MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT

Act 28 of 2002.

MINERAL AND PETROLEUM RESOURCES DEVELOPMENT REGULATIONS

[Updated to 3 June 2015]

GoN R527, G. 26275 (c.i.o 23 April 2004),
GoN R1288, G. 26942 (c.i.o 29 October 2004),
GoN R1203 in G. 29431 (c.i.o 30 November 2006),
GoN R349 in G. 34225 (c.i.o 18 April 2011),
GoN R466 in G. 38855 (c.i.o 3 June 2015).

The Minister of Minerals and Energy has, under section 107(1) of the Mineral and Petroleum and Resources Development Act, 2002 (Act 28 of 2002), read with the provisions of section 14 of the Interpretation Act, (Act 33 of 1957) made the regulations in the Schedule.

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CHAPTER 1

SHORT TITLE

These Regulations shall be called the Mineral and Petroleum Resources Development Regulations.

1. DEFINITIONS

In this Schedule any word or expression to which a meaning has been assigned in the Act shall have that meaning and, unless the context indicates otherwise—

"closure certificate" means a closure certificate issued in terms of section 43 of the Act;

"competent person" means a person who—

(i) is qualified by virtue of his or her knowledge, expertise, qualifications, skills and experience; and

(ii) is familiar with the provisions of the Act and other related legislation; and

(iii) has been trained to recognise any potential or actual problem in the performance of the work;

"environmental impact assessment" means an assessment as contemplated in section 39(1) of the Act;

"form" means a document or standard form attached to the regulations as Annexures I and II;

"designated agency" means the agency designated by the Minister in terms of section 70 of the Act;

“interested and affected person” means a natural or juristic person or an association of persons with a direct interest in the proposed or existing operation or who may be affected by the proposed or existing operation;

“latent environmental impact” means any environmental impact that may result from natural events or disasters after a closure certificate has been issued;

“produced water” means water produced with petroleum from the subsurface in the course of exploration or production operations, and separated from the petroleum with the intention of discharging it into the environment;

“residual environmental impact” means the environmental impact remaining after a closure certificate has been issued;

“the Act” means the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).

CHAPTER 2
MINERAL AND PETROLEUM, SOCIAL AND ENVIRONMENTAL REGULATIONS

PART 1: MINERAL AND PETROLEUM REGULATION

2. Manner of lodging application and plan

(1) An application for any permission, right or permit made in terms of the Act must be lodged by submitting an appropriate compatible electronic completed form contained in Annexure I, together with the prescribed Annexures in compatible electronic format with the Regional Manager in whose region the land is situated or to the designated agency, as the case may be—

(a) by hand;

(b) registered post; or

(c) electronically on the Department’s official website address or the relevant address specified in the appropriate form.

[Reg 2(1) subs by reg 2 of GoN R349 in G. 34225.]

(2) An application contemplated in subregulation (1) must be accompanied by a plan of the land to which the application relates, in accordance with generally accepted standards, signed and dated by the applicant and must contain—

(a) the co-ordinates and spheroid (Clarke 1880 / Cape Datum, WGS84 / WGS84, WGS94 / Hartebeesthoek94) of the land to which the application relates;

(b) the north point;

(c) the scale to which the plan has been drawn;

(d) the location and where applicable, the name and number of the land to which the application relates;

(e) the extent of the land to which the application relates;

(f) the boundaries of the land to which the application relates;

(g) surface structures and registered servitudes where applicable; and

(h) the topography of the land to which the application relates.

(3) In the case of an application for a mining permit in terms of section 27 of the Act, the applicant may be exempted from the requirements in subregulation (2)(a) and (2)(h) upon lodgement of such application.

3. Consultation with interested and affected persons

(1) The Regional Manager or designated agency, as the case may be, must make known by way of a notice, that an application contemplated in regulation 2, has been accepted in respect of the land or offshore area, as the case may be.

(2) The notice referred to in subregulation (1) must be placed on a notice board at the office of the Regional Manager or designated agency, as the case may be, that is accessible to the public.

(3) In addition to the notice referred to in subregulation (1), the Regional Manager or designated agency, as the case may be, must also make known the application by at least one of the following methods—

(a) publication in the applicable Provincial Gazette;

(b) notice in the Magistrate's Court in the magisterial district applicable to the land in question; or

(c) advertisement in a local or national newspaper circulating in the a *[sic]* where the land or offshore area to which the application relates, is situated.

(4) A publication, notice or advertisement referred to in subregulation (3) must include—

(a) an invitation to members of the public to submit comments in writing on or before a date specified in the publication, notice or advertisement, which date may not be earlier than 30 days from the date of such publication, notice or advertisement;

(b) the name and official title of the person to whom any comments must be sent or delivered; and

(c) the—

(i) work, postal and street address and, if available, an electronic mail address;

(ii) work telephone number; and

(iii) facsimile number, if any, of the person contemplated in paragraph (b).

4. Application for reconnaissance permission

(1) An application for a reconnaissance permission in terms of section 13 of the Act must be completed in the form of Form A contained in Annexure I, and must contain—

(a) the full particulars of the applicant;

(b) in the case of a company or closed corporation, documentary proof that the applicant has obtained the necessary authority to make the application in a representative capacity on behalf of the company or closed corporation, as the case may be;

(c) the plan, contemplated in regulation 2(2);

(d) the registered description of the land to which the application relates, specifying the farm name or names;

(e) documentary proof of the applicant's financial ability or access thereto which may include but is not limited to the following—

(i) An approved budget for the proposed reconnaissance operation;

(ii) loan agreements entered into for the proposed reconnaissance operation;

(iii) a resolution by a company to provide for the finances required for the proposed reconnaissance operation; and

(iv) any other mechanism or scheme providing for the necessary finances for the proposed reconnaissance operation;

(f) documentary proof of the applicant's technical ability or access thereto to conduct the proposed reconnaissance operation in accordance with the reconnaissance work programme;

(g) a reconnaissance work programme for the duration of the proposed reconnaissance operation; and

(h) the estimated expenditure regarding the proposed reconnaissance operation.

(2) The application must be lodged together with the application fee specified in regulation 75(1)(a).

5. Application for prospecting right

(1) An application for a prospecting right in terms of section 16 of the Act must be completed in the form of Form B contained in Annexure I, and must contain—

(a) the full particulars of the applicant;

(b) in the case of a company or closed corporation, documentary proof that the applicant has obtained the necessary authority to make the application in a representative capacity on behalf of the company or closed corporation, as the case may be;

(c) the plan, contemplated in regulation 2(2) to which the application relates;

(d) the registered description of the land to which the application relates, specifying the farm name and subdivision;

(e) an indication of the mineral or minerals for which the prospecting right is required;

(f) the period for which the prospecting right is required;

(g) a prospecting work programme contemplated in regulation 7 including estimated annual expenditure for each phase of the prospecting operations;

(h) documentary proof of the applicant's technical ability or access thereto to—

(i) conduct the proposed prospecting operation in accordance with the prospecting work programme; and

(ii) to mitigate, manage and rehabilitate relevant environmental impacts;

(iii) comply with relevant provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996);

(i) a description of how the applicant's technical ability will be provided by making use of in-house expertise, contractors and consultants on the proposed prospecting operation;

(j) a budget and documentary proof of the applicant's financial ability or access thereto, which may include but is not limited to the following—

(i) Loan agreements entered into for the proposed prospecting operation;

(ii) a resolution by a company to provide for the finances required for the proposed prospecting operation; and

(iii) any other mechanism or scheme providing for the necessary finances for the proposed prospecting operation;

(k) a list of existing rights and permits held by the applicant compiled in table format which indicates the region, the location with regard to the land name and the existing right or permit number for each mineral;

(l) certified copy or copies of the title deed or deeds, where applicable, in respect of the land to which the application relates; and

(m) any other specific or additional information, data or documentation which the Minister may request in connection with the information submitted in terms of paragraphs (a) to (l).

(2) The application must be lodged together with the application fee specified in regulation 75(1)(b).

6. Terms and conditions of prospecting right

The terms and conditions of a prospecting right agreed upon will be approved by the Minister.

7. Prospecting work programme

(1) The prospecting work programme must contain—

(a) the full particulars of the applicant;

(b) the plan contemplated in regulation 2(2), showing the land to which the application relates;

(c) the registered description of the land to which the application relates specifying the farm name and subdivision;

(d) the mineral or minerals to be prospected for;

(e) a geological description of the land substantiated by a geological map;

(f) a description of how the mineral resource and mineral distribution of the prospecting area will be determined through—

(i) the prospecting work to be performed;

(ii) a geochemical survey to be carried out; and

(iii) a geophysical survey to be undertaken;

(g) a description of the prospecting method or methods to be implemented that may include—

(i) any excavations, trenching, pitting and drilling to be carried out;

(ii) any bulk sampling and testing to be carried out; and

(iii) any other prospecting methods to be applied;

(h) All planned prospecting activities must be conducted in phases and within specific time frames.

(i) technical data detailing the prospecting method or methods to be implemented and the time required for each phase of the proposed prospecting operation;

(j) details with documentary proof of—

(i) the applicant's technical ability or access thereto to conduct the proposed prospecting operation; and

(ii) a budget and documentary proof of the applicant's financial ability or access thereto, which may include but is not limited to the following—

(aa) Loan agreements entered into for the proposed prospecting operation;

(bb) resolution by a company to provide for the finances required for the proposed prospecting operation; and

(cc) any other mechanism or scheme providing for the necessary finances for the proposed prospecting operation;

(k) a cost estimate of the expenditure to be incurred for each phase of the proposed prospecting operation where the expenditure must be broken down into—

(i) direct prospecting costs;

(ii) labour costs;

(iii) costs pertaining to the rehabilitation and management of environmental impacts; and

(iv) any other direct cost; and

(m) an undertaking, signed by the applicant, to adhere to the proposals as set out in the prospecting work programme.

(2) The prospecting work programme referred to in subregulation (1) shall form part of the prospecting right when such right is granted.

8. Progress report in respect of prospecting

(1) Every 12 months from the date of the granting of a prospecting right, or at the end of the period of the prospecting right if the period of prospecting is less than 12 months, the holder of a prospecting right must submit, within 30 days of the expiry of such period, progress reports contemplated in section 21 (1)(b) of the Act, to the Regional Manager regarding the prospecting operation.

(2) The progress report contemplated in subregulation (1) must contain the following—

(a) Details of the prospecting operations conducted during the reporting period;

(b) a surface plan which corresponds with the plan contemplated in regulation 2(2), of the prospecting area, the location, extent and depth of all boreholes, trenches or excavations completed;

(c) the lithology, mineral content and mineral distribution identified in those boreholes, trenches or excavations;

(d) any geological or pre-feasibility reports, or any geological and pre-feasibility reports, completed on the mineral or minerals obtained from the excavation, trench or borehole or a brief summary statement of the results;

(e) actual expenditure incurred in respect of the prospecting area and the basis on which it was calculated;

(f) details with regard to the execution and compliance with the approved environmental management plan;

(g) prospecting operations that will be conducted during the next reporting period in accordance with the prospecting work programme;

(h) any other relevant information obtained by the holder of a prospecting right regarding the prospecting operations; and

(i) any additional information regarding the prospecting operations, requested by the Minister.

(3) If prospecting methods other than boreholes, trenches or excavations are utilised, the following information is required in the progress report—

(a) Full details of any geophysical surveys conducted, including—

(i) the flight plans or surface plans showing all flight lines or traverse lines; and

(ii) any data in writing or digital format gathered during those surveys.

(b) full details of any geochemical surveys conducted, including—

(i) the surface plans showing all sample points;

(ii) the details of all analysis carried out on those samples; and

(iii) the full analytical results of all those samples; and

(c) the full results of any other investigations or tests performed, including locations of any other samples and bulk samples collected, including, where applicable—

(i) the petrographic descriptions of thin sections;

(ii) the full information and analytical results of any age determinations;

(iii) the full results of any physical properties determined;

(iv) the full results of any chemical analysis performed;

(v) the full results of any sedimentological investigations; and

(vi) the full results of any other tests or procedures performed.

(4) Certified copies of any geological maps or plans produced during the prospecting operation must be included in the progress report.

(5) The holder of a prospecting right must supply the Regional Manager concerned with a list of borehole core information generated during any drilling programme.

(6) The holder contemplated in subregulation (5) must obtain written permission from the Regional Manager to destroy any residual borehole core.

9. Application for renewal of prospecting right

(1) An application for the renewal of a prospecting right in terms of section 18(1) of the Act must be completed in the form of Form C contained in Annexure I, and must be accompanied by the information requested therein.

(2) The application for the renewal of a prospecting right must be lodged together with the application fee specified in regulation 75(1)(b).

10. Application for mining right

(1) An application for a mining right in terms of section 22(1) of the Act must be completed in the form of Form D contained in Annexure I and must contain—

(a) the full particulars of the applicant;

(b) in the case of a company or closed corporation, documentary proof that the applicant has obtained the necessary authority to make the application in a representative capacity on behalf of the company or closed corporation, as the case may be;

(c) a plan contemplated in regulation 2(2) showing the land and mining area to which the application relates;

(d) the mineral or minerals for which the right is required;

(e) the period for which the right is required;

(f) a mining work programme contemplated in regulation 11;

(g) a social and labour plan contemplated in regulation 46;

(h) detailed documentary proof of the applicant's technical ability or access thereto to conduct the mining activities and to mitigate and rehabilitate relevant environmental impacts;

(i) documentary proof that the applicant has the ability to comply with relevant provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996);

(j) a description of how the applicant's technical ability will be provided by making use of in-house expertise, contractors and consultants on the proposed mining operation;

(k) budget and documentary proof of the applicant's financial ability or access thereto, which may include but is not limited to the following—

(i) loan agreements entered into for the proposed mining operation;

(ii) a resolution by a company to provide for the finances required for the proposed mining operation; and

(iii) any other mechanism or scheme providing for the necessary finances for the proposed mining operation.

(l) a list of existing rights or a list of existing rights and permits, as the case may be held by the applicant, to be compiled in a table format that indicates the region and location with regard to the land name and the existing right or permit number for each mineral within the Republic; and

(m) a certified copy or copies of the title deed or deeds, where applicable, in respect of the land to which the application relates; and

(n) any other specific and additional information, data or documentation that the Minister may request in connection with the information submitted under paragraphs (a) to (m).

(2) The application for a mining right must be lodged together with the application fee specified in regulation 75(1)(c).

11. Mining work programme

(1) A mining work programme must contain—

(a) the full particulars of the applicant;

(b) a plan contemplated in regulation 2(2), showing the land and mining area to which the application relates;

(c) a registered description of the land or area to which the application relates;

(d) the details of the identified mineral deposit concerned with regard to the type of mineral or minerals to be mined, its locality, extent, depth, geological structure, mineral content and mineral distribution;

(e) the details of the market for, the market's requirements and pricing in respect of the mineral concerned;

(f) the details with regard to the applicable timeframes and scheduling of the various implementation phases of the proposed mining operation, and a technically justified estimate of the period required for the mining of the mineral deposit concerned;

(g) a financing plan that must contain—

(i) the details and costing of the mining technique, mining technology and production rates applicable to the proposed mining operation;

(ii) the details and costing of the technological process applicable to the extraction and preparation of the mineral or minerals to comply with market requirements;

(iii) the details and costing of the technical skills and expertise and associated labour implications required to conduct the proposed mining operation;

(iv) the details and costing of regulatory requirements in terms of the Act and other applicable law, relevant to the proposed mining operation;

(v) the details regarding other relevant costing, capital expenditure requirements, and expected revenue applicable to the proposed mining operation;

(vi) a detailed cash flow forecast and valuation, excluding financing of the proposed mining operation, which forecast must clearly indicate how the applicable regulatory costs will be accommodated therein;

(vii) the details regarding the applicant's resources or proposed mechanisms to finance the proposed mining operation, and details regarding the impact of such financing arrangements on the cash flow forecast; and

(viii) provisions for the execution of the social and labour plan.

(h) an undertaking, signed by the applicant, to adhere to the proposals as set out in the mining work programme.

(2) The mining work programme contemplated in subregulation (1) shall form part of the mining right where such right is granted.

12. Terms and conditions of mining right

The terms and conditions of a mining right agreed upon will be approved by the Minister.

13. Application for renewal of mining right

(1) An application for the renewal of a mining right in terms of section 24(1) of the Act must be completed in the form of Form E contained in Annexure I, and must be accompanied by the information requested therein.

(2) The application for a renewal of a mining right must be lodged together with the application fee specified in regulation 75(1)(c).

14. Application for mining permit

(1) An application for a mining permit in terms of section 27 of the Act must be completed in the form of Form F contained in Annexure I, and must be accompanied by the information requested therein.

(2) The application for a mining permit must be lodged together with the application fee specified in regulation 75(1)(d).

15. Monthly returns with respect to mining or processing of minerals

Monthly returns contemplated in section 28(2)(a) of the Act, must reach the Director-General not later than the fifteenth day of the month following the month in respect of which it is reported and must be forwarded as set out in forms to be provided by the Department for that purpose.

16. Application for retention permit

(1) An application for a retention permit in terms of section 31(1) of the Act must be completed in the form of Form G contained in Annexure I, and must be accompanied by the information requested therein.

(2) The application for a retention permit must be lodged together with the application fee specified in regulation 75(1)(e).

17. Application for renewal of retention permit

(1) An application for renewal of a retention permit in terms of section 34(1) of the Act, must be completed in the form of Form H contained in Annexure I.

(2) The application for a renewal of a retention permit must be lodged together with the application fee specified in regulation 75(1)(e).

18. Application for reconnaissance permit

(1) An application for a reconnaissance permit in terms of section 74 of the Act must be completed in the form of Form K contained in Annexure I, and must be lodged at the office of the designated agency.

(2) The application contemplated in subregulation (1) must contain—

(a) the full particulars of the applicant;

(b) in the case of a company or closed corporation, documentary proof that the applicant has obtained the necessary authority to make the application in a representative capacity on behalf of the company or closed corporation, as the case may be;

(c) a plan contemplated in regulation 2(2), showing the land, area or offshore area to which the application relates;

(d) a registered description of the area to which the application relates;

(e) a clear statement of the technical motivation;

(f) the period for which the permit is required;

(g) a reconnaissance work programme contemplated in regulation 20 with estimated expenditure during the reconnaissance operations;

(h) documentary proof of the applicant's technical ability or access thereto to enable the applicant to conduct the proposed reconnaissance survey and to mitigate and rehabilitate relevant environmental impacts;

(i) a description' of how the applicant's technical ability will be provided by making use of in-house expertise, contractors and consultants on the proposed reconnaissance operation;

(j) a budget and documentary proof of the applicant's financial ability or access thereto which may include but is not limited to the following—

(i) Loan agreements entered into for the proposed reconnaissance operation;

(ii) resolution by a company to provide for the finances required for the proposed reconnaissance operation; and

(iii) any other mechanism or scheme providing for the necessary finances for the proposed reconnaissance operation.

(k) a list of existing rights and permits held by the applicant to be compiled in a table format that indicates the location with regard to the land name or offshore area and the existing right or permit number for petroleum exploration or production;

(l) certified copy or copies of the title deed or deeds, where applicable, in respect of the land to which the application relates;

(m) any other information, data or documentation that the Minister may require in connection with information required under paragraphs (a) to (k).

(3) The application must be lodged together with the application fee specified in regulation 75(2)(a).

19. Terms and conditions for reconnaissance permit

The terms and conditions of a reconnaissance permit agreed upon will be approved by the Minister.

20. Reconnaissance work programme

(1) A reconnaissance work programme must contain—

(a) a description of the mineral or minerals for which reconnaissance operations shall be undertaken;

(b) an outline of the geological, geochemical, geophysical and other work to be performed;

(c) technical data detailing the reconnaissance method or methods to be implemented for the proposed reconnaissance programme;

(d) an estimate of the expenditure to be incurred, which must include costs pertaining to the rehabilitation and management of environmental impacts; and

(e) the programme for the marketing and sale of any data and conditions relating thereto which shall be limited to a maximum period of 10 years.

(2) The reconnaissance work programme contemplated in subregulation (1) shall form part of the reconnaissance permit where such permit is granted.

21. Report in respect of reconnaissance activities

(1) A holder of a reconnaissance permit must submit progress reports to the designated agency, detailing progress achieved as described in the reconnaissance work programme.

(2) A progress report contemplated in subregulation (1) must be submitted 12 months from the date of issuing of a reconnaissance permit, or at the end of the period of the reconnaissance permit if the period of reconnaissance activities is less than 12 months.

22. Supply of data in respect of reconnaissance

A holder of a reconnaissance permit must supply to the designated agency, in a format and medium as agreed upon with the designated agency, digital and, where appropriate, hard copies of all data, reports and interpretations generated, as soon as possible after completion of the operations or projects.

23. Application for technical co-operation permit

(1) An application for a technical co-operation permit in terms of section 76 of the Act must be completed in the form of Form L contained in Annexure I, and must be lodged at the office of the designated agency.

(2) The application contemplated in subregulation (1) must contain—

(a) the full particulars of the applicant;

(b) in the case of a company or closed corporation, documentary proof that the applicant has obtained the necessary authority to make the application in a representative capacity on behalf of the company or closed corporation, as the case may be;

(c) a plan contemplated in regulation 2(2), showing the land, area or offshore area to which the application relates;

(d) a registered description of the area to which the application relates;

(e) a clear statement of the technical motivation;

(f) the period for which the permit is required;

(g) a technical co-operation work programme contemplated in regulation 25;

(h) documentary evidence to prove that the applicant has access to financial resources and has the technical ability to conduct the proposed technical co-operation study; and

(i) any other information, data or documentation that the Minister may require in connection with information required under paragraphs (a) to (h).

(3) The application for a technical co-operation permit must be lodged together with the application fee specified in regulation 75(2)(b).

24. Terms and conditions for technical co-operation permit

The terms and conditions of a technical co-operation permit agreed upon will be approved by the Minister.

25. Technical co-operation work programme

(1) An applicant for a technical co-operation permit must submit a technical co-operation work programme that must include—

(a) an outline of the geological, geochemical, geophysical and other work to be performed;

(b) technical data detailing the research and analysis methods to be implemented for the proposed technical co-operation work programme; and

(c) an estimate of the expenditure to be incurred.

(2) A technical co-operation work programme contemplated in subregulation (1) shall form part of the technical co-operation permit where such permit is granted.

26. Report in respect of technical co-operation activities

(1) A holder of a technical co-operation permit must submit a report to the designated agency, detailing progress achieved as described in the technical co-operation work programme.

(2) A progress report contemplated in subregulation (1) must be submitted 12 months from the date of issuing of a technical co-operation permit, or at the end of the period of the technical co-operation permit if the period is less than 12 months.

27. Supply of data in respect of technical co-operation activities

A holder of a technical co-operation permit must supply to the designated agency, in a format and medium agreed upon with the designated agency, digital and, where appropriate, hard copies of all data generated, as soon as possible after the completion of operations or projects.

28. Application for exploration right

(1) An application for an exploration right in terms of section 79 of the Act must be completed in the form of Form M contained in Annexure I, and must be lodged at the office of the designated agency.

(2) The application contemplated in subregulation (1) must contain—

(a) the full particulars of the applicant;

(b) in the case of a company or closed corporation, documentary proof that the applicant has obtained the necessary authority to make the application in a representative capacity on behalf of the company or closed corporation, as the case may be;

(c) a plan contemplated in regulation 2(2), showing the land, area or offshore area to which the application relates;

(d) a registered description of the area to which the application relates;

(e) an indication of the mineral or minerals for which the right is required;

(f) a certified copy or copies of the title deed or deeds, where applicable, in respect of the area to which the application relates;

(g) a clear statement of the technical motivation;

(h) the period for which the right is required;

(i) an exploration work programme contemplated in subregulation 30;

(j) documentary evidence to prove that—

(i) the applicant has the financial ability or access thereto and has the technical ability or access thereto to conduct the proposed exploration operation optimally in accordance with the exploration work programme, which must be supported by a report from an independent assessor approved by the designated agency;

(ii) the granting of the right will further the objects referred in section 2(d) and (f) of the Act;

(k) a list of existing rights and or permits held by the applicant to be compiled in a table format that indicates the region and location with regard to the land and the existing right or permit number for mineral or minerals; and

(l) any other information, data or documentation that the Minister may require in connection with information required under paragraphs (a) to (k).

(2) The application must be lodged together with the application fee specified in regulation 75(2)(c).

29. Terms and conditions for exploration right

The terms and conditions of an exploration right agreed upon will be approved by the Minister.

30. Exploration work programme

(1) An exploration work programme must contain—

(a) the full particulars of the applicant;

(b) a plan contemplated in regulation 2(2), showing the area to which the application relates;

(c) a registered description of the area to which the application relates;

(d) the mineral or minerals to be explored;

(e) the period for which the right is required;

(f) an outline of the geological, geochemical, geophysical, exploration drilling and other work to be performed;

(g) technical data detailing the exploration method or methods to be implemented and the time required for each stage of the proposed exploration operation;

(h) an estimate of the expenditure to be incurred for each stage of the exploration operation where the expenditure must be broken down into—

(i) exploration costs; and

(ii) costs pertaining to the rehabilitation and management of environmental impacts.

(2) The exploration work programme contemplated in subregulation (1) shall form part of the exploration right where such right is granted.

(3) In the case where an old order prospecting right must be converted into a new exploration right, the following information must, in addition to that required in terms of item 6 of Schedule II to the Act and to that required in terms of regulations 28 and 30, also be included—

(a) a brief summary of the geology of the exploration target with a compilation of the data and conclusions generated under the old order prospecting right;

(b) a description of the contractual work commitment and exploration work carried out and conclusions reached, which must include—

(i) past geological results as are outlined for the progress report;

(ii) details of past expenditure broken down into exploration costs, manpower costs and costs pertaining to the rehabilitation and management of environmental impacts;

(iii) data previously compiled but not yet provided to the designated agency; and

(iv) a statement reflecting rehabilitation work completed and the rehabilitation work uncompleted.

31. Reports in respect of exploration

(1) A holder of an exploration right must submit timeous accurate progress reports to the designated agency on a monthly, quarterly and annual basis.

(2) Monthly progress reports must be submitted within seven days of month-end.

(3) Quarterly progress reports must be submitted within 21 days of the end of the particular quarter of the year and must include—

(i) the numbers of local and expatriate persons employed;

(ii) work done and money expended on operations;

(iii) the site and depth of every well drilled or being drilled;

(iv) the formations penetrated and particulars regarding any occurrence of petroleum or any other mineral of potential value encountered; and

(v) a statement reflecting rehabilitation work completed and the rehabilitation work uncompleted.

(4) Annual progress reports must be submitted within 60 days of calendar year end and must include—

(i) a full report of the exploration operations carried out during the year;

(ii) a detailed statement of exploration expenditure incurred during the year;

(iii) a description of operations planned for the following year;

(iv) a budget for exploration operations planned for the following year; and

(v) a statement reflecting rehabilitation work completed and rehabilitation work uncompleted.

32. Supply of data in respect of exploration

A holder of an exploration right must supply to the designated agency in a format and medium agreed upon with the designated agency, samples, digital and where appropriate, hard copies of all data generated, as soon as possible after the completion of the exploration operations.

33. Application for renewal of exploration right

(1) An application for the renewal of an exploration right in terms of section 81 of the Act must be completed in the form of Form M contained in Annexure I, and must be lodged at the office of the designated agency.

(2) The application contemplated in subregulation (1) must contain—

(a) the full particulars of the applicant;

(b) a plan contemplated in regulation 2(2), showing the exploration area in question;

(c) the mineral or minerals for which the renewal of the exploration right is required;

(d) the period for which the renewal is required, together with any possible further renewal periods;

(e) reasons why a renewal is required;

(f) a detailed report reflecting the exploration results, the interpretation thereof and the exploration expenditure incurred;

(g) a report reflecting the extent of compliance with the requirements of the approved environmental management plan, the rehabilitation to be completed and the estimated cost thereof;

(h) an exploration work programme contemplated in regulation 30 for the renewal period; and

(i) any other information or documentation that the designated agency or the Minister may require in connection with information required under paragraph (a) to (h).

(2) The application for the renewal of an exploration right must be lodged together with the application fee specified in regulation 75(2)(c).

34. Application for production right

(1) An application for a production right in terms of section 83 of the Act must be completed in the form of Form N contained in Annexure I, and must be lodged at the office of the designated agency.

(2) The application contemplated in subregulation (1) must include—

(a) the full particulars of the applicant;

(b) in the case of a company or closed corporation, documentary proof that the applicant has obtained the necessary authority to make the application in a representative capacity on behalf of the company or closed corporation, as the case may be;

(c) a plan contemplated in regulation 2(2), showing the land, area or offshore area to which the application relates;

(d) details of the petroleum types and the quantity thereof, which the applicant intends to remove and dispose of during production operations;

(e) a clear statement of the technical motivation;

(f) the period for which the right is required;

(g) a registered description of the land to which the application relates;

(h) a production work programme contemplated in regulation 36;

(i) certified copy or copies of the title deed or deeds, where applicable, in respect of the land to which the application relates;

(j) a social and labour plan contemplated in regulation 46;

(k) documentary evidence to prove that—

(i) the applicant has the financial ability or access thereto and has the technical ability or access thereto to conduct the proposed production operation optimally, which must be supported by a report from an independent assessor approved by the designated agency;

(ii) the applicant has the ability to comply with the relevant provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996);

(iii) the granting of such right will further the object referred to in section 2(d) and (f) of the Act;

(l) a list of existing rights and or permits held by the applicant to be compiled in a table format that indicates the region and location with regard to the land and the existing right or permit number for mineral or minerals; and

(m) any other information, data or documentation that the designated agency or the Minister may require in connection with information required under paragraphs (a) to (l).

(3) An application for a production right must be lodged together with the application fee specified in regulation 75(2)(d).

35. Terms and conditions for production right

The terms and conditions of a production right agreed upon will be approved by the Minister.

36. Production work programme

(1) A production work programme must contain—

(a) the full particulars of the applicant;

(b) a plan contemplated in regulation 2(2), showing the land to which the application relates;

(c) a registered description of the land to which the application relates;

(d) the type of petroleum to be produced;

(e) a comprehensive feasibility study including details of the measured petroleum resource:

(f) technical data detailing the production method to be used;

(g) details in respect of the envisaged production rate, processing, and marketing arrangements;

(h) a financing plan that must contain—

(i) the details and costing of the production technique, technology and production rates applicable to the proposed production operation;

(ii) the details and costing of the technological process applicable to the extraction or preparation of the petroleum to comply with market requirements;

(iii) the details and costing of the technical skills, expertise and associated labour implications required to conduct the proposed production operation;

(iv) the details and costing of regulatory requirements in terms of the Act and other applicable law, relevant to the proposed production operation;

(v) the details regarding other relevant costing, capital expenditure requirements, and expected revenue applicable to the proposed production operation;

(vi) a detailed cash flow forecast and valuation, excluding financing of the proposed production operation, which forecast must clearly indicate how the applicable regulatory costs will be accommodated therein;

(vii) the details regarding the applicant's financial resources or proposed mechanisms to finance the proposed production operation, and the details regarding the impact of such financing arrangements on the cash flow forecast; and

(viii) provision for the execution of the social and labour plan; and

(i) an assessment of the reserves carried out by a competent person approved by the designated agency or the Minister; and

(j) an assessment of the development programme carried out by a competent person approved by the designated agency or Minister.

(2) The production work programme contemplated in subregulation (1) forms part of the production right where such right is granted.

(3) In the case where a holder of an OP26 mining lease wishes to convert the lease into a production right, the holder must, in addition to the information required in terms of item 5 of Schedule II to the Act and required in terms of regulations 34 and 36 include the following information—

(a) A brief history of the production area and operations, as well as an explanation of activities undertaken;

(b) a schedule of reserves and resources classified in terms of the classification rules of the Society of Petroleum Engineers as from the date of conversion;

(c) annualised figures for past expenditure broken down into development costs, production costs and costs pertaining to the rehabilitation and management of environmental impacts;

(d) copies of production reports reflecting relevant data;

(e) data previously compiled but not yet provided to the designated agency; and

(f) a statement reflecting completed-rehabilitation work and uncompleted rehabilitation work.

(3) An undertaking, signed by the applicant, to adhere to the proposals set out in the production work programme.

37. Supply of data in respect of production

(1) A holder of an production right must supply to the designated agency in a format and medium agreed upon with the designated agency, samples, digital and, where appropriate, hard copies of all data generated, as soon as possible, after the completion of the production operation.

38. Application for renewal of production right

(1) An application for the renewal of a production right in terms of section 85(1) of the Act must be completed in the form of Form N contained in Annexure I, and must be lodged at the office of the designated agency.

(2) The application for a renewal of a production right must be lodged together with the application fee specified in regulation 75(2)(d).

39. Regional Mining Development and Environmental Committees

(1) A Regional Mining Development and Environmental Committee contemplated in section 64(1) of the Act, must be established by the Board for each region contemplated in section 7 of the Act within 30 days after the Act takes effect.

(2) The composition of a Regional Mining Development and Environmental Committee must ensure competency and expertise in minerals and mining development, petroleum exploration and production, social and labour issues pertaining to the Act and mining environmental management.

(3) A Regional Mining Development and Environmental Committee must consist of not more than 14 members appointed by the Board and approved by the Minister and shall include—

(a) the Regional Manager or Chief Executive of the designated agency, as the case may be, as the Chairperson;

(b) the Principal Inspector of Mines for that Region; and

(c) representatives of relevant Government departments within the national, provincial or local sphere of government or relevant organs of state within each sphere.

(4) The Board may appoint a representative from any relevant parastatal organisation or a consultant from time to time: Provided that such representatives shall have no right to vote at any meeting of the Regional Mining Development and Environmental Committee.

PART II: SOCIAL AND LABOUR PLAN

40. Application of provisions

(1) For the purposes of this Part, the provisions of regulations 41, 42, 43, 44, 45, 46 apply, with the necessary changes, to petroleum exploration and production.

(2) Any reference in the provisions referred to in subregulation (1) to—

(a) old order mining right, must be construed as a reference to old order production right;

(b) mine, must be construed as a reference to production operation;

(c) mining industry, must be construed as a reference to petroleum exploration and production industry;

(d) mining operation, must be construed as a reference to production operation;

(e) mining rights, must be construed as a reference to production rights; and

(f) Regional Manager, must be construed as a reference to designated agency.

41. Objectives of social and labour plan

The objectives of the social and labour plan are to—

(a) promote employment and advance the social and economic welfare of all South Africans;

(b) contribute to the transformation of the mining industry; and

(c) ensure that holders of mining rights contribute towards the socio-economic development of the areas in which they are operating.

42. Submission of social and labour plan

(1)

(a) An application for a mining right must be accompanied by a social and labour plan contemplated in regulation 46.

(b) The Regional Manager may refer the said social and labour plan back to the applicant with proposals for amendments and the revised social and labour plan must then be re-lodged within a period specified by the Regional Manager.

(2)

(a) An application for the conversion of an old order mining right in terms of the Act must be accompanied by a social and labour plan contemplated in regulation 46.

(b) The Regional Manager may refer the said social and labour plan back to the applicant with proposals for amendments and the revised social and labour plan must then be re-lodged within a period specified by the Regional Manager.

43. Applicability of social and labour plan

A social and labour plan lodged with the Regional Manager is valid until a closure certificate has been issued in terms of section 43 of the Act.

44. Amendment of social and labour plan

A social and labour plan may not be amended or varied without the consent of the Minister after the granting of the mining right to which such social and labour plan pertains.

45. Reporting of social and labour plan

The holder of a mining right must submit an annual report on the compliance with the social and labour plan to the relevant Regional Manager.

46. Contents of social and labour plan

The contents of a social and labour plan must include the following—

(a) A preamble which provides background information of the mine in question;

(b) a human resources development programme which must include—

(i) a skills development plan which identifies and reports on—

(aa) the number and education levels of the employees which must be completed in the form of Form Q contained in Annexure II; and

(bb) the number of vacancies that the mining operation has been unable to fill for a period longer than 12 months despite concerted effort to recruit suitable candidates which must be completed in the form of Form R contained in Annexure II;

(ii) a career progression plan and its implementation in line with the skills development plan;

(iii) a mentorship plan and its implementation in line with the skills development plan and the needs for the empowerment groups;

(iv) an internship and bursary plan and its implementation in line with the skills development plan; and

(v) the employment equity statistics which must be completed in the form of Form S contained in Annexure II and the mine's plan to achieve the 10% women participation in mining and 40% historically disadvantaged South Africans (HDSA) participation in management within 5 years from the granting of the right or the conversion of the old order right.

(c) A local economic development programme which must include—

(i) the social and economic background of the area in which the mine operates;

(ii) the key economic activities of the area in which the mine operates;

(ii) the impact that the mine would have in the local and sending communities;

[**Editor Note:** Numbering as per original *Gazette*.]

(iii) the infrastructure and poverty eradication projects that the mine would support in line with the Integrated Development Plan of the areas in which the mine operates and the major sending areas;

(iv) the measures to address the housing and living conditions of the mine employees;

(v) the measures to address the nutrition of the mine employees; and

(vi) the procurement progression plan and its implementation for HDSA companies in terms of capital goods, services and consumables and the breakdown of the procurement which must be completed in the form of Form T contained in Annexure II.

(d) processes pertaining to management of downscaling and retrenchment which must include—

(i) the establishment of the future forum;

(ii) mechanisms to save jobs and avoid job losses and a decline in employment;

(iii) mechanisms to provide alternative solutions and procedures for creating job security where job losses cannot be avoided; and

(iv) mechanisms to ameliorate the social and economic impact on individuals, regions and economies where retrenchment or closure of the mine is certain.

(e) to provide financially for the implementation of the social and labour plan in terms of the implementation of—

(i) the human resource development programme;

(ii) the local economic development programmes; and

(iii) the processes to manage downscaling and retrenchment.

(f) an undertaking by the holder of the mining right to ensure compliance with the social and labour plan and to make it known to the employees.

PART III: ENVIRONMENTAL REGULATIONS FOR MINERAL DEVELOPMENT, PETROLEUM EXPLORATION AND PRODUCTION

47. Application of provisions

(1) For purposes of this Part, the provisions of regulations 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61 and 62 shall apply, with the necessary changes, to petroleum exploration and production.

(2) Any reference in the provisions referred to in subregulation (1) to—

(a) Director-General, must be construed as a reference to designated agency;

(b) mining, must be construed as a reference to production;

(c) mining operation, must be construed as a reference to production operation;

(d) mining right, must be construed as a reference to production right;

(e) prospecting, must be construed as a reference to exploration;

(f) prospecting right, must be construed as a reference to exploration right;

(g) reconnaissance permission, must be construed as a reference to reconnaissance permit; and

(h) Regional Manager, must be construed as a reference to designated agency.

48. Environmental reports to be compiled for application of mining right

(1) An environmental impact assessment contemplated in section 39(1) of the Act is a process which results in the compilation of—

(a) a scoping report contemplated in regulation 49; and

(b) followed by an environmental impact assessment report contemplated in regulation 50.

49. Contents of scoping report

(1) A scoping report, in relation to a proposed mining operation, must—

(a) describe the methodology applied to conduct scoping;

(b) describe the existing status of the environment prior to the mining operation;

(c) identify and describe the anticipated environmental, social and cultural impacts, including the cumulative effects, where applicable;

(d) identify and describe reasonable land use or development alternatives to the proposed operation, alternative means of carrying out the proposed operation and the consequences of not proceeding with the proposed operation;

(e) describe the most appropriate procedure to plan and develop the proposed mining operation;

(f) describe the process of engagement of identified interested and affected persons, including their views and concerns; and

(g) describe the nature and extent of further investigations required in the environmental impact assessment report.

(2) The scoping report must be submitted to the office of the Regional Manager where the application was lodged, within 30 days from the date of the notification contemplated in section 39(1) of the Act.

(3) The Regional Manager must evaluate the scoping report and request the relevant Government departments and organs of State, as the case may be, to submit written comments on the scoping report within 30 days from the date of the request.

(4) The Regional Manager may request the applicant to forward specific and additional information or to conduct further investigations regarding the scoping report submitted in terms of subregulation (2).

(5) The Regional Manager must collate and forward all comments contemplated in subregulation (3) to the applicant who must address and incorporate such comments in the environmental impact assessment report and environmental management programme.

(6) The applicant contemplated in subregulation (5) must compile the environmental management programme based on the environmental impact assessment report.

50. Contents of environmental impact assessment report

The contents of an environmental impact assessment report must include the following—

(a) An assessment of the environment likely to be affected by the proposed mining operation, including cumulative environmental impacts;

(b) an assessment of the environment likely to be affected by the identified alternative land use or developments, including cumulative environmental impacts;

(c) an assessment of the nature, extent, duration, probability and significance of the identified potential environmental, social and cultural impacts of the proposed mining operation, including the cumulative environmental impacts;

(d) a comparative assessment of the identified land use and development alternatives and their potential environmental, social and cultural impacts;

(e) determine the appropriate mitigatory measures for each significant impact of the proposed mining operation;

(f) details of the engagement process of interested and affected persons followed during the course of the assessment and an indication of how the issues raised by interested and affected persons have been addressed;

(g) identify knowledge gaps and report on the adequacy of predictive methods, underlying assumptions and uncertainties encountered in compiling the required information;

(h) description of the arrangements for monitoring and management of environmental impacts; and

(i) inclusion of technical and supporting information as appendices, if any.

51. Environmental management programme

An environmental management programme contemplated in section 39(1) of the Act must include the following—

(a) A description of the environmental objectives and specific goals for—

(i) mine closure;

(ii) the management of identified environmental impacts emanating from the proposed mining operation;

(iii) the socio-economic conditions as identified in the social and labour plan; and

(iv) historical and cultural aspects, if applicable;

(b) an outline of the implementation programme which must include—

(i) a description of the appropriate technical and management options chosen for each environmental impact, socio-economic condition and historical and cultural aspects for each phase of the mining operation;

(ii) action plans to achieve the objectives and specific goals contemplated in paragraph (a) which must include a time schedule of actions to be undertaken to implement mitigatory measures for the prevention, management and remediation of each environmental impact, socio-economic condition and historical and cultural aspects for each phase of the mining operation;

(iii) procedures for environmental related emergencies and remediation;

(iv) planned monitoring and environmental management programme performance assessment;

(v) financial provision in relation to the execution of the environmental management programme which must include—

(aa) the determination of the quantum of the financial provision contemplated in regulation 54; and

(bb) details of the method providing for financial provision contemplated in regulation 53;

(vi) an environmental awareness plan contemplated in section 39(3)(c) of the Act;

(vii) all supporting information and specialist reports that must be attached as appendices to the environmental management programme; and

(viii) an undertaking by the applicant to comply with the provisions of the Act and regulations thereto.

52. Environmental management plan

(1) An applicant who's application for a prospecting right or mining permit was accepted in terms of the Act, must submit an environmental management plan at the office of the Regional Manager in whose region the application was lodged within 60 days from the date of notification by the Regional Manager.

(2) An environmental management plan, must substantially be in the standard format provided by the Department and must contain—

(a) a description of the environment likely to be affected by the proposed prospecting or mining operation;

(b) an assessment of the potential impacts of the proposed prospecting or mining operation on the environment, socio-economic conditions and cultural heritage, if any;

(c) a summary of the assessment of the significance of the potential impacts, and the proposed mitigation and management measures to minimise adverse impacts and benefits;

(d) financial provision which must include—

(i) the determination of the quantum of the financial provision contemplated in regulation 54; and

(ii) details of the method providing for the financial provision contemplated in regulation 53;

(e) planned monitoring and performance assessment of the environmental management plan;

(f) closure and environmental objectives;

(g) a record of the public participation undertaken and the results thereof; and

(h) an undertaking by the applicant regarding the execution of the environmental management plan.

53. Methods for financial provision

(1) Financial provision required in terms of section 41 of the Act to achieve the total quantum for the rehabilitation, management and remediation of negative environmental impacts must be provided for by one or more of the following methods—

(a) An approved contribution to a trust fund as required in terms of section 10(1)(cH) of the Income Tax Act, 1962 (Act 58 of 1962) and must be in the format as approved by the Director-General from time to time;

(b) a financial guarantee from a South African registered bank or any other bank or financial institution approved by the Director-General guaranteeing the financial provision relating to the environmental management programme or plan in the format as approved by the Director-General from time to time;

(c) a deposit into the account specified by the Director-General in the format as approved by the Director-General from time to time; or

(d) any other method as the Director-General may determine.

(2) In the case of subregulation (1)(c), proof of payment must be submitted to the office of the relevant Regional Manager prior to the approval of the environmental management plan or environmental management programme, as the case may be.

54. Quantum of financial provision

(1) The quantum of the financial provision as determined in a guideline document published by the Department from time to time, include a detailed itemisation of all actual costs required for—

(a) premature closure regarding—

(i) the rehabilitation of the surface of the area;

(ii) the prevention and management of pollution of the atmosphere; and

(iii) the prevention and management of pollution of water and the soil; and

(iv) the prevention of leakage of water and minerals between sub-surface formations and the surface.

(b) decommissioning and final closure of the operation; and

(c) post closure management of residual and latent environmental impacts.

(2) The holder of a prospecting right, mining right or mining permit must annually update and review the quantum of the financial provision—

(a) in consultation with a competent person;

(b) as required in terms of the approved environmental management programme or environmental management plan; or

(c) as requested by the Minister.

(3) Any inadequacies with regard to the financial provision must be rectified by the holder of a prospecting right, mining right or mining permit—

(a) in an amendment of the environmental management programme or environmental management plan, as the case may be;

(b) within the timeframe provided for; or

(c) as determined by the Minister.

55. Monitoring and performance assessments of environmental management programme or environmental management plan

(1) As part of the general terms and conditions for a prospecting right, mining right or mining permit and in order to ensure compliance with an environmental management programme or environmental

management plan and to assess the continued appropriateness and adequacy of the environmental management programme or environmental management plan, a holder of such permit or right must—

(a) conduct monitoring on a continuous basis;

(b) conduct performance assessments of the environmental management plan or environmental management programme as required; and

(c) compile and submit a performance assessment report to the Minister in which compliance with paragraph (b) is demonstrated.

(2) The frequency of performance assessment reporting shall be—

(a) in accordance with the period specified in the approved environmental management programme or plan; or

(b) every two years; or

(c) as agreed to in writing by the Minister.

(3) A performance assessment report contemplated in subregulation (1)(c), shall be in the format provided in guidelines that will from time to time be published by the Department and shall as a minimum contain the following—

(a) Information regarding the period applicable to the performance assessment;

(b) the scope of the assessment;

(c) the procedure used for the assessment;

(d) the interpreted information gained from monitoring the approved environmental management programme or environmental management plan;

(e) the evaluation criteria used during the assessment;

(f) the results of the assessment; and

(g) recommendations on how and when non-compliance and deficiencies will be rectified.

(4) A holder of a prospecting right, mining right or mining permit may appoint an independent competent person(s) to conduct a performance assessment and compile a performance assessment report:

Provided that such appointment shall not exonerate the holder of the responsibilities in terms of these regulations.

(5) Subject to section 30(2) of the Act, the performance assessment report submitted by the holder may be disclosed by the Minister to any person on request.

(6) If upon consideration by the Minister, the performance assessment executed by the holder of a prospecting right, mining right or mining permit is not satisfactory or the performance assessment report submitted by the holder is found to be unacceptable, the holder must—

(a) repeat the whole or relevant parts of the performance assessment and revise and resubmit the report;

(b) submit relevant supporting information;

(c) appoint an independent competent person(s) to conduct the whole or part of the performance assessment and to compile the report.

(7) If a reasonable assessment indicates that the performance assessment cannot be executed satisfactorily by a holder of a prospecting right, mining right or mining permit or a competent person(s) appointed by the holder, the Minister may appoint an independent competent person(s) to conduct such performance assessment and such appointment and execution shall be for the cost of the holder.

(8) When the holder of a prospecting right, mining right or mining permit intends closing an operation, a final performance assessment must be conducted and a report submitted to the Minister to ensure the following—

(a) the requirements of the relevant legislation have been complied with;

(b) the closure objectives as described in the environmental management programme or environmental management plan have been met; and

(c) all residual environmental impacts resulting from the holder's operations have been identified and the risks of latent impacts which may occur have been identified, quantified and arrangements for the management thereof have been assessed.

(9) A final performance assessment report must either precede or accompany an application for a closure certificate in terms of the Act.

56. Principles for mine closure

In accordance with applicable legislative requirements for mine closure, the holder of a prospecting right, mining right, retention permit or mining permit must ensure that—

(a) the closure of a prospecting or mining operation incorporates a process which must start at the commencement of the operation and continue throughout the life of the operation;

(b) risks pertaining to environmental impacts must be quantified and managed proactively, which includes the gathering of relevant information throughout the life of a prospecting or mining operation;

(c) the safety and health requirements in terms of the Mine Health and Safety Act, 1996 (Act 29 of 1996) are complied with;

(d) residual and possible latent environmental impacts are identified and quantified;

(e) the land is rehabilitated, as far as is practicable, to its natural state, or to a predetermined and agreed standard or land use which conforms with the concept of sustainable development; and

(f) prospecting or mining operations are closed efficiently and cost effectively.

57. Application for closure certificate

(1) An application for a closure certificate by the holder of a prospecting right, mining right, retention permit or mining permit in terms of section 43(4) of the Act must be completed in the form of Form P, contained in Annexure II.

(2) The application referred to in subregulation (1) must be accompanied by the following documentation—

(a) A closure plan contemplated in regulation 62;

(b) an environmental risk report contemplated in regulation 60;

(c) a final performance assessment report contemplated in regulation 55(9); and

(d) a completed application form contemplated in regulation 58(1) to transfer environmental liabilities and responsibilities, if the transfer of such liabilities have been applied for.

58. Application to transfer environmental liabilities to competent person

(1) An application to transfer environmental liabilities to a competent person must be completed in the form of Form O contained in Annexure II and must be lodged with the Minister for consideration.

(2) The Minister may transfer liabilities and responsibilities as identified in the environmental management plan or the environmental management programme and the required closure plan to a competent person contemplated in regulation 59.

(3) When considering the transfer of environmental liabilities and responsibilities, the Minister may consult with relevant Government departments or organs of State which administers any law relating to matters affecting the environment.

59. Qualifications of person regarding transfer of environmental liabilities and responsibilities

For the purposes of transferring environmental liabilities and responsibilities as may be identified in the environmental management plan or the environmental management programme and any closure plan, the person to whom such transfer is made must—

(a) have the expertise, resources and organisational abilities to integrate risk assessment, risk management and risk financing to ascertain the cost of environmental management;

(b) have the expertise, financial and other resources to meet his or her obligations to carry out actions necessary to fulfil the environmental obligations as set out in the environmental management plan or the environmental management programme or any closure plan concerned;

(c) have appropriate experience in environmental management, prospecting or mining operations and mine health and safety matters;

(d) have direct access to insurance products and alternative risk financing services appropriate to financing of exposure to risks;

(e) have the ability to manage trusts set up in terms of section 10(1)(cH) of the Income Tax Act, 1962 (Act 58 of 1962); and

(f) have expertise and experience or proven access thereto to interpret and manage the findings of an environmental risk assessment.

60. Environmental risk report

An application for a closure certificate must be accompanied by an environmental risk report that must include—

(a) the undertaking of a screening level environmental risk assessment where—

(i) all possible environmental risks are identified, including those which appear to be insignificant;

(ii) the process is based on the input from existing data;

(iii) the risks that are considered are qualitatively ranked as—

(aa) a potential significant risk;

(bb) a uncertain risk;

(cc) an insignificant risk;

(b) the undertaking of a second level risk assessment on issues classified as potential significant risks where—

(i) appropriate sampling, data collection and monitoring be carried out;

(ii) more realistic assumptions and actual measurements be made; and

(iii) a more quantitative risk assessment is undertaken, again classifying risks as posing a potential significant risk or insignificant risk.

(c) an assessment of whether risks classified as posing potential significant risks are acceptable without further mitigation;

(d) risks classified as uncertain risks be re-evaluated and re-classified as either posing potential significant risks or insignificant risks;

(e) documenting the status of insignificant risks;

(f) identifying alternative risk prevention or management strategies for potential significant risks that have been identified, quantified and qualified in the second level risk assessment; and

(g) agreeing on management measures to be implemented for the potential significant risks that must include—

(i) a description of the management measures to be applied; a predicted long-term result of the applied management measures;

(ii) the residual and latent impact after successful implementation of the management measures;

(iii) time frames and schedule for the implementation of the management measures;

(iv) responsibilities for implementation and long-term maintenance of the management measures;

(v) financial provision for long-term maintenance; and

(vi) monitoring programmes to be implemented.

61. Closure objectives

Closure objectives form part of the draft environmental management programme or environmental management plan, as the case may be, and must—

(a) identify the key objectives for mine closure to guide the project design, development and management of environmental impacts;

(b) provide broad future land use objective(s) for the site; and

(c) provide proposed closure costs.

62. Contents of closure plan

A closure plan contemplated in section 43(3)(d) of the Act, forms part of the environmental management programme or environmental management plan, as the case may be, and must include—

(a) a description of the closure objectives and how these relate to the prospecting or mine operation and its environmental and social setting;

(b) a plan contemplated in regulation 2(2), showing the land or area under closure;

(c) a summary of the regulatory requirements and conditions for closure negotiated and documented in the environmental management programme or environmental management plan, as the case may be;

(d) a summary of the results of the environmental risk report and details of identified residual and latent impacts;

(e) a summary of the results of progressive rehabilitation undertaken;

(f) a description of the methods to decommission each prospecting or mining component and the mitigation or management strategy proposed to avoid, minimise and manage residual or latent impacts;

(g) details of any long-term management and maintenance expected;

(h) details of a proposed closure cost and financial provision for monitoring, maintenance and post closure management;

(i) a sketch plan drawn on an appropriate scale describing the final and future land use proposal and arrangements for the site;

(j) a record of interested and affected persons consulted; and

(k) technical appendices, if any.

PART IV
POLLUTION CONTROL AND WASTE MANAGEMENT REGULATION

63. Principles of pollution control and waste management

In accordance with applicable legislative requirements for pollution control and waste management, a holder of a mining right, prospecting right or mining permit in terms of the Act must—

(a) avoid the generation and production of pollution, waste and mine residue at source; or

(b) where the generation and production of pollution, waste and mine residue cannot altogether be avoided, it must be minimised, re-used or recycled; or

(c) where possible, dispose pollution, waste and mine residue in a responsible and sustainable manner.

64. Air quality management and control

(1) A holder of a right or permit in terms of the Act, must comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996), as well as other applicable law regarding air quality management and control.

(2) The assessment of impacts relating to air quality control and management, where appropriate, must form part of the environmental impact assessment report and environmental management programme or the environmental management plan, as the case may be.

65. Fire prevention

(1) All coal debris and bituminous rock must be deposited in compliance with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) at a site as identified and approved in the environmental management programme or environmental management plan.

(2) A holder of a mining right pertaining to the mining of coal shall be responsible for all damages resulting from the combustion of the coal residue stockpiles or deposits.

66. Noise management and control

(1) A holder of a right or permit in terms of the Act must comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996), as well as other applicable law regarding noise management and control.

(2) The assessment of impacts relating to noise pollution management and control, where appropriate, must form part of the environmental impact assessment report and environmental management programme or the environmental management plan, as the case may be.

67. Blasting, vibration and shock management and control

(1) A holder of a right or permit in terms of the Act must comply with the provisions of the Mine Health and Safety Act, 1996, (Act 29 of 1996), as well as other applicable law regarding blasting, vibration and shock management and control.

(2) An assessment of impacts relating to blasting, vibration and shock management and control, where applicable, must form part of the environmental impact assessment report and environmental management programme or the environmental management plan, as the case may be.

68. Water management and pollution control

(1) The provisions of the National Water Act, 1998 (Act 36 of 1998) shall apply to the water management and pollution control at all proposed or existing prospecting or mining operations.

(2) An assessment of impacts relating to water management and pollution control at proposed prospecting or mining operations, where appropriate, must form part of the environmental impact assessment report and environmental management programme or environmental management plan, as the case may be.

69. Disposal of waste material

(1) A holder of any right or permit in terms of the Act, must comply with applicable legislative requirements regarding the disposal of waste material.

(2) The assessment of impacts relating to the disposal of waste material, where appropriate, must form part of the environmental impact assessment report and environmental management programme or environmental management plan, as the case may be.

(3) Waste material from reduction works, beneficiation plants, coal preparation plants, screening and washing installations and generating stations at a mine shall be disposed of in accordance with the approved environmental management programme or environmental management plan and on an approved demarcated site.

(4) Dumping or impounding of rubble, litter, garbage, rubbish or discards of any description, whether solid or liquid, must take place only at the site or sites demarcated for such the purpose in accordance with the approved environmental management programme or environmental management plan.

(5) No sand dump or slimes dam shall be established on the bank of any stream, river, dam, pan, wetland or lake without written permission of the Minister in consultation with the relevant Government department and upon such conditions as he or she may determine and as approved in the environmental management programme or environmental management plan, as the case may be.

(6) Coal debris shall not be allowed to accumulate on any ground where there exist, or where there are likely to occur, surface fissures or cavities as a result of underground operations.

70. Soil pollution and erosion control

(1) A holder of a right or permit in terms of the Act, must comply with applicable legislative requirements regarding the management and control of soil pollution and erosion, where applicable.

(2) The assessment of impacts relating to soil pollution and erosion control, where appropriate, must form part of the environmental impact assessment report and environmental management programme or the environmental management plan, as the case may be.

(3) The spillage of hazardous chemicals onto soils or its escape or migration into surrounding soils from the approved depositioning area, must be prevented.

(4) Oils, grease and hydraulic fluids must be disposed of—

(a) in a waste disposal receptacle for collection or treatment; or

(b) at a licensed facility; or

(c) in accordance with a method approved in the environmental management programme or environmental management plan, as the case may be.

(5) Oils, grease and hydraulic fluid spills must be cleaned up by removing all contaminated soil and disposing such soil in a waste disposal receptacle or at a licensed facility.

(6) The acidification, salination and mineralisation of soils through seepage of polluted water and the irrigation of land with any water must take place within applicable legislative requirements or as approved in the environmental management programme or environmental management plan, as the case may be.

(7) The chemical and physical properties of top soil to be used for the purposes of rehabilitation must not be changed by introducing foreign material, gravel, rock, rubble or mine residue to such soil.

71. Sanitation of surface

(1) Toilet facilities shall be located in such a manner that no water or other pollution is caused.

(2) No person shall pollute the workings with faeces or urine or misuse the facilities provided or inappropriately foul the surrounding environment with faeces or urine. Acceptable hygienic and aesthetic practices must be adhered to.

72. Granite off-cuts and related waste

Granite off-cuts and related waste must be broken into manageable units to be either recycled, crushed or disposed of and the applicable land must be rehabilitated in accordance with the identified end-land use as identified in the approved environmental management programme or environmental management plan, as the case may be.

73. Management of residue stockpiles and deposits

(1) The assessment of impacts relating to the management of residue stockpiles and deposits, where appropriate, must form part of the environmental impact assessment report and environmental management programme or the environmental management plan, as the case may be.

(2)

(a) Mine residue must be characterised to identify any potentially significant health or safety hazard and environmental impact that may be associated with the residue when stockpiled or deposited at the site(s) under consideration.

(b) Residue stockpiles and deposits must be characterised in terms of its—

(i) physical characteristics, that may include—

(aa) the size distribution of the principal constituents;

(bb) the permeability of the compacted material;

(cc) void ratios of the compacted material;

(dd) the consolidation or settling characteristics of the material under its own weight and that of any overburden;

(ee) the strength of compacted material;

(ff) the specific gravity of the solid constituents; and

(gg) the water content of the material at the time of deposition, after compaction, and at other phases in the life of the deposit;

(ii) chemical characteristics, that may include—

(aa) the toxicity;

(bb) the propensity to oxidise and decompose;

(cc) the propensity to undergo spontaneous combustion;

(dd) the pH and chemical composition of the water separated from the solids;

(ee) stability and reactivity and the rate thereof; and

(ff) neutralising potential; and

(iii) mineral content, that may include the specific gravity of the residue particles and its impact on particle segregation and consolidation.

(c) All mine residue stockpiles and deposits must be classified by a competent person.

(3)

(a) All residue stockpiles and deposits must be classified into one or a combination of the following categories—

(i) the safety classification to differentiate between residue stockpiles and deposits of high, medium and low hazard on the basis of their potential to cause harm to life or property; and

(ii) the environmental classification to differentiate between residue stockpiles and deposits with—

(aa) a potentially significant impact on the environment due to its spatial extent, duration and intensity of potential impacts; or

(bb) no potentially significant impact on the environment.

(b) The classification of residue stockpiles and deposits shall determine the—

(i) level of investigation and assessment required;

(ii) requirements for design, construction, operation, decommissioning, closure and post closure maintenance; and

(iii) qualifications and expertise required of persons undertaking the investigations, assessments, design and construction thereof.

(c) The safety classification of residue stockpiles and deposits shall be based on the criteria as indicated in the Table below:

Number of residents in zone of influence	**Number of workers in zone of influence**	**Value of third party property in zone of influence**	**Depth to underground mine workings**	**Classification**
0	< 10	0-R2m	>200m	Low hazard
1-10	11-100	R 2 m-R20 m	50 m-200 m	Medium hazard
> 10	> 100	> R20 m	<50m	High hazard

(d) A risk analysis must be carried out and documented on all high hazard residue stockpiles and deposits.

(e) The environmental classification of residue stockpiles and deposits must be undertaken on the basis of—

(i) the characteristics of the residue;

(ii) the location and dimensions of the deposit (height, surface area);

(iii) the importance and vulnerability of the environmental components that are at risk; and

(iv) the spatial extent, duration and intensity of potential impacts.

(f) The assessment of impacts and analyses of risks shall form part of the environmental impact assessment and environmental management programme or environmental management plan, as the case may be.

(4)

(a) The process of investigation and selection of a site for residue stockpiling and residue deposits must entail—

(i) the identification of a sufficient number of possible candidate sites to ensure adequate consideration of alternative sites;

(ii) qualitative evaluation and ranking of all alternative sites;

(iii) qualitative investigation of the top ranking sites to review the ranking done in terms of subparagraph (ii);

(iv) a feasibility study to be carried out on the highest ranking site(s), involving—

(aa) a preliminary safety classification;

(bb) an environmental classification;

(cc) geotechnical investigations; and

(dd) groundwater investigations.

(b) The geotechnical investigations may include—

(i) the characterisation of the soil profile over the entire area to be covered by the residue facility and associated infrastructure to define the spatial extent and depth of the different soil horizons; and

(ii) the characterisation of the relevant engineering properties of foundations soils and the assessment of strength and drainage characteristics.

(c) The groundwater investigations may include—

(i) the potential rate of seepage from the residue facility;

(ii) the quality of such seepage;

(iii) the geohydrological properties of the strata within the zone that could potentially be affected by the quality of seepage; and

(iv) the vulnerability and existing potential use of the groundwater resource within the zone that could potentially be affected by the residue facility.

(d) From these investigations contemplated in paragraphs (a), (b) and (c) above, a preferred site must be identified.

(e) Further investigation on the preferred site, must include—

(i) land use;

(ii) topography and surface drainage;

(iii) infrastructure and man-made features;

(iv) climate;

(v) flora and fauna;

(vi) soils;

(vii) ground water morphology, flow, quality and usage; and

(viii) surface water.

(f) The investigations, laboratory test work, interpretation of data and recommendations for the identification and selection of the most appropriate and suitable site for the disposal of all residue that has the potential to generate leachate that could have a significant impact on the environment and groundwater must be carried out by a competent person.

(5)

(a) The design of the residue stockpile and deposit shall be undertaken by a competent person.

(b) An assessment of the typical soil profile on the site is required for residue stockpiles and deposits that—

(i) have a low hazard potential; and

(ii) have no significant impact on the environment.

(c) The design of the residue stockpile and deposit must take into account all phases of the life cycle of the stockpile and deposit, from construction through to closure and must include—

(i) the characteristics of the mine residue;

(ii) the characteristics of the site and the receiving environment;

(iii) the general layout of the stockpile or deposit, whether it is a natural valley, ring dyke, impoundment or a combination thereof and its three dimensional geometry at appropriate intervals throughout the planned incremental growth of the stockpile or deposit;

(iv) the type of deposition method used; and

(v) the rate of rise of the stockpile or deposit.

(d) Other design considerations, as appropriate to the particular type of stockpile and deposit that must be incorporated include—

(i) the control of storm water on and around the residue stockpile or deposit by making provision for the maximum precipitation to be expected over a period of 24 hours with a frequency of once in a 100 years;

(ii) the provision, throughout the system, of a freeboard of at least 0.5 m above the expected maximum water level to prevent overtopping;

(iii) keeping the pool away from the walls; where there are valid technical reasons for deviating from this, adequate motivation must be provided and the design must be reviewed by a competent person;

(iv) the control of decanting of excess water under normal and storm conditions—

(aa) the retention of polluted water in terms of polluted water in terms of GN R991(9), where measures may be required to prevent water from the residue deposit from leaving the residue management system;

(bb) the design of the penstock, outfall pipe, under-drainage system and return water dams;

(cc) the height of the phreatic surface, slope angles and method of construction of the outer walls and their effects on shear stability;

(dd) the erosion of slopes by wind and water, and its control by vegetation, berms or catchment paddocks; and

(ee) the potential for pollution.

(e) A design report and operating manual must be drawn up by a competent person for all residue stockpiles and deposits that—

(i) have a medium to high hazard; and

(ii) have a potentially significant impact on the environment.

(f) Relevant information pertaining to the management of mine residue stockpiles and deposits must be included in the environmental management programme or environmental management plan.

(6)

(a) The holder of any right or permit in terms of the Act, must ensure that—

(i) the residue deposits, including any surrounding catchment paddocks, are constructed and operated in accordance with the approved environmental management programme or environmental management plan;

(ii) the design of the residue deposit is followed implicitly throughout the construction thereof, and that any deviations from the design be approved by the Regional Manager and that the environmental management programme and environmental management plan be amended accordingly;

(iii) as part of the monitoring system, measurements of all residues transported to the site and of all surplus water removed from the site are recorded;

(iv) appropriate security measures are implemented to limit unauthorised access to the site and intrusion into the residue deposit;

(v) specific action is taken in respect of any sign of pollution;

(vi) adequate measures are implemented to control dust pollution and erosion of the slopes at residue stockpiles and deposits; and

(vii) details of rehabilitation of the residue deposit are provided in the environmental management programme or environmental management plan, as the case may be.

(b) A system of routine maintenance and repair in respect of the residue deposit must be implemented to ensure the ongoing control of pollution, the integrity of rehabilitation, health and safety matters at the site.

(7)

(a) A monitoring system for residue stockpiles and deposits with respect to potentially significant impacts as identified in the environmental assessment must be included in the environmental management programme or environmental management plan, as the case may be.

(b) In the design of a monitoring system for a residue stockpile or deposit, consideration must be given to—

(i) baseline and background conditions with regard to air, surface and groundwater quality;

(ii) the air, surface and groundwater quality objectives;

(iii) residue characteristics;

(iv) the degree and nature of residue containment;

(v) the receiving environment and specifically the climatic, local geological, hydrogeological and geochemical conditions;

(vi) potential migration pathways;

(vii) potential impacts of leachate;

(viii) the location of monitoring points and the monitoring protocols; and

(ix) the reporting frequency and procedures.

(8)

(a) The decommissioning, closure and post closure management of residue deposits must be addressed in the closure plan, which must contain the following—

(i) The environmental classification, including assumptions on which the classification is based;

(ii) the closure objectives, final land use or capability;

(iii) conceptual description and details for closure and post-closure management;

(iv) cost estimates and financial provision for closure and post-closure management; and

(v) residual impacts, monitoring and requirements to obtain mine closure in terms of the Act.

CHAPTER 3
APPEALS

74. Appeal against administrative decisions

(1) Any person who appeals in terms of section 96 of the Act against an administrative decision, must within 30 days after he or she has become aware of the or should reasonably become aware of the administrative decision concerned, lodge a written notice of appeal with the Director-General or the Minister, as the case may be.

(2) The notice of appeal must state clearly—

(a) the actions appealed against; and

(b) the grounds on which the appeal is based.

(3) The appeal fee specified in regulation 76(1)(f) must accompany a notice of appeal.

(4) The Director-General or the Minister, as the case may be, may in his or her discretion and on such terms and conditions as he or she may decide, condone the late noting of an appeal.

(5) After receipt of the notice of appeal, the Director-General or the Minister, as the case may be, must—

(a) dispatch copies thereof to—

(i) the person responsible for the administrative decision concerned;

(ii) any other person, whose rights may, in the opinion of the Director-General or the Minister, as the case may be, be affected by the outcome of the appeal; and

(b) request the persons contemplated in paragraph(a) to respond as provided for in subregulations (6) and (7).

(6) A person contemplated in subregulation 5(a)(i) must, within 21 days from receipt of the notice of appeal, submit to the Director-General or the Minister, as the case may be, written reasons for the administrative decision appealed against.

(7) A person contemplated in subregulation 5(b)(ii) must within 21 days from receipt of the notice of appeal, submit to the Director-General or the Minister, as the case may be, a replying submission indicating—

(a) the extent and nature of his or her rights;

(b) how the outcome of the appeal may affect his or her rights; and

(c) any other information pertaining to the grounds as set out in the notice of appeal.

(8) The Director-General or Minister, as the case may be, must dispatch the documents contemplated in subregulations (6) and (7) to the appellant by registered post and request him or her to respond thereto in writing within 21 days from receipt thereof.

(9) The Director-General or the Minister, as the case may be, must, within 30 days from the date of receipt of the response contemplated in subregulation (8), either—

(a) confirm the administrative decision concerned;

(b) set aside the administrative decision concerned;

(c) amend the administrative decision concerned; or

(d) substitute any other administrative decision for the administrative decision concerned.

(10) A notice of appeal contemplated in subregulation (1)—

(a) that is addressed to the Director-General, may be forwarded to any of the following addresses—

(i) Postal address:
Department: Minerals and Energy
Private Bag X59
PRETORIA
0001
For attention: Director, Legal Services; or

(ii) *Domicilium citandi et executandi*:
Department: Minerals and Energy

Mineralia Centre
Cnr of Andries and Visagie Streets
PRETORIA
For attention: Director, Legal Services; or

(b) that is addressed to the Minister, may be forwarded to any of the following addresses—

(i) Postal address:
Department: Minerals and Energy
Private Bag X59
PRETORIA
0001
For attention: Director, Legal Services; or

(ii) Domicilium citandi et executandi:
Department: Minerals and Energy
Mineralia Centre
Cnr Andries and Visagie Streets
PRETORIA
For attention: Director, Legal Services.

CHAPTER 4
GENERAL AND MISCELLANEOUS REGULATIONS

75. Application fees for permissions, permits, rights and appeals

(1) Application fees payable in terms of Chapter 4 of the Act, shall be as follows—

In relation to—

(a) a reconnaissance permission: R 100,00;

(b) a prospecting right and a renewal thereof: R 500,00;

(c) a mining right or a renewal thereof: R 1000,00;

(d) a mining permit: R 100,00;

(e) a retention permit or a renewal thereof: R 5000,00; and

(f) the lodging of an appeal: R 500,00.

(2) Application fees in respect of onshore and offshore applications payable in terms of Chapter 6 of the Act, shall be as follows:

DESCRIPTION		ONSHORE (R)	OFFSHORE (R)
(a)	Reconnaissance permit	100,00	500,00
(b)	Technical co-operation permit	100,00	500,00
(c)	Exploration right or a renewal thereof	500,00	1000,00
(d)	Production right or a renewal thereof	1000,00	5000,00

(3) The fees specified in this chapter shall be paid when the application or appeal concerned is lodged and shall not be refundable: Provided that the fee payable in respect of an appeal shall be returned to the applicant if his or her appeal is upheld.

76. Prospecting fees

(1) The prospecting fees or exploration fees payable as contemplated in section (19)(2)(f) and section 82(2)(e) of the Act, shall be as follows—

(a) A prospecting right or an exploration right granted in terms of section 17 or section 80 of the Act, on land other than offshore areas, the scheduled rates shall apply as categorised below:

CATEGORY	**A**	**B**
Area in hectares	**0-1000**	**1001 and greater**
Year	**Fixed annual (R)**	**Rate R/hectare**
1	1000,00	1,00
2	1100,00	1,50
3	1200	2
4	1300	2
5	1400	3

All hectares will be rounded to the nearest hectare; by rounding up if the fraction is 0,5 hectare or more, or otherwise by rounding down.

(b) The prospecting fees contemplated in subregulation (1)(a) will be revised annually.

(c) A renewal of a prospecting right or an exploration right granted in terms of section 18 or section 81 of the Act, the following scheduled rates apply as categorised below:

CATEGORY	**A**	**B**
Area in hectares	**0-1000**	**1001 and greater**

Year	Fixed annual (R)	Rate R/hectare
1	2800,00	5,00
2	2900,00	6,00
3	3000,00	7,00

(i) All hectares will be rounded to the nearest hectare; by rounding up if the fraction is 0,5 or more, or by otherwise rounding down.

(ii) In the case of an exploration right renewed for more than one period of two years as provided for in section 81(4), the renewed exploration fees will escalate at R 1,00 per annum for each subsequent renewal.

(d) a prospecting right granted offshore in terms of section 17 of the Act, excluding diamond concessions, for any mineral other than petroleum, the prospecting fee will be R 100,00 per square kilometre for the first year and thereafter escalate at a rate of R 10,00 per square kilometre per annum for the period granted.

(e) a renewal of a prospecting right granted offshore in terms of section 18 of the Act. the prospecting fee will be R 200,00 per square kilometre for the first year and thereafter escalate at a rate of R 20,00 per square kilometre per annum for the renewal period granted.

(f) an exploration right granted in terms of section 80 of the Act offshore, the exploration fee will be R200 000 per annum per degree square (about 10 000 square km), pro-rated as appropriate but with a minimum of R50 000, increased annually by the increase in the Consumer Price Index (CPI) for metropolitan areas as published by the relevant state agency.

(g) a renewal of an exploration right granted in terms of section 81 of the Act offshore, the exploration fee will be, for the first renewal, R225 000 per annum, for a second renewal period R250 000 per annum, and for a third renewal R275 000, per degree square in all cases pro-rated as appropriate but with minimums of R56 250, R 62 500 and R68 750 respectively, increased annually by the increase in the consumer Price Index (CPI) for metropolitan areas as published by the relevant state agency.

(h) a prospecting right granted in terms of section 17 of the Act for the (a), (b), (c) and (d) diamond concession areas, specified below will be as follows for the first year and thereafter escalate at a rate of 10 percent (simple interest) per annum for the duration of the prospecting right granted:

Concession area	Total amount (Rand)
(a)	5000,00
(b)	4000,00

(c)	3000,00
(d)	2000,00

(i) For a renewal of a prospecting right granted in terms of section 18 of the Act for the (a), (b), (c) and (d) diamond concession areas, the initial rates specified in subregulation (1)(h) will double respectively for year one of the renewal period and thereafter escalate at a rate of 10 percent (simple interest) per annum for the renewal period granted.

(2) The prospecting fees or exploration fees must be paid by the holder of such right annually in advance and not later than 30 days from the commencement date of such right and thereafter not later than 30 days following the anniversary of each respective year of the prospecting right for the duration thereof.

(3) If the prospecting fees or exploration fees referred to in subregulation (2) are not paid punctually on the due dates of payment, the holder shall be in *mora debitoris* and shall pay interest thereon at the rate prescribed in terms of section 80 of the Public Finance Management Act, 1999 (Act 1 of 1999) reckoned from the day following the last day allowed for payment up to and including the day of payment.

(4) Upon the relinquishment of areas already prospected or explored, in respect of the applicable prospecting or exploration right, excluding a right granted over a diamond concession area, the prospecting or exploration fees payable may be reduced accordingly: Provided that—

(a) written notification with details of the relinquishment is submitted by the holder of the prospecting or exploration right to the regional Manager or Designated Agency, whichever is applicable, at least 90 days before payment of the annual prospecting or exploration fees becomes due; and

(b) the holder is not in *mora debitoris* due to late payments on any amount in respect of prospecting or exploration fees, or where any debt in respect of prospecting or exploration fees are outstanding.

(5) Where advance payments have been made and the prospecting or exploration right is abandoned, suspended or cancelled before the lapsing of such right, no refunds of prospecting or exploration fees paid will be allowed.

77. Retention fees

(1) The retention fees payable as contemplated in section (35)(2)(a) of the Act must be paid at the Office of the Regional Manager in whose region the retention permit was obtained and shall be as follows:

Year	**Rand ha**
1	5000.00

2	5500.00
3	6000.00

(2) The retention fees contemplated in subregulation (1) will be revised annually.

(3) For a renewal of a retention permit granted in terms of section 34(1) of the Act, the rates in subregulation (1) will double and shall be as follows:

Year	Rand ha
1	10000.00
2	11000.00

(4) The retention fees must be paid by the holder of such permit annually in advance and not later than 30 days from the commencement date of such permit and thereafter not later than 30 days following the anniversary of each respective year of the retention permit for the duration thereof.

(5) If the retention fees referred to in subregulations (1) and (3) are not paid punctually on the due dates of payment, the holder shall be in *mora debitoris* and shall pay interest thereon at the rate prescribed in terms of section 80 of the Public Finance Management Act, 1999 (Act 1 of 1999) reckoned from the day following the last day allowed for payment up to and including the day of payment.

(6) Where advance payments have been made and the retention permit is abandoned, suspended or cancelled before the lapsing date of such permit, no refunds of retention fees paid will be allowed.

CHAPTER 5
TRANSITIONAL ARRANGEMENTS

78. Lodgement of old order prospecting right listed in Table 1 of Schedule II of the Act for conversion

An application for the conversion of an old order prospecting right contemplated in item 6(1) of Schedule II of the Act, must be completed in the form of Form I contained in Annexure I.

79. Lodgement of old order mining right listed in Table 2 of Schedule II of the Act for conversion

An application for the conversion of an old order mining right contemplated in item 7(1) of Schedule II of the Act must be completed in the form of Form J contained in Annexure I.

80. Application of transitional arrangements to OP26 right and OP26 mining lease pertaining to petroleum exploration and production

The provisions of regulations 79 and 80 shall apply respectively, with the necessary changes, to the conversion of an OP26 right and OP26 mining lease.

81. Affidavit forms

The affidavits required in terms of Schedule II; items 4(2)(h), 5(2)(e), 6(2)(d) and 7(2)(d) of the Act, must be completed on the applicable Forms U, V, W and X, respectively.

82. Conversion fees

(1) The conversion fees payable to convert old order rights into:

Description		Conversion fees (Rand)
(a)	exploration right	R200,00
(b)	production right	R500,00
(c)	prospecting right	R 200,00
(d)	mining right	R 500,00

(2) The fees referred to in subregulation (1) shall be paid on the lodgement of an application for the conversion concerned and shall not be refundable.

82A.

(1) Any claim for compensation contemplated in item 12(4) read with item 12(1) to Schedule II of the Act, must be lodged at the office of the Regional Manager in whose region the expropriated property is situated—

(a) on or before 30 April 2011 where the claimant has become aware or should reasonably have become aware on or before 30 April 2010 of the said expropriation; and

(b) in all other cases, within one year of the date when the claimant has or should reasonably have become aware of such expropriation:

Provided that a Court may, on good cause shown, condone the late lodgement thereof.

[Reg 82A(1) subs by reg 2(a) of GoN R1203 in G. 29431.]

(2) The claim referred to in subregulation (1) must be in writing and must comply with all the requirements of item 12(2) of Schedule II of the Act, and must further—

(a) describe the property which has been expropriated in terms of the Act;

(b) set out the amount of compensation claimed;

(c) set out the grounds upon which it is alleged that the property concerned has been expropriated; and

(d) be signed by or on behalf of the person making the claim.

(3) In determining the quantum of compensation to be paid, the claimant must indicate, in addition to the requirements of item 12(3), the difference in nature and content between the property expropriated and the rights which have been preserved or which can be acquired in terms of the provisions of the Act.

(4) The Director-General must, within 120 days from the date of receipt of a claim referred to in subregulation (1), determine whether the claimant has a valid claim or not, and inform the claimant of his or her determination with written reasons for such determination.

(5) The claimant shall have the right to appeal the decision of the Director-General in terms of section 96 of the Act.

(6) If the Director-General determines that the claim for compensation is valid or the Minister upholds the validity of a claim on appeal, the amount of compensation and the time and manner of payment of such compensation must be—

(a) agreed to between the Director-General and the claimant; or

(b) where no agreement is reached within 180 days of the date on which the claimant has been informed in writing of the determination of the Director-General that the claim is valid or of the upholding by the Minister of the validity of the claim on appeal, determined by a Court.

[Reg 82A(6) subs by reg 2(b) of GoN R1203 in G. 29431.]

(6A) A claimant may not issue legal proceedings against the Minister in respect of the determination or payment of compensation for an expropriation contemplated in item 12(1) of Schedule II to the Act, unless a claim has been lodged as contemplated in subregulation (1) and—

(a) the claimant has been informed in writing of the determination of the Director-General that the claim is invalid as contemplated in subregulation (4) and the claimant has not appealed the decision of the Director-General as contemplated in subregulation (5); or

(b) where the claimant has appealed the decision of the Director-General as contemplated in subregulation (5), the claimant has been informed in writing by the Minister of the confirmation of the said decision; or

(c) the period contemplated in subitem (6)(b) has expired.

[Reg 82A(6A) ins by reg 2(c) of GoN R1203 in G. 29431.]

(7) To the extent that they may be applicable, the provisions of sections 10(4), (5), (7) and (8), 14, 15, 19 and 21 of the Expropriation Act, 1975 (Act 63 of 1975) shall apply with the necessary changes to a claim made in terms of item 12(1) to Schedule I1 of the Act.

[Reg 82A ins by reg 2 of GoN R1288 in G. 26942; reg 82A(7) subs by reg 2(d) of GoN R1203 in G. 29431.]

83. Forms

The forms contained in Annexure I and Annexure II are prescribed for use under the Act.

Form	***Annexure***	***Form Description***	
Form A.	*Annexure I*	*Application form for a reconnaissance permission in terms of Section of the Act, 2002*	*DME 275*
Form B.	*Annexure I*	*Application form for a prospecting right in terms of Section of the Act, 2002*	*DME 274*
Form C.	*Annexure I*	*Application form for the renewal of a prospecting right in terms of Section 18 of the Act, 2002*	*DME 301*
Form D.	*Annexure I*	*Application form for a mining right in terms of Section 22 of the Act, 2002*	*DME 276*
Form E.	*Annexure I*	*Application form for the renewal of a mining right in terms of Section 24 of the Act 2002*	*DME 303*
Form F.	*Annexure I*	*Application form for a mining permit in terms of Section 27(2) of the Act, 2002*	*DME 282*
Form G.	*Annexure 1*	*Application form for a retention permit in terms of Section 31 of the 2002*	*DME 283*
Form H.	*Annexure I*	*Application for the renewal of retention permit in terms of Section 34 of the Act, 2002*	*DME 299*
Form I.	*Annexure I*	*Lodgment form for the conversion of an old order prospecting right listed in Table 1 of Schedule II of the Act, 2002 for conversion*	*DME 313*
Form J.	*Annexure I*	*Lodgment form for the conversion of an old order mining right listed in Table 2 of Schedule II of the Act, 2002 for conversion*	*DME 314*
Form K.	*Annexure I*	*Application form for a reconnaissance permit in terms of Section 74 of the Act, 2002*	*DME 285*
Form L.	*Annexure I*	*Application form for a technical co-operation permit in terms of Section 76 of the Act, 2002*	*DME 279*
Form M.	*Annexure I*	*Application form for a right in terms of Section 79 and the thereof in terms of Section 81 of the Act, 2002*	*DME 287*
Form N.	*Annexure I*	*Application form for a production right in terms of Section 83 and the renewal thereof in terms of Section 85 of the Act, 2002*	*DME 304*

Form O.	*Annexure II*	*Application to transfer environmental and responsibilities to competent person terms of section 43(2) of the Act, 2002*	*DME 258*
Form P.	*Annexure II*	*Application for certificate in terms of Section 43(3) of the Act*	*DME 270*
Form Q.	*Annexure 2*	*Form to be completed in terms of regulation 46(b)(i)(aa) of the Social and Labour Plan to report the number and education levels of employees*	*DME 327*
Form R.	*Annexure II*	*Form to be completed in terms of regulation of the Social and Labour Plan to report the number of vacancies that the mining operation has been unable to fill for a period longer than months*	*DME 328*
Form S.	*Annexure II*	*Form to be completed in terms of regulation 46(b)(v) of the Social and Labour Plan to report employment equity statistics*	*DME 325*
Form T	*Annexure II*	*Form to be completed in terms of regulation 46(c)(vi) of the Social and Labour Plan to report the procurement progression plan and its implementation for HDSA*	*DME 326*
Form U.	*Annexure II*	*Affidavit in respect of the continuation of exploration operations in terms of Schedule II: item 4(2)(h) of the Act, 2002*	*DME 356*
Form V	*Annexure II*	*Affidavit in respect of the continuation of production operations in terms of Schedule II; 2002*	*DME 357*
Form W.	*Annexure II*	*Affidavit in respect of the continuation of an old order prospecting right in terms of Schedule II; item 6(2)(h) of the Act*	*DME 358*
Form X	*Annexure II*	*Affidavit in respect of the continuation of an old order mining right in terms of Schedule II; item 7(2)(d) of the Act*	*DME 359*

(The following forms are available upon request, please refer to our website for our contact details.)

CHAPTER 6
GENERAL PROVISIONS

84. Definitions

In these Regulations a word or expression to which a meaning has been assigned in the Act, bears that meaning and, unless the context otherwise indicates—

"API standards" means relevant American Petroleum Institute Standards;

"applicant" means a person who intends to make an application for an exploration right or production right in terms of the Act;

"aquifer" has the meaning assigned to it in section 1(1) of the National Water Act, 1998 (Act 36 of 1998);

“base fluid” means the continuous phase fluid type, including, but not limited to water used in hydraulic fracturing operations;

“casing” means piping positioned in a wellbore and cemented in place to prevent soil or rock from caving and isolates fluids from the surrounding geological formations;

“competent authority” has the meaning assigned to it in section 1(1) of the National Environmental Management Act;

“competent person” has the meaning assigned to it in the Mineral and Petroleum Resources Development Regulations;

“EMPr” has the meaning assigned to it in the Environmental Impact Assessment Regulations;

“environmental authorisation” has the meaning assigned to it in section 1(1) of the National Environmental Management Act;

“Environmental Impact Assessment Regulations” means the Environmental Impact Assessment Regulations, 2014, published in Government Notice R982 Government Gazette 38282 of 4 December 2014;

“exploration well” means a well drilled for the purpose of obtaining specific geological and geophysical information to prove, define and assess the existence and commerciality of petroleum by conducting any type of pressure tests;

“flare” means a thermal oxidation system using an open, enclosed, or semi-enclosed flame;

“fresh water” means surface and sub-surface water in its natural state that—

(a) is suitable for human consumption, domestic livestock, irrigation, industrial, municipal and recreational purposes;

(b) is capable of supporting aquatic life in line with South African water quality guidelines; and

(c) contains less than 1000 mg/l Total Dissolved Solids;

“gas” means natural gas, including casinghead gas, coal bed methane and shale gas;

“geohazard” means a geological state such as dolerites, kimberlite such as groundwater pathways, possible fault reactivation, zones of brecciated rock, proximity of hot springs, abnormal water temperature or presence of palaeochannels, that may lead to widespread damage or risk;

“groundwater” means water found in the sub-surface in the saturated zone below the water table;

“holder” means a holder of an exploration or production right granted in terms of sections 80 and 84 of the Act, respectively;

“horizontal well” means a well where the wellbore is drilled vertically to a kickoff depth beyond which the wellbore is deviated to run parallel to the target formation;

“hydraulic fracturing” means injecting fracturing fluids into the target formation at a pressure exceeding the parting pressure of the rock to induce fractures through which petroleum can flow to the wellbore;

“hydraulic fracturing additive” means a chemical substance or combination of substances, including, but not limited to a chemical and proppant that is added to a base fluid for the purposes of preparing hydraulic fracturing fluid;

“hydraulic fracturing flowback” means hydraulic fracturing fluid and other fluids that return to the surface after hydraulic fracturing has been completed and prior to the well being placed in production;

“hydraulic fracturing fluid” means the mixture of the base fluid and the hydraulic fracturing additives used to perform hydraulic fracturing;

“hydraulic fracturing string” means a pipe or casing string used for the transport of hydraulic fracturing fluids;

“inactive well” means a well that has not been active for six (6) consecutive months;

“micro-seismic monitoring” means the monitoring of seismic activity less than or equal to magnitude 3 using a network of calibrated seismological equipment in order to produce readings on magnitude, depth, location, error and time of each seismic event;

“Mineral and Petroleum Resources Development Regulations” means the Mineral and Petroleum Resources Development Regulations published in Government Notice R.527 dated 23 April 2004;

“naturally occurring radioactive material” means radioactive material that naturally exists in natural materials;

“National Environmental Management Act” means the National Environmental Management Act, 1998 (Act 107 of 1998);

“oil” means natural crude oil or petroleum and other hydrocarbons, regardless of gravity, which are produced at the well in liquid form and which are not the result of condensation of gas after it leaves the underground reservoir;

“production well” means a well drilled for the purpose of producing petroleum;

“produced water” means water, regardless of chloride and total dissolved solids content, that is produced in conjunction with oil or natural gas production or natural gas storage operations, but does not include hydraulic fracturing flowback;

“proppant” means sand or a natural or man-made material that is used during hydraulic fracturing operations to prop open the artificially created or enhanced fractures;

“release” means spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment;

“saturated zone” means the sub-surface zone below the water table where interstices are filled with water under pressure greater than that of the atmosphere;

“seismic monitoring” means the monitoring of seismic activity using a network of calibrated seismological equipment in order to produce readings on magnitude, depth, location, error and time of each seismic event;

“specific environmental management Act” has the meaning assigned to it in section 1(1) of the National Environmental Management Act;

“South African Waste Information System” or **“SAWIS”** means a national waste information system established in terms of section 60 of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008);

“stratigraphic well” means a well or hole drilled only for the purpose of obtaining information pertaining to specific geological, structural and stratigraphic information that might lead towards the discovery of petroleum with no intent to produce from such a well;

“the Act” means the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002);

“pollution” has the meaning assigned to it in section 1(1) of the National Environmental Management Act;

“water resources” has the meaning assigned to it in section 1(1) of the National Water Act, 1998;

“watercourse” has the meaning assigned to it in section 1(1) of the National Water Act, 1998;

“well” means a drilled hole used for the purpose of exploration and production of petroleum resources;

“well integrity” means the application of technical, operational and organisational solutions to reduce the risk of uncontrolled release of formation fluids throughout the life cycle of a well;

“well examination scheme” means arrangements for an examination of the well conducted by an independent and competent person that are—

(a) recorded in writing; and

(b) suitable for ensuring, together with the assistance of any other measures the holder may take, that the well is designed, constructed, operated, maintained, modified, suspended, and decommissioned so that—

(i) there can be no escape of fluids from the well; and

(ii) risks to the health and safety of persons from the well or anything in it, or from strata, to which the well is connected, have been assessed and are within acceptable levels.

“well site” means the surface area, including a well, occupied by equipment or facilities necessary for or incidental to drilling, hydraulic fracturing, production, or plugging a well.

85. Purpose and application of Regulations

(1) The purpose of these Regulations is to augment the Mineral and Petroleum Resources Development Regulations, so as to prescribe standards and practices that must ensure the safe exploration and production of petroleum.

(2) These Regulations apply to onshore exploration and production operations and must be read with the Act, the Mineral and Petroleum Resources Development Regulations and any other relevant legislation.

[Chapter 6 ins by GoN R466 in G. 38855.]

CHAPTER 7
ENVIRONMENTAL IMPACT ASSESSMENT

86. Environmental Impact Assessment

(1) The exploration and production activities related to petroleum are subject to the requirements of the National Environmental Management Act and any relevant specific environmental management Act.

(2) Before exploration and production activities related to petroleum may commence, the holder must be in possession of an Environmental Authorisation issued in terms of the Environmental Impact Assessment Regulations, 2014.

(3) When submitting an application in terms of the Environmental Impact Assessment Regulations an applicant must comply with the minimum information requirement, guidance document or decision support tool as identified by the competent authority.

(4) The designated agency, the Council of Geosciences and the Council for Scientific Research must be identified as interested and affected parties for the purposes of the public participation to be undertaken as part of the Environmental Impact Assessment process.

87. Assessment of conditions below ground

(1) An applicant or holder must assess the geology and geohydrology of the affected area prior to well design and submit a geological overview report to the designated agency for approval.

(2) The report contemplated in subregulation (1) must be submitted, for consideration, to the competent authority as part of the application for Environmental Authorisation. The report must at least include the following information—

(a) A geological map of the area (that can encompass several hydraulic fracturing sites) at the appropriate scale and with details that must allow understanding of the potential structural aspects;

(b) an analysis of available geological information such as published and unpublished map sheets, satellite imagery and published and unpublished scientific papers;

(c) stratigraphic exploration boreholes to understand the regional stratigraphy and possible structural complexity as well as proposed depth(s) to the top and the bottom of the formation into which well fracturing fluids are proposed to be injected;

(d) borehole analysis including core logging, downhole geophysics, camera, water strikes, hydrogeochemical character and injection tests in fractures or formations;

(e) the physical and chemical properties of the stratigraphic formations such as porosity, permeability, naturally occurring fissures and fractures, total organic carbon, clay and mineralogy;

(f) cross sections of the study area based on surface geology, exploration borehole and geophysical profiling showing the stratigraphy, including the presence and morphology of dolerite, kimberlite and tectonic structures;

(g) groundwater monitoring (area covered, duration of monitoring, watercourse) and deep groundwater investigation to be specified when independent preliminary research has been completed;

(h) a model of fluid migration in the geological formation; and

(i) geohazards associated with geological formation and structural features and possible solutions to overcome them.

88. Water resource monitoring

(1) An applicant or holder must appoint an independent specialist to conduct a hydrocensus fulfilling the standard requirements of the department responsible for water affairs which indicates potentially affected water resources, on at least, a three kilometres radius from the furthest point of potential horizontal drilling, as well as identify priority water source areas and domestic groundwater supplies indicated on relevant geohydrological maps.

(2) An applicant or holder must prepare and submit, together with the water use licence application, to the department responsible for water affairs, a proposed water resource monitoring plan, for approval. The plan must at least identify—

(a) the sampling methodology;

(b) the monitoring points;

(c) the monitoring parameters;

(d) the monitoring frequency; and

(e) the reporting frequency.

(3) The monitoring plan contemplated in subregulation (2) must be submitted to the competent authority for consideration, as part of the application for Environmental Authorisation.

(4) Water samples collected as part of the monitoring plan contemplated in subregulation (2) must be analysed by an accredited laboratory and the holder must submit the results and their interpretation to the designated agency and the department responsible for water affairs within seven days after receipt thereof.

(5) The results must at least include a detailed description of the sampling and testing conducted, including duplicate samples, the chain of custody of the samples and quality control of the testing.

(6) A full water monitoring report must be included in the EMPr required in terms of the Environmental Impact Assessment Regulations, 2014.

(7) A holder must, after conducting a baseline water quality assessment, continue with monitoring in accordance with the approved plan and must—

(a) have the water resources subjected to sampling, analysis and interpretation of water quality and changes in water levels by an independent specialist approved by the designated agency in accordance with the approved plan contemplated in subregulation (2);

(b) submit the results of the analysis and interpretation to the designated agency and the department responsible for water affairs within seven days of receipt of the analysis and interpretation; and

(c) submit the monitoring assessment reports in accordance with the approved monitoring plan contemplated in subregulation (2).

(8)

(a) The designated agency, Council for Geoscience, Council for Scientific and Industrial Research, designated local authorities or the department responsible for water affairs, may collect samples of fluids encountered in the exploration or production area (water or hydrocarbons, at depth or at the surface) for their own analysis and interpretation.

(b) The holder must allow site access to the authorities mentioned in paragraph (a) for the purpose of collecting the samples.

(9) Data collected as contemplated in this regulation must be published except where it may be shown to directly relate to the availability of petroleum and commercial value of the holder's acreage.

(10) Groundwater aspects must be recorded and reported according to the department responsible for water affairs' Standard Descriptors for Geosites.

(11) The holder must capture the water resource data generated into the relevant department responsible for water affairs' databases.

89. Assessment of related seismicity

(1) An applicant or holder must, prior to conducting hydraulic fracturing, assess the risk of potential hydraulic fracturing related seismicity and submit a risk assessment report and the proposed mitigation measures to the designated agency for approval and recommendation by the Council for Geoscience and the risk assessment report must, as a minimum, identify—

(a) stressed faults which must be avoided in the fracturing process;

(b) fracture behaviour of targeted formations; and

(c) the site-specific seismic monitoring to be undertaken pre-fracturing, during operation and post fracturing including the monitoring and reporting frequency.

(2) An applicant or holder must carry out site-specific surveys prior to hydraulic fracturing to characterise local stress regimes and identify proximal faults and the site characterisations must at least include—

(a) desktop studies of existing geological maps;

(b) seismic reflection and refraction data where available;

(c) available background seismicity data;

(d) stress data from proximal boreholes where available; and

(e) other relevant available geophysical data, such as gravity.

(3) The risk assessment report contemplated in subregulation (1) and the site-specific surveys contemplated in subregulation (2) must be submitted to the competent authority, for consideration, as part of the application for Environmental Authorisation.

(4) The assessment of the orientation and slip tendency of faults and bedding planes may be done once faults have been identified and geological stress regimes characterised.

(5) The holder must mitigate risks of fault movement by identifying stressed faults by preventing fracturing fluids from entering stressed faults.

(6) The holder must test fracture a targeted formation in a given well by using small pre-fracturing injection tests with micro-seismic monitoring.

(7) A holder must, following pre-fracturing injection tests contemplated in subregulation (6), investigate whether seismic activity occurs and then modify subsequent hydraulic fracturing operations.

(8) The holder must undertake seismic monitoring at the site for a period of three years after hydraulic fracturing activities have ceased and include the results of the seismic monitoring in the monitoring report contemplated in subregulation (1)(c).

90. Site preparation

The area in respect of which an exploration or production right is granted must be prepared in accordance with the Environmental Authorisation and the approved EMPr.

91. Site containment

A holder must at all times, prevent the contamination of the environment by providing a suitably designed impermeable site underlay system and making site drainage arrangements.

Protection of astronomy activities

92. Radio astronomy

(1) The Minister of Mineral Resources must, as part of issuing an exploration and a production right, ensure that the holder of such a right complies with the declarations made, and regulations promulgated, in terms of the Astronomy Geographic Advantage Act, 2007 (Act 21 of 2007), for the protection of astronomy advantage areas declared for radio astronomy purposes.

(2) Where an authorisation is required by a declaration made, or a regulation promulgated, in terms of the Astronomy Geographic Advantage Act, 2007, the authorisation must be obtained prior to the issuing of an exploration and a production right.

(3) Compliance with a declaration made, and a regulation promulgated, in terms of the Astronomy Geographic Advantage Act, 2007, must be a condition of the exploration and production right.

93. Optical astronomy

(1) The Minister of Mineral Resources must, as part of issuing an exploration and production right, ensure that the holder of such a right complies with the declaration made and regulations promulgated, in terms of the Astronomy Geographic Advantage Act, 2007, for the protection of astronomy advantage areas declared for optical astronomy purposes.

(2) Where an authorisation is required by a declaration made, and regulations promulgated, in terms of the Astronomy Geographic Advantage Act, 2007, the authorisation must be obtained prior to the issuing of an exploration and production right.

(3) Compliance with a declaration made, and regulations promulgated, in terms of the Astronomy Geographic Advantage Act, 2007, must be a condition of the exploration and production right.

[Chapter 7 ins by GoN R466 in G. 38855.]

CHAPTER 8
WELL DESIGN AND CONSTRUCTION

94. Well risk identification and assessment

(1) The primary responsibility for identifying, assessing and mitigating well hazards rests with the holder.

(2) An applicant or holder must ensure that the following specific design and operational risks are considered as part of the well-related risk assessment process—

(a) Aquifer isolation;

(b) permeable zones must be assessed to achieve adequate isolation by casing with cement;

(c) the holder must protect potable groundwater and prevent migration of high salinity groundwater into the stimulation well or other aquifers and the final well decommissioning of the stimulation well design must be considered at the well design phase;

(d) casing deformation and cement degradation;

(e) fracturing containment;

(f) seismicity induced by hydraulic fracturing;

(g) deformation of aquifers and geological strata due to injection or extraction of fluids or gas; and

(h) surface subsidence due to deformation of aquifer and geological during fluid or gas extraction.

(3) Control measures must—

(a) be based on well design risk assessments and the environmental risk assessments;

(b) be documented in the well's basis of design documentation and well operations programmes or equivalent documents.

(4) The well design risk assessment contemplated in subregulation (2), which includes the proposed control measures contemplated in subregulation (3), must be submitted to the competent authority, for consideration, as part of the application for an Environmental Authorisation.

95. Well design

(1) A holder must ensure that a well design is informed by the risk assessment and is constructed, equipped, commissioned, operated, modified, maintained, suspended and decommissioned in a manner that provides for the control of the well at all times and must prevent—

(a) the migration of petroleum and other fluids into any other formation except the targeted formation;

(b) the pollution of water resources; and

(c) risks to health and safety of persons from the well or anything in the well, or in strata to which the well is connected.

(2) The final well decommissioning design must be considered at the well planning stage and be included as part of the application for Environmental Authorisation for consideration.

(3) The decommissioning design must at least consider the following—

(a) The height of cement in annulus outside casing;

(b) permeable formations outside the casing that must be covered by cement;

(c) cementing casing overlaps;

(d) the need for plugs to cover the full diameter of the hole, with only casing within the cement;

(e) the type of fluid in annuli above cement; and

(f) the difficulty of injecting cement into the annulus.

(4) Where technically appropriate and environmentally safe, multi-well pads and horizontal drilling technologies must be considered in order to maximise the spacing between neighbouring wells and to minimise the cumulative surface impact of operations.

96. Well construction standards

(1) A well, except a stratigraphic well, must be cased according to current industry standards published by the API “5CT Specification for Casing and Tubing” and the casing thread compound and its use must conform to the current API RP 5A3.

(2)

(a) A casing installed must have a minimum yield pressure designed to withstand at least 1.2 times the maximum pressure to which the casing may be subjected during drilling, production or hydraulic fracturing operations.

(b) The minimum yield pressure must be based upon engineering calculations as listed in the API “TR 5C-3 Technical Report on Equations and Calculations for Casings, Tubing and Line Pipe used as Casing and Tubing, and Performance Properties Tables for Casing and Tubing “.

(3) A holder may not use casing—

(a) that is pitted, patched, bent, corroded, crimped, or casing;

(b) the threads of which are worn or damaged; or

(c) that is reconditioned and that has not passed the approved hydrostatic pressure and drift test pursuant to API “5CT Specification for Testing and Tubing”.

(4) A holder must contact the designated agency at least two days prior to setting a casing to enable an authorised person to be present when the test is done.

(5) A holder may, despite any provision of these Regulations, but subject to subregulations (6) and (7), adopt well construction standards for exploration and production wells other than those provided for in these Regulations.

(6) A holder intending to adopt well construction standards as contemplated in subregulation (5) must—

(a) submit detailed information about the proposed well construction standards;

(b) provide a detailed comparative technical assessment of the proposed well construction standards and the standards prescribed under these Regulations from an independent drilling engineer; and

(c) show how such well construction standards will enhance higher levels of well integrity as compared with those prescribed under these Regulations.

(7) A holder may proceed to implement well construction standards as contemplated in subregulation (5) only after receiving written consent from the designated agency.

(8) A holder intending to drill stratigraphic wells—

(a) must submit, to the designated agency, its proposed well design and construction standards to be adopted to show that well integrity will be maintained; and

(b) may only proceed with drilling after receiving written approval from the designated agency.

97. Conductor casing

Conductor casing must be set and cemented to a surface in order to—

(a) stabilise unconsolidated sediments;

(b) isolate shallow aquifers that provide or are capable of providing fresh groundwater for water wells and springs in the vicinity of the well; and

(c) provide a base for equipment to divert shallow natural gas.

98. Surface casing

Surface casing for exploration or production wells must be set to a depth of 60m below the base of the deepest fresh water or at least 100 metres above the top of expected petroleum bearing zones, whichever comes first, and cemented to a surface.

99. Intermediate casing

(1) Intermediate casing for exploration and production wells must be set to protect unexpected fresh water found below the surface casing shoe.

(2) Intermediate casing used to isolate fresh water must not be used as the production string in the well in which it is installed and must not be perforated for purposes of conducting a hydraulic fracture treatment through it.

(3) When intermediate casing is installed to protect fresh water, it must be set at least 30 meters below the base of the unexpected deepest fresh water and must be cemented to the surface.

(4) In instances where intermediate casing is set solely to protect fresh water encountered below the surface casing shoe and cementing to the surface is technically infeasible and may result in lost circulation or both, cement must be brought to a minimum of 180 meters above the shallowest fresh water zone encountered below the surface casing shoe.

(5) The location and depths of petroleum-bearing zones or fresh water zones that are open to the wellbore above the casing shoe, must be confirmed by coring, electric logs, testing or such data from an offset well on the same well pad and must be reported to the designated agency.

100. Production casing

(1) In cases where intermediate casing is not installed, production casing must be run and be fully cemented to the surface.

(2) If intermediate casing is in place, production casing must be set and be fully cemented to 150 meters above the top perforated zone.

101. Centralisers

(1) Casing must be centralised in each segment of the wellbore to provide sufficient casing standoff and foster effective circulation of cement to isolate critical zones including aquifers, flow-zones, voids, lost circulation zones and hydrocarbon production zones.

(2) Surface casing must be centralised at the shoe, above and below a stage collar or diverting tool, and through fresh water zones.

(3) In non-deviated holes, a pipe centraliser must be placed every fourth joint from the cellar cement shoe to the ground surface or to the bottom of the cellar.

(4) Centralisers must be in accordance with the standards of—

(a) API “10 D, Specification for Bow-Spring Casing Centralisers and all rigid centralisers”;

(b) API “10 TR 4 Considerations Regarding Selection of Centralisers for Primary Cementing Operations”; and

(c) API RP “10D-2, Recommended Practice for Centraliser Placement and Stop Collar Testing”.

(5) The designated agency may require additional centralisation where necessary in order to ensure the adequacy of the integrity of the well design.

102. Cement requirements and compressive tests

(1) A holder must notify the designated agency at least two days before commencing with cementing of casing operations to enable an authorised person to be present.

(2) Cementation of casing must be done by the pump and plug method with a minimum of 25% excess cement and appropriate loss circulation material, unless another amount of excess cement is approved by the designated agency.

(3) Cement placed into the well bore must be cement that is manufactured to meet the standards of API "10 A Specification for cements and material for well cementing" or ASTM "C150/C150M Standard Specification for Portland Cement" and foamed cement slurry must be prepared to minimise its free water content in accordance with API "RP 10B-4 Recommended Practice on Preparation and Testing of Foamed Cement Slurries at Atmospheric Pressure."

(4) A holder must conduct tests for cement mixtures for which published performance data is not available on representative samples of the basic mixture of cement and additives used, by using distilled water or potable tap water for preparing the slurry.

(5) The actual water for preparing the slurry for cement mixtures for which published performance data is not available must be the distilled water or potable tap water used for testing as contemplated in subregulation (4).

(6) Tests contemplated in subregulation (4) must be conducted using the equipment and procedures established in the current API "RP 10 B-2 Recommended Practice for Testing Well Cements" and API "RP 10B-4 Recommended Practice on Preparation and Testing of Foamed Cement Slurries at Atmospheric Pressure".

(7) Test data showing competency of a proposed cement mixture to meet the requirements of the current API "API RP 10 B-2 Recommended Practice for Testing Well cements" must be submitted to the designated agency for approval prior to the cementing operation.

(8) A holder must perform cement compressive strength tests on casing strings and if it does not conform to standards it must be redone.

(9) After the cement is placed behind the casing, a holder must wait for the cement to set until the cement achieves a calculated compressive strength of at least 500psi (3447.38 kPa) before the casing is disturbed in any way, including installation of a blow-out preventer.

(10) The cement must have a compressive strength of at least 1,200 psi (8273.71 kPa), and the free water separation must be no more than 6 millilitres per 250 millilitres of cement, tested in accordance with the current API TR 10TR3.

(11) A holder must ensure that there is isolation of hydraulic fracturing operations from freshwater and other permeable horizons by ensuring complete cement isolation in each casing annulus.

(12) A holder must, in co-operation with specialist contractors, prepare suitable programmes for cement placement operations, including monitoring of the effectiveness of placement as part of the operations planning, contingency plans and procedures to cover the possibility of a failure to meet the cementation design objectives.

(13) The designated agency may, where necessary, require—

(a) a specific cement mixture to be used in a well or an area if evidence of local conditions indicates that specific cement is necessary; or

(b) installation of an additional cemented casing string or strings in the well.

(14) A holder must run a radial cement bond evaluation log and monitor the annular pressure to verify the cement bond on all casing strings and must carry out remedial cementing if the cement bond is not adequate for drilling ahead.

(15) A copy of the cement job log for a cemented casing string in the well must be maintained in the well file and be submitted to the designated agency.

(16) Proposed changes to the cementation programme must be reported to the designated agency for approval before the changes are implemented except in the case of a need to prevent a possible catastrophic consequence.

103. Casing string tests

(1) After the setting and cementing of a casing string, except the conductor casing, and prior to further drilling, the casing string must be tested with fresh water, mud, or brine to at least the maximum anticipated treatment pressure but no less than 0.22 psi per foot (1.512 kPa per 0.3048 meter) of casing string length or 1,500 psi (10 342.12 kPa), whichever is greater, for at least 30 minutes with less than a 5% pressure loss.

(2) The pressure test must not exceed 70% of the minimum internal yield and if the pressure declines more than 5%, or if there are other indications of a leak, corrective action must be taken before conducting further drilling and hydraulic fracturing operations.

(3) A holder must notify the designated agency at least two days prior to conducting a pressure test to enable an authorised person to be present when the test is done.

(4) A record of the pressure test must be submitted to the designated agency prior to conducting hydraulic fracturing operations.

(5) The actual pressure must not exceed the test pressure at any time during hydraulic fracturing operations.

(6) A hydraulic fracturing string used in the operations must be either strung into a production liner or run with a packer set at least 30 meters below the deepest cement top and must be tested to not less than

the maximum anticipated treating pressure minus the annulus pressure applied between the fracturing string and the production or immediate casing.

(7) The pressure test must be considered successful if the pressure applied has been held for at least 30 minutes with no more than 5% pressure loss.

(8) The annulus between the hydraulic fracturing string and casing must be pressurised to at least 250 psi (1723.69 kPa) and monitored.

104. Formation pressure integrity test

(1) A holder must, after a successful casing string test contemplated in regulation 103, conduct a formation pressure integrity test below the surface casing and below all intermediate casing.

(2) A holder must notify the designated agency, at least two days prior to conducting a formation pressure integrity test, to enable an authorised person to be present when the test is done.

(3) A record of the pressure test must be submitted to the designated agency prior to conducting hydraulic fracturing operations.

(4) The actual hydraulic fracturing treatment pressure must not exceed the casing test pressure at any time during hydraulic fracturing operations.

105. Blowout prevention

(1) A holder must install blowout prevention equipment that meets the current API Std 53 for blowout equipment after setting the casing to shut-off a wellhead which must be supported and secured to prevent stresses on all connections.

(2) A holder may be exempted from installing blowout prevention equipment as contemplated in subregulation (1) only if the holder—

(a) obtains written approval from the designated agency;

(b) shows that the conditions under which it is operating do not require the installation of blowout preventer equipment as contemplated in subregulation (1); and

(c) provides reliably operating well control equipment it intends to install in order to control kicks, prevent blowouts and to safely carry out all well operations.

(3) Blowout prevention equipment installed at a well that maybe subject to hydraulic fracturing must include a remote blowout prevention actuator—

(a) that is powered by a source other than rig hydraulics;

(b) that is located at least 20 meters from the well head; and

(c) that has an appropriate rated pressure equal to or greater than the induced hydraulic fracture pressure.

(4) Lines, valves and fittings between the blowout preventer and the remote actuator must be flame resistant and must have a working pressure rating higher than the maximum anticipated well heads surface pressure.

(5) Blowout prevention equipment must be in good working condition at all times.

(6) When blowout prevention equipment is installed, tested, or in use, a competent person must be present at the well site and that person must have a current well control certification from an accredited training programme that is acceptable to the designated agency.

(7) The certification referred to in subregulation (6) must be available at the well site and be provided to the designated agency upon request.

106. Pressure testing of blowout prevention equipment

(1) The blowout prevention equipment must be tested to 100% of rated working pressure and the annular-type blowout preventer must be tested to 1,000 psi (6894.76 kPa) at the time of installation in accordance with current API std 53 for blowout equipment.

(2)

(a) Testing of blowout prevention equipment for a drilling or completion operation must take place prior to drilling below the last cemented casing seat.

(b) The holder must maintain a record of the pressure tests and submit the record to the designated agency.

(3) A holder must notify the designated agency at least two days prior to conducting a blowout preventer test to enable an authorised person to be present when the test is done.

(4) Blowout prevention equipment that has failed any pressure test must not be used until it is repaired and passes the pressure test.

107. Well examination

(1) A holder must submit a well examination plan to the designated agency before commencing with drilling or hydraulic fracturing, which plan must include aspects not limited to the following—

(a) groundwater and aquifer isolation;

(b) fracture containment;

(c) related seismicity risks;

(d) fracturing and flow-back or testing programmes and operations; and

(e) independent well examination.

(2) The designated agency may, at the cost of the holder, appoint an independent and competent person to undertake well examination.

(3) Well examination must at all times demonstrate that the pressure boundary of the well is controlled throughout the life cycle of the well.

[Chapter 8 ins by GoN R466 in G. 38855.]

CHAPTER 9
OPERATIONS AND MANAGEMENT

108. Management of operations

A holder must appoint competent persons to be responsible for the day to day management of the operations in accordance with relevant legislation, policies and relevant operational procedures.

109. Drilling fluids

(1) A holder must ensure that drilling operations through shallow soils and local aquifers are always undertaken using air, water or water-based mud systems, details of which must be declared through material safety data sheets to the designated agency prior to commencement of drilling operations.

(2) A holder may only use other forms of drilling fluids below cemented surface casing where it can be shown that the use of drilling fluids contemplated in subregulation (1) is technically infeasible and with the prior approval of the designated agency.

Management of operations

110. General

(1) A holder must not commence with drilling operations before obtaining the necessary authorisations, permits and licences in terms of the National Water Act, 1998, the National Environmental Management Act, 1998, and the specific environmental management Act;

(2) An applicant must submit the following to the designated agency, the department responsible for water affairs and to the competent authority as part of the application for Environmental Authorisation—

(a) A well engineering design which must include but not be limited to the—

(i) type of rig to be used;

(ii) method of drilling;

(iii) type and estimated amount of drilling fluids;

(iv) different stages of drilling and the size of drill bits;

(v) casing programme;

(vi) cementation programme; and

(vii) perforation design.

(b) a hydraulic fracturing programme and procedure that must include—

(i) pre-fracturing simulation and modelling;

(ii) the proposed depth(s) to the top and the bottom of the formation into which well fracturing fluids are to be injected;

(iii) the authorised source and volume of water to be used;

(iv) handling, storage, reuse, transportation, treatment and disposal of hydraulic fracturing fluids and flow-back;

(v) fracturing fluid compositions, concentrations and estimated total volume to be used;

(vi) the anticipated surface and downhole treating pressure range;

(vii) the maximum injection treatment pressure;

(viii) the annuli and offset well pressure monitoring programme to be performed;

(ix) a testing and flowback plan;

(x) equipment rig up and testing, including testing of high pressure equipment;

(xi) a design of the fracture geometry including fracturing target zones, sealing mechanisms and aquifers;

(xii) a micro-seismic monitoring programme;

(xiii) the monitoring of pressure on the production string and well annuli during rig up and testing; and

(xiv) the monitoring of any adjacent or offset wells for pressure on the production string and other well annuli as required.

111. Hydraulic fracturing equipment

(1) Equipment used in hydraulic fracturing operations must be fit for purpose and must meet relevant API standards as prescribed in these Regulations.

(2) Water transfer systems must be designed to site-specific conditions and must be tested and monitored in accordance with a schedule approved by the designated agency.

112. Mechanical integrity tests and monitoring

(1) Before the commencement of hydraulic fracturing—

(a) mechanical integrity tests required under these Regulations must be successfully completed;

(b) the injection lines and manifold, associated valves, hydraulic fracturing head or tree and any other wellhead component or connection not previously tested must be tested with fresh water, mud, or brine to at least the maximum anticipated treatment pressure for at least 30 minutes with less than a 5% initial pressure loss.

(2) A holder must notify the designated agency at least two days before commencing with the tests contemplated in subregulation (1) to enable an authorised person to be present during the testing operations.

(3) A record of the pressure test must be maintained by a holder and made available to the designated agency.

(4) The pressure exerted on treating equipment including valves, lines, manifolds, hydraulic fracturing head or tree, casing and hydraulic fracturing string, if used, must not exceed 95% of the working pressure rating of the weakest component.

(5) A function-tested relief valve and diversion line must be installed and used to divert flow from the hydraulic fracturing string-casing annulus to a covered tank in case of hydraulic fracturing string failure.

(6) The relief valve must be set to limit the annular pressure to no more than 95% of the working pressure rating of the casings forming the annulus.

(7) The hydraulic fracturing treatment pressure must not exceed the test pressure of any given component at any time during hydraulic fracturing operations.

(8)

(a) During hydraulic fracturing, annulus pressure, injection pressure and the rate of injection must be continuously monitored and recorded.

(b) Micro-seismicity (in real time <5 minute delay) must be monitored by a long array of accelerometers located in an offset monitoring well, situated 100m or more away from well at a comparable depth.

(c) Microseismic sensors must be designed for temperatures between 175-200 degrees C.

(d) Tiltmeter measurements must be taken with an array of tiltmeters, either located in shallow offset wells (10 m) at the site surface or in a more sensitive deep offset well at comparable depth to fracking depth and in fracking well which provides info on fracture orientation and direction (azimuth).

(e) Downhole pressure sensors must be used to provide indirect measurements of fracture height, which are to be connected to the production casing as well as outer casings to monitor well integrity.

(f) Performing temperature and flow logging along the length of the well must correlate with information on fracture growth.

(g) Proppants must be tagged with radioactive isotopes so that proppant can be analysed to locate where different stages of the proppant went and to locate fractures at depth.

(h) Chemical tracers must be added to hydraulic fracturing fluid to improve the understanding of fracture fluid loss and flowback.

(i) Temperature in the well must be measured to trace fluids from shale formations that are at a higher temperature than shallow fluids using fibre-optic sensors to measure temperature, pressure and sound that provides real-time information on fracture locations in the well (fibre-optic sensors are especially valuable for use in downhole high pressure high T situations where electronic gauges fail).

(j) The following aspects must also be monitored during the stimulation operation and reported to the designated agency on a quarterly basis—

(i) type and volumes of water sourced for stimulation operations;

(ii) volumes and rates of fracking fluid pumped into the target zone; and

(iii) volumes and rates of flowback received during and after each stimulation.

(9) The holder must maintain monitoring records and submit—

(a) the records to the designated agency at any time during the period up to and including five years after the well is permanently plugged or decommissioned.

(b) Monitoring results must also be included in the Environmental Management Programme Report required in terms of the Environmental Impact Assessment Regulations.

(10) Hydraulic fracturing operations must be immediately suspended if an anomalous pressure or flow condition or other anticipated pressure or flow condition is occurring in a way that indicates that the mechanical integrity of the well has been compromised and that continued operations pose a risk to the environment.

(11) A holder must notify the designated agency and the department responsible for water affairs within one hour of suspending hydraulic fracturing as a result of circumstances contemplated in subregulation (10) relating to the mechanical integrity of the well or the risk to the environment.

(12) Remedial action must be undertaken immediately and the designated agency must be satisfied with the remedial actions prior to issuing a written consent for the recommencement of operations.

(13) The designated agency may only issue a written consent for the recommencement of operations as contemplated in subregulation (12) after consulting with the department responsible for water affairs.

113. Hydraulic fracturing fluid disclosure

(1) The substances listed in schedule I attached hereto are prohibited from use in the fracturing process.

(2) A holder or applicant shall, as part of the impact assessment, submit the following information to the competent authority—

(a) Fluids and their status as hazardous / non-hazardous substances;

(b) Material safety data sheet information;

(c) Volumes of fracturing fluid, including proppant, base carrier fluid and each chemical additive;

(d) The trade name of each additive and its general purposed in the fracturing process;

(e) Each chemical intentionally added to the base fluid, including each chemical, the chemical abstracts service number, if applicable and the actual concentration, in percent by mass;

(f) Possible alternatives;

(g) Possible risk of the above on the environment and water resources and

(h) Remediation required if a pollution incident were to occur.

114. Fracture and fracturing fluid containment

(1) A holder must conduct a risk assessment and submit a risk assessment report to the designated agency and to the competent authority as part of the application for Environmental Authorisation which report must—

(a) describe the control and mitigation measures for fracture containment; and

(b) document the basis for the sealing mechanism and demonstrate that adequate control measures will be implemented.

(2) Faults and igneous intrusions that may impact the hydraulic fracturing seal mechanism must be researched and assessed and the assessment must be documented and referenced in the Hydraulic Fracturing Programme referred to in regulation 110(2)(b), in order to demonstrate that the risk of fracturing fluids migrating via faults and intrusions beyond the designated fracture zones has been mitigated.

(3) Hydraulic fracturing must be monitored and recorded as stipulated in the Hydraulic Fracturing Programme referred to in regulation 110(2)(b) to ensure that well integrity is maintained.

(4) Hydraulic fracturing fluid must be confined to the target zone and if the monitoring system contemplated in subregulation (3) or the water monitoring programme indicates that hydraulic

fracturing fluid or hydraulic fracturing flowback is migrating outside the target zone, the holder must immediately—

(a) suspend hydraulic fracturing until remedial action, that prevents the fluid migration, is completed; and

(b) notify the designated agency and the Department of Water and Sanitation.

(5) A holder must obtain the approval of the designated agency prior to resuming hydraulic fracturing operations suspended in terms of subregulation (4).

(6) The designated agency may only issue a written consent for the recommencement of operations as contemplated in subregulation (5) after consulting with the department responsible for water affairs.

115. Fracturing fluids management

(1) An applicant or holder must assess potential risks and develop a risk management plan for each well to be fractured which plan must address the following aspects—

(a) Identification of chemical ingredients and characteristics of each additive;

(b) identification of volume and concentration of hydraulic fracturing additives in the fracturing fluid;

(c) assessment of potential environmental and health risks of fracturing fluids and additives in both diluted and concentrated form; and

(d) definition of operational practices and controls for the identified risk.

(2) A risk management plan referred to in subregulation (1) must be submitted—

(a) to the competent authority, for consideration and approval, as part of the application for Environmental Authorisation; and

(b) to the designated agency before the applicant or holder may commence with hydraulic fracturing operations.

(3) A holder must—

(a) to the extent technically feasible, maximise the use of environmentally friendly additives and minimise the amount and number of additives; and

(b) train and develop relevant employees on appropriate procedures in the handling of hydraulic fracturing additives.

116. Management of flowback and produced fluids

(1) A holder must manage flowback and produced fluids in accordance with the approved waste management plan referred to in regulation 125.

(2) A holder must, within seven days after it becomes available, disclose to the designated agency and the department responsible for water affairs, the following information regarding flowback and produced fluids—

(a) The actual volume of fluids to be recovered during flow-back;

(b) the water quality balance of additives not recovered;

(c) the actual rates, pressures and temperatures of fluids recovered and produced;

(d) the flowback and produced fluids compositional analysis;

(e) any identified contamination issues; and

(f) any radioactive contaminated fluids.

117. Transportation of fluids

(1) An applicant or holder must develop a fluid transportation management plan that must at least ensure—

(a) planning to minimise fluid transport movements and distances;

(b) the implementation of management procedures to address the risks associated with fluid transport;

(c) that natural gas is removed from fluids prior to fluids being transported and a system for checking and recording is implemented;

(d) that fluids are transported to and from the hydraulic fracturing treatment site in accordance with relevant legislation and national standards in a manner designed to prevent spillage; and

(e) that the general workforce, including drivers, receives appropriate training and is equipped to respond to emergencies and to implement clean up measures.

(2) A fluid transportation management plan referred to in subregulation (1) must be submitted—

(a) to the competent authority, for consideration and approval, as part of the application for Environmental Authorisation; and

(b) to the designated agency 30 days prior to the commencement of drilling and hydraulic fracturing.

(3) The transportation of hazardous fluids or materials must be carried out in accordance with applicable South African National Standards, relevant legislation and the Material Safety Data Sheets.

(4)

(a) The fluid transportation management plan referred to in subregulation (1) must include a quarterly reporting requirement.

(b) Quarterly reports conforming to the approved plan must be submitted to the designated agency and the department responsible for water affairs.

(5) The quarterly reports must be consolidated into annual reports which must be included in the EMPr.

118. Fluids storage

(1) An area where hydraulic fracturing additives, chemicals, oils, fuels are to be stored must have sufficient containment capacity to hold the volume of the largest container stored on site plus 10% to allow for precipitation, unless the container is equipped with individual secondary containment.

(2) For the purposes of storage at the well site, hydraulic fracturing additives, hydraulic fracturing fluids, hydraulic fracturing flowback, and produced water must be stored in above-ground tanks during the phases of drilling, hydraulic fracturing and production operations until removed for proper disposal.

(3) For the purposes of centralised storage off site for potential re-use prior to disposal, hydraulic fracturing additives, hydraulic fracturing fluids, hydraulic fracturing flowback, and produced water must be stored in above-ground tanks with lined bund walls.

(4) Untreated hydraulic fracturing fluids and hydraulic fracturing flowback must be removed from the well site within 60 days after the completion of hydraulic fracturing operations.

(5) Tanks, piping, and conveyances, including valves of sufficient pressure rating, must be constructed and be able to resist corrosion and be maintained in a leak-free condition.

(6) Fluids transfer operations from tanks to tanker trucks must be supervised at both ends and along interconnecting piping.

(7)

(a) A sample from every tank that contains hydraulic fracturing flowback or produced water must be tested for volatile organic compounds, semi-volatile organic chemicals, inorganic chemicals, heavy metals, and naturally occurring radioactive material, prior to removal from the site.

(b) The results of the test must be—

(i) Submitted to the waste transportation and disposal operators and the designated agency; and

(ii) included in the quarterly waste management report.

(8)

(a) The background level of radioactivity in the ground adjacent to the storage tanks must be measured prior to drilling and prior to site restoration to establish whether there has been any change that may require particular remediation measures.

(b) The results of the measurements must be included in the quarterly report to be submitted to the designated agency.

(9) A holder must make use of tanks to store flow-back fluids on site.

(10) Storage tanks must comply with applicable corrosion control requirements in accordance with applicable South African National Standards in terms of the Standards Act, 2008 (Act 8 of 2008).

(11) Storage site locations must be secured at all times.

(12) Information relating to tank maintenance records, tank cleaning records and off-take waste disposal records must be included in the quarterly report, submitted to the designated agency and included in the EMPr.

119. Hydraulic fracturing operations

(1) A holder may only proceed with hydraulic fracturing operations—

(a) after the designated agency has approved the plans and well engineering design contemplated in regulation 27; and

(b) after all other requirements prescribed by these Regulations have been fully satisfied.

(2) A holder must notify the designated agency and the department responsible for water affairs, in writing, at least five days before commencing with hydraulic fracturing operations.

(3) During hydraulic fracturing, a holder must—

(a) comply with the terms and conditions of the exploration and production right as well as any other authorisations;

(b) conduct operations in a manner that does not pose a risk to public health, life, property and the environment;

(c) ensure that arrangements to deal with emergencies are in place and are disclosed to the designated agency and relevant departments;

(d) ensure that audits by independent and competent persons are made available to the designated agency and are in line with the reporting requirement of plans provided for in these Regulations;

(e) ensure that a sufficient number of people, who are adequately trained and experienced to operate fracturing, flow-back or testing equipment, emergency shut-down systems and spill containment equipment, are available;

(f) ensure that systems acceptable to the designated agency are in place to monitor the extent of the induced fracture network; and

(g) ensure the monitoring of adjacent or offset wells for pressure on the production string and other well annuli, as required.

(4) An applicant or holder must ensure that—

(a) risk assessments to eliminate or reduce the risks of dangerous substances being released and the impact of the release on the environment, is carried out; and

(b) proposals for the control and mitigation of the risks are provided and submitted to the competent authority, for consideration, as part of the application for Environmental Authorisation.

(5) The holder must ensure that once approved, the necessary control and mitigation measures are implemented.

120. Post hydraulic fracturing report

(1) A holder must compile and submit, to the designated agency and the department responsible for water affairs, a detailed post hydraulic fracturing operation report, for review and recommendations, which report must include among others—

(a) the location of the well, position in co-ordinates and well number;

(b) the actual fluid compositions, concentrations and total volumes used;

(c) the actual surface and downhole treating pressure range;

(d) the maximum injection treating pressure;

(e) the actual or calculated fracture geometry;

(f) annuli and offset well pressure monitoring records;

(g) confirmation that wellbore integrity was maintained throughout the operation;

(h) the testing and flow-back results;

(i) an explanation of operational variations to the pre-job design;

(j) data and information concerning related seismic events, in internationally accepted formats, that have been recorded including the steps taken as a result of such events;

(k) plans to continue micro-seismic monitoring; and

(l) the induced seismic events that have been recorded including the steps taken as a result of such events.

(2) A holder must compile an audit report of the detailed post hydraulic fracturing operations for the completed well pad and submit the report to the designated agency and the department responsible for water affairs.

Management of Water

121. Water balance

(1) A holder in control of operations must compile a water balance that—

(a) is based on data collected from installed flow measurement devices, to measure the amount of water abstracted, received, consumed, transported or discharged as required, in order to

ensure that the flow of at least 90% of the total water in use is measured, with the remaining 10% or less being calculated;

(b) incorporates accurate values determined from suitable measurement or modelling for rainfall, runoff, seepage and evaporation from the facilities where these components of the water balance may potentially come into play;

(c) accounts for seasonal changes for the flow values affected by rainfall or evaporation;

(d) is computerised so that it can be updated at least monthly with measured and modelled data;

(e) accounts for and reflects the possible interconnections between the operations, the surface and ground water resource and how these may be avoided and mitigated;

(f) is used by the holder to generate water management reports to assist in the management of the impact of the operations on the water resource; and

(g) is submitted to the department responsible for water affairs on a bi-annual basis together with the monitoring data, unless stipulated otherwise in a water use licence.

(2) A holder in control of operations must ensure that measuring devices used to develop the water balance are easily accessible, properly maintained and in good working order, based on a verifiable programme of checking, calibration, or renewal of measuring devices.

122. Protection of water resources

(1) A holder must, prior to and during all the phases of drilling and hydraulic fracturing operations, ensure that the operation does not pollute a water resource or reduce such a resource and where such an incident occurs, a holder must implement the necessary remedial measures;

(a) the operation does not cause adverse impact to water quality in the catchment area; and

(b) the rights of existing water users are protected.

(2) A well site where hydraulic fracturing operations are proposed or planned, must not be located—

(a) within 5 kilometres, measured horizontally, from the surface location of an existing municipal water well field and identified future well fields and sources and directional drilling may not be within 2.5 kilometres of municipals well field;

(b) within 500 metres, measured horizontally, from the surface location of an existing water borehole and directional drilling may not be within 500 metres of the borehole; and

(c) within 500 metres, measured horizontally, from the edge of a riparian area or within 1:100 year flood-line of a watercourse.

(3) A well may not be drilled within one kilometre of a wetland.

(4) A holder must undertake regular water quality testing as determined by the department responsible for water affairs.

123. Water use

(1) A holder must, prior to commencement of hydraulic fracturing, obtain the necessary authorisation for the water uses as required, indicating the supply source, quality and location for the base fluid for each stage of the operation and the water usage volume.

(2) An applicant or holder must prepare an integrated water management plan and submit it to the designated agency and the department responsible for water affairs with the following components—

(a) A master layout plan per well site;

(b) hydrocensus;

(c) flowcharts and data derived from a dynamic, computerised water balance;

(d) a pollution prevention and impact minimisation plan;

(e) a stormwater management plan;

(f) a water conservation and demand management strategy;

(g) post closure water management and monitoring;

(h) a water monitoring plan; and

(i) water monitoring, analysis and reporting of mineral, metal and chemical constituents.

(3) A holder must consider re-using hydraulic fracturing fluids and produced water from its operations or neighbouring operations in order to reduce competition with freshwater uses.

Management of Waste

124. General

(1) Waste, including solids, liquids, sludges and slurries, must be disposed of in accordance with the applicable legislation.

(2) Waste containing radioactive materials must be managed in accordance with National Radioactive Waste Disposal Institute Act, 2008 (Act 53 of 2008).

(3) Liquid waste must be disposed of at an approved waste treatment facility in accordance with relevant legislation and disposal of liquid waste at domestic waste water treatment facilities must only take place after prior consultation with the department responsible for water affairs.

(4) Disposal to underground, including the use of re-injection disposal wells, is prohibited.

(5) Discharge of hydraulic fracturing fluids, hydraulic fracturing flowback, and produced water into a surface watercourse is prohibited.

(6) Annular disposal of drill cuttings or fluids is prohibited.

(7) Drill cuttings and waste mud must be temporarily stored in above ground tanks.

(8) Solid waste generated during operations must be categorised and disposed of accordingly at a licensed landfill site or treatment facility.

125. Waste management

(1) An applicant or holder must prepare and submit a comprehensive waste management plan to the competent authority, for consideration and approval, as part of the application for Environmental Authorisation.

(2) The plan contemplated in subregulation (1) must mention the waste to be produced at the site, including drill mud, flow back, produced fluids and radioactive contaminated fluids.

(3) A holder must, when managing waste generated from its operations, adhere to the waste management plan contemplated in subregulation (1) and the relevant legislation.

(4)

(a) The holder must maintain a record of the waste produced and disposed of.

(b) The content of the record to be kept must be included in the approved waste management plan contemplated in subregulation (1).

(5)

(a) The holder must compile a waste report which must be submitted to the South African Waste Information System (SAWIS).

(b) Disposal, recovery or treatment facilities used by the holder must be registered on the South African Waste Information system and waste statistics related to the fracturing operation must be submitted to the system.

Management of pollution incidents

126. Management of spillage

(1) A spillage of hydraulic fracturing fluids or hydraulic fracturing flowback in excess of 50 litres must be reported to the designated agency within 24 hours of occurrence.

(2) A spillage of hydraulic fracturing fluids, hydraulic fracturing additives, or hydraulic fracturing flowback, used or generated during or after hydraulic fracturing operations must be cleaned up immediately.

(3) An incident involving the spilling of a harmful substance that flows or may flow into a water resource must be dealt with in accordance with sections 19 and 20 of the National Water Act, 1998 and sections 28 and 30 of the National Environmental Management Act, 1998.

Management of air quality

127. Fugitive emissions

(1) A holder must minimise the emissions associated with the venting of hydrocarbon fluids and natural gas during hydraulic fracturing operations by—

(a) routing the recovered fluids into storage vessels and—

(i) routing the recovered gas into a gas gathering line, collection system, or to a generator for onsite energy generation subject to section 20 of the Act; or

(ii) using a method other than venting.

(b) employing sand traps, surge vessels, separators and tanks as soon as practicable during cleanout operations to safely maximise resource recovery and minimise releases to the environment.

(2) If a holder establishes that it is technically infeasible to minimise emissions associated with the venting of hydrocarbon fluids and natural gas during hydraulic fracturing using the methods specified in subregulation (1), the designated agency must require the holder to capture and direct any natural gas

produced during the hydraulic fracturing operations phase to a flare, except in conditions that may result in fire hazards or explosion.

(3) A flare used as contemplated in subregulation (2) must be equipped with a reliable continuous ignition source over the duration of hydraulic fracturing operations and a holder must maintain and operate the flare in accordance with the manufacturer's specifications.

(4) In order to establish the technical infeasibility contemplated in subregulation (2), a holder must demonstrate, for each well site, on an annual basis, that taking the actions listed in subregulation (1) is not feasible based on a site-specific analysis.

(5) A holder that uses a flare during hydraulic fracturing, other than emergency conditions, must file an updated site-specific analysis, annually, with the designated agency.

(6) The site-specific analysis contemplated in subregulation (4) must have details about whether any changes have occurred that alter the technical infeasibility of a holder to reduce the emissions as contemplated in subregulation (1).

(7) A holder must, on a quarterly basis, record and report to the designated agency, the amount of gas flared or vented from each hydraulic fracturing well.

128. Fugitive dust

(1) A holder must comply with the National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004) and the National Dust Control Regulations published in Government Gazette 36974, Government Notice R827 of 1 November 2013.

(2) A holder must employ practices for the control of fugitive dust during hydraulic fracturing operations, which must include, but not limited to—

(a) the use of speed restrictions;

(b) regular road maintenance; and

(c) the restriction of construction activity during high-wind days.

(3) Additional management practices such as road surfacing, wind breaks and barriers or automation of wells, to reduce truck traffic, may also be required by the relevant department if technologically feasible to minimise fugitive dust emissions.

129. Noise control

(1) Site selection, including the identification of traffic routes, must consider the potential effect of noise pollution on the surrounding environment.

(2) The necessary abatement measures must be considered as part of the planning process for hydraulic fracturing operations.

(3) A holder must adherence to local by-laws concerning noise control and limits.

[Chapter 9 ins by GoN R466 in G. 38855.]

CHAPTER 10
WELL SUSPENSION AND DECOMMISSIONING

130. Well suspension

(1) A holder may only suspend a well—

(a) after obtaining the approval of the designated agency; and

(b) for a period determined by the designated agency.

131. Suspended well integrity management

(1) A holder must ensure that management standards and procedures are in place for monitoring wells that are in suspension phase following drilling and hydraulic fracturing operations, prior to development phase, including the status of the equipment and any annulus pressure.

(2) Procedures must take account of the specific circumstances of the well and must include the reporting criteria for any anomaly and a risk assessment of the anomaly.

(3) The suspension of a well—

(a) must be effected in such a way that the well can be re-entered safely and secured using pressure control equipment, without compromising the barriers in place; and

(b) may not jeopardise the future final abandonment of the well.

132. Well decommissioning or closure

(1) A well that is no longer active, or producing, or for which the approved suspension period determined in terms of regulation 130 (b) has passed, must be plugged and decommissioned in accordance with—

(a) a decommissioning plan approved by the designated agency; and

(b) the relevant provision of the Environmental Impact Assessment Regulations.

(2) The decommissioning plan must take into account the following factors—

(a) Current condition and design of the well;

(b) height of cement in annulus outside casing;

(c) permeable formations outside casing that must be covered by cement;

(d) cement casing overlaps;

(e) the need for abandonment plugs to cover the full diameter of the hole;

(f) the type of fluid in annuli above cement;

(g) the difficulties of injecting cement into the annulus;

(h) future monitoring of the integrity of the well plug;

(i) the depth below surface at which casing must be cut; and

(j) related seismic activity risks.

(3) The surface area of a decommissioned well must be clear of obstructions and equipment and the well bore must be cemented for the full length and diameter of the wellbore to surface.

133. Short Title

These Regulations are called Regulations for Petroleum Exploration and Production, 2015.

[Chapter 10 ins by GoN R466 in G. 38855.]

Schedule I
Hydraulic Fracturing Fluids

(1) The following substances will not be allowed as additives to fracturing fluids:

	Chemicals Components of Concern: Carcinogens, Chemicals regulated under Safe Drinking Water Act and Hazardous Air Pollutants

Chemical Component	Chemical Category	CAS registry	of Products containing chemical
Methanol (Methyl	HAP	67-56-1	342
Ethylene glycol (1,2-	HAP	107-21-1	119
Diesel	Carcinogen, SDWA, HAP	68476-34-6	51
Naphthalene	Carcinogen, HAP	91-20-3	44
Xylene	SDWA, HAP	1330-20-7	44
Hydrogen chloride	HAP	7647-01-	42
Toluene	SDWA,HAP	108-88-3	29
Ethylbenzene	SDWA,HAP	100-41-4	28
Diethanolamine (2,2-iminodiethanol)	HAP	111-42-2	14
Formaldehyde	Carcinogen, HAP	50-00-0	12
Sulphuric acid	Carcinogen	7664-93-9	9
Thoreau	Carcinogen	62-56-6	9
Benzyl chloride	Carcinogen, HAP	100-44-7	8
Cumene	HAP	98-82-8	6
Nitrilotriacetic acid	Carcinogen	139-13-9	6
Dimethyl formamide	HAP	68-12-2	5
Phenol	HAP	108-95-2	5
Benzene	Carcinogen, SDWA,	71-43-2	3
Di (2-	Carcinogen, SDWA	117-81-7	3
Acrylamide	Carcinogen, SDWA,	79-06-1	2
Hydrogen fluoride(Hydrofluoric	HAP	7664-39-3	2
Phthalic anhydride	HAP	85-44-9	2
Acetaldehyde	Carcinogen, HAP	75-07-0	1
Acetophenone	HAP	98-86-2	1
Copper	SDWA	7440-50-	1
Ethylene oxide	Carcinogen, HAP	75-21-8	1
Lead	Carcinogen, SDWA	7439-92-1	1
Propylene oxide	Carcinogen,HAP	75-56-9	1
p-Xylene	HAP	106-42-3	1
1-Methylnaphthalene		90-12-0	
2-Butanone		78-93-3	
Aniline		62-53-3	
2-methylphenol		95-48-7	
3-Methylphenol		108-39-4	
4-Methylphenol		106-44-5	

	Chemicals Components of Concern: Carcinogens, Chemicals regulated under Safe Drinking Water Act and Hazardous Air Pollutants		
Chemical Component	**Chemical Category**	**CAS registry**	**of Products containing chemical**
acetonitrile		75-05-8	
Phenol		108-95-2	5
Thiophene		110-02-1	
Pyrrole		109-97-7	
2-Methylnaphthalene		91-57-6	
Benzidine		92-87-5	
Isophorone		78-59-1	
Chloroethane		75-00-3	
2-pyrrolidone		616-45-5	
vinyl chloride		75-01-4	
Bromomethane		74-83-9	
4-methylphenol		106-44-5	
Acetone		67-64-1	3
2-Hexanone		591-78-6	

[Sch I ins by GoN R466 in G. 38855.]