JOURNAL OF LAWS

OF THE REPUBLIC OF POLAND

Warsaw, 10 July 2015

Item 968

**REGULATION**

**OF THE MINISTER OF THE ENVIRONMENT**1)

of 01 July 2015

**on geological and investment report of a hydrocarbon deposit**

Pursuant to Article 97(1)(2) of the Act of 09 June 2011 – Geological and Mining Law (Journal of Laws [Dz.U.] of 2015, item 196) the following is ordered:

**Article 1.** The Regulation shall specify detailed requirements for the geological and investment report of a hydrocarbon deposit.

**Article 2.** 1. The geological and investment report of hydrocarbon deposits shall be defined as a deposit within:

1. its natural boundaries, or
2. the boundaries set by the application of the limit values of the parameters defining the deposit and its boundaries, or
3. its separated part, if the exploitation of the separated part of a hydrocarbon deposit does not threaten the rational exploitation of the hydrocarbon deposit and the neighbouring deposits.
   1. In the case referred to in Article 89(5) of the Act of 09 June 2011 − Geological and Mining Law, hereinafter referred to as “the Act”, the new geological and investment report of a hydrocarbon deposit drawn up for a part of a hydrocarbon deposit intended for development shall include the name of the hydrocarbon deposit followed by the Arabic numeral, starting with 1.
   2. If a geological and investment report of a hydrocarbon deposit is prepared for a deposit resulting from a merger of two or more deposits, the name of a new hydrocarbon deposit in that report may be at most double-barrelled, with the proviso that at least one part refers to the name of one of the previous deposits.

**Article 3.** The geological and investment report of a hydrocarbon deposit shall specify the results of geological development works previously carried out in the area specified in the report.

**Article 4.** The geological and investment report of a hydrocarbon deposit within the boundaries of the planned mining area shall specify:

1. the optimal variant of rational use of the resources from this deposit, including in particular by way of comprehensive and rational use of the main mineral, a concurrent mineral and the associated minerals, taking into account:
   1. geological conditions of occurrence of hydrocarbon deposits,
   2. technical capabilities and economic conditions of hydrocarbon extraction,
   3. expected manner of decommissioning mining plants, environmental protection, protection of resources left in the deposit after the end of exploitation and reclamation of land after mining activity in land areas and conducting activities aiming at restoring utility or natural values in the maritime territories of the Republic of Poland, including removal of the underwater infrastructure located on the seabed;
2. activities necessary for environmental protection, including exploitation technology ensuring reduction of negative environmental impacts.

1) The Minister of the Environment manages the government administration department – the environment, on the basis of Article 1(2)(2) of the Regulation of the President of the Council of Ministers of 22 September 2014 on detailed scope of activity of the Minister of the Environment (Journal of Laws [Dz.U.], item 1267).

**Article 5.** In the geological and investment report of a hydrocarbon deposit, the method of making the hydrocarbon deposit resources accessible and extractable shall be specified, which shall enable future development of the part of the hydrocarbon deposit not covered by the development and development of the resources of the deposits occurring in the neighbourhood of the deposit.

**Article 6.** 1. Geological and investment report of a hydrocarbon deposit shall be prepared divided into a text geological and investment part, a graphic geological and investment part and a tabular part, regardless of the category of the deposit recognition, in the form of:

1. typescript or computer printout;
2. electronic document within the meaning of Article 3(2) of the Act of 17 February 2005 on computerisation of the activities of business entities pursuing public tasks (Journal of Laws [Dz.U.] of 2014, item 1114).
3. The text part of the geological investment report of a hydrocarbon deposit shall contain:
4. sheets and summaries:
   1. a title sheet of a geological and investment report of a hydrocarbon deposit for deposits of natural gas, crude oil and their natural derivatives, as well as methane present in hard coal deposits as the main mineral, the template of which is specified in Annex No 1 to the Regulation,
   2. a summary of geological reserves, including recoverable geological reserves and unrecoverable geological reserves, extractable reserves, industrial and non-industrial reserves of hydrocarbons by category of exploration of a deposit, for deposits of natural gas, crude oil and their natural derivatives, the model of which is set out in Annex No 2 to the Regulation,
   3. a summary of the extractable reserves, industrial reserves and non-industrial reserves of methane present in a hard coal deposit as the main mineral for deposits of methane present in hard coal deposits as the main mineral, the template of which is set out in Annex No 3 to the Regulation,
   4. an information sheet of a hydrocarbon deposit for deposits of natural gas, crude oil and their natural derivatives, and methane present in deposits of hard coal as the main mineral, the template of which is set out in Annex No 4 to the Regulation,
   5. an information sheet for geological and investment report of a hydrocarbon deposit or an appendix to geological and investment report of a hydrocarbon deposit, for deposits of natural gas, crude oil and their natural derivatives, as well as methane present in hard coal deposits as the main mineral, the template of which is specified in Annex No 5 to the Regulation,
   6. a summary of dates and numbers of decisions approving or notifying the acceptance without reservations of earlier geological and investment reports of hydrocarbon deposits and appendices to the geological and investment report of hydrocarbon deposits, and decisions approving geological and investment reports of hydrocarbon deposits and appendices to the geological and investment report of hydrocarbon deposits for deposits of natural gas, crude oil and their natural derivatives, as well as methane present in hard coal deposits as the main mineral, the template of which is set out in Annex No 6 to the Regulation;
5. a list of chapters;
6. a descriptive geological part with division into chapters defining:
   1. the purpose of preparing a geological and investment report of a hydrocarbon deposit;
   2. an administrative location of the hydrocarbon deposit, geographical characteristics of the hydrocarbon deposit (location of the deposit, land development, characteristics of the condition of the environment and its protection, condition of the deposit development and its surroundings),
   3. the condition and method of recognition of hydrocarbon deposits, and in extracted deposits − the condition and method of exploitation of hydrocarbon deposits,
   4. geological conditions of hydrocarbon deposits (stratigraphy, tectonics),
   5. geological characteristics of a hydrocarbon deposit, its locations, forms, structures, tank properties for a hydrocarbon deposit, and in the case of a methane deposit present in hard coal deposits as the main mineral − characteristics of coal methane bearing capacity and coal-bearing series,
   6. characteristics of the type and quality of the main mineral, associated minerals and concurrent mineral extracted from a hydrocarbon deposit, co-occurring useful trace elements and technological properties of the minerals and possible directions of their use,
   7. results of tests and characteristics of geological and mining conditions of hydrocarbon deposits, in particular hydrogeological, geological and engineering, gas and geothermal, to the extent necessary to plan, conduct and complete the exploitation and use the land after completing mining activity and reclamation of this area, and in a hydrocarbon deposit intended for underground tankless storage of substances and underground waste storage – to the extent necessary to design this activity,
   8. data concerning the structure of a hydrocarbon deposit, conditions of its occurrence, mineral quality and presentation of the properties of rocks surrounding the hydrocarbon deposit, which are taken into account when assessing the impact of extraction on the environment, as well as the harmful substances present in the deposit,
   9. method of determining the boundaries of a hydrocarbon deposit and its parameters used to calculate the hydrocarbon deposit reserves, justification for the choice of the method of calculating the hydrocarbon deposit reserves and the adopted method of classifying the hydrocarbon deposit reserves with respect to the degree of recognition of a hydrocarbon deposit,
   10. hydrocarbon reserves and the accuracy of their estimation:
       * reserves of the main mineral deposit, divided into:
         + – recoverable geological reserves,
         + – unrecoverable geological reserves – if they are documented,
         + – extractable reserves,
       * associated and concurrent minerals extracted from a hydrocarbon field, divided into:
         + – recoverable geological reserves,
         + – unrecoverable geological reserves – if they are documented,
         + – extractable reserves,
       * resources of concurrent beneficial trace elements,
   11. settlement of hydrocarbon reserves in relation to the reserves documented in the most recent geological report of a hydrocarbon deposit or an appendix to the geological report of a hydrocarbon deposit approved or accepted without reservations or in the geological and investment report of a hydrocarbon deposit or an appendix to the geological and investment report of a hydrocarbon deposit and explaining the differences found,
   12. conditions for the protection of a hydrocarbon deposit and an area requiring protection against activities preventing the development of a hydrocarbon deposit,
   13. list of literature and archival materials used to prepare geological and investment report of hydrocarbon deposits;
7. a descriptive investment part with division into chapters defining:
   1. characteristics of geographical, legal and environmental conditions affecting the possibility of exploiting a hydrocarbon deposit or a part of a hydrocarbon deposit and the location of mining plant facilities,
   2. boundaries of the planned mining area and mining area together with the justification of the boundaries of the intended exploitation,
   3. location and method of access to hydrocarbon deposits, proposed systems of exploitation of main, associated and concurrent mineral deposits, taking into account geological and mining conditions, in particular hydrogeological and geological and engineering conditions, together with expected water inflows, drainage methods and quality of the pumped water and the impact of the intended exploitation on the surface of the area and building structures, and in the case of the maritime territories of the Republic of Poland − the impact of the intended exploitation on the seabed and the infrastructure located thereon,
   4. risks that may affect the safety of exploitation and the protection of resources and how to counteract them,
   5. expected volume of extraction of hydrocarbons, particularly in annual periods,
   6. conditions of water injection into the rock mass if, in connection with hydrocarbon extraction from the deposit, it is planned to inject water into the rock mass,
   7. criteria for classifying hydrocarbon reserves to industrial reserves or non-industrial reserves under existing geological, technical and economic conditions, as well as the method of determining and the size of industrial and non-industrial reserves and the scope of their possible changes,
   8. degree of use of industrial reserves, together with an explanatory statement,
   9. degree of intended use of associated and concurrent mineral reserves and recoverable concurrent and associated minerals, including toxic ones,
   10. method and scope of protection of non-industrial reserves and the conditions necessary for their reclassification to industrial reserves as a result of hydrocarbon deposit exploitation,
   11. expected method of decommissioning the mining plant, protection of reserves left in the deposit after the end of exploitation and the expected method of land reclamation after mining activity in land areas and conducting activities aiming at restoring utility or natural values in the maritime territories of the Republic of Poland, including removal of the underwater infrastructure located on the seabed,
   12. characteristics of economic conditions for the exploitation of a hydrocarbon deposit and the use of a hydrocarbon deposit, and in case these factors determine the classification of hydrocarbon deposit reserves to industrial and non-industrial reserves − detailed economic analysis of the exploitation of a hydrocarbon deposit and the use of a hydrocarbon deposit,
   13. activities necessary for environmental protection and exploitation technology ensuring reduction of negative impacts on the environment,
   14. detailed requirements for the rational exploitation and proper use of the minerals in the deposit;
8. annexes including:
   1. discussion of the history of exploration and exploitation of the deposit,
   2. discussion of performed geological development works and specialist studies and the methods of their implementation,
   3. results of specialist studies carried out,
   4. list of the geophysical surveys carried out,
   5. presentation of the statistical or geostatistical surveys carried out and their results,
   6. copies of documents, the content of which is significant for the prepared geological and investment report of a hydrocarbon deposit, including decisions approving the geological report of a hydrocarbon deposit and appendices to the geological report of a hydrocarbon deposit, decisions approving the geological and

investment report of a hydrocarbon deposit, and appendices to the geological and investment report of a hydrocarbon deposit, notifications on acceptance of the geological report of a hydrocarbon deposit and appendices to the geological report of a hydrocarbon deposit, concessions and copies of applications for geological works to perform geophysical surveys in order to examine geological structures relating to the occurrence of hydrocarbon deposits, acceptance reports or other documents confirming the transfer of geological information from the current course of geological development works to the concession-granting authority or to the national geological service keeping the archive referred to in Article 162(1)(2) of the Act,

* 1. proof of the existence of the right to use the geological information on the basis of which the geological and investment report of a hydrocarbon deposit was prepared.

1. The provision of section 2(5)(g) shall not apply to preparation:
2. geological and investment report of a hydrocarbon deposit and appendices to the geological and investment report of a hydrocarbon deposit in the cases referred to in Article 9(3) and Article 11;
3. geological and investment report of a hydrocarbon deposit and appendices to the geological and investment report of a hydrocarbon deposit in the cases referred to in Article 89(5) of the Act;
4. geological and investment report of a hydrocarbon deposit and an appendix to the geological and investment report of a hydrocarbon deposit for the purposes of changing a concession in the case referred to in Article 205(3) of the Act.
5. The graphic part of the geological and investment report of a hydrocarbon deposit shall contain:
6. for the geological part of the documentation:
7. hydrocarbon deposit location map prepared on a topographic map obtained from the state surveying and cartographic repository, depending on the deposit size in the scale from 1:10,000 to 1:50,000, or on nautical charts of the maritime territories of the Republic of Poland, prepared in particular by Biuro Hydrograficzne Marynarki Wojennej [the Naval Hydrographic Office], depending on the deposit size in the scale from 1:25,000 to 1:500,000,
8. topographic map prepared on the basis of data and information obtained from the state surveying and cartographic repository, of land areas, prepared in an appropriately selected scale, enabling a detailed presentation of the boundaries of the documented area and the boundaries of the hydrocarbon deposit as well as the places where the research in the documented area was conducted, in particular the drilling and geophysical surveys,
9. situational and bathymetric map (survey plan) for the maritime territories of the Republic of Poland prepared, in particular, by the maritime offices and the Naval Hydrographic Office of the Republic of Poland, on a scale enabling a detailed presentation of the boundaries of the documented area and the boundaries of hydrocarbon deposits as well as the places where the research in the documented area was conducted, in particular drilling and geophysical surveys,
10. geo-environmental map of the hydrocarbon deposit area presenting the components of the environment under protection, prepared in a scale enabling a detailed presentation of the components of the environment under protection, including the location of the hydrocarbon deposit,
11. maps and stratigraphic sections illustrating the conditions of occurrence, form, arrangement and structure of a hydrocarbon deposit, its tank parameters and, in the case of deposits with several openings, the quality of the mineral,
12. structural map or maps of the roof or roofs of gas-bearing or oil-bearing horizons,
13. geological maps and stratigraphic sections, and depending on the needs − also hydrogeological, geological and engineering, geothermal, geothermal and gas-bearing maps and sections,
14. drilling profiles;
15. for the investment part of the documentation:
16. topographic map prepared on the basis of data and information obtained from the state surveying and cartographic repository, for land areas in a scale enabling a detailed presentation of the area to be developed with the indication of the boundaries of the hydrocarbon deposit, the boundaries of the planned mining area, the boundaries of adjacent mining areas for hydrocarbon deposits, the proposed place or places of access to the hydrocarbon deposit,
17. situational and bathymetric map (survey plan) for the maritime territories of the Republic of Poland prepared, in particular, by the maritime offices and the Naval Hydrographic Office of the Republic of Poland, in a scale enabling a detailed presentation of the area to be developed with the indication of the boundaries of the hydrocarbon deposit, the boundaries of the planned mining area, the boundaries of the neighbouring mining areas and the mining areas for hydrocarbon deposits, the proposed place or places of access to the deposit.
18. The tabular part of the geological and investment report of a hydrocarbon deposit shall contain the following information:
19. results of research on the type and quality of the mineral;
20. calculation of mineral reserves in individual parts of a deposit or in calculation blocks;
21. collective summary of hydrocarbon reserves;
22. calculations of industrial and non-industrial reserves in the area planned for development, taking into account the state as at 31 December of the year preceding the year of preparation of geological and investment report of a hydrocarbon deposit, however, if the geological and investment report of a hydrocarbon deposit is prepared in the period from 1 January to 31 March, these calculations take into account the state as at 31 December of the year preceding the year preceding the year of preparation of geological and investment report of a hydrocarbon deposit;
23. list of coordinates of the area presented in the two-dimensional Cartesian coordinate system, belonging to the state spatial reference system:
    1. points delimiting the boundaries of a documented hydrocarbon deposit, compiled in accordance with the order in which they are joined, and in the case of a deposit documented in several areas – with a division into areas; in the maritime territories of the Republic of Poland, the list of points delimiting the boundaries of a documented hydrocarbon deposit is additionally determined in the WGS 84 geodetic reference system,
    2. drilled boreholes, and for land areas along with the numbers of properties on which the boreholes are located.
24. When this paragraph refers to:
25. recoverable geological reserves – they are understood as reserves that meet the limits of the parameters defining the deposit;
26. unrecoverable geological reserves – they are understood as reserves that do not meet the limits of the parameters defining the deposit;
27. extractable reserves – they are understood as the reserves of a deposit technically possible to be extracted;
28. industrial reserves – they are understood as a part of recoverable or unrecoverable geological reserves of a hydrocarbon deposit, within the boundaries of the planned mining area or a separate part of the deposit intended for development, which may be the subject of technically and economically justified exploitation, taking into account in particular the requirements concerning environmental protection;
29. non-industrial resources – they are understood as a part of recoverable or unrecoverable geological reserves of hydrocarbon deposits not classified as industrial resources in the area planned for development, the exploitation of which may become justified as a result of technical, economic or environmental changes.

**Article 7.** 1. In the geological and investment report of hydrocarbon deposits, the geological boundaries of hydrocarbon deposits are determined as natural boundaries or by the use of parameters defining the deposit and its boundaries.

1. In the geological and investment report of a hydrocarbon deposit and the appendix to the geological and investment report of a hydrocarbon deposit prepared in order to settle the reserves remaining in the deposit, “recoverability” criteria or limit values of parameters defining the deposit and its boundaries, used to calculate the reserves, adopted in the latest geological report of a hydrocarbon deposit and the appendix to the geological report of a hydrocarbon deposit approved or accepted without reservations or in the geological and investment report of a hydrocarbon deposit and the appendix to the geological and investment report of a hydrocarbon deposit, should be used.
2. The limit values of the parameters defining a deposit and its limits for a hydrocarbon deposit to be used for the preparation of geological and investment report for a hydrocarbon deposit shall be set out in Annex No 7 to the Regulation.
3. The application of other values of parameters defining a deposit and its limits for a hydrocarbon deposit than those specified in Annex No 7 to the Regulation for the preparation of geological and investment report of a hydrocarbon deposit shall be possible in the case of specific:
4. geological conditions;
5. technical or economic conditions of extraction of hydrocarbons from a deposit or relating to their use.
6. The application of other values of parameters defining a deposit and its limits for a hydrocarbon deposit than those specified in Annex No 7 to the Regulation shall require justification in the text part of the prepared geological and investment report for a hydrocarbon deposit.

**Article 8.** 1. In the geological and investment report of a hydrocarbon deposit, excluding natural gas deposits from gas-bearing shale and oil deposits from oil-bearing shale, the following categories of recognition of hydrocarbon deposits shall be used: C, B, A.

1. A geological and investment report of a hydrocarbon deposit or a part of it, excluding natural gas deposits from gas-bearing shale and oil deposits from oil-bearing shale, shall satisfy the following requirements for each category of appraisal:
2. in category C – hydrocarbon deposit boundaries shall be determined on the basis of the results of geophysical surveys and geological interpretation; the obtained data included in the geological and investment report of a hydrocarbon deposit enable the planning of works necessary for further exploration or development of the deposit after obtaining from at least one borehole of the inflow of mineral resources in an amount of economic significance or, in the case of multi-horizontal deposits, after determining the saturation of gas and oil-bearing levels with hydrocarbons on the basis of drilling geophysical profiling on the basis of at least one borehole of industrial inflow of mineral resources, while the error of estimating average values of the deposit and reserves parameters may not exceed 50%;
3. in category B – geological structure of a hydrocarbon deposit, its boundaries and tank parameters and their variability shall be determined on the basis of detailed results of geological works carried out; the obtained data included in the geological and investment report of a hydrocarbon deposit enable planning works necessary for further identification of a hydrocarbon deposit or its development, after obtaining from at least one borehole of an inflow of mineral in an amount of economic significance, while the error of estimating average values of the deposit and reserves parameters may not exceed 35%;
4. in category A – the data determined for category B shall be determined taking into account the results obtained from the exploitation, while the error of estimating the average values of parameters of the deposit and reserves shall not exceed 20%.
5. In the geological and investment report of hydrocarbon deposits for gas-bearing shale gas deposits and for oil-bearing shale oil deposits, the category of recognition of hydrocarbon deposits C shall be used.
6. The geological and investment report of a hydrocarbon deposit for a gas-bearing shale gas deposit and an oil-bearing shale deposit in the category C shall define a deposit or a part of it, initially examined to such an extent that the results of such research enable the presentation of the method of development of a deposit or its part in the geological and investment report of a hydrocarbon deposit; the reserves of hydrocarbon deposits specified in this documentation shall be estimated on the basis of data from at least one borehole from which they were obtained after stimulation measures, in particular fracturing, flow of natural gas or crude oil in economically significant quantities, and on the basis of interpretation of the results of geophysical surveys to determine the volume and gas-bearing capacity (oil-bearing capacity) of the deposit.

**Article 9.** 1. The geological and investment report of a hydrocarbon deposit or an appendix to the geological and investment report of a hydrocarbon deposit, with the exception of methane present in hard coal deposits as the main mineral, containing a new determination of primary reserves consistent with the current state of the knowledge, shall include an explanation of the reasons for the changes in these reserves.

1. The geological and investment report of the exploited hydrocarbon deposit or an appendix to the geological and investment report of the exploited hydrocarbon deposit, apart from the results of geological works performed in order to document the deposit, shall include data contained in the geological and surveying documentation of the mining plant, results of current hydrocarbon deposit testing and results of specialist surveys, in particular hydrogeological, geological and engineering, gas, geothermal and other information necessary to determine the planned use of the area after the end of mining activity and its reclamation.
2. In the event of discontinuation or decommissioning of a hydrocarbon deposit, the settlement of hydrocarbon deposit reserves shall be made in the appendix to the geological and investment report of the hydrocarbon deposit. The provisions of Article 6(2)(4), 6(4)(2) and 6(5)(4) shall not apply to the preparation of such an appendix.
3. The geological and investment report of a hydrocarbon deposit or an appendix to the geological and investment report a hydrocarbon deposit shall include materials that document the changes in the text, tables and graphics, settlement of hydrocarbon deposit reserves and explanation of the differences in the size of the documented reserves.

**Article 10.** A change in the geological documentation of a hydrocarbon deposit, which has been approved or accepted without reservations, shall be made by preparing geological and investment report of a hydrocarbon deposit.

**Article 11.** If a hydrocarbon deposit is discontinued or decommissioned for which the geological report of the hydrocarbon deposit has been approved or accepted without reservations, the settlement of hydrocarbon deposit reserves shall be made in the geological and investment report of the hydrocarbon deposit.

**Article 12.** The Regulation shall come into force after 14 days from the day of publishing.2)

Minister of the Environment: *M.H. Grabowski*

2) The scope of matters regulated by this Regulation was previously regulated in the Regulation of the Minister of the Environment of 22 December 2011 on geological report of mineral deposits (Journal of Laws [Dz.U.] No 291, item 1712), which in this respect shall expire on the date of entry into force of this Regulation pursuant to Article 26(1) of the Act of 11 July 2014 amending the Act – Geological and Mining Law and certain other acts (Journal of Laws [Dz.U] item. 1133).

Annexes to the Regulation of the Minister of the Environment of 01 July 2015 (item 968)

**Annex No 1**

*TEMPLATE*

# TITLE SHEET OF THE GEOLOGICAL AND INVESTMENT REPORT OF A HYDROCARBON DEPOSIT

## The entity financing the report: ...........................................................................................

Deposit user\*): ......................................................................................................

Report contractor: ..........................................................................................

**Geological and investment report of a deposit** ............................. ..............................

(name of the mineral) (name of the deposit)

## for land areas:

commune/municipality: …………………………………………………………………………………

district: …………………………………………………………………………………

voivodeship: …………………………………………………………………………

for the maritime territories of the Republic of Poland:

region: …………………………………………………………………………………

(in particular: pool, shoal, bay, deep)

# Report prepared by:

## …………………………………………

(signature with first name and surname and geological qualification number or

decision number recognising professional qualifications in geology or signature with full name

and the indication “person providing cross-border services in the field of geology”)

(town/city, year)

Explanation:

\*) Not to be filled in if there is no user of the deposit.

**Annex No 2**

*TEMPLATE*

##### A SUMMARY OF GEOLOGICAL RESERVES, INCLUDING RECOVERABLE GEOLOGICAL RESERVES AND UNRECOVERABLE GEOLOGICAL RESERVES, EXTRACTABLE RESERVES, INDUSTRIAL AND NON-INDUSTRIAL RESERVES OF HYDROCARBONS BY CATEGORY OF EXPLORATION OF A DEPOSIT

###### ............................. **IN THE DEPOSIT** ..............................

(name of the mineral) (name of the deposit)

##### AS AT 31 DECEMBER ........\*) [thousand of tonnes or million m3]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Mineral deposit | Specification | Recoverable geological reserves / unrecoverable geological reserves\*\*) | | | |
| total | A | B | C |
|  | Primary geological reserves |  |  |  |  |
| Primary extractable reserves |  |  |  |  |
| Current extraction  from ……… to ……… |  |  |  |  |
| Condition of geological reserves |  |  |  |  |
| Condition of extractable reserves |  |  |  |  |
| Industrial reserves |  |  |  |  |
| Non-industrial reserves |  |  |  |  |

**Report prepared by:**

###### ....................................................................

(signature with first name and surname and geological qualification number or

decision number recognising professional qualifications in geology or signature with full name

and the indication “person providing cross-border services in the field of geology”)

Explanation:

\*) In the case of decommissioning, the date of cessation of exploitation must be stated.

\*\*) Delete where not applicable. The table for recoverable geological reserves shall be attached only in the case of estimation of unrecoverable geological reserves.

**Annex No 3**

*TEMPLATE*

**A SUMMARY OF THE EXTRACTABLE RESERVES, INDUSTRIAL RESERVES AND NON-INDUSTRIAL RESERVES OF METHANE CONTAINED IN A HARD COAL DEPOSIT**

#### ………………………………..

(deposit name)

### AS THE MAIN MINERAL

**AS RECOGNISED ON 31 DECEMBER .............. \***)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mineral deposit  Type/quality | Extractable recoverable geological reserves [mln m3] | | | |
| total | A | B | C |
| Adsorbed methane |  |  |  |  |
| Free methane\*\*) |  |  |  |  |
| Recoverable geological reserves in total |  |  |  |  |
| Industrial reserves |  |  |  |  |
| Non-industrial reserves |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mineral deposit  Type/quality | Extractable unrecoverable geological reserves\*\*\*) [mln m3] | | | |
| total | A | B | C |
| adsorbed methane |  |  |  |  |
| free methane\*\*) |  |  |  |  |
| Extractable unrecoverable geological reserves in total |  |  |  |  |
| Industrial reserves |  |  |  |  |
| Non-industrial reserves |  |  |  |  |

**Report prepared by:**

#### ....................................................................

(signature with first name and surname and geological qualification number or

decision number recognising professional qualifications in geology or signature with full name

and the indication “person providing cross-border services in the field of geology”)

Explanation:

\*) In the case of decommissioning, the date of cessation of exploitation must be stated.

\*\*) If it occurs in a deposit.

\*\*\*) This part of the table shall be included only in the case of estimation of unrecoverable geological reserves.

**Annex No 4**

*TEMPLATE*

# AN INFORMATION SHEET OF A HYDROCARBON\*)

## ............................ ..............................

(name of the mineral) (name of the deposit)

## Deposit name:

* 1. Deposit code (in MIDAS system):
  2. Main mineral:
  3. Deposit location:

for land areas:

City/town: …………… commune/municipality: …………… district: ……...…… voivodeship: ……………

for the maritime territories:

region (in particular: pool, shoal, bay, deep): ………………………………………

* 1. Deposit user (full name):

address:

telephone:

fax:

e-mail:

* 1. Mining supervision:
  2. Extraction concession / investment decision (for developed deposits): concession / decision number:

Issued by:

Issued on:

Expiry date:

* 1. Mining district and mining area (name of the district): decision No:

Issued by:

Expiry date:

Status:

* 1. Deposit development project / appendix No: decision No / notice of acceptance:

Issued by:  
Issued on:

* 1. Total area of the deposit: ……… ha
  2. Type of property above the deposit:

woodland: …… ha

farmland: …… ha industrial buildings: …… ha municipal land: …… ha

other (in particular: parks, nature reserves, water intake areas) ha

* 1. Environmental hazards caused by extraction:
  2. Deposit development status:
  3. Date of commencement of extraction:
  4. Date of cessation of extraction:
  5. Stratigraphy and lithology of reservoir rock:
  6. The subtypes of main minerals:
  7. Coalbed methane volume:

from …… to …… on average …… m3/t c.s.w.

* 1. The depth of the roof of the methane bearing zone:

from …… to …… m

* 1. Total thickness of methane bearing deposits: …… m
  2. Quality parameters of types and subtypes of the main mineral:

min. max. on average unit

methane CH4 …… …… …… ……

ethane C2H6 …… …… …… ……

heavy hydrocarbons C3 …… …… …… ……

carbon dioxide CO2 …… …… …… ……

nitrogen N2 …… …… …… ……

hydrogen sulfide H2S …… …… …… ……

helium He …… …… …… ……

net calorific value …… …… …… ……

specific gravity of crude oil …… …… …… ……

paraffin …… …… …… ……

sulphur S …… …… …… ……

mercury Hg …… …… …… ……

* 1. Associated minerals:
  2. A concurrent mineral extracted from a deposit of hydrocarbons:
  3. Number of oil and gas bearing and methane bearing levels of coal deposits:
  4. Depth of the deposit location: …… m
  5. Depth of the underlying water position: …… m
  6. Effective thickness of the deposit: …… m
  7. Porosity: …… %
  8. Permeability: …… mD
  9. Gas/oil bearing of shale …… m3/t of shale
  10. Silica content in shale: …… %
  11. Carbonate content in shale: …… %
  12. Clay minerals content in shale: …… %
  13. Total organic carbon content in shale (TOC): …… %
  14. Hydrocarbon saturation ratio: …… %

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 36. | Primary deposit pressure: …… | MPa |  | | |
| 37. | Current pressure: …… MPa |  |
| 38. | Deposit temperature: …… oC |  |
|  |  | min. | max. | on average | unit |
| 39. | Absolute capacity (Vabs): | …… | …… | …… | m3/min, t/d |
| 40. | Allowed capacity (Vallow): | …… | …… | …… | m3/min, t/d |
| 41. | Water ratio: | …... | …… | …… | g/m3 |
| 42. | Gas ratio: | …… | …… | …… | m3/t |
| 43. | Oil ratio: | …… | …… | …… | g/m3 |
| 44. | Chemical type of deposit water: |  |  |  |  |

1. The degree of mineralisation of the deposit water: …… g/l
2. Production conditions:
3. Extraction rate:
4. Reserve calculation method:
5. Estimation error for average values of deposit and reserves parameters:

**Documentation prepared by:**

....................................................................

(signature with first name and surname and geological qualification number or

decision number recognising professional qualifications in geology or signature with full name

and the indication “person providing cross-border services in the field of geology”)

Explanation:

\*) Blank spaces on the information sheet shall be marked “not applicable”. Sections 30–34 apply to natural gas deposits from gas-bearing shales and oil deposits from oil-bearing shales.

**Annex No 5**

*TEMPLATE*

# AN INFORMATION SHEET FOR GEOLOGICAL AND INVESTMENT REPORT OF A HYDROCARBON DEPOSIT / AN INFORMATION SHEET FOR THE APPENDIX

**(FOLLOWING NO) TO GEOLOGICAL AND INVESTMENT REPORT OF A HYDROCARBON DEPOSIT\*)**

## .............................. ...........................

(name of the mineral) (name of the deposit)

## Date of commencement of surveys: ...............................................

Date of completion of surveys: ..............................................

Number of drills made: ……… total metric area: ……… contractor: …………………...

drilling depth: from: ………… to: ………

profiling of boreholes: contractor ............................................................................................

(signature with first name and surname and geological qualification number or decision number recognising professional qualifications in geology or the indication “person providing cross-border services in the field of geology”)

## Sampling: contractor .........................................................................................................

(signature with first name and surname and geological qualification number or decision number recognising professional qualifications in geology or the indication “person providing cross-border services in the field of geology”)

## Storage place of:

− geological samples ……………………………………………………………………...

− source materials transferred to the archives: ………………………………………

Geophysical surveys of the boreholes:

type: ....................... number: ……… contractor: ......................................................................

(signature with first name and surname and geological qualification number or decision number recognising professional qualifications in geology or the indication “person providing cross-border services in the field of geology”)

## Surface geophysical surveys:

type: ....................... number: ……… contractor: ......................................................................

(signature with first name and surname and geological qualification number or decision number recognising professional qualifications in geology or the indication “person providing cross-border services in the field of geology”)

## Laboratory tests:

type: ....................... number: ……… contractor: ........................ name of the laboratory: .................

(first name and surname)

## Hydrogeological surveys:

type: ....................... number: ……… contractor: ......................................................................

(signature with first name and surname and geological qualification number or decision number recognising professional qualifications in geology or the indication “person providing cross-border services in the field of geology”)

## Geological and engineering surveys:

type: ....................... number: ……… contractor: ......................................................................

(signature with first name and surname and geological qualification number or decision number recognising professional qualifications in geology or the indication “person providing cross-border services in the field of geology”)

## Gas tests: contractor .....................................................................................................

(signature with first name and surname and geological qualification number or decision number recognising professional qualifications in geology or the indication “person providing cross-border services in the field of geology”)

## Reserve calculation: contractor .............................................................................................

(signature with first name and surname and geological qualification number or decision number recognising professional qualifications in geology or the indication “person providing cross-border services in the field of geology”)

## Surveying: contractor …………………………………………………………...

(first name and surname and number of geodetic license)

## Documentation team: ................................................................................................................

...............................................................................................................

...............................................................................................................

**Documentation prepared by:**

....................................................................

(signature with first name and surname and geological qualification number or

decision number recognising professional qualifications in geology or signature with full name

and the indication “person providing cross-border services in the field of geology”)

Explanation:

\*) Any items that are not relevant to the particular documentation shall be omitted in the information sheet for the geological and investment report of a hydrocarbon deposit.

*TEMPLATE*

### A SUMMARY OF DATES AND NUMBERS OF DECISIONS APPROVING OR NOTIFYING THE ACCEPTANCE WITHOUT RESERVATIONS OF EARLIER GEOLOGICAL AND INVESTMENT REPORTS OF HYDROCARBON DEPOSITS

**AND APPENDICES TO GEOLOGICAL AND INVESTMENT REPORT OF HYDROCARBON DEPOSITS AND DECISIONS APPROVING GEOLOGICAL AND INVESTMENT REPORTS OF HYDROCARBON DEPOSITS AND APPENDICES TO GEOLOGICAL AND INVESTMENT REPORT OF HYDROCARBON DEPOSITS**

#### ………………………. …………………….

(hydrocarbon type) (deposit name)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date and number of the approval decision or notification of acceptance without reservations | Hydrocarbon type | Category of appraisal of a deposit | Documented recoverable / unrecoverable geological reserves\*) [mln m3]  [thousands of tons] | |
| geological | extractable |
|  |  | A  B C | as of: ….................................... | |
|  |  |
|  |  | A B C | as of: ….................................... | |
|  |  |
|  |  | A B C | as of: ….................................... | |
|  |  |

### Documentation prepared by:

#### ....................................................................

(signature with first name and surname and geological qualification number or

decision number recognising professional qualifications in geology or signature with full name

and the indication “person providing cross-border services in the field of geology”)

Explanation:

\*) Delete where not applicable.

## THE LIMIT VALUES OF THE PARAMETERS DEFINING A DEPOSIT AND ITS LIMITS FOR A HYDROCARBON DEPOSIT

Table 1

|  |  |  |  |
| --- | --- | --- | --- |
| **Methane present in a hard coal deposit as the main mineral** | | | |
| No | Parameter | Unit | Boundary value |
| 1  2 | Maximum documenting depth  Minimum coalbed methane volume defining the outline of | m  m3/t c.s.w. | 1500  4.5 |
|  | deposit zone |  |  |
| 3 | Minimum coalbed methane volume on average | m3/t c.s.w. | higher |
|  |  |  | than the residual one |
| 4 | Minimum thickness of coal bed | m | 0.6 |
|  | coal |  |  |

Table 2

|  |  |  |  |
| --- | --- | --- | --- |
| **Crude oil deposits** | | | |
| No | Parameter | Unit | Boundary value |
| 1  2  3 | Minimum permeability of reservoir rocks  Minimum initial average capacity from the borehole in the outline of the deposit  Maximum crude oil density | m2 (mD) t/d  g/cm3 | 1x10-15 (1)  2  0.9 |

Table 3

|  |  |  |  |
| --- | --- | --- | --- |
| **Natural gas deposits** | | | |
| No | Parameter | Unit | Boundary value |
| 1  2  3 | Minimum permeability of reservoir rocks  Minimum initial average capacity from the borehole in the outline of the deposit  Maximum mercury content | m2 (mD) m3/min  µg/m3 | 1x10-16 (0.1)  2  30 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Tight natural gas deposits** | | | |
| No | Parameter | Unit | Boundary value |
| 1  2  3 | Maximum permeability of reservoir rocks  Maximum initial average capacity from the borehole in the outline of the deposit following stimulation treatments  Maximum mercury content | m2 (mD) m3/min  µg/m3 | 1x10-16 (0.1)  0.7  30 |

Table 5

|  |  |  |  |
| --- | --- | --- | --- |
| **Natural gas deposits from gas-bearing shales** | | | |
| No | Parameter | Unit | Boundary value |
| 1 | Minimum effective thickness of shale | m | 10 |
|  | gas-bearing |  |  |
| 2 | Minimum average silica content (or | % vol. | 10 |
|  | carbonates) in the gas-bearing shale |  |  |
| 3 | Minimum average shale gas bearing capacity | m3/t of shale | 0.5 |
| 4 | Maximum mercury content | µg/m3 | 30 |
| 5 | Minimum gas content of gas-bearing shales | m3/m2 | 18 |
| 6 | Maximum clay mineral content | % | 60 |

Table 6

|  |  |  |  |
| --- | --- | --- | --- |
| **Tight crude oil deposits** | | | |
| No | Parameter | Unit | Boundary value |
| 1  2  3 | Maximum permeability of reservoir rocks  Maximum initial average capacity from the borehole in the outline of the deposit following stimulation treatments  Maximum mercury content | m2 (mD) t/d  µg/m3 | 1 x10-16 (0,1)  1.0  30 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Crude oil from oil-bearing shale deposits** | | | |
| No | Parameter | Unit | Boundary value |
| 1 | Minimum effective thickness of shale | m | 15 |
|  | oil-bearing |  |  |
| 2 | Minimum average shale oil bearing capacity | m3/t | 0.002 |
| 3 | Maximum mercury content | µg/m3 | 30 |
| 4 | Minimum oil content of oil-bearing shales | m3/m2 | 0.075 |
| 5 | Maximum clay mineral content | % | 60 |

Table 8

**Deposits of natural gas accompanying crude oil**

All gas reserves dissolved in crude oil and present in a gas cap shall be considered to be recoverable if the quality of the natural gas meets the limits of the parameters defining the deposit and its boundaries.

Table 9

|  |  |  |  |
| --- | --- | --- | --- |
| **Helium deposits as an admixture accompanying natural gas deposits** | | | |
| No | Parameter | Unit | Boundary value |
| 1 | Minimum average helium content in the gas  in the outline of the deposit. | % vol. | 0.2 |