coming in Tobolsk. The river port in Tobolsk is one of the largest river ports in Russia. It provides supplies for the cities, roads, and oil and gas industries in the north of the Tyumen Region.

Both the town and the district are characterised by a high level of residential properties provision, i.e. 24.9 sq. m per capita and 24.1 sq. m per capita respectively. The rundown residents account for 3.9% and 8.8% of the total housing in the town and the district respectively. Most housing facilities in the town (74.5%) have central water supply, sewerage, central heating, and hot water supply.

6.3.6 *Community health and safety*

The health rate of population both in Tobolsk and Tobolsk District is satisfactory. The general morbidity rate in the town is slightly higher than the Region’s average (1,523 cases per 1,000 residents against 1,497 per 1,000 respectively). The opposite situation is observed in the district: 924 cases per 1,000 residents.

Tobolsk is characterised by higher morbidity rate of infective diseases, skin diseases, and diseases of the locomotion system (Figure 6-7). The incidence of tuberculosis in the town and the district is higher than the Region’s average. The incidence of HIV/AIDS and sexually transmitted diseases is comparable with the Region’s average.

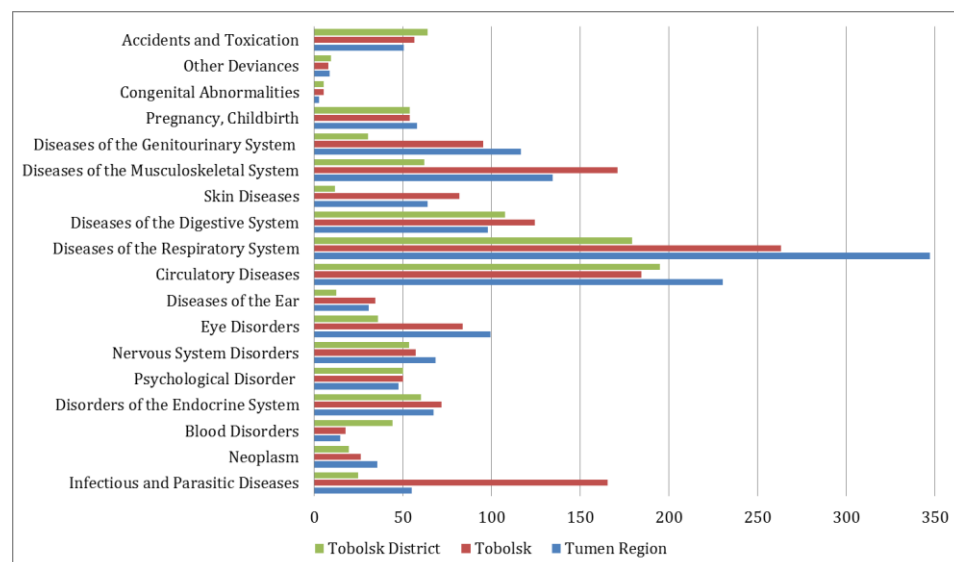


Figure 6-7 *Total morbidity per 1,000 residents in Tyumen region, Tobolsk, and Tobolsk District in 2012*

6.3.7 *Sanitary and hygiene conditions*

The level of air pollution in Tobolsk is assessed as ‘low’. Emissions in 2012 totalled 7.2 thousand tonnes. About 90% of the Tobolsk population is supplied

with water from the Irtysh River and the remaining 10% use artesian water. The population of Tobolsk District use the underground water supply.

The town generates about 20 thousand cu m of sanitary wastewater per day, which is collected and transferred to the sewage treatment facilities. About half of the sewage is transferred to the treatment facilities of Tobolsk-Neftekhim LLC . Low-capacity sewage treatment facilities are available only in five settlements of Tobolsk District.

The annual waste generation in Tobolsk is between 30 thousand and 32 thousand tonnes of solid domestic waste disposed of at the municipal landfill. The existing municipal landfill has a sufficient capacity to accommodate all incoming waste.

6.3.8 *Cultural and archaeological heritage*

According to information of the Historical and Cultural Heritage Committee of the Tyumen Region, no sites of historical or cultural value were identified within the proposed construction site. The same applies to the proposed route for the water pipeline. There are 11 ethnographical sites and 21 archaeological sites located in 11 km from the proposed water pipeline route.

7 ENVIRONMENTAL IMPACT ASSESSMENT

7.1 OVERVIEW OF ENVIRONMENTAL IMPACTS

Main environmental impacts during construction will be associated with:

- air pollution by emissions from vehicles, equipment, and machinery;
- GHG emissions;
- noise pollution;
- removal of topsoil from the construction site;
- vegetation clearance and destruction of wildlife habitats during site preparation;
- minor impact on the geological environment, groundwater and surface water;
- visual impacts on landscapes.

During operation, the level of environmental impacts will be relatively low compared to the construction period, being limited to:

- air pollution by emissions from the Complex' units;
- wildlife disturbance;
- noise pollution;
- continuous impact on visual landscapes.

7.2 IMPACT ON AMBIENT AIR QUALITY

The Project's impact on air quality will be associated with emissions from vehicles, machinery, and production equipment.

<i>Construction</i>	<i>Operation</i>
<i>Major sources:</i> vehicles, construction machinery and equipment	<i>Major sources:</i> smoke stacks of ECU, boilers
<i>Major pollutants:</i> nitrogen and carbon oxides, soot, xylene, toluene, butanol, ethyl acetate, fluorides, butyl acetate, manganese	<i>Major pollutants:</i> nitrogen oxides, silicon dioxide, propylene, methyl alcohol, etc.
<i>Receptors/ areas:</i> residential areas (Mikhailovka, Denisova, Sokolovka, Chukmanka, Rovdushka), Abalak SPNA boundary, construction camp	<i>Receptors/ areas:</i> residential areas (Mikhailovka, Denisova, Sokolovka, Chukmanka, Rovdushka), Abalak SPNA boundary
<i>Prediction:</i> no exceedance of maximum permissible concentrations (MPC) of pollutants is expected. Maximum pollutant concentration is 0.53 MPC of nitrogen dioxide in the residential area (Mikhailovka).	<i>Prediction:</i> no exceedance of maximum permissible concentrations (MPC) of pollutants is expected. Maximum pollutant concentration is 0.66 MPC of nitrogen dioxide at the SPZ boundary
<i>Impact significance:</i> minor	<i>Impact significance:</i> minor
<i>Embedded controls:</i> use of effective air filters, sulphur-free fuel gas, dust control and airtight storage, discharge of combustible gases into flares for treatment/ utilisation to prevent environmental pollution in the event of incidents, etc.	

7.3 GHG EMISSIONS

The Complex will produce polymers using BFLH as feedstock (APG processing product). Estimated GHG emissions by the Complex will total 2.8 million tonnes of CO₂e per year.

Production of polymers will prevent emissions of 6.276 million tonnes of CO₂e per year, which could be generated in case of APG disposal by flaring.

Thus, the Complex operation will reduce GHG emissions by 3.476 million tonnes of CO₂e.

**6.276 million tonnes of CO₂e/year – 2.800 million tonnes of CO₂e/year
= 3.476 million tonnes of CO₂e/year**

7.4 NOISE POLLUTION

The Project implementation will be associated with increased noise pollution of the area caused by continuous operation of the Complex.

Construction	Operation
<i>Major sources:</i> vehicles, construction machinery and equipment	<i>Major sources:</i> production units and UI&O facilities
<i>Maximum impact period:</i> construction year 2	<i>Maximum impact period:</i> flare operation during change of product
<i>Receptors/ areas:</i> residential areas (Mikhailovka, Denisova, Sokolovka, Chukmanka, Rovdushka), Abalak SPNA boundary, construction camp	<i>Receptors/ areas:</i> residential areas (Mikhailovka, Denisova, Sokolovka, Chukmanka, Rovdushka), Abalak SPNA boundary,
<i>Prediction:</i> no deviation from sanitary guidelines at all control points	<i>Prediction:</i> no deviation from sanitary guidelines in the residential and SPNA areas. Minor exceedance (by 3 dBA) of the sound pressure level established for residential areas may occur at the southern SPZ boundary facing Tobolsk-Neftekhim
Impact significance: negligible	Impact significance: negligible
<i>Embedded controls:</i> condition monitoring of vehicles and construction equipment; execution of 'noise-generating' work between 7 am and 23 pm; use of noise protection materials in production buildings, etc.	

7.5 IMPACTS ON GEOLOGY AND GROUNDWATER

According to the design solutions, the depth of excavation will be shallow and there will be no underground storage tanks. The Project's impact on the geological environment and groundwater is expected to be negligible.

Construction	Operation
<i>Major sources:</i> site grading/ levelling, construction of underground utilities and foundations, equipment operation	<i>Major sources:</i> underground utilities
<i>Major impacts:</i> mechanical disturbance of natural subsoil structure, impact on groundwater table, pollution	<i>Major impacts:</i> temporary mechanical disturbance of earth cover during routine maintenance or repair of underground utilities

<i>Construction</i>	<i>Operation</i>
<i>Receptors/ areas:</i> upper subsoil, groundwater	<i>Receptors/ areas:</i> surface subsoil, groundwater
<i>Prediction:</i> drainage system will prevent flooding potentially caused by changes of groundwater table; negative geological processes (heaving) will be avoided due to replacement of heaving soils	<i>Prediction:</i> temporary disturbance of site extent
<i>Impact significance:</i> negligible	<i>Impact significance:</i> negligible
<i>Embedded controls:</i> confining construction activities to allocated construction site; replacement of frost heaving soils with non-heaving and slightly heaving soil; appropriate water removal system; hard surface (concrete) cover on main production sites , etc.	

7.6 IMPACTS ON SURFACE WATER

The Project provides for a recycling water supply system without any discharges of wastewater in the environment.

Major construction impact is the planned filling of artificial water bodies and a creek located within the construction site. Impact significance is assessed as 'negligible' as these water bodies are man-made origin and of no fishery or recreational value.

Daily abstraction of 61,200 m³ of fresh river water during operation will be equivalent to approximately 0.04% of the average total flow discharge rate in the Irtysh River at the subject river station. Therefore, potential impact on hydrology of the Irtysh River is expected to be negligible and requires no special assessment of impact significance.

7.7 IMPACTS ON TOPSOIL

For the purposes of site preparation to construction total 1,380,000 m³ of topsoil will be stripped out. Based on the approval of the Tobolsk Administration, the topsoil will be used for reclamation and improvement purposes in three designated areas in the town.

<i>Construction</i>	<i>Operation</i>
<i>Major sources:</i> site grading/ levelling, earth-moving work, off-road traffic	<i>Major sources:</i> precipitation of pollutants from air emissions generated by the Complex operation
<i>Major impacts:</i> topsoil removal, soil pollution	<i>Major impacts:</i> pollution of soil with heavy metals
<i>Receptors/ areas:</i> soil on the construction site	<i>Receptors/ areas:</i> SPZ area
<i>Prediction:</i> impact on soil cover will be primarily associated with precipitation of pollutants from air emissions (PM/ dust, soot) in areas of high concentration of machinery and vehicles during execution of construction work	<i>Prediction:</i> negligible emissions without transfer beyond the SPZ boundary
<i>Impact significance:</i> moderate (topsoil removal), negligible (pollution)	<i>Impact significance:</i> no special assessment is required
<i>Embedded controls:</i> execution of construction work within allocated boundaries, use of equipment in good condition, waterproofing of equipment and vehicle parking areas, operation of the drainage system, air filters, etc.	

7.8 IMPACTS ON VEGETATION

Compensations will be implemented through planting of trees on plots specified by the Tobolsk administration. Total area of plantings will cover 460 ha. Fir will account for 90% of future plantations and the remaining 10% will be pine.

<i>Construction</i>	<i>Operation</i>
<i>Major sources:</i> site clearance, traffic of vehicles and machinery	<i>Major sources:</i> precipitation of pollutants from air emissions generated by the Complex operation
<i>Major impacts:</i> vegetation clearance, dust pollution	<i>Major impacts:</i> pollution/ deterioration of growth conditions
<i>Receptors/ areas:</i> vegetative cover on the construction site and in adjacent areas	<i>Receptors/ areas:</i> SPZ, Abalak reserve
<i>Prediction:</i> pollution of stems and leaves by precipitating dust and pollutants (soot, hydrocarbons, oil products, etc.) from construction machinery and vehicles	<i>Prediction:</i> negligible emissions, critical for vegetation concentrations of pollutants will not be exceeded
<i>Impact significance:</i> moderate (clearance), negligible (pollution)	<i>Impact significance:</i> no special assessment is required
<i>Embedded controls:</i> replanting of identified individual representatives of rare and protected species out of the Complex site, compensation through proportional vegetation planting, execution of construction work within allocated boundaries, use of equipment in good condition, etc.	

7.9 IMPACTS ON WILDLIFE

Location of the Project site within the industrial area will reduce the overall impact on wildlife. No impact on fish fauna during the construction and the operation of the Complex is expected.

<i>Construction</i>	<i>Operation</i>
<i>Major sources:</i> construction works, presence of personnel and traffic of machinery and vehicles	<i>Major sources:</i> operation of flares, production units and UI&O facilities (noise)
<i>Major impacts:</i> disturbance factor, destruction of individual species and habitats, introduction of synanthropic (domesticated or human associated) species	<i>Major impacts:</i> death of birds in flare systems, disturbance factor, habitat transformation
<i>Receptors/ areas:</i> animal populations and habitats within the construction site and in the vicinity	<i>Receptors/ areas:</i> animal population of the Abalak reserve, birds flying over the Project site
<i>Prediction:</i> most pronounced effects will be associated with introduction of synanthropic species (rats, crows, dogs, etc.) and destruction of habitats on the proposed construction site. Given the absence of mammals listed in the Red Book, the overall impact will be less pronounced.	<i>Prediction:</i> most vulnerable species inhabit remote parts of the Abalak reserve. Given the distance of 10 km, the impact of the Complex operation on these areas will be negligible. There is a probability of death of birds in flare flames during mass migrations.
<i>Impact significance:</i> moderate (introduction of synanthropic species), minor (for other impacts)	<i>Impact significance:</i> minor
<i>Embedded controls:</i> prohibition off-road traffic of vehicles and personnel (confine traffic to temporary and permanent access roads), prohibit loose dog keeping, inspections of food waste storage and disposal regulations, etc.	

7.10 IMPACTS ON SPNA

Potential impacts on the Abalak Natural and Historical Complex will be negligible during the construction, because of the character of potential impact sources (predominantly vehicles and construction machinery) and the short duration of the impact. No impact significance assessment is required.

Potential impacts on operation stage may be more pronounced due to larger continuous emissions and potential cumulative effects on the SPNA. The impact significance is assessed as 'minor'.

7.11 VISUAL IMPACTS ON LANDSCAPES

The proposed site is surrounded with forest vegetation and industrial facilities of Tobolsk-Neftekhim, Tobolsk CHPP, etc. Potential visual impact on landscape will be negligible.

8 SOCIAL AND ECONOMIC IMPACTS

The Project implementation will have impacts on a wide range of socioeconomic receptors. Direct and indirect impacts of the Project will have both negative and positive effects on the local social and economic environment.

8.1 OVERVIEW OF SOCIOECONOMIC IMPACTS

Potential socioeconomic impacts will be primarily associated with provision of temporary and permanent employment, increased budget revenues, and implementation of social projects of the Company.

Potential social impacts indicated in *Figure 8-1* are typical for major petrochemical projects that are implemented within populous urban areas. However, considering the Project specifics, the likelihood of occurrence of the discussed potential impacts will vary.

8.2 MAJOR POSITIVE SOCIOECONOMIC IMPACTS

The Project implementation will have several direct or indirect positive impacts.

One of the key positive impacts of the Project will be creation of new jobs and employment opportunities. According to the current Project scenario, up to 1,632 local residents will be employed during the operation stage of the Complex. The positive impact will be also associated with temporary employment during the construction of the Project facilities; local workforce should account for 5% of the total construction labour used.

The multiplier effect (indirect impact) on the labour market and the local economy may be several times greater than direct positive impacts of the Project. According to the Company's information, one job at the Project facilities will create at least four jobs in associated sectors.

Creation of new jobs at different project stages will have a number of additional (accompanying or following) positive impacts:

- increased incomes of the local community and improvement of the quality of life;
- improved educational level of the local population;
- establishment of a vocational training system supported with guaranteed employment opportunities;
- reversal of the negative demographic trend (loss of population) by increasing the influx of migrants and reducing the rate of emigration.

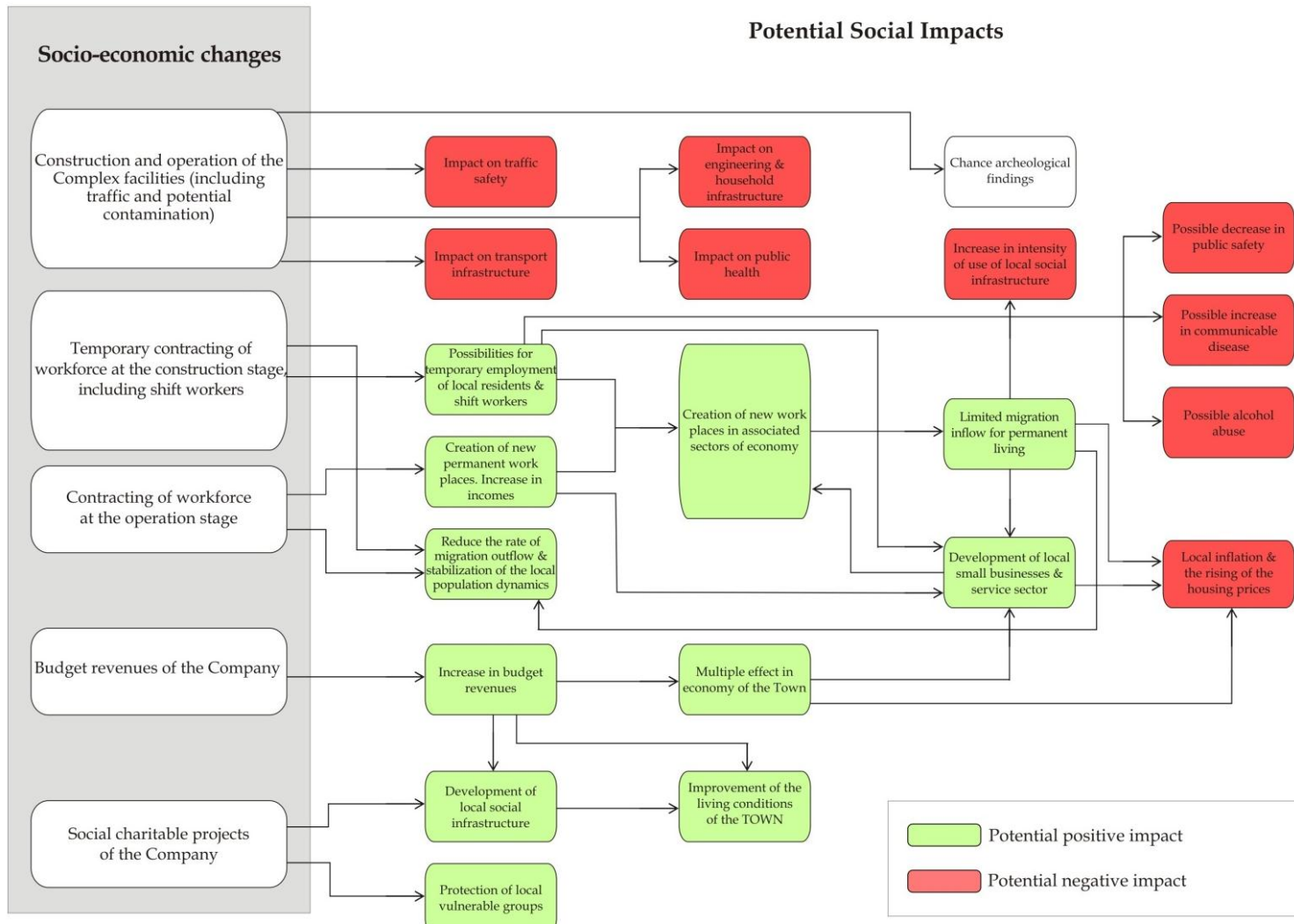


Figure 8-1 Schematic diagram of potential social impacts on the receptors in Tobolsk and Tobolsk District

The Project implementation will have significant positive impact on the economic situation in Tobolsk and certain positive impact on the District economy. Major earnings of the town and district economies directly associated with the Project will be taxes, employees' wages, capital investments, and other payments. During operation, worker wages will account for the largest proportion of cash flow into the local economy.

Significant indirect positive impact on the local economy will be also associated with development of associated industries. It is expected that the operation of the Complex will facilitate growth of industrial output, increase incomes of the local community, including the purchasing power of the population, and strengthen the potential for development of small and medium businesses.

Potential positive impacts of the Project will be also associated with implementation of social projects. To date, the enterprises of SIBUR Holding implement a wide range of socially oriented projects in Tobolsk.

SIBUR Holding enterprises and the Administration of Tobolsk conclude annual agreements on socioeconomic cooperation. A new SIBUR's enterprise in Tobolsk will support and stimulate further development of social programmes and initiatives sponsored by the Holding.

8.3 *POTENTIAL NEGATIVE SOCIOECONOMIC IMPACTS*

Potential negative impacts associated with construction and operation of the Complex will be as following:

- potential impacts on the local community caused by temporary construction inflow workforce;
- potential impacts on the local infrastructure and health of the local community directly related to construction and operation of the Complex.

Impacts on the social environment and safety

According to the Project scenario, approximately 11 thousand migrant workers will be involved in the construction as a temporary workforce to be accommodated in the construction camp. Based on the experience of major projects involving temporary workforce it is estimated that a massive inflow of temporary workers may be a source of the following potential impacts on the social environment:

- potential increase of crimes;
- potential increase of incidence of social diseases (communicable/infectious and sexually transmitted diseases);
- potential increase in alcohol and drug abuse.

Accommodation of construction workers in the construction camp will reduce the likelihood of occurrence of the above listed social impacts. All employees that will be accommodated in construction camp will be requested to have a compulsory vaccination and a confirmation of having no social diseases. These measures will allow a certain level of control over the likelihood of infectious and sexually transmitted diseases distribution. The 'no alcohol' policy in the construction camp and on the construction site will reduce the

likelihood of alcohol consumption growth and alcohol abuse in the town during the construction period.

The significance of the Project's impact on the crime situation in the town during construction has been assessed as *moderate*. Significance of the impact on the incidence of social diseases and alcohol abuse has been assessed as *'minor'*.

Impacts on the transport infrastructure and road safety

The cargo turnover during the construction and the operation will be comparable or even exceed the current volume of goods transportation in Tobolsk. Increased traffic will enlarge the risk and likelihood of road incidents with local community members involved. No settlements are located along the main traffic routes or in the immediate proximity to roads and railways. There is a risk of incidents involving residents of settlements located at a certain distance from the road. However, the likelihood of occurrence of such incidents has been assessed as *'low'*.

In addition to the increased likelihood of road incidents with local residents involved, there is an issue of increased pressure on the transport infrastructure of the town. The project-related traffic will double the load on the transport infrastructure of Tobolsk.

The overall impact of the Project on road safety is expected to be of *'minor'* significance. The significance of potential impact on the road infrastructure has been also assessed as *'minor'*.

Impact on communal infrastructure (services and utilities)

During the construction, the Project will use the capacity of local utilities, services, and facilities (Tobolsk CHPP, the landfill of "Paritet" LLC, waste treatment facilities of Tyumen City), as well as facilities of Tobolsk-Neftekhim (water intake, water pipeline, wastewater/ sewage treatment facilities). The increase of load on the municipal infrastructure will be of minor significance.

During the operation, the Project will use the capacity of utilities and communal infrastructure of regional significance (power supply, waste treatment facilities), municipal infrastructure ("Paritet" landfill), and facilities of Tobolsk-Neftekhim (water intake, water pipeline, wastewater/ sewage treatment facilities). The operation will primarily affect resources of the municipal landfill, which will be used for waste disposal.

The Project implementation will add 15 thousand m³ of dry salts and, possibly, some other waste. This will be equivalent to 8% of the current volume of waste disposed of in the landfill. The landfill is currently approaching the limits of its capacity so a landfill reconstruction/ upgrade project is being considered.

The significance of potential negative impact on the landfill has been assessed as *'moderate'*.

Health impact

Assessment of potential health impact of air pollution was based on the analysis of the total emissions of existing and proposed petrochemical industries (i.e. Tobolsk-Neftekhim, Tobolsk-Polymer, and ZapSibNeftekhim) and Tobolsk CHPP.

Dispersion modelling of critical air pollutants was used to determine quantitative risk of chronic diseases, cancer, acute health effects and spatial distribution of these risks across the area exposed to the impact of emissions from the Project facilities. It was estimated that the risk of acute respiratory effects correspond to ***low (permissible)*** risk levels at the residential area boundary (according to hazard coefficients for individual substances and the total index of hazard for the combined effect).

The risk assessment exercise has demonstrated that quantitative risk values beyond the indicative SPZ boundary will correspond to 'minimal' and 'low' levels (i.e. permissible). This suggests that the proposed calculated size of the SPZ is sufficient in terms of local community health protection.

Notwithstanding the negligible scale, potential negative impact significance has been assessed as 'moderate' because of the long-term duration and continuity of the impact.

9 OCCUPATIONAL HEALTH AND SAFETY

The Occupational Health and Safety Policy of the SIBUR Holding have been approved by the Board of Directors on 28 April 2011.

The corporate OH&S management systems are developed in accordance with the requirements of the national legislation, OHSAS standards, using best international practice and experience of the leading international companies.

In accordance with the requirements of the national legislation, ZapSibNeftekhim, LLC has developed and plans to implement an OH&S strategy. The following actions will be undertaken during construction:

- development of Occupational Health and Safety Procedures for construction contractors;
- regular inspections of the construction site, including compliance audits against national and internal safety regulations;
- measures to ensure fire safety at the construction site, security and protection of personnel, provision of construction workers with comfortable accommodation in construction camps.

During operation, the OH&S activities will focus on:

- continuous process of instruction and training of personnel on OH&S matters, including knowledge tests;
- ensuring compliance of the Company's and contractors' personnel with regulatory work safety requirements;
- development and implementation of additional measures to reduce impacts on the Company's and contractors' personnel in accordance with the corporate requirements and procedures required by national norms and standards;
- regular medical tests of employees to prevent admission to work of persons with counter indications;
- ongoing effective operational monitoring of compliance with the OH&S regulations;
- provision of workers with personal protection equipment of fine quality;
- identification and regular review of health and life risks associated with potential incidents and harmful impacts;
- investigation of incidents and accidents to analyse root causes and take appropriate corrective and preventive actions, including analysis of accidents at similar facilities.

10 WATER PIPELINE

10.1 GENERAL

The Complex will be supplied with river water via a double-line water pipeline from the water intake facilities of Tobolsk-Neftekhim LLC located at the Irtysh River 23 km southeast of the Project site. The maximum daily flow rate will be 61,200 m³. The water pipeline will be in continuous operation.

The total length of the proposed pipeline is 32.3 km (28.15 km of underground and 4.15 km of aboveground pipeline). The proposed route is laid across:

- settlement land (Tobolsk town, Vakhrusheva village);
- forest land of the Tobolsk forestry (including the area of the Abalak Natural and Historical Complex);
- agricultural land.

The total area of land to be allocated for the water pipeline construction is 116.38 ha (including 116.31 ha for a temporary lease for the construction period and 0.07 ha (water sumps) for a long-term lease).

The 18.74 km section of the proposed water pipeline will cross the zone of the cultural landscape within the Abalak Natural and Historical Complex (*Figure 6-3*).

The water pipeline will cross the rivers Karakunduska, Zagvazdinsky Log, and a nameless creek. These watercourses will be crossed using the horizontal directional drilling method with no disturbances of the watercourses channels.

Alternatives of water pipeline routing: there is an existing water line for transport of water from the Epanchinsky water intake facilities at the Irtysh River (owned by of Tobolsk-Neftekhim LLC) to the Tobolsk-Neftekhim water treatment facilities. The route of the existing water line crosses the recreational zone of the Abalak Natural and Historical Complex.

To reduce the potential adverse impacts during the construction of the new water line it was decided to make new routing which will bypass the recreational zone. The route of the new water line will cross only cultural zone of the Abalak Complex.

10.2 IMPACTS DURING THE WATER PIPELINE CONSTRUCTION

Environmental Impacts

Major impacts will be associated with the construction period. The short construction duration (9 months) and the work execution during the winter period will reduce potential environmental impacts.

No impact on most vulnerable resources, i.e. surface water bodies, is anticipated because directional drilling does not affect the channel bed.

Impacts on vegetation and top soil will be associated with removal of topsoil and clearance of vegetation within the allocated construction sites. The Project provides for the soil and land reclamation after the completion of the pipeline construction. No rare or protected plant species were identified within the proposed pipeline route area.

Potential impact will be of 'site' extent and short-term duration considering that construction work is confined with the allocated boundaries.

The impact on wildlife will consist of destruction of individual species and habitats and the impact of disturbance factor. The absence of rare species and the short duration of construction (winter) will reduce the overall impact.

The significance of impact on soil, vegetation, and wildlife has been assessed as 'minor' under condition that the embedded control is implemented.

The impacts on air quality, acoustic environment, geology and groundwater, and SPNA will be limited in scale and duration.

The significance of impact on air quality, acoustic environment, geology and groundwater, and SPNA has been assessed as 'negligible' under condition that the embedded control is implemented.

Potential impact on fish fauna will be associated with temporary disturbance of the Irtysh floodplain (loss of feeding resources) during construction of the water pipeline. The significance of impact on fish resources was evaluated on the basis of the estimated productivity and use of the feeding resources by the fish population

The potential damage to fish resources has been estimated as 1,713.8 kg of fish. This damage will be compensated through artificial fish reproduction to stock water bodies in the Ob-Irtysh basin. Estimated cost of compensation in 2013/2014 is based on the cost of juveniles whitefish and totals 1,374 277.5 RR.

The fish fauna impact significance has been assessed as 'negligible'.

Social and economic impacts

Major impacts will occur during the construction of the water pipeline. Among potential impacts of the Project the impact on road safety and land users will be most important.

The major impact on the land users in Tobolsk District will be associated with temporary withdrawal of land, which is partly used by the local community as a source of ecosystem and recreational services. For some land users this land is a source of income. This impact will be offset by cash payments equivalent to the lost profit.

The overall significance of impact on land users has been assessed as 'negligible'.

The estimated volume of goods transportation required for the construction of the water pipeline is 15.7 thousand tonnes, i.e. six times exceeding the current volume of goods transportation in the district. This may be associated with increased risk of road incidents for the residents of settlements located near the road from Tobolsk to Epanchina village. The settlements (villages) located in the immediate proximity to road are Preobrazhenka (224 residents), Zagvazhdina (255 residents), and Vakhrusheva (25 residents).

The significance of impact on road safety has been assessed as 'moderate'.

No significant socioeconomic impacts are anticipated to occur during operation of the water pipeline. Potential impacts may be associated with routine maintenance of the pipeline or emergency situations. The above impacts are not discussed in this Report.

11 ROUTINE ENVIRONMENTAL MONITORING

The Project provides for the routine environmental monitoring (REM) of:

- *air quality* (measurements of in emissions from stationary sources; monitoring of air pollution at the SPZ boundary of “ZapSibNeftekhim”, LLC and in residential area of the nearest settlements);
- *noise level* (measurements at the indicative (estimated) SPZ boundary at two points in the direction of the residential area and the Abalak reserve);
- *wastewater* (measurements for pollutant concentrations in sanitary wastewater, stormwater and process wastewater, metering and recording of wastewater flow rates; monitoring of utilities);
- *waste management* (visual inspection of temporary waste storage sites; chemical analysis of dry salt from the evaporation unit and dried sludge from the sewage treatment facilities).

In order to timely identify changes of the environment based on the analysis of potential environmental and public health impacts an additional local monitoring program is recommended to support the Routine Environmental Monitoring provided for by the Project. This program includes the following actions:

- *air quality assessment* (measurements of air quality and weather factors during construction and operation at three points at the SPZ boundary; lateral snow survey north of the Complex and within the Abalak reserve);
- *noise level monitoring* (to be conducted only during construction at the indicative SPZ boundary at two control points in the direction of the residential area);
- *monitoring of exogenous geological processes* (visual monitoring of advancing erosion forms on the Project site during construction and along the water pipelines route during operation);
- *vegetation monitoring* (during construction and operation; monitoring of vegetation conditions and identification of plant diseases; evaluation of conditions and dynamics of populations of rare plant and lichen species north of the Complex and within the Abalak reserve);
- *wildlife monitoring* (epizootic control; monitoring of populations within SPZ and adjacent area to the north of the SPZ).

12 ENVIRONMENTAL AND SOCIAL ACTION PLAN

The Company aims to minimise negative environmental, social, and public health impacts and maximise benefits of its activity for the population of Tobolsk town and Tobolsk District and other parties that may be affected by the Project throughout all stages.

The Environmental and Social Action Plan (ESAP) has been developed on the basis of findings of the comprehensive assessment of the Project's environmental and social impacts and aims to ensure effective environmental and social management of the Project.

The ESAP has been developed to:

- improve environmental actions presented in the design documentation;
- achieve compliance with the Performance Standards of the International Finance Corporation on environmental and social aspects of the design implementation.

The ESAP implementation will help mitigate identified impacts, and where that is not possible, compensate these impacts and reduce and/ or control risks associated with potential impact.

The ESAP will cover all production and infrastructure facilities of the Project and operations associated with its implementation, as well as all activities associated with construction and operation of the Project facilities whether these activities are carried out by the Company's or contractors' personnel.

13 STAKEHOLDER ENGAGEMENT AND INFORMATION DISCLOSURE

According to the Corporate Code of Ethics of OJSC SIBUR Holding, the principles of the Company's information policy are completeness, timeliness, objectivity and reliability of the information disclosed and ensuring free and easy access to this information. The Company provides timely disclosure and accuracy of information about all key aspects of its activity.

The Company regularly communicates with stakeholders throughout the entire period of the Project implementation.

Public consultations on the Project were held in Tobolsk in December 2012. In the second half of 2012, the representatives of OJSC SIBUR Holding and "ZapSibNeftekhim", LLC held a number of meetings with the public of Tobolsk. In November 2012, the Company established a feedback mechanism (a 'hotline' email address has been managed).

In February 2013 ERM developed a Stakeholder Engagement Plan (SEP) for the Project. The Plan includes development of information disclosure actions and a grievance mechanism.

According to the Plan in June 2013 representatives of JSC "SIBUR Holding" and "ZapSibNeftekhim", LLC held informational meetings with villagers of Mikhailovka, Denisova, Sokolovka villages of Tobolsk District situated close to the site of the future Complex.

Due to the fact, that the planned water pipeline route will cross the cultural landscape area of the Abalak Natural and Historical Complex, the Company conducted public hearings on the water pipeline construction project with residents of Tobolsk District in November 2013.

Within the framework of the land lease process for the water pipeline construction in December 2013, the Company organised meetings of land users in order to approve the land lease.

The SEP has been updated during the ESIA development process. The Plan currently focuses on further development of the stakeholder engagement system and information disclosure process during construction and operation of the Project.

