

Frequently Asked Questions

Last Updated_31 October 2016

Environmental Baseline Study

Q1. What were the results of the environmental baseline study?

A. The reports outlining the results received to date from the environmental baseline study are located on our website: www.evolutionmining.co.nz (Publications/Environmental Studies & Reports). The study and these associated reports were conducted by an independent NZ consultant, Pattle Delamore Partners (PDP). We encourage people to read the full reports to get all relevant information and context.

Q2. Was there any mercury in any of the water bores you tested?

A. There was no detectable mercury in any of the water bores tested. Please read the full report located on our website.

Q3. Do the results indicate that there is mercury present in surface water at Puhipuhi?

A. Mercury was present at 0.23 parts per billion in stream water samples collected adjacent to the historic mercury processing area in the upper reaches of Waikiore Stream. A sample taken 1.2km downstream contained mercury at a concentration of 0.1 parts per billion. Samples further downstream and in other Puhipuhi catchments contained mercury at parts per trillion concentrations. Please refer to the full Surface Water Sampling Report, available on our website.

Q4. How do the results compare to New Zealand safe drinking water standards?

A. No samples exceed the health-based Maximum Acceptable Values for the New Zealand Drinking Water guidelines, although aesthetic values related to pH, colour and clarity were exceeded in several samples due to high iron content. None of the samples exceeded Australian and New Zealand Environment Conservation Council (ANZECC) Livestock Drinking Water trigger levels from any sites. The Maximum Acceptable Value for mercury in drinking water is 7 parts per billion, which is approximately 30 times higher than the highest value recorded in stream water (0.23 parts per billion).

Q5. How do these results compare with ANZECC ecosystem protection guidelines?

A. At two locations mercury concentrations exceeded the ANZECC (2000) trigger values for 99% Aquatic Ecosystem Protection Guidelines of 0.06 parts per billion (ppb). One of these sampling locations was located immediately adjacent to a historic mercury processing plant (site PUX). The water sample collected at this location contained dissolved mercury concentrations of 0.236 ppb. The second site (PSX) is located approximately 1 kilometre downstream of sampling location PUX and the concentration of mercury measured in stream water at that location was 0.1 ppb. Water samples from all other monitoring sites were below the ANZECC 99% trigger level of 0.06 ppb dissolved mercury.

Q6. Is there any mercury present downstream of Puhipuhi?

A. The highest mercury concentrations are in water sampled within the immediate vicinity of the historic mercury processing plant at the headwaters of the Waikiore Stream. Mercury concentrations downstream of the historic mercury processing plant decrease rapidly to ultra-trace concentrations. The survey results indicate that catchments downstream of Puhipuhi do not contain appreciable mercury in stream water.

Q7. Is it safe to consume fish and crustaceans from streams in the Puhipuhi area?

A. Based on their findings, PDP's Aquatic Organisms Sampling Report recommends that consumption of shortfin eels from the Puhipuhi area is limited to less than 3.5 servings of 150 grams per month for a 70kg adult. PDP recommend that freshwater crayfish collected from within the catchments sampled are not regularly consumed as part of an individual's regular diet.

Please refer to PDP Report's on Aquatic Organisms Sampling under the 'Environmental Studies and Reports' tab on our website.

For more information on safe eating standards for fish and shellfish please refer questions to NZ Food Safety Authority or NZ Ministry for Primary Industries, or refer to their online and published guidelines.

Q8. How do the PDP survey results compare with earlier surveys by NRC and others?

A. The results are very similar to recent surveys carried out by NRC (2015) and Gionfriddo (2015). The mercury concentrations measured are lower than those reported in an early study by Hoggins and Brooks (1973).

Q9. Why was PDP chosen to conduct the environmental baseline study?

A. PDP is a NZ based company who are experienced in assessing and managing the impacts of different types of drilling and also have expertise in mercury chemistry in addition to expertise in a wide range of environmental disciplines. They have a reputation for integrity, technical expertise and a high standard of work.

Q10. Are the PDP reports peer reviewed?

A. The full PDP reports are available on our website for anyone to review. Evolution is confident that the studies undertaken by PDP meet industry best practice, supported by the fact that parts of the study will be presented by PDP at various technical conferences. We welcome any comments, questions or feedback you may have on the reports – see the 'Contact Us' page of our website.

Exploration Drilling Program

Q1. When did you commence exploration drilling?

A. The drill rig and support vehicles were deployed to the drill site on 8th June 2016. The equipment arrived at 5.30am in accordance with a traffic management plan arranged with the District Council and the Police. A 5.30am delivery ensured that the transport and offloading was done with minimal disruption to local traffic, local residents and local businesses.

Q2. How many holes is Evolution drilling?

A. 10

Q3. How long are you going to be drilling for?

A. We will be drilling for 6 months initially. Any activity after that will depend on what results we get. If the initial results show there is no likelihood that an economic gold deposit is present, we will not pursue our interest in this area.

Q4. How large is a drill hole?

A. A drill hole is approximately 10cm in diameter.

Q5. What depth will Evolution drill to?

A. We will be drilling to 500-600m down below the ground.

Q6. How large is the drill site?

A. The drill site will be approximately 15m x 20m (the same footprint as a small house).

Q7. Will the drill rigs damage the ground surface?

A. We will be putting measures in place to minimise any impacts on the ground surface from the drill rigs, including using tracked vehicles (rather than wheels) and laying down artificial road materials or gravel for the vehicles to drive on.

Q8. What is the government's annual requirement for Evolution to drill?

A. There is not an annual requirement for Evolution to drill. There is an agreed work program, that includes drilling, which is staged to reflect evolving understanding of the prospectivity of the area. Early stages of exploration involve compilation of existing information, mapping, soil sampling and geophysics, and this is usually followed by drilling if prospective targets are identified.

Q9. Have you employed any local people on the drilling program?

A. Yes. Evolution has a policy to maximise local employment and local procurement where possible. This applies in NZ where our preference is to employ local people, provided they have the appropriate skills and qualifications or can be trained if training is appropriate.

Q10. It is known that mercury is an issue in the area; what are you doing to ensure you don't disturb the mercury?

A. We have conducted an environmental baseline study (see answers to questions under 'Environmental Baseline Study' and see full reports on our website) which identified that the greatest risk of mobilising mercury to the environment is disturbance of soil. We will be putting appropriate measures and controls in place to minimise any soil disturbance. Drill holes will also be sealed by casing and by drill fluids during drilling and will be grouted with cement on completion to 150m, which is the maximum depth to which mercury may be expected to occur.

Q11. Have landholders agreed to having you on their property?

A. Many landholders have allowed access to enable us to complete various investigations, both environmental and geological.

Q12. Who have you talked with locally about your drilling program?

A. We have spoken with the directly affected parties including local residents, Tangata Whenua and regulators.

Q13. Are you having any community meetings?

A. Many of our key stakeholders have indicated that they would prefer to talk directly to us or receive information via email rather than attend an open community meeting, however we may hold community meetings in future if there is indication that local community residents are interested in attending such meetings. We welcome questions, comments and feedback from anyone who is interested in our activities (see 'Contact Us' page on our website). We are willing to talk to anyone who would like more information about our activities or has relevant concerns they would like to communicate.

Q14. Can you guarantee that you won't pollute the local water?

A. We have conducted an environmental baseline study (see answers to questions under 'Environmental Baseline Study' and see full reports on our website) and we will be putting appropriate environmental measures and controls in place. This includes having systems in place to prevent runoff of sediment to waterways, conducting minimal earthworks, using silt traps, and storing any drilling fluids above-ground.

Q15. Will you continue environmental monitoring during the drilling?

A. Yes. During drilling we will monitor the site and the nearest waterways to ensure that our sediment controls are effective. We will also monitor noise. Drilling waste will be stored and analysed on site at completion of each hole and prior to disposal to an offsite approved landfill.

Q16. Is Evolution's management of drill holes similar to the controls that were used for the holes already drilled in the area by past explorers?

A. Evolution will be putting more rigorous controls in place than what previous drill holes had. Previous holes were drilled between 1984 and 2008 and most of them were done using a less controlled drilling technique than Evolution will be using. We have no evidence that previous holes were plugged or grouted on completion (which Evolution will do) and this may not have been done in the past.

A review of 42 of 50 historic exploration drill sites in the area (which is located on our website) found very little evidence of disturbance and these sites appear to have been rehabilitated to the extent that the original contour of the land was restored and original vegetation at the time of drilling has been reinstated.

Q17. I've heard that Evolution is drilling directly under DoC conservation land. Is this true?

A. Contrary to some recent claims, Evolution's current drill program is not on or under DoC conservation land.

Q18. Are holes drilled vertically down or on an incline?

A. The ore bodies we are targeting are vertical or near vertical so it is industry standard to drill inclined holes in order to effectively test multiple potential targets. Evolution will conduct any such drilling in compliance with section 57 of the Crown Minerals Act.

General

Q1. Have you employed any local people?

A. Yes. Evolution has a policy to maximise local employment and local procurement where possible. This applies in NZ where our preference is to employ local people, provided they have the appropriate skills and qualifications or can be trained if training is appropriate.

Q2. How long before you start mining?

- A. If an economic gold deposit is identified from drilling, mining would be at least 5 years away and would be dependent on the outcomes of a series of feasibility studies to investigate environmental, economic and engineering-related aspects in addition to undertaking extensive consultation and obtaining all relevant mining Permits and consents.

Q3. Has Evolution ever constructed a mine before?

- A. Yes, Evolution's Mt Carlton mine in Queensland, Australia completed construction and was commissioned under Evolution's ownership.

Q4. Where will you put the tailings dam?

- A. Exploration drilling does not automatically mean that mining would follow. (See above answer to 'How long before you start mining?')

Should that phase be reached, extensive investigation would be carried out to determine an appropriate site. There are established standards for location and construction of tailings dams to ensure their integrity under a range of conditions including high rainfall and earthquake events. Evolution has considerable expertise in this area and would also draw on external expertise where appropriate.

Q5. Does the old mercury mine sit within the Evolution's Exploration Permit area?

- A. Yes. This area is included in the environmental baseline studies. The full reports from these studies can be viewed on our website (Publications/Environmental Studies and Reports).

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