Shire of Irwin Community Roundtable Supplemental Q&A -

DMP and DoW response to questions from December 7th 2016 workshop

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DMP (Further contact via Lyn Reid Department of Mines and Petroleum, Tel: +61 8 9222 3214, Lynn.REID@dmp.wa.gov.au**)**

Is it possible to get more public information on the DMP website relating to audits of company performance (e.g. what checks have been done, when?) ***(Reference Question Number 10)***

Answer: In response to stakeholder interest, DMP has developed a Transparency Policy and has several transparency improvement initiatives underway that respond to key issues of interest. An example is DMP's introduction of the down-hole chemical disclosure in 2012, which includes monitoring and reporting. From a regulatory perspective, there are some associated legal issues with publicly releasing site inspection results and data if it may be used at some point as evidence in a prosecution case. Notwithstanding, DMP is investigating ways of presenting a succinct summary of compliance inspections on the DMP website to help improve confidence in operational performance.

What is the relevance/significant of toxicity of the chemicals used in the industry compared to other industries (e.g. farms and Roundup)? ***(Reference Question Number 11)***

Answer: Chemicals used in the resources sector are comprehensively assessed prior to use and carefully monitored during use for each specific activity. As mentioned, the chemical disclosure requirements are rigorously applied. Environment Plans approved for each activity include information about the specific chemical products approved for use. These are available on the DMP website. Use of similar chemicals in other sectors (eg broad acre farming, intensive horticulture) are not as closely regulated. The Department of Agriculture and Food (DoAF) is the lead agency for regulating chemical use in agricultural sector. DoAF does not require activity specific assessment, monitoring or reporting. There is lots of information available on the internet for the relative toxicity of various chemicals used by agriculture, mining, medicines, petroleum, etc. The DMP Environmental Risk Assessment for Chemicals provides a good overview: http://www.dmp.wa.gov.au/Documents/Environment/ENV-PEB-165.pdf

What soil and water testing is done? Who does it and when? ***(Reference Question Number 12)***

Answer: Soil and water quality are key factors assessed and regulated for each activity. Baseline monitoring is required so once activities are underway and completed, any significant changes in monitoring results can be detected and acted upon promptly to mitigate any impacts. DMP assesses and approves proposed monitoring protocols that have been developed by technical specialists prior to the activities starting. Monitoring

protocols focus on the potential contamination source, the pathway and any potential receptor. Ongoing non-specific water monitoring within sumps for chemicals is extremely expensive and not a good use of tax payer resources – instead DMP inspects the chemicals being stored on site against what has been approved for use. Sumps may contain a mixture of drilling, cementing, fraccing and waste fluids – so concentrations of chemicals would not be identical to what is in the chemical disclosure information.
Water testing of sumps is not undertaken as this water is contained in a lined sump and not released to the environment. If any leaks or spills occur to the environment, then DMP requires companies to undertake soil and water testing as part of their clean up (to ensure that the environment is returned to a non-polluted state). Water quality monitoring is generally undertaken by independent consultants. Baseline groundwater monitoring is also best practice for any drilling activities to get an understanding of water quality pre and post drilling. Monitoring continues throughout the activity and afterwards too.

If a tailings dam wall breaks - how is it managed? Does it go into the soil and how is this cleaned? ***(Reference Question Number 13)***

Answer: Sumps are required to be constructed to overflow rather than break. DMP requires companies to have freeboard (extra) volume in their sumps to cater for exceptional rainfall events. Spill contingency plans must also be approved by DMP to deal with any type of spill (large or small). Overflows / breaches must be reported to DMP, investigated and cleaned up.

How are chemicals managed at the end of their life of use? ***(Reference Question Number 14)***

Answer: All chemicals are disposed of at an appropriate DER licensed waste facility. Chemicals contained within evaporation ponds are tested after drilling activities have ceased. If these chemicals are found to be above guideline levels they are removed and disposed of at an appropriate DER licensed waste facility.

How advanced is the science on the chemicals used and what is the confidence level that they are safe (e.g. we thought asbestos was safe)? ***(Reference Question Number 15)***

Answer: Chemicals are a part of everyday life – and we are exposed to a larger number of chemicals every day. The body of scientific knowledge on approved chemicals is significant and is the foundation for the assessment of risk. If this body of knowledge changes, then we apply that to our new understanding of risks and controls. This is exactly the same for any industry and medical science too.

At DMP all chemicals proposed for use by a petroleum company are risk assessed according to WA environment and safety regulations before they are approved or rejected. DMP uses the most current scientific knowledge to assess the toxicity and biodegradability of chemicals. Petroleum companies must demonstrate that the chemicals used do not pose significant risk to human health, the environment or groundwater resources. If a significant risk or potential impact is identified then the proposal is referred to the EPA for an independent environmental assessment.

If there is a well integrity issue, how are chemicals managed? ***(Reference Question Number 16)***

Answer: There are many classifications of well integrity issues (see Petroleum in Western Australia magazine, April 2015, pp 24—25, available at http://www.dmp.wa.gov.au/Petroleum/Publications-1601.aspx). The majority of well integrity issues do not allow interaction between the internal contents of the well and the groundwater or surface environment. In circumstances where external well casing may be compromised, if the integrity issue cannot be remediated, the well will be decommissioned. Decommissioning involves installing a series of cement plugs that provide isolation internally between different vertical zones in the well and also provides isolation from the external rock formation.

If repair is possible, a steel casing patch (a sort of internal sleeve) may be installed, or a seal can be created by squeezing cement through holes usually involves the application of a patch onto the interior of the casing. To enable patching, the well is filled with fluid containing chemicals including biocides, corrosion inhibitors, and pH adjustors. These chemicals degrade into inactive versions over time. In some cases, fluid density is increased with the use of salts. After the well is patched and normal operations re-commence, the fluid is retrieved to surface from inside the well casing. Loss of the fluid into the rock formation is minimised. Once the repair is completed, the fluid is replaced by a clean water-based fluid which also contains small amounts of corrosion inhibitors, biocides and pH adjustors. This fluid stays within the casing to protect it from internal corrosion. In line with other chemical usage in petroleum wells, the highest risk of using chemicals during well integrity operations occurs at the ground surface. Mitigation measures are kept in place to minimise the risk of such events.

A DMP speaker on well management may be available to further answer this question at a later date.

What information is available for historic wells and can we access this? ***(Reference Question Number 17)***

Answer: Information about historical wells is available online through the Department of Mines and Petroleum WAPIMS system (information and free access at http://www.dmp.wa.gov.au/Petroleum-and-Geothermal-1497.aspx). To learn about a particular well, select the Wells tab at top and

type in the well name and press Search. In the next screen, click on the well name until the row turns blue. Press View Details for Selected Rows and all the publically available information about the well will be displayed in multiple tabs. In general, detailed information becomes publically available two years after the well activity is completed. The Well Completion Report contains significant amounts of information about how the well was constructed, chemicals used during drilling, and the surrounding geology. The report, although highly technical, is often clear enough to be understood by members of the public. For specific questions about available information, please contact the DMP.

Department of Water (Further contact via Mark Canny Department of Water, Tel: 0428 617 205, Mark.Canny@water.wa.gov.au**)**

What is the Water for Food program? ***(Reference Question Number 18)***

Answer: Attached are two brochures that summarise the program and provide detail on the midlands projects.

How will the Water for Food program work if there are existing/future resource leases over the same area? ***(Reference Question Number 19)***

Answer: Agriculture, including irrigated agriculture, and mining/petroleum activities have co-existed in the Midlands region for a considerable period. Additionally, the government has a clear policy position supporting multiple land use, including petroleum activities and irrigated agriculture, to make the best use of land and water resources.

Water for food is about providing updated information to existing landowners to assist them make investment decisions underpinning a move into, or expanding, irrigated agriculture. The program will not impact on existing or future “onshore petroleum” petroleum resource leases, and any future investment decisions by the landowner, and associated approval processes, will not change. Existing regulatory procedures will still apply.