

**Background and Clarification Re:  
News coverage of request to DOD regarding perchlorate studies**

To ensure the most accurate scientific and health-related information on perchlorate is provided to the public, media and regulators in light of recent news coverage, it is important to highlight a few key points from the January 2005 National Academy of Sciences (NAS) report, “Health Implications of Perchlorate Ingestion.”

**First, in terms of health effects the NAS report clearly states:**

- “The committee emphasizes that inhibition of iodide uptake by the thyroid has been the only consistently documented effect of perchlorate exposure in humans.” (p 110)
- “Inhibition of iodide uptake by the thyroid clearly is not an adverse effect.” (p 111)
- “The committee notes that effects downstream of inhibition of iodide uptake by the thyroid have not been clearly demonstrated in any human populations exposed to perchlorate, even at doses as high as 0.5 mg/kg per day.” (p 118)

In light of these conclusions, news coverage stating that “perchlorate has been shown to impair thyroid function and result in neurological impairment of fetuses and babies, metabolic disorders and other problems” is in conflict with what peer-reviewed science currently shows.

**Second, in regard to the existing research available on perchlorate, we know the following:**

- NAS says the data on perchlorate’s mechanism of action and effects in animals and humans are sufficient to derive a reference dose. (p 122)
- NAS took an unprecedented step in using the no-effect level – inhibition of iodide uptake – as its point of departure. (p 119)
- The application of safety factors to this no-effect level led the committee to conclude that its reference dose “should protect the health of even the most sensitive populations.” (p119)

At the same time as the NAS called for additional research in its report, the committee made clear the existing research is sufficient to develop a reference dose protective of all populations.

In further support of this point, a letter published in *Environmental Health Perspectives* in November 2005 by NAS chair Dr. Richard Johnston and three other members of the NAS perchlorate panel, indicated the existing database from perchlorate studies was adequate, and therefore did not necessitate additional uncertainty factors in establishing a reference dose.

Specifically, Dr. Johnston and his colleagues wrote, “Given the choice of a nonadverse effect (inhibition of iodide uptake by the thyroid) as the point of departure and the multiple studies in which doses of perchlorate much higher than 0.007 mg/kg per day had no effect on any aspect of thyroid function, the committee did not apply a database uncertainty factor.”

Finally, in regard to NAS’ call for additional research, recent research highlighted by Dr. John Gibbs in his letter to the NAS (available on the CWQ Web site at [http://www.councilonwaterquality.org/facts/NAS\\_letter.htm](http://www.councilonwaterquality.org/facts/NAS_letter.htm)) shows that the latest research is consistent with the NAS findings.