

Statutory Declaration

Resource activities other than mining

Declaration of compliance for written documents

A statutory declaration is a written statement of facts that is sworn or declared under the Oaths Act 1867. This statutory declaration has been prepared to declare the authority holders compliance with the provisions of the Environmental Protection Act 1994 (EP Act) or an environmental authority condition that stipulates the requirement to submit a certified written document to the administering authority.

Oaths Act 1867

**QUEENSLAND
TO WIT**

Re: Written documents relating to an environmental authority for a resource activity other than mining under the *Environmental Protection Act 1994*.

Written document: Stimulation Risk Assessment – Santos Southwest Queensland, dated June 2020

(Insert type of document, e.g. contingency plan for emergency environmental incidents)

Subject matter: Compliance with Well Construction, Maintenance, Stimulation Schedule conditions as per Table 1 within the written document.

(Insert subject matter, e.g. compliance with environmental authority number PEN1001222222)

Authority holder: Santos Ltd

I, Carolyn Brumley

(Insert full name of person making this declaration)

of, Burnley, Victoria

(Insert suburb and city of the person making this declaration)

Statutory Declaration
Declaration of compliance for written documents

in the State of Victoria do solemnly and sincerely declare that:

1. I am a suitably qualified person as defined in the environmental authority; having professional qualifications, training, skills and experience relevant to the subject matter and can give authoritative assessment, advice and analysis relative to the subject matter using the relevant protocols, standards, methods or literature. A copy of my curriculum vitae is Annexure A to this declaration¹;
2. Relevant material, including current published guidelines (where available) have been considered in the written document
3. I have not knowingly included false, misleading or incomplete information in the *Stimulation Risk Assessment Report – Santos Southwest Queensland*, dated June 2020
4. I have not knowingly failed to reveal any relevant information or document to the Department of Environment and Science
5. The *Stimulation Risk Assessment Report – Santos Southwest Queensland*, dated June 2020, addresses relevant matters under K6 of Schedule K of the Environmental Authority as per Table 1 within the written document and is factually correct; and
6. The opinions expressed in it are honestly and reasonably held.

And I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the *Oaths Act 1867*.

Taken and declared before me, at

MELBOURNE

(Insert name of town or city and suburb)

this

13TH

day of

JULY

in the year

2020

(Insert day, e.g. 18th)

(Insert month)

(Insert year)



Signed

(Person making this declaration)



Signed

(Cross out whichever is not applicable)

Justice of the Peace / Commissioner for Declarations /
Solicitor / Barrister

(Print name and registration number, if applicable)

¹ The signatory does need to initial each page of the annexure, but it does need to be marked with the following:
"This is the [insert name of document] or a copy of the [insert name of document] marked with the letter "A" referred to in the Statutory Declaration [insert sworn/taken/affirmed/solemnly declared] before me at [insert day] of [insert month], [insert year]."

Statutory Declaration
Declaration of compliance for written documents

Approved By

Signature

Date

Director
Energy Regulation and Implementation Unit
Environmental Protection Act 1994
Department of Environment and Heritage
Protection

Enquiries:

Energy Regulation and Implementation Unit
(Level 7, 400 George Street)
Department of Environment and Heritage Protection

Regular or registered post:

GPO Box 2454, Brisbane QLD 4001

Courier or hand delivery:

Level 3, 400 George Street, Brisbane QLD 4000

Telephone: (07) 3330 5619

Facsimile: (07) 3330 5634

Annexure A. This is the curriculum vitae marked with the letter "A" referred to in the Statutory Declaration which was declared before me on 13th of July, 2020.



Carolyn Brumley

Principal Risk Assessor/Contaminated Land Specialist

PROFESSIONAL SUMMARY

Dr Carolyn Brumley is a leader of the Golder risk assessment and toxicological services group, based in Melbourne. Carolyn has 20 years consulting experience based in contaminated land, including four years of experience in the Australian, Canadian and New Zealand regulatory and private sectors. Carolyn specialises in human health and ecological risk assessments of contaminated land and waterways, and has expertise in toxicological reviews and chemical criteria development.

Carolyn works with private and public sector clients in areas such as contaminated land, waste, ports and harbours, oil and gas, Defence, mining and chemical registration. She is a certified environmental practitioner with the Environment Institute of Australia and New Zealand.

AREAS OF SPECIALISATION

Chemical Risk Assessment

Numerous human health and ecological risk assessments (HHERA) in areas such as contaminated land, large scale mine developments, hydraulic fracturing, chemical spills and site remediation.

Specific ERA experience on petroleum hydrocarbons, PFAS, metals and chlorinated solvents in groundwater, receiving waterbodies and sediments, as well as impacts of soil contamination in terrestrial ecosystems. Food chain modelling for contaminants that may enter aquatic and terrestrial food chains. Use of ANZG (2018, formerly ANZECC and ARMCANZ 2000) framework for assessment of ecological risks.

Specific human health risk assessment experience associated with contaminated land and modelling of chemical migration to receptors (e.g. vapour intrusion modelling), estimates of intake associated with multiple exposure pathways, modelling of human health risks.

Regulatory toxicology and risk experience in agricultural chemical registration, and national chemical regulation frameworks.

Environmental Assessment

The assessment and remediation of contaminated sites (soil, ground and surface waters, and sediment). The application of risk assessment in remediation advice. The provision of ecological risk assessment advice as part of environmental impact assessments (EIAs) for proposed mine developments.

Education

Ph.D. Environmental Toxicology, RMIT University, Melbourne Australia, 1995

B.Sc. (Hons) Physiology, Monash University, Melbourne Australia, 1989

Certifications

Certified Environmental Practitioner, 2005

PROJECT EXPERIENCE

Senior Review and Technical Advisor | Various Oil and Gas clients | 2012 – ongoing

Queensland and South Australia

Senior review and technical advisor for the human health and ecological hazard assessments of chemicals used in stimulation fluids and in hydraulic stimulation activities. Review of chemical, toxicological and ecotoxicological data, and classification by hazard bands.

Senior Lead | Orica Deer Park | Orica | 2008 – ongoing

Victoria, Australia

Senior lead of the human health and ecological risk assessments of soil, groundwater, surface water and sediment contamination at the former manufacturing site. The work involved vapour risk assessments, vapour bore installation, vapour and contaminant modelling, collection and analysis of ecological data, reporting, presentations, and discussions with the site Auditor to assist with site divestment.

Lead Environmental Risk Assessor | Chemical Assessments | APVMA | 2014 – ongoing

Canberra, Australian Capital Territory

Preparation of environmental assessments for new and existing pesticides. The assessments entail review of existing chemical and ecotoxicological data and assessment reports from other jurisdictions and preparation of regulatory endpoints (aquatic and terrestrial) to assess environmental risks to a range of receptor types (algae, crustacean, fish, bees, earthworms, birds and mammals). The work entails extensive review and quality assessment of ecotoxicological data used in the environmental assessment.

Lead Ecological Risk Assessor | Defence Australia | 2017-2019

Conducted and reviewed multiple ecological risk assessments (ERAs) at per- and poly fluorinated alkyl substances (PFAS) contaminated Defence sites in Australia. Risks from PFAS contamination in soil, surface water, sediment, groundwater and biota (fish, aquatic invertebrates, plants and soil invertebrates) have been assessed using a variety of techniques, including food chain modelling (to higher trophic level receptors), lines of evidences and direct Tier 1 comparisons.

Lead Ecological Risk Assessor | Fracturing Fluid Risk Assessment | Oil and Gas client | 2014

Queensland, Australia

Preparation of a comprehensive risk assessment on hydraulic stimulation fluids, flow back waters and coal seam gas (CSG) waters. Review and compilation of data on Direct Toxicity Assessment (DTA) of stimulation fluids, CSG waters and flowback waters performed consistent national methodologies, as well as review of ecotoxicology and physico-chemical data on hydraulic stimulation chemicals.

Project Lead and Reviewer | Commonwealth Department of Environment | National Water Quality Guidelines | 2014-2017

Canberra, Australian Capital Territory

Senior oversight and reviewer for the development of national water quality guideline values protective of aquatic ecosystems in fresh and marine waters. Work has been prepared for the Commonwealth Department of Environment (DoE) and has involved collation and assessment of literature on selected chemicals, and application of the methodology of the National Water Quality Management Strategy to derive Default Guideline Values (DGVs). To date, 13 DGVs have been derived for industrial and agricultural chemicals, as well as PFOS and PFOA.