«VNIIKHIMPROEKT» ENGINEERING DESIGN CENTER

Ukraine, 02660, Kiev, M.Raskovoi Str., 11

Order 6090

PRODUCTION AND ADMINISTRATIVE BLOCK BUILDINGS REFURBISHMENT PROJECT

«KEN-PAK PACKAGING PLANT», LLC

Moscow Province, Volokolamsk, Yamskaya Str., #25

VOLUME 7

ENVIRONMENTAL PROTECTION

Book 2

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

6090-EIA

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WARRANTY STATEMENT

The Project is developed in accordance with the acting norms and regulations in capital construction, technology and sanitation. The Project envisages measures to provide design reliability, explosion and fire safety of site facilities, population safety and protection and reliable robust operation of site facilities in emergency situations, protection of the natural environment during their operation and meets the requirements of the Russian Federation City Construction Code of December 29, 2004, No190-FZ.

Project Chief Engineer I.V. Pinchuk

SUMMARY

The «VNIIKHIMPROEKT» Engineering Design Center (former «VNIIKHIMPROEKT» Institute licensed by the License of the Federal Capital Construction and Utilities Agency, D 759893, Registration Number GS-1-77-0126-0-9909208845-026779-1 of 17.07.2006) has more than 35 years of experience in designing industrial enterprises and production facilities.

Environmental impact of such production facilities is principally limited to noise effects, atmospheric emissions and discharges to sewage system. Solid wastes in the form of compacted pucks of aluminium cuttings and rejected casings are returned for recycling via non-ferrous metal scrap collection services.

The current section considers environmental aspects and measures of protecting the environment related to constructing the production block and refurbishing the existing administrative block needed to organize production of aluminium beverage cans at «KEN-PAK PACKAGING PLANT», LLC of 950 Mil pieces annual capacity.

The design is carried out following Agreement № 085 of May 15, 2008.

To manufacture aluminium cans it is envisaged to purchase a full-set automated technology line by «ROESLEIN» Company (USA) that is the provider of principal technological equipment for all the enterprises of the «CAN-PACK» Group.

The Project is developed with the account of requirements by Standards 150 of the 14000 Series, (GOST R ISO 14001-98 and GOST R ISO 14011-98).

Composition of the Project documents is prescribed by the «Provisions on Assessing the Environmental Effects of Projected Industrial and Other Activities in the Russian Federation».

The calculations of pollutants' concentrations in atmospheric air were conducted using the "EKOLOG" application SW and a PC.

The total number of systemic organized emission sources is 23.

The number of specified polluting substances is 25.

Registered emissions form a group of substances that feature a cumulative effect (Code 6045).

The sums of maximum ground surface concentrations produced by the considered emission sources including all the pollutants and the group of cumulative substances never exceed respective MPCs.

Registered emissions do not affect the position of the outer boundary of the sanitary protection zone.

Maximum ground surface pollutants' concentrations to be produced by the newly installed full-set automated technology line to manufacture aluminium beverage cans never exceed 0,9 MPC at the outer boundary of the production facilities sanitary protection zone or beyond it.

The level of environmental hazard for lay population generated in the course of organizing and starting aluminium beverage cans production facilities at the existing industrial site within the industrial zone of Volokolamsk never increases.

C O N T E N T S

1. INTRODUCTION

The basis for developing the project of constructing production block building and refurbishing the existing administrative block to organize production facilities for aluminium beverage cans is the Statement of Work on Working Project, approved by the enterprise management.

The principal tasks in developing the current Section of the Project documents consist in:

- defining the types of environmental impact;
- defining parameters of emission sources from the production facilities considered;
- defining the set of comprehensive air quality protection activities to maintain hygienic norms of atmospheric air quality;
- defining the level of effect of emissions of polluting substances on atmospheric pollution at the outer boundary of the sanitary protection zone;
- developing proposals on regulation maximum permissible atmospheric emissions;
- defining the level of noise effects;
- defining qualitatively and quantitatively effluents and wastes generated by production facilities;
- assessing environmental effects of the planned production facilities.

The Section contents are prescribed by «Provisions on Assessing the Environmental Effects of Projected Industrial and Other Activities in the Russian Federation».

EIA materials are developed with the account of requirements by Standards 130, Series 14000, in particular - 1501401:1996 and 13014004:1998 (GOST R ISO 14001-98 and GOST R ISO 14011-98) that contain requirements and guidelines on the principles and operation of the environment management system.

When putting together this Section the data were used from:

- The Short Climate Description;
- Architectural Design Statement of Work (ADS) №17;
- Pre-Project Design data;
- Mapping data of 1:500 - 1:10000 scales;
- Data from in-situ survey of the industrial site;
- Data from other Sections of the Project;
- Acting regulation documents.

2. PHYSICAL AND GEOGRAPHICAL DESCRIPTION OF SITE LOCATION

«KEN-PAK PACKAGING PLANT», LLC is situated in the industrially built-in area at: 143620, Moscow Province, Volokolamsk, Yamskaya Str., 25. Tel: +7(495) 223-6570, Fax: + 7(495) 223-6578.

E-Mail: info@canpack.ru

The enterprise area is 5,7 ha.

The terrain of the industrial site is even, partially planed, and is characterized by the absolute heights of 209,6 - 213,9 m. It features a general eastern slope.

The northern part of the industrial site is built-in by various buildings and structures. Its western part is occupied by crane tracks and a block used as a warehouse.

Various enterprises belonging to the overall industrial area are situated to the north of the «KEN-PAK PACKAGING PLANT», LLC industrial site.

To the east of the enterprise there lies a warehousing zone and the site of the electric power sub-station.

To its south lie the lands of GosLesFond (State Forestry Fund) covered with grass, low bush and bush vegetation. To its south-west stands the boiler building.

To the west lie the lots of GosLesFond.

On its north and west the enterprise site boundary is formed by the ground-level heating pipeline, positioned on piles.

Along the southern border of the site there runs a transit gas pipeline.

The principal automobile entrance to the site is from its north-eastern corner.

According to SanPiN 2.2.1/2.1.1.1200-03, the enterprise belongs to metal-processing industries with their regulation sanitary protection zone span of 100 m.

The sanitary protection zone is set to start from the outer boundary of the production facilities site.

The enterprise site positioning and situation map is attached.

The enterprise site map with its projected emission sources is attached.

The city of Volokolamsk is situated on the left bank of the Gorodenka River by its inflow to the Lama River (upper Volga basin), 129 km to the NW of Moscow. The town was initially founded by the Novgorod people at the area of River Lama to River Voloshnya (Ruza River tributary) ship portage. The town is known as Volok-na-Lame (Lama River Portage) since 1135.

The Moscow Province climate is described as moderately continental, with frosty snowy winter and humid relatively warm summer typical for the central part of the Russian Plain.

That climate is formed under the effect of air masses transfer by western and south-western cyclones, arctic air outbreaks from the north and transformation of air masses of various origins.

The effects of air masses coming from the northern Atlantics are typical for both winter and summer seasons. These result in highly probable wintertime thaws and humid cool periods during summer months.

The absolute minimum temperature is -36°C.

The absolute maximum temperature is +37°C.

The annual average temperature is +4,1°C.

The annual average amount of precipitation is 641 mm.

3. METEOROLOGICAL CHARACTERISTICS AND FACTORS THAT CONTROL DIFFUSION OF POLLUTING SUBSTANCES IN THE ATMOSPHERE
(according to observations at the «VDNKh» meteorological station)

Table 1

METEOROLOGICAL CHARACTERISTICS	COEFFICIENTS
Temperature stratification dependent coefficient, as per GRD-86, Item 2.2., A	140
Terrain profile coefficient, η	1,0
Average maximum outdoor air temperature for the warmest month, as per SNiP 23-01-99*, Table 2*, Group 5, °C °C	+23,0
Average outdoor air temperature for the coldest month, ascper SNiP 23-01-99*, Table 3*. Group 2 (for boilers operating in heating mode), °C	-10,9
Average annual repeatability of wind direction, by compass points, %	
N	12
NE	7
E	7
SE	13
S	15
SW	17
W	16
NW	13
Wind speed U*, m/s at 5% repeatability excess	3
Geographical latitude, degrees	56
Atmospheric pollution potential (APP) for the zone	II

4. GENERAL CHARACRERISTIC OF DESIGNED FACILITY

4.1. The production technology for aluminium beverage cans by «CAN-PACK» has been in use in the USA for about 45 years. During last decades the «CAN-PACK» technology has been thoroughly upgraded. Automated manufacturing plants to produce standardized beverage cans according to that technology have lately been constructed in many countries of Europe, Asia, Africa and Latin America. Demand for beverages packaged in such cans is constantly growing. Products packed into these cans do not loose their wholesome qualities. Used cans are recyclable. The technology by «CAN-PACK» has gained a reputation of being environmentally safe.

4.2. The Project envisages organizing manufacturing facilities to produce aluminium beverage cans at the «KEN-PAK PACKAGING PLANT», LLC. The annual output capacity of the facilities is 950 Mil cans a year.

Product assortment is to consist of aluminium cans of 66,3 mm dimater, 168 mm height, 500 ml capacity.

To manufacture aluminium cans, it is envisaged to purchase a full-set automated technology line by «ROESLEIN» (USA), that is the provider of the principal technological equipment for all the enterprises of the «CAN-PACK» Group.

The designed production facilities will include:

- production block №1 – newly designed;
- administrative block - an existing building to be refurbished.

It is envisaged to deploy the cans production facilities in the newly designed production block №1 of the total area of about 10000 m^2.

«CAN-PACK» production facilities consist of:

- aluminium cans manufacturing technology line;
- auxiliary stations that support line operations, as well as warehousing, maintenance and repairs, office premises and laboratories.

Support stations and premises are separated from the principal production facilities by noise insulating partitions. The bulk of ready products will be immediately shipped out to plants that can beverages.

The plant operational mode is 3 shifts of eight hours workday, 350 days a year.

4.3. Elelctric power and other resources for the production facilities will be provided as per respective technical specifications.

Transport operations will be performed by automotive vehicles.

4.4. The technological process of cans manufacturing consists of the following stages:

- feeding aluminium rolls to the technology line;
- unwinding and oiling aluminium sheet;
- producing prefabs (circles) of aluminium sheet and extruding cylinders at presses;
- forming cans in bodymakers;
- cutting can openings to prescribed height;
- washing/drying cans in tunnel washer where the following operations take place:
- preliminary washing at a temperature of 58°C;
- washing with the use of detergents containing dissolved sulphuric acid and surfactants;

- chemical treatment at a temperature of 40°C with the use of reactants containing water solution of fluorine ions;
- rinsing by hot water;
- rinsing by deionized water;
- drying in washer furnace;
- laquering of cans outer surface with water soluble materials, drying and printing of required inscriptions with further drying in vertical furnaces by LTG company;
- laquering of cans inner surface with the use of atomizers by REYNOLDS;
- laquer curing (drying) in horizontal furnaces by IBO, heated by natural gas;
- waxing and tapering open can ends;
- testing (detecting microholes, cracks and other defects);
- pallettizing.

The sequence of operations is strictly regulated. The technological process flowchart is attached.

4.5. The «KEN-PAK PACKAGING PLANT» enterprise envisages producing 0,5 l capacity cans from the aluminium alloy rolled sheet by "SAMECO" (Samara, Russia).

It is envisaged to use environmentally clean laquer substances (laquers and printing paints) safe for humans by well-known global providers VALSPAR, COATINGS, DEXTER or PPG for protective can coatings and lithography works.

4.6. The principal equipment to manufacture aluminium beverage cans by «CAN-PACK» technology will be procured as a full set. Beside the principal equipment, that complete set includes built-in treatment facilities and a compressor plant (consisting of "KAESER" copmressors). The «CAN-PACK» technology has been tested for 45 years already. Its upgrades have basically touched on the can shape, reduction of can weight, the use of new aluminium alloys and safe laquer and polygraphy materials.

4.7. The design of supply-and-exhaust ventilation meets the requirements by capital construction regulations and standards.

During routine operations of the equipment no hazardous substances enter the technology zone.

The amount of emissions by «CAN-PACK» production facilities is assumed at its maximum according to generalized data of the emissions inventory (including both the concentrations measured instrumentally and those retrieved by calculations) from similar functioning production facilities of the same output capacity.

Volley emissions will be absent in case of routine (standard) functioning of technological and evacuation equipment.

4.8. Under unfavorable meteorological conditions that result in excessive atmospheric air pollution, there exists a possibility of short-term controlled reduction (and suspension) of emissions of hazardous substances to the atmoshpere.

According to "Guidelines on Rating Enterprises by Hazard Grade in Dependence of Amount and Composition of Pollutants Emitted to the Atmoshpere", the facility does not belong to the list of production facilities subject to emission regulation under unfavorable meteorological conditions.

4.9. Measures to control hazardous emissionов are expected to follow the 1986 "Standard Procedures in Organizing the System of Controlling Industrial Atmospheric Emissions".

Monitoring adherence to hygienically permissible emissions by emission sources, of the level of atmospheric air pollution at enterprise facilities and at the boundary of the sanitary ptotection zone shall be the task of dedicated organizations operating under separate contracts.

The system of monitoring shall be based on measuring actual emissions of polluting substances to the atmosphere and comparing them to respective MPCs.

Periodicity of such monitoring shall be prescribed by a timetable approved by the enterprise management and supervising agencies.

4.10. Prior to their release to the sewage system, technological drains shall be treated in built-in local treatment facilities.

Solid wastes in the form of compacted pucks of aluminium cuttings and discarded cans go to recycling via non-ferrous metal scrap collection services.

Empty containers for liquid raw materials shall be returned to providers as secondary.

Provided the technology routine regulations are followed strictly, emission of polluting substances to soil and water basins is excluded.

5. ASSESSMENT OF ENVIRONMENTAL IMPACT

When assessing environmental effects of the facility, the following components of the natural environment are identified and considered:

- climate and microclimate;
- air medium;
- water medium;
- geological medium;
- soils;
- flora and fauna, natural reserves. Only those components and elements of the environment are considered that shall be affected by planned activities, as well as those that fall short of the regulations in their current state.

6.1. CLIMATE AND MICROLIMATE EFFECTS

Organizing production of aluminium beverage cans at the «KEN-PAK PACKAGING PLANT», LLC of 950 Mil pieces annual capacity shall entail no changes in barometric pressure and atmospheric temperature mode, no significant increase of thermal emissions or overall emissions of greenhouse pollutants. No specific measures shall be needed to prevent negative climate and microclimate effects.

5.2. LAND RESOURCES AND GEOLOGICAL ENVIRONMENT EFFECTS

Land lot allottment for constructing the Volokolamsk test plant dates back to the Soviet times General City Plan of 1977.

Upon the 1993 transformation of the enterprise into, first, the «Volokolamsk Test Plant» OJSC, and, second, the «KEN-PAK PACKAGING PLANT», LLC, no additional land allottment was done.

Erecting the production block and refurbishing the existing administrative block to organize aluminium beverage cans production facilities does not envisage any large-scale development of surface soil layer, since the plan is to retain the previous layout of the industrial site as much as possible.

Geomorphologically, the site is situated on the left bank of the Lama River, above its flood plain.

The site engineering-geological conditions may be described as follows:

Geologically, the site is formed by quarternary sediments to the full depth of probing.

Structurally, that formation is characterized by the following engineering-geological elements (EGE):

EGE-1: technogenically transformed ground with predominant light adobe of hard ductility and poor water permeability, its depth reaching 3,0 m.

EGE-2: heavy pulverescent adobe of soft ductility and good water permeability, its depth reaching 2,5 m.

EGE-3: light pulverescent clay, up to 1,5 m depth.

EGE-4: light semi-solid watertight clay, up to 7,2 m depth.

EGE-5: moraine adobe (laying below 14 m from the surface).

Hydrogeological conditions:

The aquifer is fed by infiltrating atmoshperic precipitation.

The stable level of ground water is recorderd at the depth of about 8 m (absolute levels of 203,0 - 203,7 m).

According to the Technical Report on the Engineering and Geological Survey, site soil is found to be corrosively aggressive to aluminium, lead and steel; while ground waters are corrosively aggressive to aluminium and lead.

The area seismicity in M5K-64 Scale units for average soil conditions according to the OCP-97 A,B,C map set is 0,0,6.

Geological, hydrogeological and other conditions, as well as the nature of the activities planned do not trigger or stimulate any manifestations of exogenic processes.

Prior to start of the Project design there have been no data or indications of site soil pollution by heavy metals, pesticides or radioactive substances.

The regulation sanitary protection zone of the enterprise lacks any meliorated, irrigated or reclaimed areas. Nature protection, recreational, historical, cultural or other specialized functions areas are also absent.

When implementing project solutions, no extra land resources shall be involved or subjected to pertubations, flooding, waterlogging or insiccation. All the changes in the terrain profile, regulation of parameters of surface runoff and of hydrogeological conditions at construction site and the adjacent area ever to have been made took place in the course of building automobile roads across the industrial site and erecting its existing buildings and structures.

No additional effects on geological environment will develop in the course of implementing the project. Static and dynamic forcings due to newly installed equipment will not exceed regulation levels of such forcings on sub-surface layers.

In the course of implementing the project solutions environmental stability of geological medium shall be retained.

Due to compact arrangement of buildings, structures, facilities and installations, the enterprise design follows the approved regulations on land surface capacity and its general plan.

Project implementation retains the existing intra- and inter-industrial links operated by other land users.

The plant area has no nature preservation and protection, recreational, historical, cultural or other specialized function lands that would call for any extra limitations on their use.

Fertile surface soil from under the footprint of the future production block has been removed prior to start of the project construction works.

As per the data of geological studies, soil entrails under the footprint of the planned enterprise have no minerals fit for any industrial use. There are no protected geological features that would be of scientific, cultural, aesthetic, sanitary, recreational, recuperational or other importance (geological reserves, preserves, natural monuments, scientific and training field sites, caves, etc.).

5.3. WATER RESOURCES EFFECTS

Water for the designed facility shall be supplied by the water main pipeline 2 0150 of the system of centralized water supply, as per the Technical Specifications on Water Supply and Drainage of April 11, 2008, № 05, issued by the "Volokolamsk District Utilities Production Technical Enterprise" Municipal Unitary Enterprise.

It is envisaged to use that water for household use, technological needs, indoor and outddor fire extinguishing.

A system of water recycling is planned for cooling technological equipment.

The outdoor system of water piping (for household use and fire extinguishing) is to be of polythene pipes of PE80 type. The indoor water distribution system will be of polypropylene pipes.

The calculated daily, hourly and second water consumption figures are presented in the water budget and water drainage part of the design. Water consumption and drainage budget is attached.

No protected zones of potable water intake or water protection zones are present within the designed facility area.

Household drains from the household sewage system of the designed facility shall enter pipeline mains of centralized drainage system, according to Technical Specifications on Water Supply and Drainage.

The Project envisages using SN4 and SN8 polythene pipes.

Rain runoff from the plant site will be the resposibility of the on-site rain drainage sewage system network opening to storm discharge collector.

To cool technological equipment of the production facilities (bodymakers, cutting emulsion treatment system, printing machines) a water recycling system will be used, bringing the heated recycled water to pumps of the recycling water station at its residual head pressure. Ventilator cooling stacks are positioned on the outer side of production block №1, set on concrete foundations.

The amount of recycled water will constitute 1426 m^3/day, 59,4 m^3/hr, 16,5 l/s.

To produce softened and deionized water, it is planned to use water treatment full-set facilities by «EUROWATER» (Germany) that will be positioned in stand-alone premises. The process of water treatment will be fully automatic, following the «EUROWATER» technology routine.

Production facilities of the «KEN-PAK PACKAGING PLANT», LLC shall feature no open sewage discharge to any water basins.

For its technological needs, «CAN-PACK» production facilities shall consume fresh water to the amount of up to 432 m^3/day.

Beside its technological needs, the production facilities will consume water for household needs and for fire extinguishing (5,2 l/s for indoor and 20 l/s for outdoor needs). Water feed to the block will follow respective Technical Specifications. Fire extinguishing pipelines shall feature the necessary number of fire cocks.

The Project solutions envisaged exclude any polluting substances to enter soils and water basins.

All the technological sewage shall enter local treatment facilities (LTF).

Local treatment facilities for the «CAN-PACK» production line will be deployed in block № 1 by the side of the technology line itself. The total area they will occupy is 324 m^2.

For its operation the LTF needs:

- piped-in water at a pressure of 0,2-0,3 mPa;
- electric power at 3x380/220 V, 50 Hz, 15 kW;
- pressurized air at 0,6 mPa pressure.

Treatment facilities follow the operation mode of the principal can manufacturing technology line. LTF operations are highly automated (a microprocessor by «Alan Bradley» with an intuitive interface is used). To service the LTF through a workshift, two workers are needed who maintain the filtering press, control reactants mixing and periodic rinsing of filters. No continuous presence of personnel on the premises of LTF is needed.

It is expected to treat acid technological sewage from can washing in the technology line to the amount of 14 m^3/hr, as well as periodic drains at LTF:

- demineralizer reprocessing - 4,0 m^3 (twice a week);
- general cleaning - 0,2 m^3/day;
- filter rinsing - 1,5 m^3/filter.

Neutralized drains are fed to sewage system of the enterprise and then, go to the collector together with other drains, as per the Technical Specifications.

It is supposed to dispose (store) solid (dry) neutralized sediments from local treatment facilities (that basically contain aluminates) in places agreed with the Sanitation and Epidemiology Service. Usually such dry mineralized sediments are accepted to dump lots for solid household wastes without any limitations and are used to intersperse layers of wastes. To dessicate precipitates a filtering press shall be used periodically.

Technological drains from can washing technology line are neutralized using a continuous flow technique as follows:

Pumps pump the drains to buffer drum T01 (18 m^3), then further to common drum T02 split into three zones where the following operations follow one another:

- zone 1: follow-up oxidation to pH 3,5 (by 40% H_2S0_4 solution fed from dispenser 01);
- zone 2: separation of oils from drains (oils forwarded to special collector);
- zone 3: drains neutralization to pH 7,0 (by 25% water solution of NaOH fed from dispenser 02).

Further on, drains gravity flow to flotation tank T03 separated into two parts in which flakes form with the help of flocculants fed from despensers 03 and 04. Separation of suspended particles from the drains occurs faster in one part of the tank than in the other. Sludge from the tank surface and from the bottom of the flotation bath is removed to sludge collector T06 (10 m^3) by scrappers and a pneumatic pump P4.

Water solutions of two types of polymers are used for flocculation.

Then drains pass the partition, enter an overflow drum and go to pump collector T04 (2,5 m^3). Part of the drains from the overflow drum is fed at extra pressure by pump P3 to saturation-flotation unit and after being saturated with air in the air mixer are injected to the flotator.

Upon flotation, drains go to collector drum T05 for final neutralization and checking, where the final adjustment of pH takes place before the release of the drains to the plant sewage system, the final check of pH and conductivity and recording of these values conducted by automatic recorder in the control cabinet. For reagents, 5% solutions of H_2SO_4 from dispenser 05 or NaOH from dispenser 06 are used.

Approximate paramerers of LTF drains are presented in Table 2.

Table 2

No	Parameter	Value	Regulation value
1	PH	6,5 -8,5	6,5 -8,5
2	WOD (water oxygen demand)	150 mg O_2/dm^3	500
3	COD (chemical oxygen demand)	350 mg O_2/dm^3	800
4	Suspended particles	200 mg/dm^3	500
5	Ether extractants	20 mg/dm^3	20
6	SURFACTANT (detergents)	10 mg/dm^3	20
7	Temperature	15-20°C	до 40 °C
8	Sulphates	250 mg/dm^3	400
9	Chlorides	350 mg/dm^3	350
10	Fluorides	1,5 mg/dm^3	1,94
11	Nitrates	6 mg/dm^3	9,1
12	Oil products	9,2 mg/dm^3	25

The principal technological flowchart of the local treatment facilities is attached to Book 1.

Local treatment facilities use the following water soltions of chemical reagents in the process of drains neutralization:

H_2SO_4 - 40% solution (collector drum 01). Most often a commercial solution of prescribed concentration is used.

NaOH - 25% solution (collector drum 02).

Flocculant – water solution of organic polymer. Two types of flocculants from dispensers 03 and 04 are used.

The annual amounts of reagents needed for specified annual capacity of the facilities are as follows:

H_2SO_4 - 96% technical acid - 2,13 ton.

NaOH – flaked - 3,2 ton.

Polyelectrolite (polymer 6873 or other) - 24 m^3 (of operational concentration). Polymer may be either dry or in the form of thick gel.

Servicing LTF (which includes preparing the reagents) requires the regulations and safety routines to be followed strictly.

The site system of flood (rain) sewage system is developed by «MontazhStroi», LLC.

Project implementation will not affect negatively the operation of the existing water supply and sewage systems and networks, and it cannot disrupt the hydrological and hydrobiological mode of ground waters.

When constructing production block and refurbishing the existing administrative block to organize aluminium beverage cans production facilities, the available networks and structure of water supply and sewage are retained, hydrological and hydrogeological parameters of both the surface and ground water will not change, morphometric, hydrodynamic, filtration and water budget indicators of the environment shall all be kept intact.

Measures taken to protect ground waters from exhaustion and pollution.

Among the measures taken to prevent ground waters from exhaustion are the following:

- account of ground water use;
- strict maintenance of prescribed water consumption limits;
- measures to reduce water withdrawal, as well as re-assessment of water resources where consumption practices fail to confirm their initially approved values;
- hydrogeological monitoring to prevent exhaustion of operational resources of ground waters;
- plugging of idle water intake wells.

Among the measures to prevent pollution of gorund waters are the following:

- prohibition to dump drainage water and liquid wastes from production facilities to absorbing layers hydraulically connected to the horizons used for water supply;
- maintaining high quality of works while constructing water networks at the enterprise;
- diversion of polluted surface runoff from the enterprise site to treatment facilities;
- installing cutoff protective hydraulic insulation in structures that are potential sources of ground water pollution;
- storing raw materials, prefabs and wastes at special sites equipped with anti-filtering screens,
- organization of regular regime observations of bedding, the level and quality of ground waters at existing stations and of potential pollution.

All the activities related to this or that type of use of ground waters, as well as positioning of the facilities that may result in their pollution (filtration fields, drainage accumulators, sludge- and tailing pits, etc.) must be approved with the local authorities of the Minisitry of Natural Resources.

5.4. ATMOSPHERIC AIR EFFECTS

Meteorological characteristics and factors are accepted according to data by the «VDNKh» meteorological station.

As for the emission ingredients from the «KEN-PAK PACKAGING PLANT» enterprise, their background concentrations are assumed at the level of 0,4 of Hygiencally Permissible Concentrations.

Sources of centralized emission of hazardous substances from production facilities include the processes of can washing, washing water heating, after-wash drying, laquering of outer and inner can surfaces by soluble materials, drying and printing of inscriptions with their further drying.

The amount of emissions from production facilities is accepted at its maximum level basing on the data presented by the Investor and the measurement data on concentrations obtained from a similar operating production facility.

The parameters of designed emission sources are presented in Table GAE-2 (general atmospheric emissions).

The overall calculated amount of polluting substances emitted into the atmoshpere by systematic sources of the production facilities is 9,347 g/s or 291,6504 t/yr. About 15% of them are natural gas combustion products from technological processes (CO and NO_2). The principal mass of emissions consists of organic solvent vapors.

When constructing production block and refurbishing the existing administrative block to organize aluminium cans production facilities, no significant change of the background level of pollution in the area of the enterprise is expected.

To evacuate polluting substances from the technology line, the project considers organized emission sources.

Parameters of such new emission sources are taken from tech specs of SOW by the Technological Department.

Cumulative emissions from organized sources are presented in Table GAE-1.

To study their atmoshperic effects, calculations were made of dissipation of polluting substances from the designed sources of emissions.

Emission sources are enumerated and presented in the enterprise layout plan. Emission sources are organized and described as tubes of round or rectangular cross-section reaching up to 20 m above the ground level.

The list and codes of substances that pollute the atmoshperic air are attached.

Calculations of concentrations of atmospheric air pollutants and their namesake emissions are done using a PC and the "EKOLOG" application SW. The SW is approved with the Voeikov Main Geophysical Observatory.

Computational modules of the "EKOLOG" application SW used to compute atmospheric pollution implement the General Regulatory Document-86 (GRD-86) methodology.

This automated system is capable of calculating maximum concentrations of pollutants in the atmopsheric surface layer with the account of various wind directions and adverse wind speeds. The system has the MPC database built in. The system is capable of forming and selecting cumulative groups of pollutants, including backgorund air pollution.

The ground surface concentrations of pollution from registered sources were retireved for the standard 1000x1000 m computational site at a 100 x 100 m step.

Mid-level coordinates of the opposing sides of that square are X_1 = 9100 m, $У_1$ = 4300 m, X_2 = 10100 m, $У_2$ = 4300 m.

Ground surface concentrations were retrieved for the atmoshperic surface layer at the level of breathing - 2,0 m.

The center of computational square is taken to be the point close to the geometric center of the industrial site with coordinates X = $_{27}$9600, У = $_{19}$4300 m in the local coordinate system.

The scale chosen and the size of computational site make it possible to track the limits of effects from expected emissions across the surrounding area in full detail.

The analysis of computational results has indicated that the sum of maximum ground surface concentrations generated by emissions from the registered sources do not exceed 0,6 MPC at grid nodes.

Computational results are attached.

According to SanPiN 2.2.1/2.1.1.1200-03 (Sanitary Protection Zone and Sanitary Classification of Enterprises, Structures and Other Facilities), the enterprise belongs to Class IV of metal processing production facilities with lithography size of its sanitary protectione zone (SPZ) of 100 m minimum.

The principal factor controlling the calculated boundary of the production facilities Sanitary Protection Zone are the effects of hazardous emissions by the enterprise to atmoshperic air and the noise it generates.

Since the sums of maximum ground surface concentrations produced by the projected emissions never exceed the maximum permissible concentrations for inhabited areas, no additional specification of the size of SPZ is needed (see Item 8.6. of GRD-86). The regulation size of the sanitary protection zone for production facilities does not reach outside the industrial area limits.

The amount of polluting substances, g/s, t/yr, released into the atmoshpere for each emission source at the designed production facilities is given in Table PAE-2. It is suggested to take them for the maximum permissible ones.

5.5. LANDSCAPE, FLORA AND FAUNA EFFECTS

Implementing the Project does not result in changes of the natural terrain, in forming of any sludge and tailing pits, in chages of ground water regime.

It is not envisaged to extinguish any greenery or perturb any existing solid ground coatings between the buildings within the scope of the General City Plan.

According to the results of studies conducted, implementation of the Project shall not produce any adverse effects in the flora and fauna outside the industrial area.

6. AMOUNT AND DESCRIPTION OF PRODUCTION FACILITY WASTES

The aluminium beverage cans production facilities generate certain wastes.

The regulated technological solid wastes formed in the course of operation of production facilities take the shape of aluminium cuttings, used filtering material, solid sediments from the local treatment facilities.

As for non-contaminated paper, it is envisaged to take it to "VtorSyrje" (“recyclable materials”) reception stations as trash.

Contaminated paper and household wastes to the amount of up to 25 t/yr shall be evacuated to dump sites agreed with Sanitation and Epidemiology Service following approved routines.

Cuttings of sheet aluminium and discarded cans shall be compacted to pucks and forwarded to recycling via non-ferrous metal scrap collection services.

Empty containers for liquid raw materials shall be returned to providers as secondary.

Full list and amounts of wastes are given in Table 3.

Table 3

No	Waste	Amount, t/yr	Hazard level	Planned use (disposal)
1	2	3	4	5
1	Aluminium cuttings from prefabs, cylinders and rejected products	2512,75	none	Non-ferrous metal wastes of aluminium sent to «VtorTsvetMet» stations
2	Emulsion wastes from metal cutting	32	yes	Recycled via specialized company
3	Cardboard bushings (to roll aluminium sheet on)	0,95	none	Returned to provider of rolled aluminium sheet or sent to disposal
4	Lubricants (for machine oiling)	6,89	yes	Sent to specialized company for recycling
5	Packaging paper and cardboard	3,20	none	Recyclable materials
6	Polymer materials	1,9	none	Recyclable materials
7	Scrap metal (laquer and paint cans)	31,7	none	Ferrous metal scrap
8	Used sorbents, filtering cloth, rags.	0,855	none	Sent to specialized company for recycling
9	Wastes identical to household	25	none	Evacuated to solid household wastes dump lots
10	Sediments from drain treatment facility	668	none	Accepted to dump lots for solid household wastes without any limitations and used to intersperse layers of wastes
	Total:	3283,245		

Production facilities are organized to minimize the possibility of release of hazardous substances to operational space of the production premises.

Wastes formed at the enterprise do not emit any volatile substances to atmoshperic air. Temporary storage areas have watertight coatings. Provided the regulations on temporal accumulation, storage and periodic evacuation of wastes formed at the enterprise are met, their environmental effect is reduced to minimum.

7. PRODUCTION FACILITIES DESCRIPTION AS A SOURCE OF NOISE, VIBRATION, ELECTRIC AND ELECTROMAGNETIC EMISSIONS

The technological equipment planned for the Project is quite noisy. The automatic technology line by «ROESLEIN» includes certain equipment that generates acoustic power exceeding the regulation limit of 80 dBA, prescribed by sanitary regulations SN 2.2.4/2.1.8.562-96. These are:

- cutting and hollow cylinders extrusion press (1 unit);
- cylinder manufacturing machine with edge cutters (8 units);
- washer machine with drying furnace (1 unit);
- printing machine (2 units);
- print drying furnace (2 units);
- internal surface laquering machine (8 units);
- bender machine tool (1unit);
- stacker (1 unit);
- aluminium wastes press (1unit).

To decrease the level of noise, the noisiest equipment is installed on separate

isolated foundations and screened off by special screens. The block is additionally cladded on the inside by thermal and noise insulating plates and closed off by perforated metal sheets, while on the outside it is decorated by metal decorative plates with air interlayers.

To lower the level of sound pressure at workstations and the premises where personnel is present permanently in the production facilities shop, the project envisages sound absorbing constructs:

- perforated sheets wall panelling (noise depletion by 20 dB);
- 100 units of volumetric sound absorbing suspended panels (by Ecophon Hygiene Advance Baffle, Sweden) with a practical sound absorption coefficient of 1. Their outward dimensions are 1200 x 600 x 40 mm. Panels are suspended in line from fixing cables at distances between 0,6 m and 2,5 m from each other and 1,25 m off the ceiling between the passages along the noisy equipment in the technology line.

Using the necessary number of sound absorbing panels in combination with sound absorbing constructions results in depleting the level of acoustic pressure in the area of reflected sound by 8 -10 dB, while the effect of sound absorbing constructs in the intermediate zone is noise depletion by 3-5 dB.

Sound absorbing constructs in the area of direct sound yield practically no depletion of the level of noise, so workers servicing noisy technology line equipment have to use personal protection equipment to protect their ears:

- Anti-noise earphones of the OPTIME I series (noise level depletion by 26 dB);
- «Berushi» (noise level depletion by 31 dB).

To protect the operators that work at control consoles of the unwinding machine, cutting and hollow extrusion presses, printing machines, bending machine tools and packaging machines, it is recommended to have acoustically insulated cabins built of soundproof transparent panels.

Calculations of the expected noise level in their technological part were done according to the technique laid out in SNiP 23-03-2003 following the sequence:

- identify the sources of noise and specify their noise characteristics;
- specify points in the premises for which the calculations should be made;
- define the routes of noise propagation from sources to calculation points and losses of sound energy along each of these routes in dependence of the distance;
- retrieve expected noise levels in calculation points.

The following initial data were used for acoustic calculations:

- layout plan with the positions of technological equipment and calculation points;
- data on the characteristics of constructs enclosing the premises;
- noise characteristics of the equipment presented by the customer.

Calculations of the expected equivalent level of acoustic pressure from 25 sources in calculation points PT1 to PT10 in zones of the direct and the reflected sound were conducted using relation No 9 from SNiP 23-03-2003:

$$L_{sum} = 10 \lg \left(\sum_{j=1}^{m} \frac{10^{0.1 L_{wi}} X_i \Phi_i}{\Omega r^2} + \frac{4}{K B} \sum_{i=1}^{n} 10^{0.1 L_{wi}} \right)$$

where:

m is the number of noise sources nearest to calculation point (i.e. those noise sources for which $r \leq 5\ r_{min}$, r_{min} being the minimum distance, м, from calculation point to the acoustic center of the source nearest to it;

n is the total number of noise sources in the premises;

L_{wi} is the octave level of acoustic power, dB, produced by the i-th source of noise;

X_i is the coefficient accounting for the effect of the proximity acoustic field, its value accepted in dependence of the ratio of distance «r» between the acoustic center of the source and the calculation point to the maximum outward size of the source. It is

prescribed by Table 2, SNiP 23-03-2003;
Φ_i =1 is the directional factor of a source of noise for sources of homogeneous emission;
$\Omega = 4\pi$ is the spatial angle of emission of the source. It is prescribed by Table 3, SniP 23-03-2003;
κ is the factor accounting for perturbations in the acoustic field diffusivity in the premises, adopted following Table 4, SNiP 23-03-2003 in dependence of the average acoustic absorption coefficient, α_{avg};
B is the acoustic constant for the premises, defined by the relation:

$$B = \frac{A}{1 - \alpha_{avg}}, \text{ m}^2$$

A is the equivalent acoustic absorbing area, m^2, defined by:

$$A = \sum_{i=1}^{n} \alpha_i S_i + \sum_{j=1}^{m} A_j n_j$$

where

α_i =1 is the acoustic absorption coefficient for the i-th surface;

S_i =3549,6 m^2 is the area of the i-th surface (wall panelling area);

A_j =3,6 m^2 is the equivalent acoustic absorbing area of the j-th single piece acoustic absorber;

N_j =100 pcs is the total number of j-th single piece acoustic absorbers;

A = 1 359,6 + 3,6*100 = 3909,6 m^2

α_{avg} is the average absorption factor given by the relation:

$$\alpha_{avg} = \frac{A}{S_{scr}} = \frac{3909,6}{20489,4} = 0.2$$, as per Table 4, SNiP 23-03-2003.

S_{scr} = 20489,4 m^2 is the total area of the surfaces that screen the noisy premises off.

$$B = \frac{3909,6}{1-0,2} = 4887 \text{ m}^2$$

Using the average acoustic absorption factor, α_{avg} =0,2, one may retrieve the “к” factor, that is the coefficient accounting for perturbations in the acoustic field diffusivity in the premises, к = 1,25 (Table 4, SNiP 23-03-2003).

All the computational coefficients for each calculation point and the level of acoustic pressure in the zones of direct and reflected sound are brought together into Table №10.4.1.1, Technological Part (Book 7).

The permissible equivalent level of acoustic pressure in production premises is 80 dBA.

The excess in the level of acoustic pressure at calculation points reaches:

PT1 - 83,63 dB - 80 dB = 3,63 dB;
PT2 - 85,49 dB - 80 dB = 5,49 dB; ■
PT3 - 88,26 dB - 80 dB = 8,26 dB;
PT4 - 88,66 dB - 80 dB = 8,66 dB;
PT5 - 101,39 dB - 80 dB = 21,39 dB;
PT6 - 83,12 dB - 80 dB = 3,12 dB;
PT7 - 83,27 dB - 80 dB = 3,27 dB;
PT8 - 83,83 dB - 80 dB = 3,83 dB;
PT9 - 84,05 dB - 80 dB = 4,05 dB;
PT10 - 84,54 dB - 80 dB = 4,54 dB;
Therefore:

In aluminium cans production facilities premises the level of acoustic pressure exceeds its permissible values by 3,12 - 21,39 dB at workstations in the center of the premises and by 3,83 - 4,54 dB by their outer wall.

Calculations of the equivalent level of acoustic power that penetrates constructs screening off the premises were conducted using formula 18, SNiP 23-03-2003

$$L_w^{scr} = 10 \lg \sum^{n} 10^{0.1 L_{wi}} - 10 \lg B_{noise} - 10 \lg k + 10 \lg S - R,$$

where
L_w- is the octave level of acoustic pressure from the i-th source, dB;
B_{noise} =4887 is the acoustic constant of the premises with noise sources, m^2;
S is the screens area, equal to:
- 132 m x8,7 m = 1148,4 m^2(wall along the D axis);
- 72 m x 8,7 m = 626,4 m^2(wall along row 24);
- 108 m x 8,7 m = 939,6 m^2(wall along the K axis);

R is the level of air depletion of noise by the screens, dB, so that:
- for panels *R* = 50 dB (Table 6, footnote 1, Item 9.2, SNiP 23-03-2003);
- for rock wool 60 mm thick *R* = 20dB.

We have totally ΔL_p = 70 dB.

$$10 \lg \sum_{i=1}^{n} 10^{0.1 L_{wi}} = 10 \lg 277801993371{,}29600 = 114{,}43735$$

L_w^{scr} = 114,43735-10 lg4887-10lg1.25 + 10lg1148,4 - 70 = 37,18 dB (behind the wall along the D axis);

L_w^{scr} = 114,43735 -10lg4887 -10lg1.25 + 10lg626,4 - 70 = 34,55 dB (behind the wall along row 24);

L_w^{scr} = 114,43735-10lg4887-10lg 1.25 + 10lg939,6 - 70 = 36,31 dB (behind the wall along the K axis);

Thus acoustic pressure outside production premises remains below the maximum regulation value of 45 dB.

The permissible equivalent level of noise in the residential area is 55 dBA during daytime and 45 dBA during nighttime.

It is planned to install equipment capable of vibrating on isolation pads in stand-alone premises. Pipelines shall be secured by shifting bearings. Ventilators shall be mounted in isolated spacings and outside buildings on spring isolation pads using flexible inserts between the ventilator and the air duct.

Requirements by SN 2.2.4/2.1.8.566-96 "Industrial Vibration, Vibration in Residential and Communal Buildings" shall be followed for Category 3 workstations of technological type "a".

Operation of imported equipment shall generate no extra vibration or produce any specific electromagnetic fields.

To prevent accumulation of static, special grounding is envisaged.

No additional measures to minimize these effects are needed.

The experience of operating similar production facilities shows that they produce no repugnatorial effects in the fauna, inhibiting effects in the flora or pathogenic effects in humans.

8. ASSESSMENT OF PROBABLE EMERGENCY SITUATIONS. PRINCIPAL PROVISIONS FOR SAFE OPERATIONS OF PRODUCTION FACILITIES

In the course of routine operation of production facilities when all the labor safety, industrial sanitation norms and regulations, technological routines are followed, no emergency situations may develop. Such situations only become possible in the result of violating technological discipline by the technical personnel, as well as during natural disasters.

In case of such an event the service personnel shall identify the nature of the emergency and take necessary measures to prevent its further development.

Safe conduct of technological process at each facility and unit consists in maintaining prescribed regulation values of technological parameters.

In the course of technological operations in each unit or in pipelines connecting these units, deviations from preset technological parameters may develop due to malfunctions of the equipment or pipelines. Such deviations of parameters are rated dangerous or abnormal, prohibitive for further conduct of technological processes.

The Project envisages certain ways and means to control the necessary technological parameters that prevent their deviation beyond preset limits.

Personnel actions during both routine operations and emergencies have to be regulated by respective routines.

The mandatory prerequisites to provide for safe technological processes at the production facilities are the following:

- adhering to requirements by technology guidelines;
- maintaining equipment, measurement instruments and electric equipment in running order;
- mainaining equipment and pipelines leakproof;

- keeping the grounding of equipment and pipelines, as well as lightning protection in constant good order;
- fencing off all the moving and spinning parts of the equipment;
- providing fitting overalls for all the personnel;
- having respective warning inscriptions and signs in dangerous areas.

The equipment shall be arranged following all the regulation distances between its separate pieces to organize workstations and provide friendly environment during maintenance and repair works.

Cans will be manufactured using modern equipment with maximum possible prevention of emission of hazardous substance into the working space of the production premises and the atmosphere of residential areas.

Production premises shall have supply-and-exhaust ventilation that shall keep hazardous air pollutants within the working space below their MPCs.

Pollution of the environment occurs in the process of laquering can surfaces and their drying, when organic solvents present in minor quantities in laquers and paints used are released together with natural gas combustion products. Recycling of natural gas combustion products and laquers and paints volatiles through drying furnaces works to deplete the concentration of hazardous substances released to the atmoshpere.

Laquers and paints used in production belong to Class III hazardous products in their effect on humans. In accordance with requirements by GOST 12.1.005-88, it is envisaged to periodically monitor the content of such hazardous substances around the equipment (in areas where laquers and paints are handled) using a portable signaling gas analyzer.

Sulphuric acid based liquid acid scrubber used to wash aluminium cans is enclosed in a sealed off system, so that it never enters the air of the working area.

Drums used to feed chemical substances to can washing baths are locked in metal mesh cages fitted with locks.

Areas potentially prone to emission of hazardous substances (acid and alcaline drums and barrels, drain treatment tanks) on the premises, water treatment facilities in the section of drains treatment are all fitted with local evacuation pumps. Systems of local evacuation all have autonomous evacuation ventilators.

The paints mixer, scales and desk workstation at the warehouse is fenced in by metal mesh. The mixer features a local evacuation pump.

The laboratory is used to study physical and chemical properties of raw materials and products, to run analyses of sewage water and air from production premises. The laboratory space is fitted with draft hoods and evacuation ventilation. Chemical reactants are used in minor quantities and are neutralized upon their use so that resulting emissions are insignificant.

Operation safety is also provided by the security regime maintained across the enterprise area, including its internal security regulaitons, routines and job responsibilities that are followed strictly.

9. ASSESSMENT OF EFFECTS ON SOCIAL AND TECHNOGENIC ENVIRONMENT

Planned technical and logistical solutions present no threat to the environment, health of either the lay population or personnel operating these production facilities.

Experience available from operating similar technology lines demonstrates that, provided these meet modern requirements while the equipment is run and maintained by qualified personnel, such technology lines remain environmentally safe.

Constructing the new production block and refurbishing the existing administrative block to organize aluminium beverage cans production facilities shall positively affect the social and household living conditions of the local population. It will provide new jobs. Production facilities will expectedly employ 173 persons.

The envisaged project solutions will not affect the local technogenic environment.

More than 90% of used cans return for recycling via non-ferrous metal scrap collection services.

The prospect of producing modern products constantly enjoying high demand that helps to store and consume beverages acording to strong hygienic and sanitary standards in combination with available primary infrastructure all point to expediency of the proposed solutions.

10. COMPREHENSIVE MEASURES TO MAINTAIN REGULATION STATE OF THE ENVIRONMENT

The Project envisages to construct a new production block and refurbish the existing administrative block to organize production facilities for aluminium beverage cans.

As for their fire and explosion safety, such production facilities belong to Category «B4».

Laquers and printing paints of low solvent content are used in the technology process.

Plant premises and production facilities feature no explosion hazard areas since technological processes of laquer and paint coating and drying are conducted in open fire zones at temperatures exceeding self-ignition temperatures of substances used.

To evacuate combustion products from drying furnaces, exhaust systems of these furnaces will be used.

The Project envisages measures for safe operation of automatic can manufacturing technology lines, namely:

- Gas analyzers to control the presence of natural gas in the air within 5 meters of the equipment will be used around drying furnaces and the boiler where natural gas is burned. Upon detecting it, gas feed to furnaces will be automatically shut off and both acoustic and light signals will be sent to the control room in the administrative block. Upon detection of any gas leak, the technology line shall be stopped until the leak is fixed.
- Light fixtures of explosion-proof design shall be installed by combustion furnaces that are switched on before the furnace starts to operate. Light fixture switches shall be installed at the entrance to production premises.
- Fire-hazardous premises are protected by automatic fire-alarm installations, their signaling channeled to the control room in the administrative block. Iin case of fire ventilation systems switch on automatically.
- Fire fighting boards are placed on the premises and by the side of production facilities, each having primary fire fighting tools to be used to extinguish initial fire ourbreaks (extinguishers, mats, etc.).

Maximum ground surface concentrations due to emissions from registered

sources and the existing background pollution do not exceed prescribed hygienic norms of atmospheric air quality.

All the production drains go to the local treatment facilities.

Wastes formed in the course of producing aluminium cans exert minimum effects on the environment, provided the requirements to their temporary accumulation, storage and periodic disposal are met.

The level of environmental risk does not increase in the course of organizing aluminium cans production facilities. Respectively, there is no increased risk of crisis development of the state of natural complexes and human life quality.

Principal factors controlling the environmental impact during the construction phase are the local short-time atmospheric pollution due to operations of heavy duty construction machines and formation of short-lived local zones of acoustic discomfort while they operate.

11. STATEMENT OF ENVIRONMENTAL CONSEQUENCES OF ACTIVITIES '

The Project envisages constructing new production block and refurbishing the existing administrative block to organize production of aluminium beverage cans.

The capacity of the production facilities is 950 Mil cans a year.

List of the project environmental impacts:

- Land use parameters never change. No extra land allocation is needed. No non-recyclable solid wastes are formed. The refurbishment and capital construction planned do not affect the geological environment. Dynamic ground loads will not exceed the regulation level standard effects.
- Starting aluminium cans production facilities will produce no hazardous effects on soils, the technogenic environment, flora and fauna outside the industrial site.
- Scheme of surface drains evacuation from the industrial site shall not change in the result of project implementation.
- All the industrial sewage shall go to the local treatment facilities first and then shall be dumped to collector, while the level of polluting substances in them shall be retained within permissible concentrations.
- Production facilities shall not generate any excessive noise, vibration, specific electric and electromagnetic fields outside the production block.
- Organizing modern production facilities for aluminium beverage cans will positively affect the social environment, since population is offered high quality products and new jobs are formed.
- Environmental impact is limited to atmospheric emissions within permissible limits.
- Registered emission sources stay within the site and do not affect the position of the sanitary protection zone boundaries.

Constructing and launching the enterprise will follow the requirements by standards 180 of the 14000 series.

Experience available from operating similar technology lines demonstrates that, provided these meet modern requirements while the equipment is run and maintained by qualified personnel, technological routines are adhered to, labor safety, sanitary and site security standards are maintained, such technology lines remain environmentally safe.

Ways and means are envisaged to monitor and control the state of the environment in the enterprise area.

The Customer pledges to publish the Statement on Environmental Consequences in the media.

Project solutions shall be implemented in accordance with norms and regulations on protection of the environment and environmental safety during every stage of the facility construction and operation.

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Project Chief Engineer	I.V. Pinchuk