# Deep Yellow Limited: Highly Encouraging Mini-Pilot Testwork From Mulga Rock

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Perth, Australia - Deep Yellow Ltd. (ASX:DYL) (FRA:JMI) (OTCMKTS:DYLLF) is pleased to provide an update on the recently completed and successful resin mini-pilot metallurgical program for the Company's Mulga Rock Project (MRP).

- The 3-month resin mini-pilot study successfully completed and results analysed

- Uranium, base metals and rare earths overall recovered metal increased compared to 2022 updated DFS

- Effective separation of the uranium and critical mineral as marketable streams confirmed

- Ability to utilise saline water while maintaining recovery efficiencies regarded as a significant environmental, technical and cost breakthrough

- Highly encouraging results allow the Company to now pursue establishing the viability of a more expansive Mulga Rock Project during the DFS revision, now underway

o Critical mineral bi-product revenue will be reported and expressed as an offset to uranium operating costs and is anticipated to be material

Deep Yellow Managing Director/CEO Mr. John Borshoff commented: "The results are very encouraging as they are a realisation of the due diligence analysis and forecasts, whereby Deep Yellow identified considerable accretive upside value in the MRP that heavily influenced its decision to acquire Vimy in 2022. The Company's assessment at the time of acquisition was that this underlying value was not properly expressed in the prior analysis of the commercial potential of this outstanding resource. We will now proceed to fully explore the additional value that we recognised, in the revised DFS that is underway. While there is still a great deal of work and analysis to be done, the results reported today support our expectation of a positive revised DFS outcome."

Summary

Significant batch and continuous metallurgical testwork, which was carried out over a 3-month period and conducted on a composite sample generated from recent drilling at the Ambassador deposit, has been completed (refer ASX announcement dated 21 January 2025). Results obtained from the testwork have now been analysed, sufficient to establish the development of an updated process design basis for the MRP. These results and the updated process design basis will be used as part of the revised Detailed Feasibility Study (DFS) for the MRP that will consider all value metals available in the Project's resource inventory.

This revised DFS is now underway, with expected completion in Q3 of calendar year 2026 and will incorporate a complete revision of not just the process flow sheet, as indicated in this announcement, but also a complete revision of the Ore Reserve Estimate (ORE), incorporating mining method, grade control, costs and scheduling.

The revised process flowsheet incorporates beneficiation, uranium resin in pulp (U RIP), critical mineral resin in pulp (CM RIP), uranium elution and refining, critical minerals elution and refining and in-pit tailing disposal. Process operating costs per pound of uranium produced are expected to benefit greatly from the production cost credit due to the critical mineral byproducts.

Sampling and Sample Composite

The samples used for the testwork reported below were collected during a dedicated metallurgical sampling drilling program completed in late 2024. The drilling program, which comprised 20 diamond drill holes, was designed to obtain a representative sample of the Ambassador Deposit, representing 91% of the Mulga Rock East Measured Indicated and Inferred resource tonnes and 93% of the contained uranium.

Pilot Plant Feed Preparation

Drill core from the Mulga Rock site was received at ALS laboratories in Balcatta in November 2014. This

consignment comprised 20 individual holes from five separate locations (BK02/05/14/17/19) (refer Figure 1 drill plan and Appendix B*). In total, 480 m of drill core was received with a combined wet mass of ~3.0 tonnes. Preliminary assay data for these holes was received from Deep Yellow exploration in December 2024. This data was used to determine the indicative gross metal value along the length of each hole, which guided the selection of intervals for metallurgical testwork.

Intervals were selected and combined to form thirteen individual composite samples, with each sample consisting of all material from a single location across a defined interval to provide for reasonable future mining dilution. In total, 232 m of drill core was selected, producing thirteen composites with a total wet mass of 1.4 tonnes (refer Table 1 and Appendix C JORC Table 1*) for composite interval and assay detail.

The 13 composites (refer Table 1*) had a small (~1 kg) sub-sample reserved for future work before being combined to create the bulk composite sample (MRP Composite) used in the testwork reported herein.

Testwork Results and Revised Process Flowsheet

Beneficiation

Beneficiation mini-pilot testwork, completed as part of the resin mini-pilot program, has identified a preferred and much simplified beneficiation flowsheet (refer Figure 2*) that will concentrate lignitic material, clay and sulphide minerals whilst rejecting silicates (sands) ahead of leaching, metal extraction and refining. Bulk silicate reject grades of <80 ppm U3O8 were achieved during testwork with opportunity to achieve <50 ppm U3O8 commercially with suitable equipment selection and configuration identified. Mass recovery to beneficiation concentrate during the testwork was 36%, with uranium recovery of over 92%. Composite average uranium grade was 662 ppm U3O8, and beneficiation upgraded this to 1,698 ppm U3O8 in the concentrate.

To be clear, however, each of these grades and recoveries in beneficiation may vary from these values, depending on the head grade and mineralogy of ore being processed in any future operation.

Leach and Metal Extraction

Acid leaching involving sequential, natural and oxidative leach of the beneficiation concentrate may be achieved at low cost to recover the value metals in subsequent sequential U RIP and CM RIP circuits (refer Figure 3*), with indicated recoveries, which are dependent on the level of oxidant used in the oxidative leach, reported as follows:

- Uranium, 92%;
- Nickel, 50%;
- Cobalt, 50%;
- Copper, 77%;
- Zinc, 89%; and
- Rare Earth Elements - REE (value elements Neodymium, Praseodymium, Dysprosium, Terbium), 50%.

In operation, the natural and oxidative leach would be combined into a single unit operation.

Overall uranium recovery (including beneficiation losses) was 85% in the mini-pilot program, which, when applied to the substantially higher contained uranium resource as reported in the ASX announcement dated 26 February 2024 and referred to in Appendix A* (increased from 56.7 Mlb U3O8 to 71.2 Mlb U3O8 in the MRP East deposits), indicates a potential for significantly higher life-of-mine uranium production (the same is also indicated for critical mineral metal recovery) for the Project.

The resins selected for both U RIP and CM RIP duties are largely insensitive to water with high salt concentration meaning processing directly, using site water (mine dewatering water at 15-20 g/l chloride) is acceptable. This was clearly demonstrated during the mini-pilot testwork which was conducted with site water. The impact of this material change (compared to earlier Vimy work using potable water) on capital and operating cost, as well as the environmental footprint of the Project, is likely to be significant, obviating the need to establish and operate a fresh water borefield (circa 30 km away) to provide high quality raw water to the process.

Resin loadings of ~35 g/l U3O8 have been achieved using 10 counter-current U RIP stages. Elution chemistry is simple and effective, generating eluate at >9 g/l U3O8 from which a final UO4 product has been generated using direct precipitation.

Variable unit processing costs ($/lb U3O8) for reagents and utilities associated with the uranium recovery section in the process (leach, uranium RIP, elution and uranium precipitation) are likely to be low compared

to contemporary uranium industry standards.

Resin loadings in CM RIP of ~35 g/l Ni+Co+Cu+Zn+REE were achieved in the mini-pilot using 10 counter-current stages. Elution chemistry for the CM RIP resin is also simple and effective, generating an eluate containing ~25 g/l Ni+Co+Cu+Zn+REE that will be processed to produce separate by-products which are envisaged to comprise a combined nickel and cobalt salt, copper cathode, a zinc salt and a combined REE salt. Batch testwork, using eluate generated in the minipilot program, to determine the preferred refining route for this stream, is presently underway.

Process Flowsheet

The combined flowsheet is depicted in Figure 3* and has inherent flexibility to respond to the cost and revenue environment as required in operation by adjusting the level of oxidant used, which is the major cost driver, in the oxidative leach.

Mining and ORE

The upgraded MRP resource model as announced February 2024, was the basis to consider all value metals to develop a revised DFS for the MRP. The positive results obtained in the mini-pilot testwork mean the mining method for the Project now needs to be re-considered and a revised ORE determined. For the purposes of this current Project analysis, no assumptions are made as to what mining technique will be chosen, but an overall stripping ratio of 10:1 is considered reasonable and assumed to help frame the initial analysis.

The MRP Mineral Resources (defined to the 2012 JORC standard with 86% to Indicated and Measured classification - refer ASX announcement dated 26 February 2024 and Appendix A) showed highly variable levels of lignite, clays and large amounts of unmineralised sands (mainly quartz and feldspar), overlain by a significant zone of barren waste. The impact of this remains to be quantified in terms of the implications on the mining method to be utilised. However, the perceived consequence is that mining-related issues will likely dominate the sound management of the operation.

Indicative Uranium Production Profile

Based on indicated grades to date, to achieve approximately 3.5 Mlb pa U3O8, which is the current Project target (refer existing DFS ASX announcement dated 12 July 2017 and 16 June 2022), and the indicated beneficiation rejection rates of 64%, run of mine (ROM) ore feed of 2.8 Mt pa is anticipated, with leach feed of approximately 1 Mt pa.

Based on the beneficiation and resin mini-pilot resin testwork reported herein, uranium recovery (overall) is expected to be 85%. The following table is based upon the results obtained in the minipilot testwork and provides a summary of the project physicals at targeted uranium production.

In the upcoming revised DFS for the Project, critical mineral bi-product revenue will be reported and expressed as an offset to uranium operating costs.

Conclusion

The results of the mini-pilot testwork are regarded as being highly encouraging. Multiple streams of marketable product are confirmed as being achievable, with the added economic and environmental footprint advantage that in-pit saline water can be used as the process water while still achieving increased uranium and critical mineral metal production. This is regarded as a significant breakthrough that will form the basis of the revised DFS design criteria.

*To view tables and figures, please visit:
https://abnnewswire.net/lnk/7284909R

About Deep Yellow Limited:

Deep Yellow Limited (ASX:DYL) (OTCMKTS:DYLLF) is successfully progressing a dual-pillar growth strategy to establish a globally diversified, Tier-1 uranium company to produce 10+Mlb p.a.

The Company's portfolio contains the largest uranium resource base of any ASX-listed company and its projects provide geographic and development diversity. Deep Yellow is the only ASX company with two advanced projects - flagship Tumas, Namibia (Final Investment Decision expected in 1H/CY24) and MRP,

Western Australia (advancing through revised DFS), both located in Tier-1 uranium jurisdictions.

Deep Yellow is well-positioned for further growth through development of its highly prospective exploration portfolio - ARP, Northern Territory and Omahola, Namibia with ongoing M&A focused on high-quality assets should opportunities arise that best fit the Company's strategy.

Led by a best-in-class team, who are proven uranium mine builders and operators, the Company is advancing its growth strategy at a time when the need for nuclear energy is becoming the only viable option in the mid-to-long term to provide baseload power supply and achieve zero emission targets.

Importantly, Deep Yellow is on track to becoming a reliable and long-term uranium producer, able to provide production optionality, security of supply and geographic diversity.

Source:
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