



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA



PROPOSED REGULATIONS FOR THE USE OF WATER DURING UNCONVENTIONAL GAS DEVELOPMENT

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Department: Water and Sanitation

**Branch: Water Use Compliance Monitoring &
Enforcement**

Date: 01 December 2021

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Purpose

- To present the regulations and ensure they are designed and implemented in public interest.
- To engage with important stakeholders – openness, transparency, consultation, engagement.
- To build consensus, balance opposing interests and reduce the potential for future conflict;
- To inform and educate stakeholders about the Department's function and responsibilities.
- To demonstrate the importance and benefits of DWS Regulations for sustainable development.

Background

- In 2011, a review of DWS's existing regulatory framework for the regulation of unconventional gas activities was conducted.
- The regulatory review indicated that the current DWS regulatory framework does not adequately regulate the activities and their potential impacts.
- In 2015, DWS declared unconventional gas activities as S21(e) controlled activities in terms of S38 (1)(d). In order to support this declaration, DWS undertook the drafting regulations for unconventional gas activities.

Research and Development

- New technology in SA – Research based and fit-for-purpose regulations.
- Research: US Colorado visit in 2014, Workshop with Ergo Exergy (2015).
- Literature review by various local and international authors provided further understanding and knowledge.
- Strategic Environmental Assessment for shale gas development in the Karoo and a Technical Readiness.
- Workshops, conferences, consultations, collaborations, partnerships, synergies, etc.

Draft Regulations to support proposed Controlled Activity

STAATSKOERANT, 16 OKTOBER 2015

No. 39:

DEPARTMENT OF WATER AND SANITATION

NOTICE 999 OF 2015

NATIONAL WATER ACT, 1998

DECLARATION OF THE EXPLORATION AND OR PRODUCTION OF ONSHORE NATURALLY OCCURRING HYDROCARBONS THAT REQUIRES STIMULATION, INCLUDING BUT NOT LIMITED TO HYDRAULIC FRACTURING AND OR UNDERGROUND GASIFICATION, TO EXTRACT, AND ANY ACTIVITY INCIDENTAL THERETO THAT MAY IMPACT DETRIMENTALLY ON THE WATER RESOURCE AS A CONTROLLED ACTIVITY IN TERMS OF SECTION 38(1) AND PUBLICATION OF SCHEDULE OF ALL CONTROLLED ACTIVITIES IN TERMS OF SECTION 38 (4) OF THE NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998)

I, Nomvula Mokonyane, Minister of Water and Sanitation, in terms of section 38(1) and (4) of the National Water Act, 1998 (Act No. 36 of 1998), hereby declare the following activities to be a controlled activity:

“The exploration and or production of onshore naturally occurring hydrocarbons that requires stimulation, including but not limited to hydraulic fracturing and or underground gasification, to extract, and any activity incidental thereto that may impact detrimentally on the water resource”.

And publish attached Schedule containing all controlled activities set out in Section 37(1)(a) to (d) and those which have, up to date of the notice, been declared to be controlled activities under section 38(1).



MRS NP MOKONYANE
MINISTER OF WATER AND SANITATION

DATE: 03.09.15

SCHEDULE

The following are controlled activities under section 37 of the National Water Act, 1998 (Act No. 36 of 1998):

- (a) Irrigation of any land with waste or water containing waste generated through any industrial activity by a waterwork;
- (b) An activity aimed at the modification of atmospheric precipitation;
- (c) A power generation activity which alters the flow regime of a water resource;
- (d) Intentional recharging of an aquifer with any waste or water containing waste;
- (e) The exploration and or production of onshore naturally occurring hydrocarbons that requires stimulation, including but not limited to hydraulic fracturing and or underground gasification, to extract, and any activity incidental thereto that may impact detrimentally on the water resource.

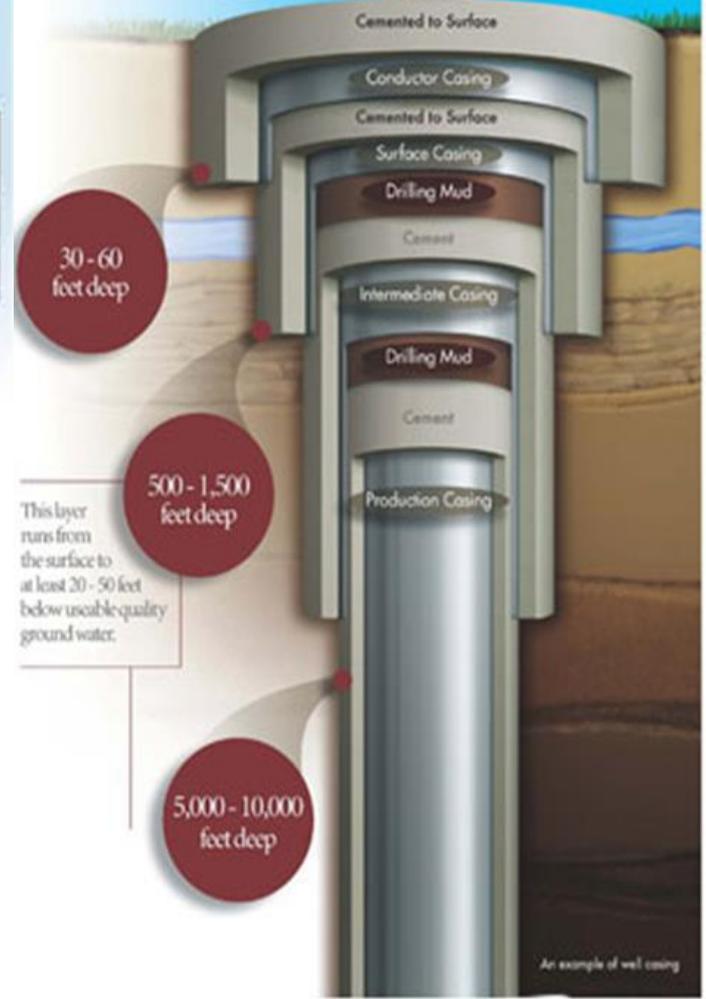
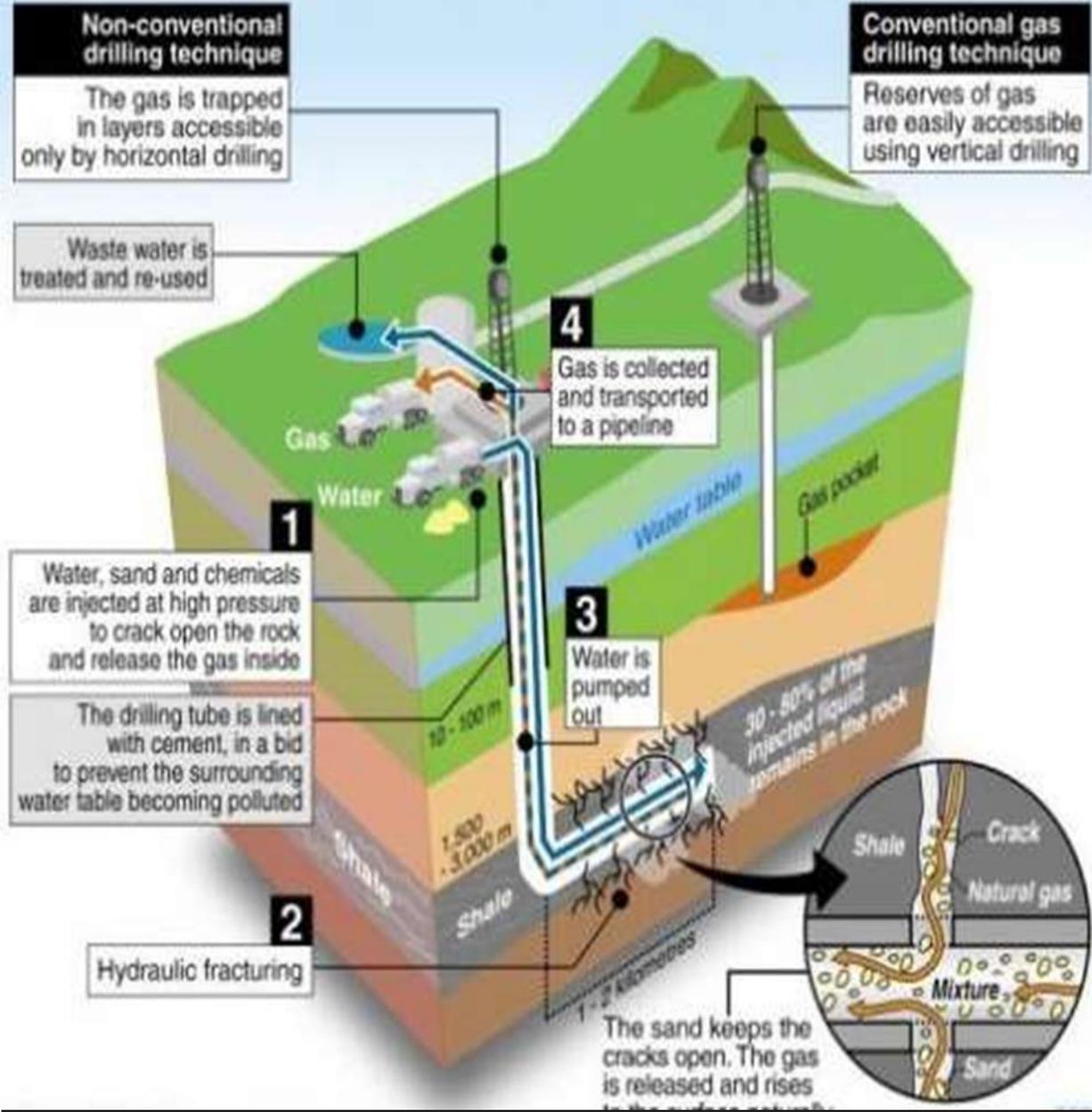
Types of Unconventional Gas

Type	Depth	Stages
1.Shale gas	1 – 5 km depths	Survey, Exploration, Production, Decommissioning
2.Coalbed methane	depth of previously inaccessible coal ~ 300 m	Pilot, Demonstration, Production, Decommissioning
3.Underground coal gasification	depth of previously inaccessible coal ~ 300 m	Pilot, Demonstration, Production, Decommissioning

Similarities between the three technologies:

1. Require stimulation
2. Have potential to alter the hydrological regime completely
3. Have impact on water resources

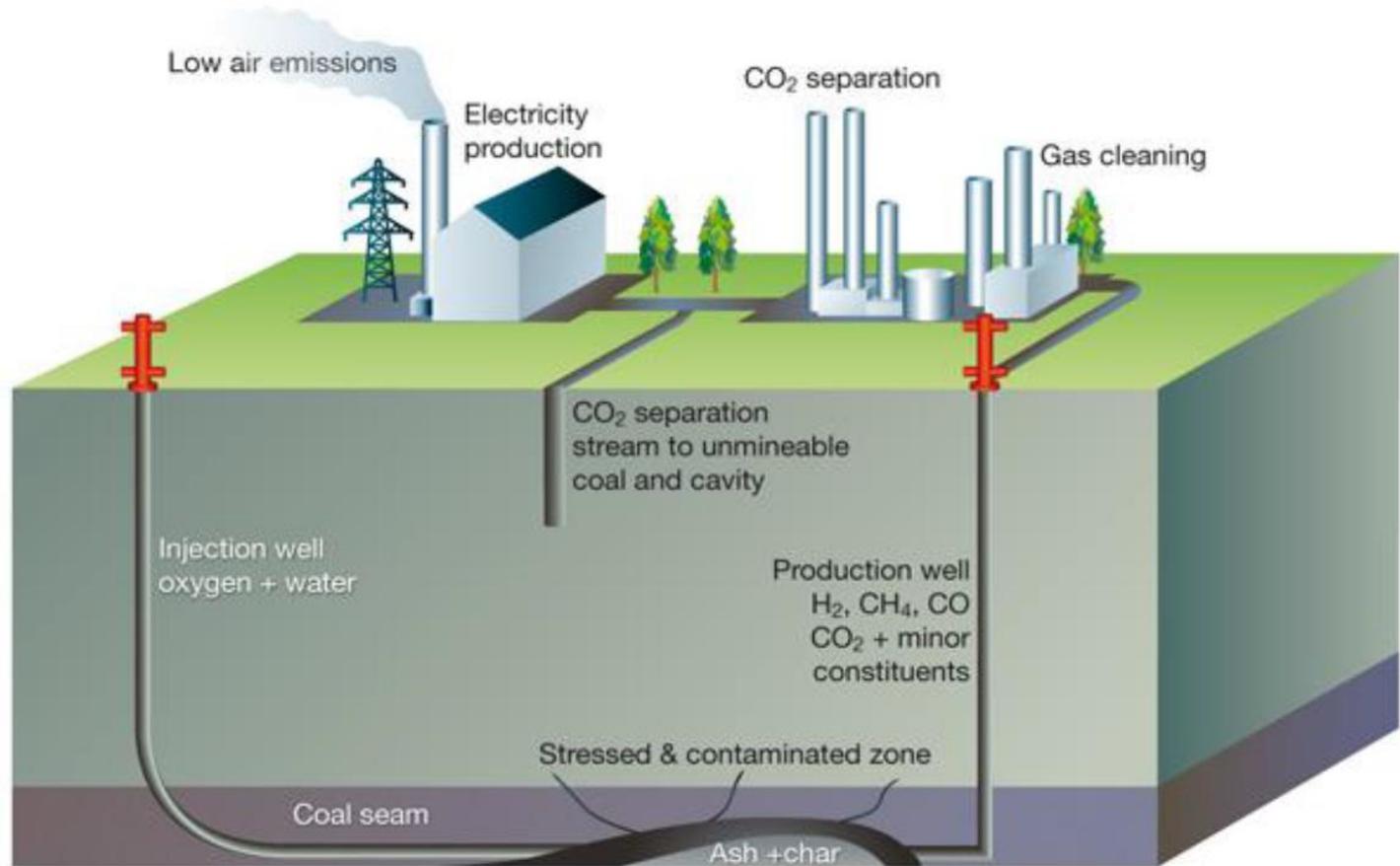
Hydraulic fracturing uses high-pressure injections to crack open rock and release oil and gas. Opponents say it may pollute ground water and trigger earthquakes. It is banned in several countries.



Graphic Courtesy of Texas Oil and Gas Association

www.phys.org and www.fracfocus.org

Underground Coal Gasification



Adapted from Mokhahlane (2019) by Roddy and Younger, 2010

Basis of Regulations

- There are general concerns that these operations could have large negative impacts such as groundwater contamination.
- The objectives of the published DWS regulations include, augmenting the NWA and its existing regulatory framework.
- Step-wise process for authorizing all unconventional gas operations to allow for informed decision making.

Basis of Regulations

- To set prohibitions and restrictions for protection of water resources.
- Requirements for disclosure on chemicals to be used during the operations
- Alignment with NEMA, and MPRDA requirements for exploration and production of activities
- Supplemented by the minimum information requirements for water use licensing application and IWRM.

Justification

- The DWS's mandate is derived from the NWA whose purpose is to ensure that water resources are protected, used, developed, conserved, managed and controlled in a sustainable manner.
- Section 3 (3) of NWA enables the National Government (in this case DWS), acting through the Minister to regulate the use, flow and control of all water in the Republic.
- Section 26 (1) of NWA gives the Minister authority to make regulations in order to protect water resources. This is the basis through which the DWS has declared and also published the draft regulations in question on the use of water for the exploration of onshore naturally occurring hydrocarbons that require stimulation.

Justification

- There is a declaration in place which requires support in the form of regulations for the said “controlled activities”.
- Information management, monitoring and regulation of water uses relating to the said activities therefore requires to be implemented with the DWS regulations, as the mandate for regulating water uses reside within the NWA.
- The DWS will be in a position to amend both its regulations and minimum requirements as and when necessary during the progress of these activities.

Regulations

- Published on 07 May 2021, initially for one month and extended to three months until 07 August 2021 for public comment.
- Comprises of 7 Chapters.
- To be applied and read together with the NWA; the Minimum Information Requirements for Unconventional Gas Activities and the National Water Act: Regulations: Procedural requirements for water use licence applications and appeals.

Regulations: Chapter 1

- Consists of definitions, purpose of the regulation and its application.
- A number of definitions include: unconventional, Underground Coal Gasification, Petroleum not as defined in the MPRDA, incidental activity, stimulation.
- The purpose of the regulation is to protect the water resource so as to avoid and minimise detrimental and cumulative impacts on the water resource by the controlled activity.
- Application of the regulations: throughout the Republic of South Africa to all onshore exploration and production operations for unconventional oil or gas that may impact detrimentally on the water resource.

Regulations: Chapter 2

- Addresses Water Use Licence (WUL) applications and licensing.
- Consists of clauses such as:
 - i. 4(1) No person may conduct, carry out, undertake or commence with the controlled activity without a water use licence.
 - ii. 4(2) An application for water use licence during exploration must meet the minimum information requirements specified by the responsible authority.
 - iii. 4(3) A water use licence during exploration may not exceed a period of nine years, cumulatively. In line with the maximum cumulative exploration period by the MPRDA.
- Clauses on when an applicant can be considered for a production WUL.
- Clauses on the suspension and/or withdrawal of a WUL.

Regulations: Chapter 3

- Prohibited areas:

7 (1) No controlled activity may occur:

- (a) within five kilometres from the edge of an existing or proposed municipal wellfield, including its aquifer; water supply borehole and/or groundwater supply infrastructure;
- (b) within five kilometers from any town without a wellfield as future water source areas;
- (c) within five kilometres of any government waterworks including dams with a safety risk;
- (d) within five kilometres from the edge of any identified strategic water source area; and
- (e) within five kilometres from the edge of a thermal or cold spring including seismically active springs.
- (2) Notwithstanding sub-regulation (1), the Responsible Authority may further amend the various distances in sub-regulation (1) after taking into account the findings of the baseline studies and scientific evidence for zone of influence.

Regulations: Chapter 3

- Prohibited Activities:

8. The following activities are prohibited—

- (a) the disposal of drill cuttings containing radioactive substances;
- (b) deep well injection of process water for disposal without authorisation;
- (c) the drilling of a well so as to enter an area outside the authorised area stipulated in the water use licence;
- (d) the storage of process water containing radioactive substances, for reuse or disposal in pits or pollution control dams;
- (e) the treatment of process water for disposal, including drilling fluids, at a treatment works that is not suitably engineered or authorised to handle such fluid;
- (f) the disposal of sludge at a landfill that is not suitably engineered or authorised to accept such waste;
- (g) the care and maintenance of exploration wells beyond eighteen months after testing, contemplated in regulation 4(4); and
- (h) abandonment of wells without decommissioning.

Regulations: Chapter 4

- **Drilling and fluid management**

9. (1) No person may use hazardous substances in drilling fluids or as additives to fracturing fluid.

(2) A person who applies for a water use licence must submit a list of all chemicals planned for use in the fracturing fluids to the Department for approval.

(3) The holder of a water use licence must provide such approved list of fracturing fluids on its website in accordance with regulation 10(2)(d).

Regulations: Chapter 5

- **Disclosure:**

10. (1) The holder of a water use licence must ensure that the water use licence is made available for access and copying, at the site of the controlled activity to anyone on request.

(2) The holder of a water use licence must publish on its website:

- (a) a complete copy of the water use licence;
- (b) its relevant hydrocensus, baseline and monitoring information, risk analysis information and environmental impact assessment;
- (c) the hydraulic fracturing programme;
- (d) the fracturing fluids and its chemical composition;
- (e) the location of all wells and monitoring boreholes and well integrity information, verified by an independent auditor or specialist; and
- (f) audit reports as specified in the licence.

Regulations: Chapter 6

- Chapter 6: Offences

11. (1) A person is guilty of an offence if that person—

- (a) provides incorrect or misleading information in any form, or intentionally omits information that may have an influence on the outcome of a decision of a responsible authority;
- (b) obtains water use licence through fraud, non-disclosure or material information or misrepresentation of a material fact, or
- (c) fails to comply with any provision of these regulations.

(2) Any person who contravenes any provision of sub-regulation (1) is guilty of an offence and liable, on the first conviction, to a fine or imprisonment for a period not exceeding five years, or to both a fine and such imprisonment and, in the case of a second or subsequent conviction, to a fine or imprisonment for a period not exceeding ten years or to both a fine and such imprisonment.

Way Forward

- To conduct external stakeholder engagements;
- Consider comments received and improve the current draft regulations
- Gazette regulations and MIR for implementation;
- **Draft guideline for WULA assessors, application forms are complete;**
- Implement regulations and MIR.



Thank you

Contact Details

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