

Regional Director
for Environmental Protection
in Wrocław
WOOS. 4233.8.2013.LCK.54

[stamp:

Sweco Hydroprojekt Kraków Sp. z o.o.

Received on: 2015-10-06; App.:

Case ref. No.: HK-2346/325/2053/15]

Wrocław, September 30th, 2015

DECISION

Under Article 71 Par. 2 Subpar. 1, Article 75 Par. 1 Subpar. 1a tiret fifth, Article 75 Par. 1 Subpar. 1i as well as Article 82 and Article 85 of the Act of October 3rd, 2008 *on the Provision of Information on the Environment and its Protection, Public Participation in Environmental Protection and Environmental Impact Assessments* (Journal of Laws of 2013, item 1235 as amended) in connection with Article 104 § 1 and Article 108 §1 of the Law of 14 June 1960 – *Administrative Procedure Code* (Journal of Laws of 2013, item 267 as amended) as well as § 2 Par. 1 Subpar. 35 and §2 Par.1 Subpar. 36 of the Regulation of the Council of Ministers of November 9th, 2010 *determining the types of projects that may significantly affect the environment* (Journal of Laws No. 213, item 1397 as amended), after considering the application of the Director of the Regional Water Management Authority in Wrocław, submitted on October 28th, 2013 (letter of October 22nd, 2013, ref. No.: HK-2346/125/2323/13) by an Attorney, Mr. Jarosław Maciaś, supplemented on November 15th, 2013 (letter of November 13th, 2013, ref. No.: HK-2362/134/2504/13) concerning issuing a final decision on the environmental conditions and defining the scope of the environmental impact report for the undertaking entitled: **“Construction of ‘Szalejów Górny’ - a dry flood control reservoir on the Bystrzyca Dusznicka river”**,

I determine

environmental conditions for the undertaking entitled: “Construction of ‘Szalejów Górny’ - a dry flood control reservoir on the Bystrzyca Dusznicka river”, according to the most favourable scenario to the environment.

I. I define:

1. The type and location of the undertaking:

The subject of the undertaking is the construction of “Szalejów Górny” – a dry flood control reservoir on the Bystrzyca Dusznicka river, with the accompanying infrastructure, in the Szalejów Górny village and Szalejów Dolny village, Kłodzko Municipality, Kłodzko district, Lower Silesian Province. The Bystrzyca Dusznicka river is a left-hand side tributary of the Nysa Kłodzka river. The dam cross-section of the reservoir was adopted at chainage km 8+910 of Bystrzyca Dusznicka. In administrative terms, the

investment is located within the boundaries of Kłodzko Municipality, on the plots located in the precinct Szalejów Górny and Szalejów Dolny.

2. Area use conditions during the undertaking implementation, with special consideration for the need to protect valuable environmental qualities, natural resources and monuments and to limit disruptions to the adjacent areas:

- 2.1 The works shall be performed in the daytime.
- 2.2 The removal of trees and shrubs in the reservoir basin shall be performed only in the zone characterized by $Q_p=10\%$ flooding probability and in places where the planned facilities (the dam, new beds, bank trims, infrastructure) are going to be constructed.
- 2.3 The removal of the trees and shrubs colliding with undertaking implementation during the period from March 15th to August 15th shall be performed under the supervision of an expert ornithologist, who prior to the removal shall inspect the trees in terms of birds presence, and if their presence is confirmed – he shall specify a permissible period for carrying out the removal. On other days (the period from August 15th to March 15th) a/m supervision is not required.
- 2.4 The removal of trees with the circumference at breast height exceeding 50 cm shall be performed under the supervision of an expert chiropterologist, who shall inspect the trees in terms of bat presence before the removal. If bat presence is confirmed, the chiropterologist shall indicate the permissible period and manner of performing the removal.
- 2.5 The stubbing of roots of removed trees and shrubs growing on the stream bed slopes shall be performed beyond the period lasting from March 1st to May 30th (the optimum period is from June 1st to August 30th).
- 2.6 The boundaries of the following natural habitats: *91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*, *9180 *Tilio-Acerion* forests of slopes, screes and ravines (*Tilio platyphyllis-Acerion pseudoplatani*) and 9170 *Galio-Carpinetum* oak-hornbeam forests, which border on the area anticipated for works performance, shall be marked on site with a phytosociologist's participation in a manner visible to works contractors. This shall be done before commencing the works. Do not locate construction site backyards or access roads nor store materials within the boundaries of habitat swathes anticipated for retaining.
- 2.7 The earthworks in the area of root clumps of trees and shrubs anticipated for retaining shall be performed manually.
- 2.8 Tree trunks present within the works corridor or in the immediate vicinity of the works and therefore exposed to mechanical damage shall be protected against damage at least to a height of 1.5 m above ground level.
- 2.9 Do not store materials or mark new transport routes within 1 m from tree trunks and shrubs.
- 2.10 The works related to topsoil removal shall be performed in the period from August 15th to March 15th.
- 2.11 The top layer of soil shall be collected before commencing the works and stored in heaps near the works corridor. Until the soil is used again to grade the area, it shall be

maintained in an appropriate humidity (do not let it dry - sprinkle as necessary) and temperature (protect against freezing, e.g. by using straw mats).

- 2.12 Excavations and other places which might constitute traps for animals shall be inspected at least once a day. Any animals found there shall be immediately caught and released beyond the investment area. The last inspection of animal presence in the excavations shall be performed directly before backfilling the excavations or filling them with construction materials.
- 2.13 Delivery of materials and traffic of vehicles serving the investment shall use in the first place the existing public, forest and dirt roads. If it becomes necessary to perform an additional access road to the investment area, it shall be routed along the shortest section possible, running beyond the boundaries of the habitats mentioned in clause I.2.6. The road shall be covered with temporary pavements made of slabs or boards, which shall be removed after works completion.
- 2.14 Temporary roads in the reservoir basin shall be liquidated immediately after works completion.
- 2.15 It is forbidden to run wheeled vehicles in the stream and to move earth, gravel and stone masses by pushing the material in the watercourse bed. It is inadmissible to route access roads in the watercourse bed, except for the areas where crossovers are to be set out e.g. in the form of fords. The equipment shall enter from the banks.
- 2.16 Do not collect stones, gravels or other materials constituting the bottom material of the Bystrzyca Dusznicka watercourse bed.
- 2.17 Do not perform works in watercourse beds in the period from March 1st to May 30th. The works shall be maximally reduced in the period from September 1st to the end of February.
- 2.18 The works in watercourse beds shall be performed under an ichthyologist's supervision (during works performance, the visits shall take place no rarer than once in 3 days).
- 2.19 Any possible works in the watercourses shall be performed section by section (beginning with the sections located in the upper parts of the watercourses) and on one side at a time, preserving the hydrological continuity of the watercourses, and during low water levels appropriate depths for fish fauna living shall be maintained as indicated by an ichthyologist. Moreover, watercourse waters shall be protected against contamination by separating them from the works performance site (e.g. using a cofferdam made of a local material or running the waters through a pipeline). The above guidelines do not refer to newly formed watercourse sections.
- 2.20 Fish fauna behaviour shall be constantly observed on the section downstream of the performed works. The inspections shall be conducted by an ichthyologist at least once in 3 days on the section of up to 500 m downstream of the works performance site. If it is noticed that the fish are dying, the works shall be interrupted immediately and the ichthyologist's directions shall be strictly followed.
- 2.21 Suspension concentration in the Bystrzyca Dusznicka river stream shall be controlled in a spot located 1 km downstream of the works performance site. The control shall

take place every 14 days or more frequently. If suspension concentration exceeds 40 mg/l, the works shall be interrupted for a period indicated by the ichthyologist.

- 2.22 Storage sites for bulk materials and production sites of construction materials (concrete mixes, prefabricated units, aggregates etc.) shall be located no closer than 100 m from the riverbed.
- 2.23 After works completion, the area shall be cleared and practices supporting the restoration of green areas shall be performed, including sowing with the use of native species complying with habitat conditions. The species for sowing shall be selected in cooperation with a botanist.
- 2.24 The first transfer of waters from the temporary riverbed to the inflow bed on the dam's bottom drain valve shall be performed in the period from June 1st to the end of February (the optimum period is from June 1st to August 31st).
- 2.25 Information about the arrangements concerning the manner and scope of performing the measures referred to in clause I.2.3, I.2.4, I.2.6 and I.2.8 as well as documents confirming the participation of specialists (e.g. a protocol of the arrangements and/or a statement of the specialist confirming appropriate measure performance) shall be submitted to the Regional Director for Environmental Protection in Wrocław within 30 days of making and/or implementing the arrangements.
- 2.26 An inspection to be carried out with the participation of a mammologist to identify any existing shelters, dens of otters and beavers before commencing the construction stage. If any shelters or dens of a/m animal species used during the period of works are inventoried, they should be marked and protected from destruction, while the works within their location should be carried out in the manner instructed by a/m specialist.
- 2.27 The construction site backyard and an access road to the construction site backyard shall be completed before commencing the construction stage. The construction site backyard shall be used to store construction materials, park and fill up machinery, perform running repairs of machines and devices as well as place staff and common use facilities (changing rooms, office, portable toilets) and waste containers.
- 2.28 The construction site backyard area to be used by machines and cars shall be protected from the ground. Every day, after completion of works, and in particular on non-working days, machines and cars shall be parked in a designated area within the construction site backyard – part of the background area should be separated and insulated from the ground to serve for operation and refuelling of machines.
- 2.29 Quantity of collected earth masses shall be limited to the quantity that is necessary to build the dam and the accompanying structures, materials should be collected in the following order:
 - the soil excavated during the rubble catcher construction to be used first,
 - afterwards, use the earth material within the area located closer to the dam in the reservoir basin (after stubbing of the basin within the Q10% area),
 - if this is insufficient for the dam construction, use the other areas which have been used so far in the best way for agriculture purposes, free from trees and shrubs.

- 2.30 Earth masses shall be collected from the area located at least 50 m away from the river (except for the rubble catcher and the excavation for the dam) with the application of protections from the water side (fencing, band ditches, etc.).
- 2.31 During the valley slopes formation (including for the purposes of acquiring materials for the construction) slope inclinations should be properly shaped, preferably in the form of a terrace, in such a way, so that the slope angle would not be more than 30°. Such grading works should consider also terrains with mass movement predispositions (the south-east part of the designed reservoir).
- 2.32 Any earthworks related to the construction of the designed investment should be performed under continuous supervision of an authorised and experienced geologist.
- 2.33 The Contractor is obliged to regularly remove the dirt formed on the roads in connection with the traffic of cars and machines related to the implementation of the designed investment.
- 2.34 The construction site backyard shall be located on plot No 804/8 (adjacent to plots No 770 and 804/7), precinct Szalejów Górny.
- 2.35 The technical state of the working construction and transport machines shall be checked regularly to eliminate leaks of hydrocarbon petroleum derivatives into the substrate.
- 2.36 In the event of any breakdown in the scope of contamination with petroleum derivatives, the ground contaminated as a result of the breakdown shall be removed immediately and delivered to entities duly authorised to carry out its further management.
- 2.37 A station with sorbent used to eliminate any leaks and spillages of petroleum derivatives should be located near the machinery parking and filling up site.
- 2.38 The construction site backyard shall be equipped with tight domestic waste-water holding tanks, the content of which shall be handed over to entities with appropriate permits to manage it.
- 2.39 The drainage duration times shall be as short as possible and one shall apply methods limiting the quantity of the water pumped out and protecting it against contamination.
- 2.40 Only means of transport in working order and devices with certified low sound emission shall be used. Defective devices which might cause increased noise levels in the surroundings shall be eliminated from the works.
- 2.41 During the course of construction works, one shall limit the consequences of secondary dust contamination by observing high standards of works and in particular by systematic clearance of the construction site, sprinkling dusty road surfaces and removal of contamination using mechanical devices (special purpose vehicles). In the places where heavy equipment exits the construction site, one shall install stations for preliminary cleaning of vehicle wheels by removing the ground and mud which might constitute a source of unorganized dust emission from road surfaces.
- 2.42 Waste generated during the implementation of the investment shall be segregated and selectively stored in containers or in designated and suitably adjusted locations, in conditions which prevent dust emission and prevent the wind picking up light

fractions resulting in a negative environmental impact. One shall also ensure regular waste collection by entities authorised to manage it further.

- 2.43 Hazardous waste shall be segregated and stored separately in designated containers placed on hardened ground, secured against unauthorised access until handed over to entities authorised to manage such waste further.

3. Environmental protection requirements necessary during the undertaking operation stage:

- 3.1 The water shall be held in the reservoir for no longer than 7 days (168 hours) or, in emergency situations, 500 hours.
- 3.2 The minimum acceptable flow downstream of the dam shall be maintained.
- 3.3 The rock rubble shall be removed from the rubble catcher maximally once per 5 years.
- 3.4 The maintenance works in the reservoir basin shall be performed beyond the period lasting from April 1st to May 15th.
- 3.5 The maintenance works in the rubble catcher shall be performed under ichthyological supervision.
- 3.6 The sluice device shall be cleaned regularly (at least once a year), with special consideration for the flow-differentiating sills and the fish migration slots in those sills.
- 3.7 The dumps in the area of the stilling basin outlet from the tailwater side and in the area of the sluice device inlet from the headwater side shall be removed mechanically.
- 3.8 The areas located within the dry reservoir to which the Investor has a legal title shall be used as a pasture or hay meadows. It is recommended to perform mowing annually (in any case, no rarer than once in 2 years) in the period from September 1st to September 30th. 5-10% of the meadow surface area shall be left unmowed (each time in a different location) and the biomass shall be disposed.
- 3.9 Using the rubble catcher for angling purposes is forbidden.
- 3.10 Investment lighting shall be limited only to the dam crest and body, the manoeuvring site at the bottom sluice inlet, the parking lot next to the backyard building, the road along the dam crest and the road connecting the dam with the backyard building. One shall apply lighting fixtures with reflectors reducing light spreading beyond the area anticipated to be lit.
- 3.11 Information about the arrangements concerning the manner and scope of performing the measures referred to in clause I.3.5 as well as documents confirming the participation of specialists (e.g. a protocol of the arrangements and/or a statement of the specialist confirming appropriate measure performance) shall be submitted to the Regional Director for Environmental Protection in Wrocław within 30 days of making and/or implementing the arrangements.

4. Environmental protection requirements necessary to be taken into account in the documentation for issuing the decision referred to in Article 72 Par. 1 of the Act on the Provision of Information on the Environment and its Protection, Public Participation in Environmental Protection and Environmental Impact Assessments:

- 4.1 The minimum acceptable flow downstream of the dam on the Bystrzyca Dusznicka river shall be maintained.
- 4.2 A series of permanent sills shall be performed in the sluice channel bottom. The sills shall be 0.1 m high, positioned at right angles to the current and equipped with a 0.9-0.95 m wide slot. The slots in the neighbouring baffles shall be located opposite.
- 4.3 The sluice device outlet shall lead directly to the stilling basin in such a way, so as to keep continuity of water table.
- 4.4 The slots of the trusses at the sluice device water inlet from the headwater side should be not smaller than 0.35 m.
- 4.5 Concerning the sections where the old bed shall be retained, do not interfere with the watercourse bottom, do not change the watercourse bed width and limit the reinforcements only to trims made of crushed stone on concave banks (the trims shall be laid on geotextile to a maximum height of 2 m or to the watercourse bank height).
- 4.6 Earth masses not built into the dam and other structures (e.g. road) shall be used to grade the area, including the area from which earth masses were obtained (except for the rubble catcher).
- 4.7 Free flow to be guaranteed, without water damming with flow probability corresponding to the flow of approx. Q60%, i.e. 15 m³/s.
- 4.8 The river section marked as B-B', i.e. from the connection with the designed riverbed to the monumental bridge marked as N-9, shall not be backfilled.

II. I find:

1. Environmental compensation to be necessary:

- 1.1 Tree and shrub species characteristic for habitats *91E0 and *9180 shall be planted before investment implementation completion to compensate for the removal of trees and shrubs in connection with investment implementation. Trees and shrubs characteristic for habitat *91E0 shall be planted within the boundaries of lots No 802/13 and 804/9 (the swathe in the southern part of the plot), precinct Szalejów Górny, while trees and shrubs characteristic for habitat *9180 shall be planted within boundaries of plots No 409 and 518/2 (the swathes in the southern part of the plot), precinct Szalejów Górny. The above activities shall be performed with the participation of a phytosociologist, on a total surface area of at least 3.9 ha. The planted species composition should be approved by a phytosociologist.
- 1.2 At least 40 nest boxes adjusted to the requirements of Grey wagtail *Motacilla cinerea* and White-throated dipper *Cinclus cinclus* shall be hung under an ornithologist's supervision in a location approved by an ornithologist as an appropriate one for the abovementioned species, in the upstream part of the Bystrzyca Dusznicka river (beyond the tree and shrub removal area).
- 1.3 After completing the undertaking construction stage, 50 nest boxes for bats shall be

hung in the investment area and its neighbourhood (within up to 1 km from the undertaking) in early spring. The boxes shall be hung in groups of 6-8 boxes each. The detailed location and model of the boxes should take into account the requirements of individual bat species. A chiropterologist should control if the location and model of the boxes comply with bat requirements. The chiropterologist should also directly supervise their hanging as well as their maintenance at the investment operation stage. Box maintenance shall be limited to repairs consisting in improving the tightness and supplementing the missing elements (do not use any chemical agents for the maintenance) as well as cleaning the faeces off the boxes. If any box is more seriously damaged or destroyed, it shall be replaced with a new one. Inspection of the boxes shall begin one year after hanging them and be conducted once a year, in the period from the end of July to the end of August, for at least 5 years.

- 1.4 Information about the arrangements concerning the performance of the environmental compensation measures referred to in clause II.1.1 – II.1.3 as well as documents confirming the participation of specialists (e.g. a protocol of the arrangements and/or a statement of the specialist confirming appropriate measure performance) shall be submitted to the Regional Director for Environmental Protection within 30 days of making and/or implementing the arrangements.

2. The need to monitor the environmental impact of the undertaking:

- 2.1 After completion of the undertaking construction stage, the works carried out in connection with the environmental compensation of habitats 91E0 and 9180 shall be evaluated on selected area by the end of the fifth and tenth calendar year. If the compensation process is incorrect, the monitoring period shall be modified and extended for further years in order to observe the succession process in the reconstructed swathe and the modification of the compensation measures. The key objective is to achieve at least the preservation state U1 (improper) in the reconstructed swathes of habitats 9180 and 91E0.
- 2.2 After completion of the undertaking construction stage, the natural habitat preservation state, i.e. 3260 water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation, shall be monitored by the end of the second, fifth and tenth calendar year. Monitoring shall be carried out on the 1.65 km river section, from the road bridge on the route from Polanica-Zdrój to Szalejów Górny to the bridge on the dirt road, in accordance with the methodology recommended by the Chief Inspectorate for Environmental Protection (GIOŚ).
- 2.3 Directly after completing dam construction and in the trout spawning period, one shall check the effectiveness of the devices supporting animal migration in terms of fish fauna movement upstream and downstream in the watercourse. The control shall be conducted with the participation of an expert ichthyologist. If their defective functioning causing fish fauna migration difficulties is found, their operation shall be improved immediately.
- 2.4 The methodology of performing the measures consisting in checking the effectiveness of the devices supporting fish migration referred to in clause II.2.3 shall be submitted to

the Regional Director for Environmental Protection in Wrocław for approval no later than 60 days before the planned monitoring commencement date.

- 2.5 Information about the arrangements concerning the manner and scope of performing the measures referred to in clause II.2.1, II.2.2 and II.2.3 as well as documents confirming the participation of specialists (e.g. a protocol of the arrangements and/or a statement of the specialist confirming appropriate measure performance) shall be submitted to the Regional Director for Environmental Protection in Wrocław within 30 days of making and/or implementing the arrangements.

III. I do not impose an obligation to conduct an Environmental Impact Assessment within the scope of the proceedings concerning issuing the decisions referred to in Article 72 Par. 1 of the Act on the Provision of Information on the Environment and its Protection, Public Participation in Environmental Protection and Environmental Impact Assessments.

IV. The Appendix constituting undertaking characterization is an integral part of the decision.

V. The decision is made immediately enforceable.

JUSTIFICATION

Mr. Jarosław Maciaś, by an application submitted on October 22nd, 2013 (received on October 28th, 2013) and supplemented in the formal scope on November 15th, 2013 (letter of November 13th, 2013 ref. No.: HK-2362/134/2504/13), requested the Regional Director for Environmental Protection in Wrocław for issuing a decision on the environmental conditions for the undertaking entitled: **“Construction ‘Szalejów Górny’ - a of dry flood control reservoir on the Bystrzyca Dusznicka river”** and for defining the scope of the environmental impact report under Article 69 Par. 1 of the Act of October 3rd, 2008 *on the Provision of Information on the Environment and its Protection, Public Participation in Environmental Protection and Environmental Impact Assessments*, hereinafter referred to as the EPA Act.

The application indicated that the undertakings which might have a significant impact on the environment and were covered by the application included:

- a dam as a flood protection facility and a damming structure with the damming height exceeding 5 m,
- deforestation with a surface area exceeding 1 ha and deforestation aimed at changing the manner of area use concerning forests which constitute an enclave among farmlands and also deforestation aimed at changing the manner of area use concerning riparian forests,
- service roads with a hard pavement due to the length exceeding 1 km.

After analysing the submitted documents, the Regional Director for Environmental Protection in Wrocław, by letter ref. No. WOŚ.4233.8.2013.ŁCK.1, requested, under Article 64 § 2 of the *Administrative Procedure Code*, for the justification of the application, indicating the personal and subject matter competence of the authority to issue the decisions on the environmental conditions under Article 75 Par. 1 Subpar. 1i of the EPA Act for all tasks

covered by the application, and for the submission of the appendixes, referred to in Article 74 of the EPA Act, for the other functionally connected structures. In a letter of November 13th, 2013 (received on November 15th, 2013) with ref. No. HK-2362/134/2504/13, the applicant stated that all undertakings covered by the application would be implemented on the basis of the Act of July 8th, 2010 *special rules concerning the preparation of investments related to flood defences* (Journal of Laws of 2005, item 966), hereinafter referred to as the Flood Act. The roads with a hard pavement listed in the application shall be facilities functionally connected with the undertaking and shall be used for operating the designed dry reservoir. The personal and subject matter competence of the Regional Director for Environmental Protection in Wrocław concerning issuing a decision on the environmental conditions under Article 75 Par. 1 Subpar. 1i of the EPA Act for the task covering the removal of trees and shrubs was justified with the provisions of Article 29 Par. 1 of the Flood Act, indicating that, according to the cited regulation, “Provisions concerning protection of agricultural and forest lands do not apply to the agricultural and forest lands covered by an investment project implementation permit”.

The subject of the undertaking is the construction of a dry flood control reservoir along with accompanying infrastructure on the Bystrzyca Dusznicka river located in the Szalejów Górny and Szalejów Dolny villages, the Kłodzko Municipality. The planned reservoir, due to its volume (the maximum reservoir capacity is more than 10 M m³) and due to the earth-fill dam implemented within the scope of the planned undertaking, with a periodic water damming exceeding 5 m qualifies as an undertaking which might have a potential significant impact on the environment, referred to in § 2 Par. 1 Subpar. 35 and §2 Par.1 Subpar. 36 of the Regulation of the Council of Ministers of November 9th, 2010 *on determining the types of projects which may significantly affect the environment*, hereinafter referred to as the “EPA Regulation”.

The planned undertaking is a project in the scope of flood protection facilities within the meaning of the Flood Act. Pursuant to the statutory disposition of Article 75 Par. 1 Subpar. 1a tiret fifth and Article 75 Par. 1 Subpar. 1i of the EPA Act, the relevant authority for issuing the decision on the environmental conditions is the Regional Director for Environmental Protection in Wrocław.

The parties to the proceedings were identified by the authority on the basis of the information contained in the application as well as land survey and height maps and maps for design purposes, with the investment scope and impact zones marked, attached to the application. The parties are: the Applicant as well as owners, holders of perpetual usufruct rights and administrators of real properties located within the investment area and its impact zone, including the case of a serious breakdown. In the administrative proceedings in question, the number of parties exceeds 20. In connection with the above, and pursuant to the statutory disposition of Article 74 Par. 3 of the EPA Act, the authority informed the parties to the proceedings about all actions of the public administration authorities pursuant to the principle set forth in Article 49 of the *Administrative Procedure Code* by announcements. The announcements were placed for 14 days on the notice boards in the seats of: the Kłodzko Municipality Office, the Kłodzko City Hall, the Regional Directorate for Environmental Protection in Wrocław, as well as in the Bulletin of Public Information (BPI) on the website of the Regional Directorate for Environmental Protection in Wrocław: wroclaw.rdos.gov.pl.

By a notice of November 20th, 2013 (ref. No.: WOOŚ.4233.8.2013.ŁCK.2) and an announcement of November 20th, 2013 (ref. No.: WOOŚ.4233.8.2013.ŁCK.3), the authority informed the Applicant's Attorney and the remaining parties to the proceedings about instituting the proceedings concerning issuing the decision on the environmental conditions for the abovementioned undertaking.

Pursuant to Article 21 of the EPA Act, the information on: the application, the decision about the report scope and the submitted report was put on a publicly available list of data on the documents containing information about the environment and its protection, under their respective numbers: 619/2013, 832/2013, 23/2014.

On November 22nd, 2013 the Regional Director for Environmental Protection in Wrocław issued decision ref. No: WOOŚ.4233.8.2013.ŁCK.5, in which he defined the scope of the report on the impact of the undertaking in question on the environment.

In fulfilment of the statutory disposition contained in Article 69 Par.4 of the EPA Act, by the decision of November 22nd, 2013 (ref. No.: WOOŚ.4233.8.2013.ŁCK.6) the authority suspended the proceedings regarding the issuance of the decision on environmental conditions for the undertaking in question by the time of submitting by the applicant the environmental impact report. The environmental impact report entitled: "Development of the design documentation - the construction design and the execution design with associated services for the task entitled: Construction of "Szalejów Górny" dry reservoir on the Bystrzyca Dusznicka river" – SWECO Hydroprojekt Kraków Sp. z o.o., under the supervision of Eng. Jacek Bonenberg PhD November 2013 – was received on February 10th, 2014 along with a letter of February 7th, 2014 (ref. No.: HK-2346/155/258/14), thus the reasons of suspending the proceedings ceased.

By the decision of February 11th, 2014, ref. No.: WOOŚ.4233.8.2013.ŁCK.8, the authority initiated ex officio the proceedings regarding the issuance of decision on environmental conditions.

On February 27th, 2014 Mr. Ireneusz Kulig, being a party to these proceedings, raised remarks to the Report scope and the manner of performed environmental compensation. The authority, having analysed the submitted evidentiary material and considering also the remarks of the Party, by the letter of March 4th, 2014, ref. No.: WOOŚ.4233.8.2013.ŁCK.10, requested the Applicant to supplement the evidentiary material, i.a. as regards: detailed characteristics of the undertaking, its impacts and cumulative impacts, as well as measures minimising and compensating negative impacts, methodologies, submission of graphical appendixes concerning the scope of works with marked fauna and flora inventory, the scope of tree removal, detailed assessment of impact of the undertaking on the environmental purposes within the affected planning boundaries of the undertaking, the environmental compensation comprising full plant growing season and activity periods of particular animal groups, and to exclude from the application the collection of earth masses.

On March 19th, 2014 the Regional Directorate for Environmental Protection in Wrocław received the remarks of Mrs. Teresa Lutosławska, the Szalejów Górny Village Administrator. The Village Administrator raised i.a. the following issues: the legitimacy of investment project implementation, the resources of natural environmental within the area covered by the

application, the scope of the environmental inventory submitted in the report, the absence of public consultation.

By the letter of April 22nd, 2014, ref. No.: WOOŚ.4233.8.2013.ŁCK.11, the authority referred to the remarks raised. It also informed that the defects in the submitted evidentiary material made it impossible for the authority to undertake further administrative actions. In addition, it stated that the submitted documentation did not have full data being significant for the case in question, such as the raised issue of the environmental inventory. The authority explained that on the basis of the documents submitted so far, it had been impossible to properly assess the state of the natural environment on the area intended for the investment project in question, and due to this fact it called the Applicant to supplement the evidentiary material accordingly. It noted that the environmental impact report had to be a reliable and coherent document, while its elements should be described transparently and legitimately in their content and form. The authority ensured that basing on the documents considered as sufficient only, it would be able to carry out a reliable environmental impact assessment and conduct public consultation, namely make public the information about the planned undertaking, including in the press.

The supplementation was submitted by the letter of April 24th, 2014, ref. No.: HK-2362/181/802/14, what the parties to the proceedings were informed about by the authority through an announcement of April 28th, 2014, ref. No.: WOOŚ.4233.8.2013.ŁCK.14. Remarks to the supplementation were again raised by Mr. Ireneusz Kulig. He raised the issue of legitimacy of the investment project implementation and the scope and date of conducted environmental inventory. Also the present authority considered the evidentiary material still as insufficient. With regard to the foregoing, it passed the remarks of the Party and requested to re-supplement the information contained in the Report and its supplementation, among others as regards: the characteristics of the undertaking, the reservoir operation and functioning, characteristic flows, operation of particular elements, the assessment of the impact of the undertaking on the environmental purposes designed for part of the waters within the boundaries of which the undertaking is implemented and remains within the range of its impact, the submission of complete environmental inventory, determining the research methodology, showing the environmental inventory results, re-analysing the impact of the undertaking at the implementation and exploitation stage on the environment, measures minimising and compensating negative impacts, the assessment of impact of the undertaking on the hydrological regime of the Bystrzyca Dusznicka river, as well as to exclude the extraction of earth masses from the scope of the investment project.

In response to the letter of the present authority and the remarks of the Party, the Applicant with the letter of October 24th, 2014, ref. No.: HK-2346/239/2188/14 (received on October 28th, 2014), submitted consolidated Report on the impact of the undertaking in question on the environment entitled: "Development of the design documentation - the construction design and the execution design with associated services for the task entitled: Construction of "Szalejów Górny" dry reservoir on the Bystrzyca Dusznicka river" – SWECO Hydroprojekt Kraków Sp. z o.o., under the supervision of Eng. Jacek Bonenberg PhD, October 2014, hereinafter referred to as the "Report". The Applicant did not exclude from the application scope the acquisition of earth masses for the dam construction. Referring to the act of June 9th, 2011 Geological and

mining law (Journal of Laws of 2014, item 613, as amended, he noted that the planned management of earth masses was not an extraction of minerals for the purposes of financial gain, but only a displacement of earth masses to the dam embankment. With regard to this case, the authority, by the letter of November 14th, 2014, ref. No.: WOOŚ.4233.8.2013.ŁCK.24, requested the Director of the Faculty of Geology at the Marshal's Office of the Lower Silesian Province to provide the information whether the acquisition of minerals from the investment project area and using them for the purposes of the investment project implementation was an extraction and thus whether it required an obtainment of a concession. In response the geological authority noted that the planned works would not consist in extracting of minerals from documented deposit defined in Article 6 Par.1 Sub-par. 19 of the act Geological and mining law as natural accumulation of minerals, rocks and other substances, the extraction of which may bring an economic benefit but it would consist in displacing of masses in connection with on-going construction works. Taking into account the above and the fact that the whole earth masses are to be managed within the project area, the Authority stated that in order to implement the undertaking in question it was not necessary to obtain the concession for extraction of mineral from the deposit.

The Applicant modified in the Report the reservoir capacity. Nevertheless, the Report still had to be supplemented as regards the impact on flora and fauna, minimising measures, monitoring and the impact of increased reservoir capacity on the flows of waters with certain probability. The evidentiary material was supplemented within this scope – the letter of January 12th, 2015 (received on January 14th, 2015), ref. No.: HK-2346/254/073/15, and the letter of January 23rd, 2015 (received on January 26th, 2015), ref. No.: HK-2346/255/162/15.

The Authority effectively delivered the supplemented evidentiary material (the Report with supplementations) to Mr. Ireneusz Kulig (on February 12th, 2015) and to Mrs. Teresa Lutosławska, the Szalejów Górny Village Administrator (on February 12th, 2015). The Parties did not raise any more remarks to the case, what the authority considered as without remarks. Pursuant to the statutory disposition of Article 77 Par. 1 Subpar. 2 in connection with Article 78 Par. 1 Subpar. 1 in connection with Article 75 Par. 1 Subpar. 1a tiret fifth of the EPA Act, the Regional Director for Environmental Protection in Wrocław applied to the Lower Silesian State Sanitary Inspector in Wrocław for an opinion before issuing a decision on the environmental conditions, informing the parties to the proceedings of that fact in an announcement of January 30th, 2015 (ref. No.: WOOŚ.4233.8.2013.ŁCK.31).

The Lower Silesian State Sanitary Inspector in Wrocław issued a decision of February 11th, 2015 (received on February 16th, 2015) with ref. No. ZNS-9027.3.176.2015.JŁ4, in which it approved the investment implementation conditions in terms of hygienic and health requirements.

With regard to an intervention by phone of the Szalejów Górny Inhabitant, the Applicant, by the letter of February 26th, 2015 (received on March 6th, 2015), ref. No: HK-2346/270/462/15, and by the letter of March 2nd, 2015 (received on March 9th, 2015), ref. No.: HK-2346/277/474/15, provided relevant explanations as to the intended purpose of the reservoir, its recreational use and the size of acquired exploitation material, and also submitted an updated list of plots. The authority informed the parties to the proceedings about the above in an announcement of March

12th, 2015, ref. No.: WOOS.4233.8.2013.LCK.35.

Basing on the foregoing, by the letter of March 12th, 2015 ref. No.: WOOS.4233.8.2013.LCK.34, the present authority repeatedly requested the Lower Silesian State Sanitary Inspector in Wrocław to issue an opinion before issuing a decision or to maintain the standpoint expressed in the decision of February 11th, 2015 (received on February 16th, 2015), ref. No.: ZNS.9027.3.176.2015.JŁ.

The Lower Silesian State Sanitary Inspector in Wrocław again expressed its standpoint. By the decision of March 20th, 2015 (received on March 25th, 2015), ref. No.: ZNS-9027.3.176.2015.JŁ, it approved the investment implementation conditions in terms of hygienic and health requirements.

Under Article 79 Par. 1 of the EPA Act, the Regional Director for Environmental Protection in Wrocław, on the basis of Article 33 of the cited Act, by an announcement of March 11th, 2015 (ref. No.: WOOS.4233.8.2013.LCK.33) published information about the planned undertaking, i.e. about:

- the commencement of conducting an Environmental Impact Assessment for the undertaking in question,
- instituting the proceedings,
- the subject of the decision to be issued on this matter,
- the relevant authority to issue the decision and the relevant authority to issue the opinion,
- the opportunity to review the necessary documentation of the case and the location where it is made available for review,
- the possibility of submitting remarks and motions,
- the manner and location for submitting remarks and motions, at the same time setting out a 21-day deadline for submitting them,
- the relevant authority to consider remarks and motions.

In the announcement, the authority indicated that the proceedings to issue a decision on the environmental conditions for the undertaking in question were conducted for the Regional Water Management Authority in Wrocław, on behalf of which Mr. Jarosław Maciaś is acting. It also clarified that the relevant authority to issue a decision on the environmental conditions for the planned undertaking which might always have a significant impact on the environment, under Article 75 Par. 1 Subpar. 1i and Article 75 Par. 1 Subpar. 1a tirt fifth of the EPA Act, was the Regional Director for Environmental Protection in Wrocław. Moreover, it informed about the requests to the Lower Silesian State Sanitary Inspector in Wrocław and about the decision issued. Additionally, it indicated that anyone might review the entire documentation collected for the case since the day of displaying the announcement publicly, in the seat of the Regional Directorate for Environmental Protection in Wrocław at Powstańców Warszawy Square 1, room No. 3018, from 7:30 am. to 3:30 pm. It announced the opportunity to submit, between March 18th, 2015 and April 7th, 2015 (incl.), remarks and motions pertaining to the planned undertaking in writing to the abovementioned address, verbally for the record or using electronic means of communication without the need to apply a safe electronic signature as referred to in the *Electronic Signature Act* of September 18th, 2001 (Journal of Laws of 2013,

item 262 as amended). It clarified that the Regional Director for Environmental Protection in Wrocław was the relevant authority to consider such remarks and motions, as indicated in the abovementioned announcement. The society was informed that remarks and motions submitted after the designated deadline would not be considered.

Basing on Article 3 Par. 1 Subpar. 11 of the EPA Act, the information on the planned undertaking was published through:

- publication on a notice board in the seat of the authority relevant in the case, i.e. the Regional Directorate for Environmental Protection in Wrocław,
- publication of the information on the website of the Bulletin of Public Information of the Regional Directorate for Environmental Protection in Wrocław (www.wroclaw.rdos.gov.pl),
- notification of the planned undertaking by an announcement in a manner customarily adopted at the implementation site of the planned undertaking by placing announcements on the notice boards of: the Kłodzko Municipality Office, the Kłodzko City Hall,
- publication in the press – in the Lower Silesian extra to *Gazeta Wyborcza*.

On March 17th, 2015, the announcement was published in the Lower Silesian extra to *Gazeta Wyborcza*. The announcement was put on the notice boards of the abovementioned Offices and in the BPI of the Regional Directorate for Environmental Protection in Wrocław between March 17th, 2015 and April 7th, 2015 (incl.).

No remarks or motions were submitted to the proceedings within the defined deadline.

With this regard, pursuant to the principle defined in Article 10 § 1 of the *Administrative Procedure Code*, the Regional Director for Environmental Protection in Wrocław, by a notice of April 28th, 2015 (ref. No.: WOOŚ.4233.8.2013.ŁCK.38) and an announcement of April 28th, 2015 (ref. No.: WOOŚ.4233.8.2013.ŁCK.39), informed the parties to the proceedings that a complete set of evidentiary material had been collected for the proceedings to issue a decision on the environmental conditions for the undertaking in question and that there was a possibility to express an opinion on the collected evidence and the reported demands. Remarks were raised by Mr. Andrzej Kalita and Mrs. Ewa Jarząbska-Kalita (letter of May 27th, 2015, received on May 29th, 2015). The authority explained to them that an attribute of a party to proceedings regarding environmental impact assessment is the entitlement of the Applicant and the entities holding property rights to the real property on which the investment project is planned and to entities holding property rights to the plots located on the area which is to be affected by the undertaking. It also noted that according to the submitted excerpt from the land register and the list of owners and holders of lands, Mr. Andrzej Kalita was a party to these proceedings, thus any explanations as to the remarks raised were provided to Mr. Andrzej Kalita.

The party requested in a/m letter i.a. for: verification of the project impact on bird species, including owl species, along with the verification of their distribution within the area of the project and in its vicinity (i.a. uninhabited household with buildings and an old house in shreds); verification of the distribution of the Castor fibre beaver species within the area intended for the investment and impact of the planned investment on that species; flood risk assessment for the planned investment area, including subject to flood risk and hazard map;

re-location of the construction site backyard near the building; impact of construction site closeness on the residents; construction of a dam on the Kłodzko foreland on the Nysa Kłodzka river, similar to that in Otmuchów.

The authority provided the remarks to the Applicant by the letter of June 8th, 2015, ref. No.: WOOŚ.4233.8.2013.ŁCK.42. The Applicant, referring to the evidentiary material submitted so far and basing on such material, by the letter of July 8th, 2015 (received on July 10th, 2015), corrected by the letter of July 21st, 2015 (July 23rd, 2015), ref. No.: HK-2346/309/1555/15, referred to the remarks raised. The information contained in that letter explained the issues presented in the evidentiary material submitted so far and did not introduce any new changes which would decide about the need to re-conduct the proceedings with the participation of the society.

The Regional Director for Environmental Protection in Wrocław, by the letter of August 3rd, 2015, ref. No: WOOŚ.4233.8.2013.ŁCK.46, basing on the explanations submitted by the Applicant, referred to the remarks raised. As regards the remarks concerning the investment impact on bird species, including owl species, and the verification of their distribution in the area and in the vicinity of the investment (i.a. an uninhabited household with buildings and an old house in shreds), as well as the distribution of the *Castor fiber* beaver species within the area intended for the investment and the investment impact on this species, he informed the Party that according to the explanations submitted by the Investor's Attorney a full environmental inventory of the area in question was carried out for the purposes of the Report. The field studies comprised among others an inventory of birds during all periods of their activity. They were carried out by an expert ornithologist, Marta Borowiec PhD, an employee of the Faculty of Biological Sciences at the University of Wrocław. He emphasized that although on the area intended for the construction of the "Szalejów Górny" dry flood storage reservoir the distribution of eagle-owl had been identified during the studies, the identification had been through identification of its droppings instead of direct observation. In addition, in the opinion of the a/m expert, this species is characterised by large territorial range, exceeding 10 km². However, it is not possible for that bird to nest at small distance from people's houses or in the vicinity, because it is very sensitive to startling and nests only in forest or rocky environment. Whereas their feeding grounds are open areas, if they are agricultural areas, it might appear near people's houses.

In addition, the authority confirmed that the studies had demonstrated the existence within the investment impact of the habitat (breeding and feeding grounds) of different bird species, i.e. the tawny owl *Strix aluco* protected under the Regulation of the Minister of Environment of October 6th, 2014 on the protection of animal species (Journal of Laws of 2014, item 1348). The environmental inventory, carried out for the purposes of the Report in question, also proved the distribution of the *Castor fiber* beaver species within the area planned for the investment, along with indication of i.a.: quantity, prevalence, the way of using the area by this species. The report on investment impact on environment included the results of conducted field studies and also indicated the minimising measures necessary to consider. Having analysed the Report by the interdisciplinary team of the Regional Directorate of Environmental Protection in Wrocław and on the basis of the said Report, it was stated that it was possible to assess the impact of the

planned investment on natural environment and to specify in the decision on environmental conditions the conditions referring to the design, realisation and operation stage of the investment.

Basing on the above, the authority concluded that the implementation of the investment in question should not disturb the balance in the natural environment or influence in a significant way the breeding and living of the abovementioned plant and animal species, provided that the conditions imposed in the decision on the environmental conditions and the conditions stemming from the binding legal regulation were taken into account. Referring to the assessment of flood risk, the authority noted that according to the documents submitted in the proceedings, including the Report on investment impact on environment, and the explanations in this regard, the flood risk assessment for the Kotlina Kłodzka had been the subject of the study entitled: "Flood protection of Kotlina Kłodzka – Feasibility Study. Dry flood storage reservoirs: Krosnowice, Szalejów Górny, Roztoki and Boboszów; and sub-basins of the Nysa Kłodzka, Biała Łądecka and Bystrzyca Dusznicka rivers. Sogreah Polska 2008". He stressed out that the basic function of the reservoir was not local, but trans-local flood protection of Kotlina Kłodzka and the city of Kłodzko, what was also confirmed in the draft document entitled: "Draft Flood Risk Management Plan for the Odra basin area", developed to the order of the National Directorate of Water Management by Grontmij Polska Sp. z o.o., hereinafter referred to as "Draft FRMP" – currently the draft document was published, which considers the remarks from the conducted public consultation, called "Flood Risk Management Plan" (this Plan will be adopted in December this year). The flood risk management plans (FRMP), which come into being basing on the flood risk and hazard maps indicated by the Party, constitute the documents which provide for measures aimed at realisation of the primary objectives of the flood risk management, which comprise i.a. hazard reduction (flood range), reduction of sensitivity of area at risk and raising ability to cope with flood risk. He underlined that according to the said Draft FRMP, the biggest flood hazard within the Kłodzko Municipality comes from the Nysa Kłodzka tributaries, i.e. Biała Łądecka and Bystrzyca Dusznicka. On the basis of that document he explained that for the proper protection of the Kotlina Kłodzka it was necessary to take further actions. It was proposed to undertake technical measures, such as the construction of four dry reservoirs on the Nysa Kłodzka tributaries (including the construction of dry flood storage reservoir on the Bystrzyca Dusznicka river in Szalejów), and to carry out activities supporting the flood protection the Kotlina Kłodzka, i.e. commencing works within the watercourses, such as flood protection drainage, regulatory and maintenance works. The Draft FRMP contained an analysis of the possibility to apply non-technical measures. The draft in question also contained an analysis of flood risk reduction effectiveness resulting from the protection/increase of forest retention, retention on urban areas. The conclusion drawn from the analysis, as presented in the Draft FRMP, indicate the lack of significant effectiveness of the measures within the scope of the protection/increase of forest retention, retention on urban areas within the problematic area. Those measures, along with the non-technical measures as regards the increase of resistance of the areas and structures to flood, are an important element of recommended activities supporting the achievement of the primary objectives, such as minimisation of existing flood risk and inhibition of flood risk increase. With reference to the

remark that the protection measures recommended in the Report do not seem quite effective, the authority explained that the Applicant had stated, basing on the information provided in the Report, that the households located downstream the dam would be protected with the reservoir at least in historical terms, corresponding to the last big flood, which took place in 1998. The reservoir shall reduce the design flow (corresponding to 1 in 200 years water, i.e. the flow equal to approx. 183 m³/s) to the permitted flow in the bed. With currently planned parameters, it shall be able to reduce the flow corresponding to the last big flood, which took place in 1998 (the flow slightly bigger than the flow corresponding to water occurring once per 200 years and amounts to 213.6 m³/s). It emphasised at this point that the reservoir had been designed in such a way, so as to reduce and safely pass a flood wave corresponding to the control flow, which in the case at hand corresponds to water with probability of occurrence once per 500 years, i.e. the flow equal to approx. 296 m³/s. It explained to the Party that a control flow should be understood as a flow on the basis of which the dam safety is checked. Therefore, as it results from the above, the designed reservoir should safely pass a flood wave with flow much higher than the last historic flood which occurred within this area. Besides, water in the reservoir shall be stored for relatively shorter period of time than in case of flood embankments located in lowland area (sluice devices ensure continuous runoff of water from the reservoir, as it was proved and presented in the Report). The head dam, contrary to flood embankments, is equipped, besides the said sluice devices, with spillway devices working in extraordinary situations (in extraordinary situations excess of water is drained through spillway devices situated at the top of the dam). Additionally, referring to the Applicant's explanations, it noted that the dam would be equipped with control and measuring instruments facilitating continuous control of the dam and its structures. Referring to the information provided by the Applicant, who had referred to historical data, the authority demonstrated that so far any dry reservoir in Poland had ever been subject to disaster, in consequence of which the buildings downstream of the dam had been damaged, while dry reservoirs in the Kłodzko valley have been used for more than one hundred years now and so far none of them was equipped with such control and measuring instruments as is planned for the Szalejów Górny reservoir. Responding to the remark concerning the construction site backyard location nearby buildings, the authority cited the Applicant's explanations in which he stated that the factors determining the construction site backyard location in the area defined in the Report included: less damage to natural environment, closeness of the dam, possibility of maximal use of existing roads. The construction site cannot be located within the reservoir basin, despite large uninhabited area, because it is a floodplain and flooding the machines may lead to land and water contamination. For that reason it was also decided to choose area with limited flooding possibility. It explained that it was not planned to harden natural meadows with debris or to dispose of wastes from the construction site by ditches. Surface soil layer shall be broken only when necessary (excavations for facilities, acquisition and storage of fill material intended for construction of the dam). Whereas domestic wastewater from the construction stage shall be disposed to tight tanks, and the stand for machine operation shall be sealed. Basing on the Applicant's explanations, the authority stated that the project had also included the Cicha stream flood waters. It emphasized that the primary objective of the investment was the flood protection. It

noted that the designed reservoir would not protect the Kotlina Kłodzka and Kłodzko city independently, as it is part of the flood protection system for that area. It noted that leaving natural polders and passive protection would be insufficient to protect that area, what was also confirmed in the feasibility study entitled “Flood protection of Kotlina Kłodzka – Feasibility Study. Dry flood storage reservoirs: Krosnowice, Szalejów Górny, Roztoki and Boboszów and sub-basins of the Nysa Kłodzka, Biała Łądecka and Bystrzyca Dusznicka rivers. Sogreah Polska 2008” and in the Draft FRMP, referred to herein above. Responding to the suggestion of building in the Nysa Kłodzka foreground a dam similar to that in Otmuchów, basing on the Applicant’s explanations the authority noted that such a dam would have to be approx. 30 m high and approx. 3 km long, while the backwater would reach Ołdrzychowice Kłodzkie and Stary Waliszów, what would require resettlement of Gorzanów, Żelazno and Krosnowice.

The Party did not raise any remarks to the provided explanations.

By the letter of July 21st, 2015 (received on July 23rd, 2015), ref. No.: HK-2346/309/1555/15, the Applicant requested for making the decision immediately enforceable.

The authority acceded to the Investor’s request and hereby makes this decision immediately enforceable. Pursuant to the statutory disposition of Article 108 §1 of the Administrative Procedure Code, a decision can be made immediately enforceable only when it is necessary with respect to the goods and values specified therein, namely “if this is essential for the protection of human life or health or for the protection of the national economy from major losses or for reasons of public interest or the exceptionally vital interests of a party to proceedings”. Enforcement of the decision shall be “necessary”, when “it is impossible to circumvent in a given time the existing situation without execution of the rights or obligations being resolved in the decision, because any delay in executing them threatens the protected goods. The threat has to be real, not only theoretically probable” (Borkowski J. [in:] Adamiak B., Borkowski J., Administrative Procedure Code. Comments, 8th Edition. C.H. Beck Publishing House, page 524).

The Szalejów Górny dry reservoir, which is to be built, shall serve for the flood protection, thus it shall serve for the protection of human health and life on the areas threatened with flood. The reservoir shall secure the national economy (i.a. bridges and roads) against losses occasioned by floods, at least as regards the last historical flood, which took place in 1998. The losses reported by the Kłodzko Municipality and indicated by the Applicant amounted to PLN 7 M. In addition, it should be emphasized that the project is a part of the Kotlina Kłodzka flood protection system with particular focus on the protection of Kłodzko city.

Basing on the foregoing, the Regional Director for Environmental Protection in Wrocław found it necessary to make this decision immediately enforceable with respect to the human life and health, as well as with respect to the protection material goods. The authority informed about the above the parties to the proceedings in an announcement of August 3rd, 2015, ref. No: WOOŚ.4233.8.2013.ŁCK.49.

By the letter of August 17th, 2015 (received on August 21st, 2015), ref. No.: HK-2346/317/1720/15, the Applicant informed about change of the disputable location for the construction site backyard. He resigned from the previous location of the construction site on plots No 492, 493, 494, 505/1, 505/2, 507, 508, 684 precinct Szalejów Górny. The construction

site shall be relocated to plot No 804/8 precinct Szalejów Górny (the area of the left dam abutment, right above the construction site backyard). The plot was covered by the application for issuing the decision on environmental conditions. The number of parties to the proceedings did not change, since part of the plots on which the construction site was previously planned to be located was within the borderlines of the investment, i.e. within permanent acquisition of the land. The construction site shall be located at approx. elevation of 342-345 m AMSL above the reach of any waters of the Bystrzyca Dusznicka river and it is at the distance of approx. 600 m away from the river. It shall occupy the surface area of approx. 0.31 ha. Other parameters were not changed. The land is free from any trees and shrubs – it is not necessary to carry out any clearance. Additionally, the land was covered by field studies, carried out for the purposes of the Report. As it results from the environmental inventory, no valuable natural values were identified within the land in question, such as sites of protected plant and animal species and natural habitat listed in Annex I to *Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ EU E.L92.206.7, OJ EU-sp.15-2-102 as amended)*.

The authority informed the parties about the planned relocation of the construction site backyard in an announcement of August 28th, 2015, ref.: WOOŚ.4233.8.2013.ŁCK.51. In the above announcement and in the notice dated August 28th, 2015, ref. No.: WOOŚ.4233.8.2013.ŁCK.50, the authority informed about the collection of evidentiary material and about the possibility to express an opinion as regards the collected evidentiary material.

Before issuing the present decision on the environmental conditions, no party submitted remarks or motions to the proceedings within the above deadline.

Within the scope of the conducted administrative proceedings on the Environmental Impact Assessment, a set of documentation compliant with Article 74 Par. 1 of the EPA Act was submitted for consideration.

3 undertaking scenarios were analysed at the undertaking stage:

- An investment scenario providing for the development of a dry reservoir with a maximum flood volume of 9.87 M m³ and a water damming up of up to 342.00 m AMSL (maximal flood volume after implemented modification 10.67 M m³) together with removal of trees in the area of 143.57 ha. A period which interferes the most with the environment is the construction period related to the construction of a head dam, the local river regulation and the removal of trees in the entire reservoir basin area. The operation period does not, as a rule, interfere with the biotic or abiotic nature. The partial change (for high flows) of the natural water runoff conditions in the river downstream of the dam is a negative element. The period of partial retention of the flood wave is extended by several to several dozen hours (depending on the probability of occurrence of the flood wave). A dam breakdown may cause fundamental damage to the environment as it might produce significant results both for the nature and the local community. Dam and reservoir liquidation also interferes with the environment, although with a smaller intensity than does the reservoir construction period.
- A rational alternative scenario, i.e. the performance of a reservoir with a permanent

damming level at an elevation of approx. 338.15 m above ground level and a volume of 5.93 M m³ and the performance of an additional flood reserve with a volume of approx. 1.53 M m³ and a damming level of 336.25 m AMSL, together with removal of trees in the entire reservoir basin area. A period which interferes the most with the environment, as in the scenario proposed by the Applicant, is the construction period related to the construction of a head dam, the local river regulation and the removal of trees in the entire reservoir basin area. The ecosystem shall change from flowing waters to standing waters. The operation period interferes with the fish fauna to an insignificant extent, because investment implementation is related to interrupting the migration corridor in the upstream direction of the watercourse. The possibility of the reservoir basin use by migrating birds is a positive element. Tourism shall intensify due to permanent damming by (filling of) the reservoir allowing for its use for recreational purposes. The change of the natural water runoff conditions in the Bystrzyca Dusznicka river downstream of the dam is a negative element. A dam breakdown may cause fundamental damage to the environment as it might produce more significant results both for the nature and the local community in the case of permanent damming than in the case of a dry reservoir. Dam and reservoir liquidation also interferes with the environment, although with a smaller intensity than does the reservoir construction period.

- The most favourable scenario to the environment (with the preservation of the main aim – flood protection, i.e. the construction of a dry reservoir with a maximum flood volume of 10.67 M m³ and a water damming up of up to 342.00 m AMSL, with the removal of trees in the reservoir basin limited to the area of covered by infrastructure and the floodplain with Q=10% flooding probability. The impacts of this scenario are similar to those of the investment scenario, however with reduction of pressure on the flora and fauna in the reservoir area during the construction period. The operation period does not, as a rule, interfere with the biotic or abiotic nature (analogically to the investment scenario). The increase of flood protection safety for the local community must be treated as an advantageous (positive) element. The partial change (for high flows) of the natural water runoff conditions downstream of the dam is an analogical (to the investment scenario) negative element. A dam breakdown may cause fundamental damage to the environment as it might produce significant results both for the nature and the local community. Dam and reservoir liquidation also interferes with the environment, although with a smaller intensity than does the reservoir construction period.

The applicant suggested investment implementation according to the most favourable scenario to the environment, with limited removal of trees and with a range of minimizing and compensation measures concerning the negative impact of the undertaking, which were imposed in the sentence of this decision. The analysis of the scenarios and their impact on the environment presented in the Report unequivocally shows that the best solution is the scenario consisting in the implementation of a dry reservoir with the smallest possible scope of tree removal. A superior objective of the planned reservoir is flood protection. Permanently

damming reservoirs (i.e. those with a flood reserve) dam water in a permanent way, unlike dry reservoirs. Permanent damming has an unfavourable effect on the reduction capacities of such reservoirs, decreasing the volume of flood water which can be held in the reservoir basin. A permanently damming reservoir fulfils several functions simultaneously (water supply, recreational purposes, flood protection purposes). In the case of the discussed undertaking, such versatility is unjustified: the primary problem to solve is the problem of floods. The flooding of a dry reservoir is a certain incident in time, after which the reservoir is emptied quickly and natural states (flows) return. This minimizes the scope of impacts on the geological environment (erosion and abrasion phenomena). In the case of a wet reservoir, the pressure on the geological environment is permanent (reservoir sloshing). The scenario consisting in the implementation of a dry reservoir with the maximal and minimal scope of tree removal is identical in many situations. Nonetheless, a limited scope of tree removal means the preservation of a part of the area offering better living conditions for all species. A tree removal performed only in a limited scope should contribute to the preservation of the existing forest habitats. The continuity of the ecological corridor along the watercourse shall also be preserved. Those factors determined the choice of the best scenario for the environment as the one recommended for implementation.

Based on an analysis of the suggested solutions, the Regional Director for Environmental Protection in Wrocław concurred with the Investor's application for implementing the undertaking under the scenario most favourable to the environment, i.e. the performance of a dry reservoir with limited tree removal.

As part of the Environmental Impact Assessment, the authority examined the anticipated impact of the undertaking on particular elements of the environment, especially on the conservation objectives of Natura 2000 sites.

The dry flood control reservoir "Szalejów Górny" is planned to be constructed on the Bystrzyca Dusznicka river, Szalejów Górny village and Szalejów Dolny village, Kłodzko Municipality, Kłodzko district, Lower Silesian Province. The Bystrzyca Dusznicka river is a left-hand side tributary of the Nysa Kłodzka river. The dam cross-section of the reservoir was adopted at chainage km 8+910 of Bystrzyca Dusznicka. The reservoir shall be created by building an earth-fill dam across the river. With the maximum damming level of 342.00 m AMSL, the reservoir shall occupy an area of approx. 142.6 ha. In administrative terms, the investment is located within the boundaries of Kłodzko Municipality, on the plots located in the precinct Szalejów Górny and Szalejów Dolny.

The following facilities are located in the vicinity of the investment:

- Municipal wastewater treatment plant in Polanica Zdrój. The treatment plant is located approx. 1.4 km in a straight line from the dam axis in the south-west direction and approx. 170 m from the borderline of the floodplain with max. damming up level (342.00 m AMSL),
- liquid fuel terminal – 1.7 km to the west of the dam axis, approx. 680 m from the borderline of the floodplain with max. damming up level (342.00 m AMSL),
- Industrial Plant "Syntetyka" in Szalejów Dolny – 1.4 km to the east of the dam axis (downstream of the dam cross-section)

Current location of the dam ensures proper spatial separation of the sub-basin with max. damming up level from the treatment plant and thus guarantees that both investments shall not affect each other. The wastes outlet from the treatment plant is located at chainage km 12+500 of the Bystrzyca Dusznicka river. The treatment plant is located approx. 1.4 km in a straight line from the dam axis in the south-west direction and approx. 170 m upstream the river from the borderline of the floodplain with max. Damming up level (342.00 m AMSL) i.e. the one with repeatability period once per 500 years. The wastewater treatment plant is founded at the elevation of approx. 344 m AMSL. The planned reservoir shall not affect the treatment plant, as there are no factors which could affect the plant (in particular the facilities located upstream the watercourse far away from the area of max. damming level). With such a spatial separation, the dry reservoir shall not affect the course of flood waters within the treatment plant area.

The liquid fuel terminal is located 1.7 km to the west of the dam axis, approx. 680 m from the borderline of the floodplain with max. damming up level (342.00 m AMSL). Separation of the valley, in which the liquid fuel terminal is located, from the flood waters dammed by the dam shall be ensured by the designed earth-fill dam.

The "Syntetyka" industrial plant in Szalejów Dolny – 1.4 km to the east of the dam axis (downstream of the dam cross-section). The purpose of the reservoir construction is to protect the areas downstream of the dam, including the "Syntetyka" plant.

The investment shall be implemented outside the boundaries of areas protected under Article 6 of the *Nature Conservation Act of April 16th, 2004 (Journal of Laws of 2013, item 627 as amended)*. The nearest protected areas (Site of Community Importance: PLH020004 – Stołowe Mountains and PLB020006 Special Bird Protection Area Stołowe Mountains) are located approx. 2 km away and the watercourses to be covered by the works do not flow through that protected area. In the opinion of this authority, investment implementation in the scope presented in the application and with the observance of the abovementioned conditions shall not exert a significant influence on the objectives and subjects of protection of the abovementioned Natura 2000 site or on Natura 2000 network coherence.

The planned construction of the dry reservoir shall proceed within the boundary of a Body of Surface Water (BSW) named "*Bystrzyca Dusznicka from Kamienny Potok to Wielisławka*", code PLRW6000512188, within the Odra river basin district (Middle Odra water region). In accordance with the provisions of the *Odra River Basin District Management Plan* published on May 27th, 2011 (M. P. No. 40, item 451) (ORBDM), the discussed BSW, which is a part of the Unified Body of Surface Water (UBSW) No SO0904 (Middle Odra water region), belongs to the ecoregion Central Highlands. The river on that section was classified as an upland silicate stream with fine-grained substrate – westward (abiotic type 5). Bystrzyca Dusznicka on that section was classified as strongly changed part of waters. According to the "Odra River Basin District Management Plan" approved at the meeting of the Council of Ministers on February 22nd, 2011, environmental objectives for this BSW may not be achieved: due to the planned actions related to investment implementation causing changes in physical characteristics of the BSW, which serve superior social purposes, i.e. flood protection, it is impossible for the BSW to achieve the assumed environmental objectives.

The planned undertaking shall be implemented during a new urban planning cycle. According

to the current characterization of the BSW outlined in a study entitled “Determining the environmental objectives for Bodies of Surface Water (BSW), Bodies of Ground Water (BGW) and Protected Areas”, commissioned by the National Water Management Authority and developed by a team of authors under the management of Eng. Agnieszka Hobot MSc (Gliwice, October 2013), on the basis of the measurement results carried out by WIOŚ in Wrocław in 2011 and 2012 the status of the BSW in question was assessed as poor and its chemical status was assessed as bad (analogically to ORBDMP). This assessment was determined by the class of biological elements and chemical state of waters. During the 2015-2021 urban planning cycle there is no justification for the need to maintain hydromorphological changes (in accordance with Article 4 Par. 3 of Directive 2006/60/EC of the European Parliament and of the Council of October 23rd, 2000 establishing a framework for Community action in the field of water policy (OJ EU L 327 of 22.12.2000, p. 1; OJ EU Polish special issue, chapt. 15, vol. 5, p. 275 as amended), referred to as the “Water Framework Directive”. The protection objective of the Body of Surface Water under analysis is to achieve, by 2021, a good ecological status and a good chemical status of the waters.

The Body of Surface Water achieves a good ecological status when all the water quality indicators associated with biological elements achieve a good status. Physical and chemical as well as hydromorphological elements, which are supporting elements, make it possible for the biological elements to achieve a good status. If biological elements meet the good status conditions, this means that the hydromorphological conditions of a given body of water are good enough to allow the biological elements to achieve a good status. Further, in order for the body of water status to be considered as good, both the ecological as well as the chemical status have to be good.

The core component for the assessment of the ecological status of waters is biological elements. Hydraulic undertakings exert a direct impact on the hydromorphology of waters, and every change to the hydromorphological as well as physical and chemical parameters entails changes to the biological elements which are dependent on hydromorphology. Thus, on the basis of the submitted evidence, it was assessed how hydromorphological as well as physical and chemical parameter changes in a BSW would result in changes to the dependent biological elements.

It stems from the analysis included in the submitted evidence that the undertaking shall not influence the hydrological regime of the watercourse in the scope of normal flows. That influence takes place only during flows related to flood water passage. The natural flow shall be preserved in the bed (except freshet periods) after reservoir construction because the reservoir does not influence low flows. The sluice devices shall ensure free flow of water corresponding to Q60% flow. The increase in the flow dynamics during the periods of water damming in the reservoir shall be limited to the time when water is held in the reservoir. The assumed storage of the flood wave is short-time, so it does not cause a change to the hydrological regime, which would influence water status on a wider scale (with max. damming level, i.e. at elevation of 342 m AMSL, corresponding to flow of control water Qc with probability p=0.2% occurring once in 500 years, the reservoir shall be emptied, except for extraordinary situations, within max. 7 days). Each regulation, which causes water concentration in the bed, results in runoff acceleration. In case of the investment in question,

such an influence shall be minimal due to small length of sections to be regulated and the preservation of the bed width similar to the natural one, and also due to slowing down the water runoff by the bottom sluices during flood hazard. The valley of the Bystrzyca Dusznicka river on the section from Szalejów Górny to the mouth to the Nysa Kłodzka river (i.e. downstream of the dam) is currently managed – the area of flooding-dependant habitats is therefore limited while the residential buildings and crops approach the riverbed. There is a Szalejów Górny - Szalejów Dolny - Stary Wielisław Dolny – Kłodzko road running along the river. In Wielisław Dolny (the border of Kłodzko city) a railway line joins the road. The dam is located approx. 3.3 km from the border of Kłodzko city. Therefore, all the above villages form the suburbs of Kłodzko. The section of Bystrzyca Dusznicka covered by the runoff levelling comprises the section from the dam to the Bystrzyca Dusznicka mouth to Nysa Kłodzka. The analysed area protected against waters Q1% downstream of the dam, i.e. 2.17 km², was in majority invested. There are no factors of impact on the water-dependant areas shaped by Nysa Kłodzka downstream of the Bystrzyca Dusznicka mouth, as the Bystrzyca Dusznicka flow Q1% corresponds more or less to the flow Q50% on the Nysa Kłodzka river (bed flow), thus water-dependant areas in the valley of the Nysa Kłodzka river depend mainly on that river. Residential buildings begin from km 8+500. At chainage km 8+350 the river is accompanied by a road linking Szalejów Górny with Szalejów Dolny. From km 7+850 the river is from both sides limited by asphalt roads until km 7+150. The above analysis demonstrated that due to historic development of the Bystrzyca Dusznicka flooding terrace, water-dependant areas are concentrated in immediate vicinity of the riverbed, therefore feeding of such areas mainly depends on annual high levels and inundations within the riverbed area. Flow corresponding to annual flood is passed through the dry reservoir, what proves, as stated in the Report, no impact on water-dependant areas. Wielisławka flows into Bystrzyca approx. at chainage km 3+750, i.e. downstream the tributary the water-dependant areas are fed by water passed by the reservoir and the tributary.

From km 1+000 of Bystrzyca Dusznicka, feeding of the water-dependant ecosystems is ensured by Nysa Kłodzka.

Significant changes to watercourse morphological structure shall cover the sections of artificial beds and the river section downstream of the dam, where the river depths and bed width variability shall unify, the bed structure shall be simplified. Changes in the bed morphology shall result from the works related to bank reinforcement as well as backfilling old bed sections and performing new bed sections. This shall cause changes to the bottom and bank structure as well as to the cross-section and the longitudinal section of the bed. However, those impacts shall concern small sections in the scale of the entire BSW and shall be minimized using the measures defined in the decision (limitation of the reinforcement scope). The cross-section of the artificial river beds shall be adjusted to a width corresponding to the width of the natural river bed on that section and adjusted to the permitted flow. After completion of construction works, the flow in the “old” bed shall not be fully restored. The old riverbed shall be partially backfilled. The diversion of riverbed is connected with leading the river to the bottom sluices. In addition, the riverbed diversion shall reduce the risk of erosion thus increase the safety of the facility operation. Apart from the watercourse transformations, the river banks shall be

interfered through the regulation by means of trims made of stone. Total interference in morphological elements shall comprise the river along the length of over 2.4 km. Shaped beds are relatively short. In order to minimize those impacts, the artificial beds shall be diversified by shaping heterogeneous bottoms, e.g. by fixing boulders to the substrate. They shall prevent flow homogeneity and create habitats for fish. Due to the fact that the regulation shall be in mostly performed on selected sections, this impact shall be minimised.

Breaking the hydraulic connectivity between surface waters and groundwater takes place on watercourse sections with tight (concrete or rocky cast by concrete) bed development. Such a development used to be applied in mountainous areas for the purposes of fast drainage of excess of rainwater or thaw water. River regulations may indirectly affect the groundwater by runoff acceleration and thus lower the groundwater in consequence of bottom erosion and carving the ground by the regulated watercourses. In case of the planned reservoir, most of the regulations shall be done in the reservoir basin (trims made of stone, inflow bed). The reservoir at the time of flood risk (above $Q=50\%$) shall dam water and slow down its runoff, therefore the effect of its operation shall be opposite to the said premise and shall not adversely affect the groundwater. The sluice device outlet shall be introduced directly to the stilling basin in such a way, so as to keep continuity of the water level. There are barrages directly downstream of the dam (one downstream of the drainage channel from the overflow), which prevent bottom erosion so the reservoir shall not cause any new impacts in this regard. Whereas the regulations are planned on such short sections that they shall not result in breaking the hydraulic connectivity between surface waters and groundwater. Flows up to approx. $15\text{m}^3/\text{s}$ are passed without damming. Above that flow the incoming water sheds over the reservoir basin. The flow of $15\text{ m}^3/\text{s}$ corresponds to the flow of approx. $Q_{60\%}$ (water 1 and 2/3 summer). A dry reservoir during flood periods (when the overflow in Bystrzyca Dusznicka is more than $15\text{ m}^3/\text{s}$ i.e. more less frequently than 1 and 2/3 year) shall dam the water. This will result in the increase of the water level above the groundwater level and in the feeding of the Quaternary aquifer. The regulations in the dry reservoir basin and downstream of the dam are to be performed in sections using rip-rap. They ensure hydraulic contact with groundwater and alternate with unregulated sections, where the contact of surface waters with groundwater remains in its natural state. The formed beds are relatively short, so they should not contribute to breaking the hydraulic connectivity between surface waters and groundwater.

Once the impacts affecting the achievement of environmental objectives and the impacts causing status deterioration as defined by the Water Framework Directive were identified, and taking into account the scope of hydromorphological changes, it was determined that the potential negative impact on biological elements would be most profound during the undertaking implementation stage. The most significant impact on macrophytes is related to plant destruction as a result of performing bank and bottom reinforcements (bank reinforcements shall be performed only on concave banks). Those works shall influence the composition and number of macrophytes, but they shall concern short sections of the watercourses and the reinforcements shall be made of crushed stone, permitting quick self-restoration of macrophytes. The character of the new flora may be slightly different due to the change of habitat conditions (a change of the amount of light and temperature after the

removal of trees and shrubs and a change of substrate character after reinforcement performance), but the scale of those changes shall not be significant. Bottom reinforcement shall be performed only on the several dozen meter new bed sections, and therefore shall not be related to macrophyte destruction. Partial backfilling the old bed section of the watercourse and performance of new bed section, thus plants destruction as a result of backfilling the Bystrzyca Dusznicka river section of shall cover the section with a total length of approx. 431 m. New river section shall be performed and its bed shall have a simplified structure (no meanders; liquidation of deep and shallow areas), and therefore the macrophyte development conditions shall be less favourable. However, those impacts shall concern a small section in the scale of the entire BSW and the new watercourse section shall be populated again by macrophytes in a short time virtually on their entire length.

The impact on macrozoobenthos and phytobenthos shall be related mainly to bank and bottom reinforcement as well as backfilling the watercourse section and constructing new bed. Those activities shall result in direct destruction of macrozoobenthos and phytobenthos as well as a negative change of habitat conditions (various microhabitats shall be replaced with uniform structures). However, the reinforcements shall be made using natural stone – its layout manner shall diversify the flow speed at the operation stage and permit the formation of microhabitats for those living organisms. The watercourses shall include unregulated sections constituting the base for macrozoobenthos, and therefore its composition shall be able to restore itself via drifts and compensation flights of adult insects. Concerning phytobenthos, the use of natural stone shall favour the restoration of phytobenthic organisms at the investment operation stage. Moreover, given the fact that the abovementioned impacts shall concern small sections in the scale of the entire BSW, this impact should not be significant.

The impact on fish fauna shall be related first and foremost to the change of hydromorphological conditions, which shall influence habitat availability for individual species and for individual growth forms. However, this impact shall be limited by the minimizing measures defined in the decision, including i.a. the indicated works performance periods, ichthyological supervision and performing the works stage by stage. Provided that the minimizing measures indicated in the decision (the necessity of maintaining the minimum acceptable flow, devices permitting migration through the dam and the sluice elements, an appropriate manner of works performance at the implementation stage, limitation of the reinforcement scope) are taken into account, the investment in question should not significantly influence fish fauna migration, either. Flood wave storage in the reservoir shall be short, so it should not significantly influence fish fauna as well.

The impact on physical and chemical elements shall be short-term, occurring first and foremost during the works performance stage. It may apply to physical and chemical parameters, such as general suspension or oxygen dissolved in water. The suspension partially contains an organic substance which shall oxidise after penetrating into the river, thus changing the oxygen conditions there. The quantitative and qualitative estimation of that phenomenon depends on many factors such as the amount of suspension penetrating into the watercourse, the flow size in the watercourse or oxygen conditions. In order to limit the scale of the phenomenon

concerning the changes of physical and chemical elements, the sentence of this decision imposes investment implementation conditions pertaining to the performance of regulation works from the river bank and recommendations on periodic interruptions to works during increased water turbidity. The character of the Bystrzyca Dusznicka river (significant inclinations and water speeds) makes it an oxygen-rich watercourse and the character of the works causes the phenomenon to be periodic and transient. In fast flowing submontane watercourses with cold, oxygen-rich waters, suspensions which penetrate into the water during the performance of works shall not significantly affect the existing oxygen conditions or aquatic organisms downstream of the performed works. Undertaking implementation shall not affect water salinity or acidity. Water temperature may change due to lack of plants in the new beds. Owing to the mountainous character of the watercourse, the turbulent water flow, the short construction stage (in relation to the reservoir operation period), natural self-purification of the water in the river and plant succession in the areas covered by construction works, the influence of that factor may be considered as negligible. The Bystrzyca Dusznicka waters shall carry rubble, which shall be deposited mainly in the sluice inlet area. Therefore, a rubble catcher shall be implemented. The transport of rubble (fine-grained substrate and sedimentation processes) shall not be stopped during low water levels and freshets no bigger than the annual flood. Water shall freely overflow into the rubble above an average annual flow $SSQ=1.60 \text{ m}^3/\text{s}$. During normal states, water shall flow through the watercourse bed, outside the rubble catcher. Rubble shall be removed from the catcher during low flows (with frequency once per several years). The catcher shall be permanently filled with water and a part of the Bystrzyca Dusznicka waters shall constantly flow through it, permitting the fish living there to survive. The catcher is located on the side of the Bystrzyca Dusznicka bed. A concrete drainage grate at the rubble catcher inlet, in the bank that separates it from the river, shall ensure permanent supplementation of the water standing in that auxiliary reservoir with fresh river water. The standing water shall come from the overflow over the embankment during freshet period. Ensuring permanent communication between the rubble catcher and the watercourse and the existing watercourse flowing to the catcher shall ensure permanent supplementation of the standing water with fresh river water and shall facilitate the existence of fishes. Except the rubble catcher, no other devices limiting rubble movement in the watercourse bed are anticipated in the investment scope. Downstream of the dam, the rubble movement phenomenon itself shall continue naturally owing to natural processes in the bed enabling that movement.

The implementation and operation of the undertaking shall not deteriorate the water quality indicators used to assess its chemical status. With correct use of machinery and devices, there should be no river contamination with petroleum derivatives. Furthermore, parking sites hardened and insulated from the soil have to be designated within the construction site backyard. They shall be used for filling up, servicing, repairing and parking the machines and devices. The construction site backyard shall be located at elevation of approx. 342-345 m AMLS beyond the reach of any waters of the Bystrzyca Dusznicka river and it is approx. 600 m away from the river.

A dry reservoir does not generate or emit priority substances that may change water chemism.

The cleanliness of the reservoir as well as the river and groundwater depends on the cleanliness of the sub-basin and its anthropogenic use. Reservoirs with permanent damming feature mechanisms which facilitate deposition of contaminants. Long-term stagnation of water in a reservoir facilitates the deposition of contaminants, and thus an increase in the thermal condition of the held water, phytoplankton growth and deposit sedimentation. Municipal waste-water discharged into the river and agriculture (through fertilisation management and erosion processes) are a source of nitrogen and phosphorus compounds which accelerate phytoplankton growth and in general are a cause of eutrophication of permanently damming reservoirs. A dry reservoir is free from those defects. Due to stagnation of water limited in time, temporarily held water has a thermal condition similar to that of the river as well as turbulent flow, the water is oxygen-rich and as such makes phytoplankton growth difficult, and constant outflow prevents the contaminants from depositing. The Bystrzyca Dusznicka water is potentially exposed to increase of contamination, the source of which may be the discharge of wastewater from the wastewater treatment plant. However, it is the treatment plant's obligation to pre-treat the wastes so that they had certain composition before discharging. The quality checks of the Bystrzyca Dusznicka river, carried out as part of the national monitoring network, indicate bad water condition in BSW due to the value of infusorial index and the content of polycyclic aromatic hydrocarbons (PAHs). Such a state is not the effect of operation of a dry reservoir. As demonstrated in the Report, infusorial phytobenthos reflects the impact of two main pressures on surface flowing waters: eutrophication and contaminations. Monitoring point of this body of water is situated at the very end of the sub-basin, therefore it records organic pollutants from the anthropogenically managed sub-basin of Bystrzyca Dusznicka downstream of the planned reservoir, and also partially from the wastewater treatment plant. PAHs come into being as side products in many chemical processes. Basically, each process connected with strong heating or incomplete combustion of organic compounds may be the source of PAHs emission, i.e. burning leaves and rubbish in gardens by the house, burning of wastes, forest fires, fumes of mechanical vehicle moving in immediate vicinity of the river. A dry reservoir is not the source of such contaminations and shall not intensify them. The dry reservoir basin shall be excluded from intensive agricultural production, which shall reduce the inflow of agricultural type biogenes. Limiting the removal of trees and shrubs shall intensify the action of water purification systems (the plants shall act like filters).

Taking the above into account, it can be stated that the project shall not have a negative impact on environmental components determining the BSW status, and thus it shall not contribute to a failure to achieve a good BSW ecological and chemical status in the current and the next planning cycle.

The undertaking lies within the boundaries of Body of Ground Water (BGW) No. 110, code PLGW6220110, which, according to the provisions of the *Odra River Basin District Management Plan*, is characterized by a good quantitative status and a good chemical status. In 2008, a review of the BGW boundaries set out in 2005 took place and as a result of those works a new BGW division of Poland was established. It shall be binding in the ORBD RBMP from the next planning cycle (the end of 2015). According to those data, the dry reservoir lies within the boundary of BSW No. 125, code PLGW6000125. The quantitative and chemical status of

this body of water has not changed.

In accordance with the binding legal regulation, the environmental objective for a Body of Ground Water is:

1. prevention or limiting of introducing contaminants;
2. prevention of deterioration of its status and improvement of that status, and thus, in the present case, maintenance of a good BGW quantitative and qualitative status;
3. protection and repair activities as well as ensuring balance between water uptake and feed, so as to achieve a good water status.

The implementation and operation of the investment should not affect the quantitative and chemical status of this Body of Ground Water. During the investment implementation and operation stages, contaminants which could change the chemism of the waters shall not be generated. The works performed during the undertaking construction stage shall not generate any negative impacts of a qualitative character on the groundwater. They may only cause short-term, temporary lowering of the groundwater table level during the performance of the necessary excavation drainage. Nonetheless, in order to fully eliminate the potential of groundwater contamination, all locations designated for servicing vehicles and working machines shall be periodically (till the end of the construction period) covered with insulation materials. Domestic waste-water shall be discharged to tight holding tanks and regularly collected by authorised entities. The works shall be performed with the use of construction equipment. In the event of uncontrolled penetration of petroleum derivatives into the ground or soil in connection with using heavy construction equipment, appropriate measures shall be taken with the aim of removing the contaminants from the ground and the soil so that groundwater and surface waters are not contaminated.

The works related to the reservoir construction may cause short-term, transient and local lowering of the groundwater table resulted from the necessity to perform the necessary drainage in the course of earthworks and construction works. This refers mainly to the drainage (pumping) of wide excavations in the location of the head dam and when acquiring fill material for the dam construction from the reservoir basin. Lowering of the groundwater table in connection with excavations and excavation drainage, including the areas from which earth masses shall be acquired for the dam construction, shall be local – maximal reach of the cone of depression shall range from 42 to 78 m.

The groundwater status in the area of a dry reservoir also depends on the cleanliness of the sub-basin and its anthropogenic use. The possibility of contaminant transfer together with rain waters from the terrain surface to the groundwater largely depends on the layer thickness of low permeability formations insulating the aquifer. A flood wave with the maximum damming up level shall stay in the reservoir no longer than 7 days (except extraordinary situations). This is caused by both the runoff time of flood waters with the maximum damming level and by the flood wave passage time through the Nysa Kłodzka to Kłodzko (intentional water retention in the reservoir due to waiting the Nysa Kłodzka flood wave out). The results of the studies carried out for the purposes of implementation of the investment in question, as presented in the Report, indicate that the impact of flood water damming on the groundwater within the analysed area is systematically reduced. It was proved that even with extreme scenario of

control water maintained for the period of 7 days the range of the changes shall not exceed the distance of 150 m from the flooding zone. Freshets and the related water damming in a dry reservoir is a periodical phenomenon with certain probability of occurrence. Except freshet periods, there are no impacts and pressure on the groundwater. And that period is prevailing during reservoir operation. Taking into consideration the above (the actual speed of flow between layers, time of water storage in the reservoir), it can be considered that the periodic groundwater changes shall not influence the depth of waters in the nearest wells, either. Home drilled wells are located off the reservoir, on the downstream side of the dam. After construction the dam shall protect the wells from flooding by flood waters (the dam shall be sealed to the rocky ground). Considering the actual speed of flow between layers, which is approx. 0.03 m/d, it can be stated that the impact of flood water damming in the reservoir on groundwater is not permanent, it is limited in time and thus it does not pose a threat to the quantitative and qualitative status of such water. After the flood water runs off the reservoir basin, the groundwater hydrodynamics comes back to the state from before the flood. In the opinion of the Authors of the Report, the above means that the dry reservoir shall not affect the groundwater. In addition, the water temporarily stored in the reservoir shall have a thermal condition similar to that of the river as well as turbulent flow, the water shall be oxygen-rich and the constant outflow shall prevent the contaminants from depositing. The dry reservoir basin shall be excluded from intensive agricultural production. Tree removal of trees shall be limited. Thus, it can be ascertained that short-term water stagnation in the reservoir does not carry a significant risk of contaminating the groundwater and consequently a deterioration of the chemical status of this body of water.

Taking the above into account, it can be stated that the project should not affect the BGW chemical status and quantitative status, and thus it shall not contribute to a failure to achieve the environmental objectives determined for that BGW in the current and the next planning cycle. The planned undertaking shall not affect the climate and climatic changes. The primary issues connected with climatic changes concentrate on such matters as emission of greenhouse gases, direct and indirect emission connected with energy demand, effectiveness of applied solutions. The planned reservoir is not the source of emission of greenhouse gases on a great scale. In the construction stage, carbon dioxide, which qualifies to greenhouse gases, shall be emitted as a result of fuel combustion in cars and machines. Energy demand shall occur during the realisation of the investment in connection with e.g. functioning of the construction site backyard. Electricity consumption shall indirectly result in the emission while generating. Electricity consumption, when generating, shall indirectly result in the emission of carbon dioxide and steam (greenhouse gasses) to atmosphere. Emission of greenhouse gases on such a scale is not however the emission which would require undertaking minimising measures in this regard. The energy demand of devices related to the planned reservoir refer to: automation of culverts, lighting of the road on the dam and the operation facilities, heating of the operation facilities – such demands are necessary and don't consume much energy. The planned undertaking is not connected with transport, the designed roads are service roads for the purposes of the reservoir operation. Stream of vehicles during construction and operation (5 cont./h) is small as regards the emission of CO₂.

In the liquidation phase of the undertaking, the size of energy volume shall be similar to that in the construction phase, and so the emission of carbon dioxide and steam (greenhouse gases) to atmosphere during energy generation shall be similar.

Due to ensured permanent runoff of water from the reservoir, the flood wave storage time in the reservoir shall be relatively short (with max. damming level, i.e. at elevation of 342 AMSL, corresponding to flow of control water Q_c with probability $p=0.2\%$ occurring once per 500 years, the reservoir shall be emptied, except for extraordinary situations, within max. 7 days). Because of short accumulation of water, no climatic phenomena shall occur and the microclimate within its area shall not be significantly changed. The opposite of “dry” reservoirs are dam reservoirs permanently filled with water. Specific microclimate is created around such reservoirs (thermal air structure) over the reservoir and the adjacent lands. Such reservoirs have an influence of mitigation of extreme phenomena by slight increase of temperature and humidity in the winter and the drop of temperature and humidity in the summer. Wind speed over the reservoir increases by several percent and affects the microclimate over the body of water, and also contributes to occurrence of water breeze and water circulation within the body of water [Malecki Z. 2009. Wpływ zbiornika zaporowego Pokrzywnica na mikroklimat w zlewni Pokrzywnicy, prawobrzeżnym dopływie Prosnicy. Ochrona Środowiska Zasobów Naturalnych, Nr 39, Paluch J., Malecki Z. J., Golcbiak P. 2009. Wpływ zbiornika zaporowego Goluchów na mikroklimat w zlewni ciemnej (trzewnej), lewobrzeżnym dopływie Prosnicy. Research and Development Civil Engineering Institute "Euroexbud" Polish Association of Ecological Engineering, Directorate of the Ziemia Kaliska Division. Scientific books. Civil Engineering in Environmental Management. No 1]. The increase of the balance of radiation, i.e. cooling down the bank zone in spring and warming up in the second half of summer and in autumn, which takes place in case of retention reservoirs, shall not occur in the planned dry reservoir, as it retains water for maximally 7 days (except extraordinary situations), therefore for most of the days during a season (spring, summer, autumn, winter) it is empty thus it cannot cause such an effect. Weakening the features of continentalism by reducing a daily amplitude of air temperature changes and the difference between extreme monthly and yearly temperatures is an effect connected with long-term storage of water and does not refer to dry reservoirs. Changes of air mass circulation, which are conducive to increased wind frequency and speed and to the reduction of the number of days with silence, are also connected with long-term water retention and are the result of increased balance of radiation. Considerable increase of humidity, both relative and absolute, is the consequence of increased evaporation from free water surface, which does not refer to dry reservoirs. A dry reservoir fills up during flood periods, therefore it is filled up in case of increased humidity and limited participation of solar radiation. In consequence of fast water accumulation and emptying the accumulated water, water in the reservoir is oxygenated and has got no time to warm up in such a way, so that it could cause changes in the local microclimate. Because of short water accumulation in “dry” reservoirs, any of the climatic phenomena described above shall appear and the microclimate within its area shall not change. The works carried out in the construction and liquidation stage of the designed undertaking shall not occasion any climatic phenomena leading to change of microclimate within that facility either. The undertaking in question was designed in

accordance with effective hydrotechnical regulations, which consider extreme phenomena related to climatic changes taking place in environment, what is regulated by relevant regulations concerning design, build and operation of flood protection reservoirs. Any hydraulic structure is exposed to extreme climatic phenomena, such as earthquakes, bursts, harmful influence of water level fluctuations. The purpose of the designed reservoir is only to delay the passage of flood wave. In principle, dry reservoirs do not retain water permanently, therefore their dam is not exposed to continuous action of water. The dam shall be equipped with control and measuring instruments to facilitate determination of displacements of the structure and its elements, surface and ground water levels. In order to maintain proper safety level, technical state of the dam and of the reservoir shall be controlled (apart from current monitoring). The control frequency and scope shall be written down in the reservoir water management instruction manual and shall be in accordance with the requirements laid down in effective legal regulations. The dam body shall be tight and shall be connected with the ground sealing, what minimises the possibility to destroy the dam. This protects the facility from occurrence of filtration taking place in the dam body and in the ground which can violate its stability. The spillway-relief devices are selected in accordance with effective regulations. The devices shall be able to transfer the 1 in 500 years water. The reservoir shall be equipped with 24h monitoring and failure warning system. Periodical checks comprise checking of all elements of the facility. In addition, an independent committee shall control full estimation of technical state (inclusive of field studies and safety coefficient calculation). It should be noted that the designed flood control reservoir itself is one of the elements that increase safety related to such extreme climatic phenomena as floods.

No measures shall be carried out in the construction, operation and liquidation stage of the undertaking aiming to minimise its impact on climatic changes. Indirect measures shall be minimisation of tree removal and lighting of the dam, as well as environmental compensation consisting in planting.

The potential sources of noise shall be machines and devices working on the construction site as well as means of transport at the reservoir implementation stage. The sources of noise shall concentrate in the dam and basin construction area as well as in the construction site backyard. Earthworks shall be a source of a harmful impact on the acoustic environment due to the use of heavy construction equipment. The noise related to car transportation shall not have a big influence on the environment beyond the construction site because materials shall be transported using mainly internal access roads. The noise emitted to the environment in connection with the operation of heavy construction equipment (excavators, bulldozers, loaders and compactors) is local. The above impacts shall be limited to the construction stage and shall not cause irreversible changes in the environment. The dam construction technology requires adequate substrate compaction. This demands appropriate equipment, the work of which generates vibrations. However, the above mentioned impact decreases with the increase of the distance from the vibration source.

The dam and its operation do not pose a hazard to the acoustic climate because they are not sources of noise. The only noise emission source may be the functioning of their related facilities such as roads. The access roads shall be used only to operate the facility and reach the

fields (the pastures). The capacity of the designed roads is estimated at 5 vehicles an hour. With such traffic intensity, the influence on the propagation of the contaminant and noise emission into the environment is negligible. All those roads shall be routed in an area to which the Investor shall have a legal title (in the reservoir basin).

Disruptions related to pollutant emission may occur during the undertaking implementation. The possible emission shall be local and limited in time to the period of construction works. Emission of vehicle exhaust fumes and dust may occur both at the construction site as well as access roads leading to the area designated for construction. Emission of gaseous contaminants by means of transport shall be mainly limited to the construction site, the backyard and access roads. Delivery and assembly of elements shall be performed using heavy transport as well as construction works machinery and devices. In the opinion of the authority, taking into account the scope and type of works (typical construction and assembly works), one can state that the associated emissions shall not cause a permanent, significant impact in the areas within their impact reach. During the construction works, fugitive dust emission may appear, caused by earthworks and car transportation (dust emission from the surface of access roads). Dam operation shall not constitute a source of pollutant emission into the air.

As regards the impact of the planned undertaking on human health and life, the standpoint was expressed by the Lower Silesian Sanitary Inspector in Wrocław, whose competence includes the performance of public health tasks, i.a. by exercising supervision over environmental hygiene conditions, the objective of which is to protect human health from adverse impact of environmental harmfulness and arduousness. Activities of the State Sanitary Inspection within the scope of preventive sanitary supervision includes in particular arrangements of design documentation in respect to hygienic and health requirements. Within its competence, that authority gave positive opinion on the undertaking implementation environmental conditions with regard to hygienic and health requirements.

The undertaking implementation period is associated with changes in the local landscape structure. The appearance and moving of heavy vehicles, the occurrence of portable construction facilities or the erection of individual structures might be seen as directly negative in the visual sense. However, this impact is limited to the investment implementation stage and the area shall be cleared following the completion of works. Natural harmonious landscape, as a result of surface exposure and the works being carried out, shall have the features of devastating landscape. Trees shall be removed in consequence of conducted clearance. Landscape structure, because of the clearance realisation, shall no longer have the quality of diversified structure. After the realisation stage, the landscape shall be re-naturalised (preceded by repair activities within the basin). The only structure with high cultural values, which is located within the reservoir area, is a double span stone road bridge at chainage km 9+204 of Bystrzyca Dusznicka. The Applicant, after arrangements with the Provincial Heritage Conservator, decided to leave the bridge intact (resign from its demolition). Artificial water reservoirs coming into being as a result of separating the river valley by a hydraulic structure may affect the river valley landscape. Area of max. damming up level shall be excluded from development and intensive agriculture. New habitats rich in flora and fauna shall be created on that area. Landscape after natural land renaturalisation within the floodplain shall have features of natural

and meadow landscape. The hydraulic structure itself shall be characterised by cultural harmonious landscape and shall be new foreign object of the landscape. This effect shall be highlighted by internal roads, including the road led along the dam crest and concrete stairway. Negative impact on the landscape shall be mitigated by grass seeding on earth-fill dam and economical application of concrete and reinforced concrete elements for its construction. The dam shall be in the form of longitudinal earth embankment covered with turf. The earth-fill dam shall become a dominant in its immediate vicinity and due to the fact that it shall be a dry reservoir it shall be visible from the side of the basin and from the downstream side. Larger exposure shall be from the downstream side. The dam shall close the necking of the Bystrzyca valley, therefore from the south-east side the view to the valleys of Bystrzyca Dusznicka shall be closed. Slopes with mild inclinations, covered by topsoil and seeded with grass mix, least interfere with the surrounding area, naturally composing with the valley slopes.

There are 5 archaeological sites within the area covered by max. damming up level. For that reason, archaeological rescue research shall be carried out at the construction stage of the reservoir. The works shall be carried out under the supervision and with the consent of the Provincial Heritage Conservator. In case of discovering presumably historical objects, any earthworks which could damage or destroy the discovered object shall be suspended. The object itself and the place of its discovery shall be protected. The Provincial Heritage Conservator shall be immediately informed about any such situation. The fact that should be also underlined is that the Applicant resigned from demolition of the historic bridge, what was discussed herein above.

The Report provides the results of the cumulative environmental impact assessment concerning the undertaking in question together with other hydraulic structures in the Nysa Kłodzka river basin. Assessing the scale of the cumulative impact of the undertaking together with other hydraulic structures on the physical characteristics of the body of water within the scope of hydrological and morphological indicators was based on the methodology used to identify significantly altered bodies of water, contained in the study entitled: "Verification of indicators for an assessment of the quantitative and morphological status of bodies of surface waters together with a change to their threshold values to support the initially identified significantly altered bodies of waters" (Błachuta J., Jarząbek A., Kokoszka R., Sarna S.; KZGW, Warsaw, 2006). The used methodology makes it possible to assess the scale of the undertaking impact on the physical characteristics of the body of water. The methodology is based on hydrological and morphological indicators. The submitted evidence applied: the indicator defining the total non-returnable uptake of surface waters compared to the average low flow in the pseudo-natural multiannual period in the cross-section closing the sub-basin of the body of water; the indicator of meeting the minimum acceptable flow criterion; the total length of embankments of watercourses significant for the sub-basin of the body of water compared to the total length of significant banks; the total height of inventoried damming structures compared to the total level difference of watercourses significant for the sub-basin of the body of water; the total length of watercourse parts cut off by perpendicular structures with a defined level difference compared to the total length of all significant watercourses; and the total length of river sections along which regulation works were performed. The presented indicators make

it possible to characterise the spatial scale of the undertaking.

It stems from the assessment that a dry reservoir does not cause a non-returnable uptake of waters, and therefore the indicator defining the total non-returnable uptake of surface waters compared to the average low flow in the pseudo-natural multiannual period (1960-1980) in the cross-section closing the sub-basin of the body of water shall not change. A dry reservoir passes (without damming) the waters corresponding to Q60%. It means that the natural flow in the river is maintained to that flow size, which automatically guarantees the maintenance of the minimum acceptable flow. A dry reservoir does not introduce new embankments of the watercourse. The side embankment, which is planned to be constructed under this project, is located far, i.e. 200 m away from the watercourse. The embankment shall serve for the protection of newly built estate from waters dammed in the reservoir. Therefore, it does not increase the embankment of watercourse and does not affect the watercourse hydromorphological conditions. Thus it can be stated that the indicator (the total length of embankments of watercourses significant for the sub-basin of the body of water compared to the total bank length of significant watercourses) shall not demonstrate reservoir influence on the cumulative impact in the sub-basin. The indicators concerning: the total height of inventoried damming structures compared to the total level difference of watercourses significant for the sub-basin of the body of water; and the total length of watercourse parts cut off by perpendicular structures with $h > 0.4$ m level difference pertain to sills, weirs and flood storage reservoirs. A property referred to as level difference is necessary to calculate the values of those indicators. The level difference has to be measured from the water table level on the tailwater side during average low water levels to the height of the water structure edge; for a reservoir, it is the difference between the normal damming level and the tailwater level. A dry reservoir has a bottom sluice on the river bed level and does not dam water during low and medium water levels, so it does not possess the physical feature referred to as level difference. The only indicator that shall change slightly is the total length of river sections on which regulation works were performed (longitudinal structures and a documented change of the river course) compared to the total length of significant watercourses. It stems from the analysis that the value of this indicator, including the reservoir, shall reach 0.18 without an adjustment ratio. Thus, the calculation results for the worst case (i.e. without an adjustment ratio) show that this indicator shall not exceed the threshold value of 0.5.

The boundary of the area subject to flooding during the maximum damming up level is 1.5 km from the state border. The Bystrzyca Dusznicka sub-basin is a border sub-basin (state border with the Czech Republic). The peaks of the Orlickie Mountains separate that sub-basin from the state border. "Szalejów Górny" dry reservoir does not significantly influence the watercourses above the boundary of the flooding with the maximum damming level. Owing to the lack of impacts in the upstream parts of the watercourse, no cross-border environmental impact may take place because the waters flow to the inside of the country. All the identified impacts are limited to the reservoir basin or their potential impact area is located downstream of the dam, owing to which they exert no influence on the border rivers.

Based on the submitted documentation taking into account the impact assessment as well as potential environmental hazards associated with the implementation and operation of the

investment and indicating a number of necessary actions in order to secure and minimize the potential negative impacts, the authority decided to impose conditions on undertaking implementation, which are listed in the sentence of this decision.

The condition in clause I.2.1 was imposed to minimise startling and discomfort of animals, in particular birds and bats, when feeding at evening or at night on the areas located in vicinity of the project implementation site.

The condition in clause I.2.2 was defined because it was determined during the analysis of the suggested undertaking scenarios that the scenario with the limited scope of tree removal, i.e. with the removal in the zone characterized by $Q_p=10\%$ flooding probability, was the most favourable scenario to the environment – the reduction of the areas subject to tree removal shall limit the loss of animal living grounds.

The condition in clause I.2.3 was imposed to reduce negative impact of the undertaking on animal species, especially birds during breeding period [almost all bird species staying on the territory of Poland are subject to the protection of species pursuant to the Regulation of the Minister of Environment of October 6th, 2014 *on the protection of animal species* (Journal of Laws of 2014 item 1348), towards which certain prohibitions apply, such as the prohibition to destroy habitats or sanctuaries, being the areas of their breeding, rearing, resting, migration or feeding]. In case of the need to remove the trees in question during the breeding period against the loss of their breeding grounds, feeding grounds and refuges during bird breeding period (within period from March 15th to August 15th), when the ornithological supervision states that the trees are inhabited by birds, the Investor should obtain a permit from relevant authority on the basis of Article 56 of the act on environmental protection for carrying out a/m action being forbidden in reference to the protected species or should suspend the removal until the end of the breeding period (what should be confirmed by an ornithologist).

The condition in clause I.2.4 was imposed to protect bat species which may use trees as refuges – the presence of a specialist is aimed at guaranteeing that trees in which bats are present shall not be cut down.

The periods indicated in clause I.2.5, I.2.17, I.2.24, as well as I.3.4 and I.3.5 were provided to protect Bullhead *Cottus gobio* and Brook lamprey *Lampetra planeri*, which are subject to the protection of species pursuant to the Regulation of the Minister of Environment of October 6th, 2014 *on the protection of animal species*, listed in Annex II to the abovementioned *Habitats Directive*: the works should be performed beyond the spawning period of those species, which lasts from March 1st to May 30th. Moreover, the works should be maximally reduced from September 1st to the end of February due to the migration and breeding period of Brown trout *Salma trutta fario* – a species which is not subject to legal protection, but constitutes a significant component of waters in the scope of fishing management.

The condition in clause I.2.6 is aimed at protecting the swathes of habitats listed in Annex I to *Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora* (OJ EU E.L92.206.7, OJ EU-sp.15-2-102 as amended), i.e. *91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (riparian mixed forests of willow, poplar, alder and ash tree), 9170 Galio-Carpinetum and Tilio-Carpinetum oak-hornbeam forests, *9180 Tilio-Acerion forests of slopes, screes and ravines (*Tilio platyphyllis-Acerion*

pseudoplatani). The surface areas of those habitats inventoried within the boundaries of the undertaking are as follows: 9170 – 3 swathes with a total surface area of approx. 2.42 ha; *91E0 – 1 swathe with a total surface area of 5 ha, whereas habitat *9180 is 1 swathe with surface area of 7 ha. Approx. 1.45 ha of habitat *91E0 and approx. 0.5 ha of habitat *9180 shall be destroyed in connection with investment implementation (as a result of tree removal). 4 swathes of habitat 6430 - mountain tall herb fringe communities (*Adenostylylion alliariae*) and riparian tall herb fringe communities (*Convolvuletalia sepium*) of total surface area: 1.05 ha and of habitat 3260 - Watercourses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation of approx. surface area: 2 ha were also determined within the boundaries of the planned investment, which shall be destroyed during investment implementation due to the impossibility to plan the works in such a way, so that they could be preserved. In addition, with reference to those habitats no minimising measures were indicated due to the fact that in case of habitat 3260 no Ranunculion fluitantis were identified on the researched river section, whereas with regard to habitat 6430 it was considered that it may be quickly regenerated after completion of the works and the fact that it occupied large area within the region. Referring to all a/m habitats it should be stated that taking into account the state of preservation of the inventoried natural habitat swathes, their resources in the region and the scope of the planned works, a/m destructions should not adversely affect the other habitat swathes in the region.

It should be noted as well that the investment area is a place of living of the bird species being covered by the protection of species pursuant to the Regulation of the Minister of Environment of October 6th, 2014 on the protection of animal species and listed in Annex I to *Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (consolidated version) (OJ EU L.10.20.7)*, i.e. eagle-owl *Bubo bubo*. This species is characterised by wide territorial range exceeding 10 km² and nests only in forest or rocky environment. Whereas open areas are its feeding ground. With respect to the above, the investment implementation should not cause any destruction of the breeding grounds of this species but only possible temporarily limited access to its potential breeding grounds.

The conditions in clause I.2.7-I.2.9 are aimed at protecting high greenery and constitute the performance of duties stemming from Article 82 of the *Nature Conservation Act*. The necessity of performing the works manually in the area of root clumps (clause I.2.7) is aimed first and foremost at protecting them against mechanical damage. The conditions in clause I.2.8 and I.2.9 are aimed at protecting high greenery intended to be retained against damage by equipment and against unfavourable changes stemming from excessive soil compaction in their immediate vicinity.

The conditions in clause I.2.10 and I.2.11 are aimed at protecting the soil together with the formed layer of low greenery and the seed bank as well as ensuring the possibility of reusing it to create a fertile soil layer.

The condition in clause I.2.12 is aimed at limiting the death rate of small animals, especially amphibians, including the species protected under the *Regulation of the Minister of the Environment of October 6th, 2014 on protection of animal species (Journal of Laws of 2014, item 1348)* at the investment implementation stage.

The condition in clause I.2.13 was imposed to minimize the surface area occupied in relation to investment implementation and thus limit the destruction of the fertile layer and herbaceous plants as well as reduce the scope of the removal of trees and shrubs.

The condition in clause I.2.14 was imposed to limit the penetration of the areas located within the reservoir basin and thus reduce startling and discomfort of animals living there.

The conditions in clause I.2.15 and I.2.16 were imposed to protect the watercourse beds against mechanical damage by equipment. They are also aimed at protecting the living organisms in the watercourses against accidental killing/destruction and unfavourable changes of physical and chemical parameters (disturbing the bottom deposits, suspension concentration increase) as well as biological parameters (destruction of breeding grounds, feeding grounds and refuges).

The conditions in clause I.2.5 and I.2.18-I.2.22 were imposed to protect the fish fauna. During the performance of works, it is necessary to ensure water flow continuity in the watercourse and appropriate fish fauna living conditions. Works performance in sections is aimed at minimizing the negative impacts related to the works implementation stage: they shall be concentrated on one short section, while the remaining watercourse sections shall be subject to less significant indirect impacts or shall remain beyond the investment impact range, enabling fish fauna to live. It is necessary to conduct ichthyological supervision during the works in the bed and the maintenance works in the rubble catcher area. This should prevent the unfavourable impacts on aquatic organisms. The tasks of an ichthyologist shall include: indicating an appropriate manner of works performance, controlling the correctness of works performance, observing the fish fauna behaviour and ensuring the implementation of adequate measures in the situations threatening the fish fauna. Moreover, it is necessary to protect the watercourse waters against contamination at the investment implementation stage. This is aimed at preventing the changes of the physical and chemical conditions of the water as well as habitat conditions for the river fauna. The term “riverbed” should be construed as space within river valley limited by active flow of waters. Since it may prove impossible to eliminate water contamination with suspension entirely, the condition in clause I.2.21 was imposed: it orders the monitoring of that concentration and interrupting the works as necessary to permit reduction of the concentration of that contaminant in the watercourse.

The application of the measures referred to in clause I.2.23 is aimed at facilitating the entrance of the desired herbaceous plant species in the area subject to the works. It is also aimed at preventing spontaneous entrance of invasive plant species in the river valley.

The conditions in clause I.2.25, I.3.11, II.2.3, II.2.5 were imposed in order for the approving authority to obtain information on the scope and manner of performing the measures (which shall supplement the documentation concerning undertaking implementation) and to obtain a confirmation of a relevant specialist’s participation in the implementation of the provisions contained in the clause, which should ensure appropriate protection of natural habitats as well as plant and animal species. If the examinations reveal a previously unforeseen increase of the negative influence on the natural environment, it shall be possible to indicate and take additional measures minimizing those impacts.

The condition in clause I.2.26 was imposed to protect breeding grounds and shelters from being destructed and to protect young individuals of beaver *Castor fiber* and otter *Lutra Lutra* being

covered by the protection of species pursuant to the *Regulation of the Minister of Environment of October 16th, 2014 on the protection of animal species*, listed in annex II of the a/m *Habitat Directive*. The presence of a specialist is aimed at guaranteeing that the works shall be performed without damage to a/m species and also that in case of unforeseen situations proper measures shall be undertaken to minimise the risk of negative influence on such species.

The earth surface protection (together with soil and relief) consists in preventing and counteracting its unfavourable changes (degradation, devastation) as well as in restoring their appropriate status in case of damage or destruction. One factor causing geomechanical transformations of the earth surface which leads to its degradation is the movement of heavy equipment (cars, cranes, machines) as well as the collection of earth masses and stacking the structural elements directly on the ground surface. Pressing the soil down by heavy equipment increases its density, which reduces the spaces between soil particles, making the soil partially or completely lose its absorption properties. Meeting the conditions defined in clauses I.2.27-I.2.29 shall contribute to minimizing the negative impact of works performed during the construction stage of the undertaking on the soil environment.

Because of the character of the investment and to increase the safety of public and proper operation of the reservoir and to eliminate the risk of error, the authority decided to impose the conditions in clauses I.2.31-I.2.32.

The impact on the soil-aquatic environment during the performance of construction works may be associated with penetration of contaminants, including petroleum derivatives. It is important to ensure proper location of the construction site backyard, put the site in order, maintain the devices in full technical efficiency, and in case of equipment failure to take actions to minimise the contamination. The construction site backyard cannot be located within the reservoir basin area, despite large uninhabited area, because it forms the floodplain and flooding a machine may lead to contamination of ground and water. Hence, in order to protect the soil-aquatic environment and exclude the possibility of contaminant penetration (in particular petroleum derivatives) to the aquatic environment and to the soil, the conditions defined in clause I.2.33-I.2.38 were imposed.

In order to protect the riverbed, the condition in clause I.2.30 was imposed.

The works related to reservoir construction may cause instances of short-term, transient lowering of the groundwater table due to the necessity for performing the necessary drainage during the earthworks and the construction works. Therefore, to protect the qualitative and quantitative status of groundwater, the authority decided to impose the condition defined in clause I.2.39.

The conditions in clauses I.2.40-I.2.41 were imposed to limit the tiresomeness in the scope of the undertaking influence on the acoustic climate and pollution emission to the atmospheric air. The conditions listed in clauses I.2.42 -I.2.43 were imposed to ensure appropriate management of waste generated at the investment implementation stage.

The condition defined in clause I.3.1 is aimed at reducing the water damming period in the reservoir because that period shall make the migration of living organisms through the reservoir more difficult and shall be characterized by different habitat conditions (changes of temperature and oxygenation degree). To prevent the scale of the abovementioned reduction

and changes from exerting a significant influence on living organisms, water storage in the reservoir (except special situations) should not exceed 7 days (water storage with maximum damming for 2 days and then a gradual water outflow from the reservoir). This limitation complies with the flood wave storage period defined in the submitted documentation: it indicates that the maximum damming in the reservoir shall be maintained for no longer than 46.3 h, i.e. less than 2 days (that situation concerns water with the probability of occurrence of 0.1% – so-called 1 in 1000 years water). After that time (or earlier) the water shall be gradually released from the reservoir. The entire process shall not exceed 7 days – this indication also takes into account the necessity of water storage in the reservoir to avoid the overlapping of flood waves on Bystrzyca Dusznicka river and Nysa Kłodzka river (the wave on the Nysa Kłodzka river does not last long enough to necessitate water storage in the reservoir for more than 7 days).

In order to protect aquatic organisms the authority decided to impose the condition in clause I.3.3.

The conditions in clauses I.3.6 and I.3.7 were imposed to maintain the possibility of fish fauna migration through the sluice devices.

The reservoir use manner indicated in clause I.3.8 takes into account its primary function, i.e. the readiness to accommodate a flood wave, which excludes the presence of high greenery. Despite that function, agricultural use is possible in the periods between the passages of flood waves. If the mowing methods and periods are observed, such reservoir use manner shall favour the colonization of that area by invertebrates, including i.a. butterfly species and meadow bird species (e.g. Corncrake *Crex crex*). The limitation concerning the use manner of the rubble catcher indicated in clause I.3.9 stems from the necessity of protecting the fish fauna living there – the reservoir must not be used for angling purposes.

The condition in clause I.3.10 was imposed to limit the light impacts within the investment area as it could have a negative influence on animals, i.a. disturb the present manner of living of insects, bats and birds.

The conditions defined in sections I.4.1-I.4.4 were imposed to minimize the investment influence on fish fauna. The maintenance of the minimum acceptable flow indicated in clause I.4.1 is necessary to maintain the fish fauna living conditions (the maintenance of the minimum acceptable flow on that level is also necessary at the operation stage, as indicated in clause I.3.2). The conditions in clauses I.4.2-I.4.4 are aimed at ensuring the possibility of fish fauna migration through the newly constructed structures and devices. The suggested series of permanent sills is aimed at slowing down and differentiating the water flow, enabling the fish fauna to go through the sluice channel and creating resting places for the organisms in the bottom zone. The indicated location of the sluice device outlet (directly to the stilling basin) shall permit the preservation of the water layer covering the stream bottom even during the lowest possible flows. The minimum width of the trusses indicated in clause I.4.4 is aimed at permitting all the fish species living in Bystrzyca Dusznicka to migrate.

The condition indicated in clause I.4.5 was imposed to minimize the transformations within the watercourse bed which could result in unfavourable changes to the fish fauna habitat conditions. This is first and foremost aimed at preserving the biggest possible number of

breeding, feeding and resting grounds.

The condition in clause I.4.6 was imposed to ensure proper use of excavated earth masses and in order to minimise the soil cover destruction and to protect the soil-aquatic environment.

The planned undertaking up to flow of approx. 15 m³/s does not affect at all the water environment and dependant waters. In this situation, natural flow is preserved, the same as if there was no dam. Hence, the authority decided to impose the conditions specified in clause I.4.7.

The condition of clause I.4.8 was imposed for the protection of existing riparian plants and for the creation of potential plant and animal habitats.

The obligation to monitor the stability of the earth-fill structure referred to in the Report stems from the currently binding legal regulation and aims to monitor the technical state of the structure from the start of the construction works.

Under § 119 of the Regulation of the Minister of the Environment of April 20th, 2007 on technical conditions for hydraulic structures and their location (Journal of Laws No. 86, item 579), hydraulic structures are equipped as required with instrumentation enabling observation and measurement of:

- 1) movement and deformation of the hydraulic structure, its substrate and the adjacent area;
- 2) stresses in the hydraulic structure;
- 3) levels and pressures of groundwater and filtration processes occurring in the hydraulic structure, its substrate and heads;
- 4) headwater and tailwater levels, as well as water levels in the main tributaries;
- 5) changes to the bottom and banks;
- 6) ice phenomena;
- 7) meteorological phenomena.

Thus, the applicant, in order to ensure the dam safety control as required by the regulations, shall perform control-measurement sections equipped with surface benchmarks, deep benchmarks, observation pillars, piezometers, feeler gauges and pressure probes (to measure the water level in the reservoir). The dam shall be equipped with instrumentation to conduct the following: monitoring of vertical movement (subsidence) of the dam substrate and body and the discharge devices, measurement of filtration pressure under the dam body, measurement of the volume of any waters filtering through the dam body, measurement of the water table level in the reservoir basin and measurement of the water levels in the river. According to the regulation by the Minister of the Environment of August 17th, 2006 *on the scope of water management instructions* (Journal of Laws No. 150, item 1087), a list of measurement devices associated with water management located on the water structure as well as the principles of performing observations and measurements shall be defined in the water management instruction. The regulation also defines the notification procedure concerning the occurrence of consequences of dangerous incidents at the water structure. A water study and a water management instruction are necessary to obtain a water permit for special use of surface waters via damming structures. The water management instruction draft is approved by the relevant authority issuing the water permit. Thus, the authority did not introduce into this decision the provisions

pertaining to the principles of observation, measurements and monitoring of the groundwater table and earth-fill structure stability or monitoring the state of dam substrate and structure concerning the possibility of leaks of waters held in the reservoir during the period of freshets, as the obligation to perform these observations stems from the binding legal regulation, and the responsibility in this scope lies with the authority issuing the water permit.

Due to the fact that under Article 75 Par. 3 of the *Environmental Protection Law of April 27th, 2001* (Journal of Laws of 2013, item 1232 as amended), the Investor is obliged to take actions aimed at repairing the damage caused, the conditions of environmental compensation performance were determined, as defined in clause II. This is not environmental compensation within the meaning of Article 35 of the *Nature Conservation Act*.

A significant negative impact related to the investment in question shall be the removal of trees and shrubs, which shall result in the destruction of approx. 1.45 ha of habitat *91E0 and 0.5 ha of habitat *9180. Therefore, clause II.1.1 imposes the obligation to perform planting on a surface area of at least 3.9 ha. The aim of the compensation in the longer term is to improve the living conditions of and create new living grounds for the animal species that lose their habitats in relation to the removal of trees and shrubs in question. It is also aimed at attempting to restore the surface areas of the destroyed habitats, so the planting should consist of the species forming those habitats.

With respect to the planned works in the riverbed and the related possible destruction of the nesting places of Grey wagtail *Motacilla cinerea* and white-throated dipper *Cinclus cinclus* – bird species listed in the *Regulation on protection of animal species* – clause II.1.2 imposes the obligation to perform substitute nesting places, i.e. 40 boxes appropriate for those species.

No hibernation grounds or breeding grounds of bats were found in the designed undertaking area, but the surveillance determined the activity of 7 bat species, i.a. Common noctule *Nyctalus noctula*, Common pipistrelle *Pipistrellus pipistrellus*, Nathusius' pipistrelle *Pipistrellus nathusii*, Daubenton's bat *Myotis daubentonii*, the presence of which is related to migrations and possibly also feeding. In the opinion of the specialists preparing an environmental analysis for the purposes of the Report in question, there is no risk of losing the bat feeding grounds, but the risk of losing their breeding grounds during the removal of trees and shrubs cannot be completely excluded. Therefore, the condition in clause I.1.3 recommends environmental compensation in the form of hanging (and later maintenance) of 50 boxes for bats.

The conditions in clauses II.2.1 and II.2.2 aim to check the state of natural habitats after completion of the reservoir construction and the level of their restoration. The condition in clause II.2.4 aims to control the effectiveness of the proposed measures which minimize the negative impacts related to investment implementation and operation on the fish fauna migration possibility. Should the need arise, the monitoring results shall also constitute the basis for introducing modifications to the applied devices supporting animal migration.

In the opinion of this authority, taking into account the conditions defined in Article 82 Par. 2 of the EPA Act, the data on the undertaking possessed at the time of issuing the decision on the environmental conditions make it possible to exhaustively assess the environmental impact of the undertaking and there is no need to perform an Environmental Impact Assessment of the

undertaking within the scope of the proceedings to issue the decision as referred to in Article 72 Par. 1 of the EPA Act. They made it possible to exhaustively and comprehensively assess its environmental impact, including the cumulative impact of other undertakings, and define the undertaking implementation conditions. The assessment reveals no significant accumulations of negative impacts. The planned undertaking is located outside the boundaries of protected areas referred to in Article 6 of the *Nature Conservation Act*, including outside of Natura 2000 sites. The proceedings underway for the undertaking in question analysed the possibility of occurrence of a potential impact of the planned undertaking on areas requiring special protection due to the occurrence of plant and animal species and their habitats or natural habitats subject to protection, including Natura 2000 sites as well other nature protection forms. The collected evidence made it possible to assess all potential impacts of the undertaking on the environment, including Natura 2000 sites, assess the significance of the impacts, propose adequate minimizing measures and propose alternative solutions within the scope of the measures compensating for the negative impacts which equally well minimize the impact of the undertaking on the environment. Therefore, in the opinion of the present authority, the data on the undertaking possessed at the time of issuing the decision on the environmental conditions make it possible to exhaustively assess the environmental impact of the undertaking, so, under clause III of the present decision, the authority did not impose an obligation to perform an Environmental Impact Assessment of the undertaking within the scope of the proceedings to issue the decision as referred to in Article 72 Par. 1 of the EPA Act.

During the proceedings on issuing the decision in question, the environmental protection authority allowed all evidence which might have contributed to a correct determination on the merits of the case, and the determination was made on the basis of the entire evidence collected during the proceedings, by which fact the authority met the requirements of Article 75 § 1 and Article 80 of the *Administrative Procedure Code*.

In the case of a collision with the sites of plant, animal or fungi species protected under the Regulations of the Minister of the Environment: *of October 9th, 2014 on protection of plant species (Journal of Laws, item 1409)*, *of October 6th, 2014 on protection of animal species (Journal of Laws of 2014, item 1348)* and *of October 16th, 2014 on protection of fungi species (Journal of Laws of 2014, item 1408)*, to which bans are related, the Investor should obtain a separate permit for prohibited activities in relation to those species from a relevant authority before the commencement of works, in accordance with Article 56 of the *Nature Conservation Act of April 16th, 2004 (Journal of Laws of 2013, item 627 as amended)* and, in the event of obtaining such a permit, perform the works with consideration for the conditions stemming from the permit.

In the light of the above, it was ruled as in the decision sentence.

Information

The parties may appeal against the decision to the General Director for Environmental Protection via the Regional Director for Environmental Protection in Wrocław within 14 days of the delivery date.

[two stamps of the Regional Director for Environmental Protection in Wrocław
Michał Jęcz /illegible signature/]

Under Article 7 Subpar. 2 of the Act of November 16th, 2006 on stamp duty (Journal of Laws of 2014, item 1628 as amended), the Regional Water Management Authority in Wrocław is exempt from stamp duty.

Recipients:

1. Jarosław Maciaś
Sweco Hydroprojekt Kraków Sp. z o.o.
ul. Trybuny Ludów 15, 30-660 Cracow
2. The parties to the proceedings via an announcement, under Article 49 of the APC
3. File.

Copies to:

1. The Lower Silesian State Sanitary Inspector in Wrocław

020860626
REGIONAL DIRECTORATE FOR
ENVIRONMENTAL
PROTECTION in WROCLAW
50-153 Wrocław, pl. Powstańców Warszawy 1
tel.: 71 340 68 07, fax 71 340 68 06,
NIP [tax ID No.] 897-17-47-119

Appendix to the decision of the Regional Director for Environmental Protection in Wrocław of September 30th, 2015, ref. No.: WOOS.4233.8.2013.LCK.54 for the undertaking entitled: “Construction of ‘Szalejów Górny’ – a dry flood control reservoir on the Bystrzyca Dusznicka river”

1. Undertaking objective – the operational principle

The subject of the undertaking is the construction of “Szalejów Górny” dry flood control reservoir on the Bystrzyca Dusznicka river, with the accompanying infrastructure, in the Szalejów Górny village and Szalejów Dolny village, Kłodzko Municipality, Kłodzko district, Lower Silesian Province. The Bystrzyca Dusznicka river is a left-hand side tributary of the Nysa Kłodzka river. The dam cross-section of the reservoir was adopted at chainage km 8+910 of Bystrzyca Dusznicka. In administrative terms, the investment is located within the boundaries of Kłodzko Municipality, on the plots located in the precinct Szalejów Górny and Szalejów Dolny.

The maximum flood volume of the reservoir shall reach approx. 10.67 M m³, with a water damming up of up to 342.00 m AMSL.

The operational principle of a dry flood control reservoir is to capture significant volumes of the flood wave in the reservoir basin (confined with a dam) as well as to permit constant outflow of water volumes which are safe to the areas located downstream of the reservoir. The waters shall flow out through a bottom sluice located in the dam on the river bottom level. This shall allow for passing low and medium flows through the reservoir basin as well as for free migration of benthos (downstream) and fish fauna (upstream and downstream of the watercourse). Except flood periods, the river flows freely in the existing bed through the sluice devices.

The reservoir dam shall be an earth-fill dam with a separated concrete sluice part. Beside the bottom sluice, the dam shall also be equipped with spillway devices in the upper part of the dam body.

The primary function of the reservoir shall be readiness to cope with the flood wave. During periods between flood wave passages, the area within the reservoir – to which the Investor shall have a legal title – partially shall be used for agricultural purposes, i.e. as pastures or hay meadows.

2. Scope of works and basic technical parameters of the undertaking:

2.1 The dam – Scope of works

The scope of basic works includes:

- performance of an earth-fill cofferdam made of sheet piles in order to perform sluice

devices,

- soil replacement for construction of the dam
- performance of anti-filtering membrane,
- performance of the dam body, protection of upstream and downstream slope of the dam.

2.2 Side embankment

Side embankment serves for the protection of the estate being under construction from flooding by water dammed in the reservoir. The crown of the designed embankment shall be 5.0 m wide at the same elevation as the dam crest, slopes shall be inclined 1:3 and the designed embankment shall be executed in the same technology as the dam. It shall be equipped with an embankment culvert with a return flap. This culvert shall drain rainwaters which flow down from the area and accumulate at the embankment. In case of catastrophic freshet, the return flap shall protect the estate area from flooding. Water shall be drained by the designed culvert directly to the Bystrzyca Dusznicka riverbed.

2.2 The spillway and discharge devices

The spillway and sluice devices consist of bottom sluice and side spillway with a stairway. Water shall flow along the east thread of the bottom sluice. They serve for safe transfer of river water through the dam. The sluice devices were designed in the form of two rectangular drains as a reinforced concrete structure working without pressure (with free water level). The drains shall be located in the route of the riverbed and shall ensure continuity of water level between the upstream and downstream side of the dam. Inlet to each of the sluices shall be narrowed and equipped with automated flat gate valves.

There are slots in the bottom of the bottom sluice, equipped with sills, which shall diversify the flow of water through the channel and shall provide shelters for fishes migrating through it. The channel is suitable for an average annual flow SSQ. A shelf was designed next to the channel, making it possible for people and animals to cross the sluice. The bottom sluice shall be also equipped with maintenance gates consisting of guideways made from channel bars and valves. The upper sluice is foreseen to work in flood conditions and in case of bottom drain choking. A stilling basin with chicanes was designed at the outlet from the sluices. For the purposes of transferring maintenance waters, an additional steel pipeline was designed with a blind flange located under the upper sluice.

2.2.1 Spillway – scope of works comprises:

- development of a reinforced concrete spillway with a stairway and a stilling basin as well as an outflow bed to Bystrzyca Dusznicka. This is an open spillway, without gate valves, which in hydraulic terms is classified as sharp-edged spillway.

2.2.2 Discharge devices – scope of works comprises:

- development of two reinforced concrete sluices,
- development of a reinforced concrete stilling basin

2.3 Gate valve chamber

Gate valve chambers were designed above the sluice inlets, in which hydraulic drives are situated with feeders for each sluice and a manoeuvring site. Access to the manoeuvring site shall be through exits from the working shelf of the dam. Access to the gate valve chamber was ensured through a traffic gallery situated in a block above bottom sluices. Entrance to the traffic gallery shall be within the stilling basin. Access to the chamber shall be also possible from the side of the reservoir basin through a watertight door. The gate valve chamber shall be equipped with automatic ventilation.

2.4 Grating at the bottom sluice outlet

Grating shall be situated before the bottom sluice inlet, which is to prevent big elements from getting through to it and clog it.

In order to clean and maintain the grating, an access through a ramp approx. 3 m wide and a bridge located over the grating was foreseen.

2.5 Sluice valves and the manners to control them

Inlets to both bottom sluices shall be equipped with valves. Presence of the valves is required and serves i.a. for locking of the sluices for duration of maintenance works, as well as in extraordinary situations.

2.6 Rubble catcher

The function of the rubble catcher is to protect the dam sluices from backfilling with the river load.

Operational rules:

- in case of low flows up to SSQ, water flows through the bed,
- in case of flood flows, which carry lots of rubble, low and mild bank is used (which serves as an overflow), besides it should be highlighted that the rubble catcher shall be founded opposite to water inflow (the bed turns in this place by 90 degrees) – this is to cause that the rubble carried by water should drop into the catcher and settle there, while water should freely flow over through the opposite strengthened cofferdam,
- when water table is below the cofferdam crest, excess of water shall flow down through a set valve – the valve shall be set to the rubble level in the catcher, after filling it, it shall be emptied and the valve shall be lowered,

2.7 Administrative building

Administrative building with technical facilities shall be the new seat of the Inspectorate, meeting the current technical requirements (communication and remote control of the other dams). Administrative building shall be also one of the alarm system control rooms. Control and measuring instruments shall be connected with this building, what provides the possibility of permanent control of the dams.

2.8 Construction of medium voltage line

20 kV medium voltage line collides with the dam axis, it shall be dismantled on that section and executed in new area, partially as underground.

2.9 Roads

Access roads and service roads served for the supervision and maintenance of the reservoir are planned to be built as part of the undertaking.

2.10 Works in the bed:

- development of 15 trims made of rip-rap on the Bystrzyca Dusznicka river, forming slopes and liquidation of outwashes,
- reconstruction and protection of the Bystrzyca Kłodzka riverbed along with execution of interim section downstream of the dam, including the diversion of riverbed (leading to the sluices) and its strengthening,
- backfilling on certain sections the old bed of Bystrzyca Dusznicka from the historic bridge to the dam,
- development of a rubble catcher – an earth structure with steel structure baffle and concrete and wooden elements,
- demolition of bridge structures and outbuildings,
- development of passages through fords and an exit to the outflow bed,
- protection of estuary section of the Cicha stream

2.11 Works in the reservoir basin and in the vicinity of the basin

- collection of earth masses in the course of realisation of the reservoir, which shall be used for the construction of the dam body and accompanying structures,
- demolition of outbuildings downstream of the dam,
- connection of utilities to the location of the administrative building next to the dam and utilities distribution on the dam
- reconstruction of 20 kV medium voltage line, construction of new poles,
- construction of transformer station with temporary and target power,
- development of power generator for a back-up power supply,
- reconstruction of low voltage line in areas of collision with designed elements,
- construction of telecommunication network with control and measuring instruments and data remote transfer,
- construction of a visual monitoring system,
- reconstruction of water pipeline network (non-main one), gas network (connection with max. pressure 0.5 MPa).

[two stamps of the Regional Director for Environmental Protection in Wrocław

Michał Jęcz /illegible signature/]