

Senate Standing Committee on Environment and Communications
Legislation Committee
Answers to questions on notice
Environment portfolio

Question No: 135
Hearing: Supplementary Budget Estimates
Outcome: Outcome 1
Programme: Science
Topic: SUPERVISING SCIENTIST - RANGER MINE
Hansard Page: 21
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Question Type: Spoken

Senator Ludlam asked:

Senator LUDLAM: All right, that is useful. Probably you do not have this now, so I might ask you to take this on notice and then I'll move on. Are you able to provide a bit of a holistic picture for us, perhaps on notice, of these three things: the extent of the plume, what is in it—what its composition is—and your understanding of its mobility and where it is going?

Mr Tayler: I can certainly do that on notice. There is also a reasonable amount of detail on those very questions in the Geoscience Australia report which was provided as an appendix to the Supervising Scientists report. But we are happy to provide you with a summary of that information.

Answer:

(1) The extent of the plume

The current extent of a plume is fully contained within the Ranger Mine Site and is almost fully confined to the area immediately beneath the plant area, as shown in **Figure 1**.

(2) Composition of the plume

Three components of the plume have been identified:

1. An area that is acidic and high in iron, uranium and sulfate.
2. An area enriched in sulfate, iron, manganese and uranium.
3. An area that is weakly enriched in hydrocarbons.

(3) Mobility and direction

There is a persistent groundwater divide beneath the plant area and so the plume is likely to move in a north-northwest direction and in a south-southeast direction towards Corridor Creek. The rate of flow has not been verified but, as the plume did not measurably progress from 2006 to 2009, it is considered to be extremely slow moving.

Ongoing monitoring by the Supervising Scientist over the past 30 years, including during and following the recent Leach Tank Incident, has not detected any unacceptable impacts on the environment surrounding the Ranger Project Area, including Kakadu National Park. As part of mine rehabilitation and closure processes, any contaminated groundwater on the Ranger mine site will need to be remediated to meet relevant closure criteria and ensure the ongoing protection of the environment.

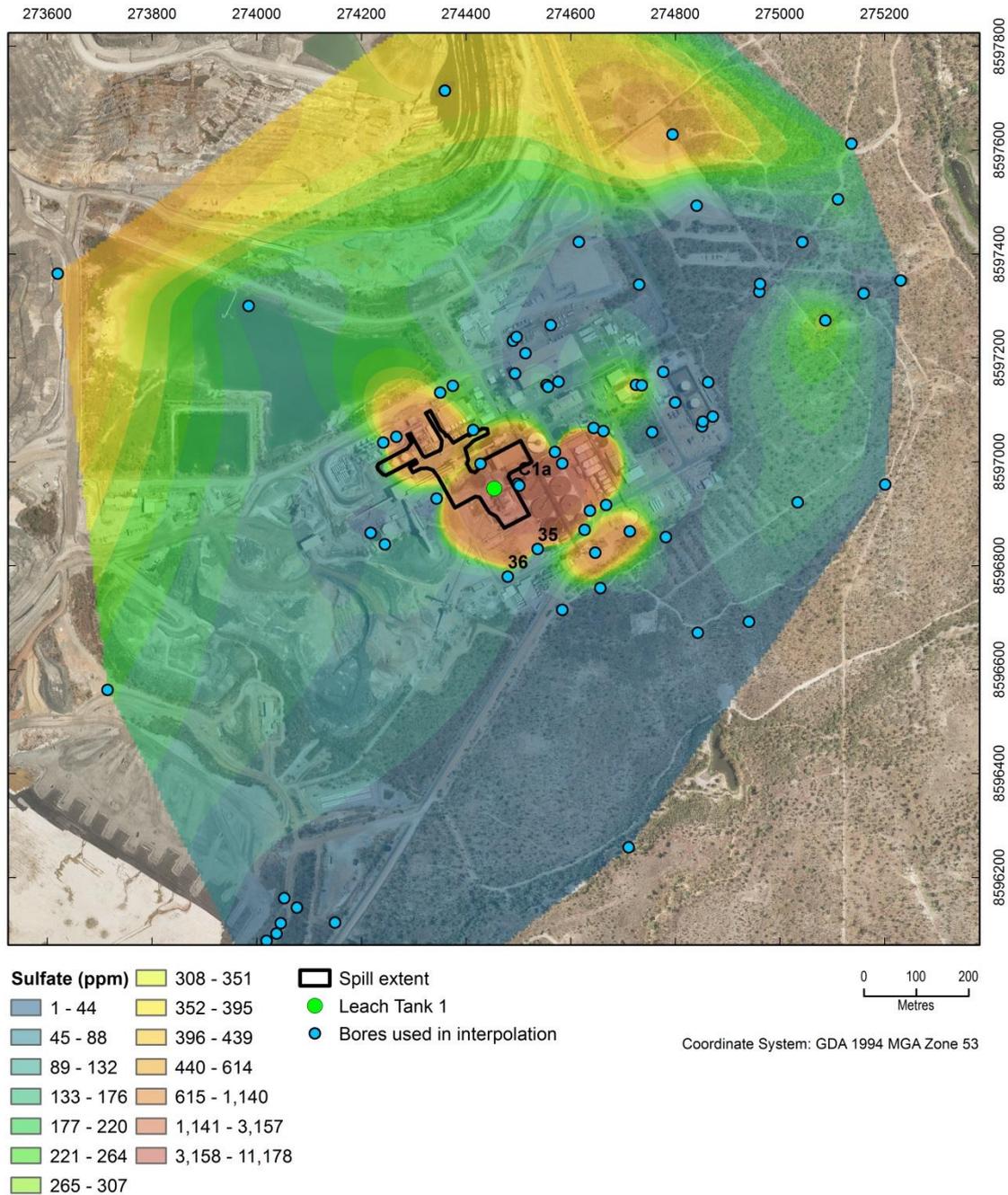


Figure 1. Sulfate concentrations in groundwater between 2006 and 2013. The warm hues beneath the Ranger Mine Plant Area represent the current extent of the plume. Sulfate is a conservative compound, meaning it does not readily bind to particles in the soils and aquifer sediments. Therefore, it represents the likely furthest extent of all chemical constituents. Map provided by Geoscience Australia (2014).