## **GIBSONS OPEN CUT REMEDIATION**

Five SOMR members took the trek to Halls Peak on Sunday March 9<sup>th</sup> to check on restoration works in response to our discovery and alerts to the EPA and Derelict Mines Office about toxic sludge being inappropriately placed after removal from sediment dams.

In rainy weather we left Bellbrook at 9:30 and after some diversions (missed turnoff plus a tree across the road) arrived at the abandoned Gibsons Open Cut Mine at Halls Peak around 11:30 in what remained pleasant and dry weather.



Beautiful country – looking from the top of Gibsons Open Cut to the Chandler River



Scarred by the abandoned mine

We initially inspected the top dam where the two sulfurous deposits previously inappropriately placed on the top and outside dam walls has either been removed or incorporated into the structure of the dam wall.

The pH of the aquamarine water was measured at 3.3 at a temperature of 23.3 degrees Celsius.



(here could be a before and after. I haven't got a good photo from the first visit of the yellow sediment on the dam wall)

We took some time to observe the construction with an internal grid drain that seems to feed out below as well as restoration of the overflow culvert. Both are apparently designed to channel water within the mine footprint to collect sediment on-site.



The loose nature of the scree and gullies eroded from rain gave us an indication of the instability of the site and the difficulty designing and constructing these control features.

Slightly further down the site we noticed an area that appears to have been recently disturbed and worked back and forth with the tracks of machinery such as an excavator or loader. Photos were taken to ask DMO if this is the location of the new containment cell. (left photo)



The middle part of the site was observed including the small central dam (I thought the small "central



dam" another level down?) and the Gibsons shaft above which runs horizontally into the cliff face for about 20 metres before being blocked by a rockfall. This shaft seems to get quite wet either from internal seepage or from water entering via the cliff face.



This area contains highly coloured rocks indicating signs of mineral content that no doubt attracted the original miners.

Late last year Precious Metal Resources (PMR) carried out exploration drilling in front of the shaft. The area has recently been levelled and no other trace of that work is left.



PMR drilling in progress at former Gibsons Mine

Left: from PMR report January 2014 Right: March 2014 From there we progressed to the bottom of the site where the 3 lower dams are the last opportunity for sediment to be trapped and maintained on the site.

This is the area where on our first visit we found toxic sediment deposited outside the containments flowing down the slope towards the Chandler River. This sediment has now been removed and quite extensive work has been done including a new small containment area with a dam wall.

It was reassuring to see the excavation had included the band of flow that had tracked down the gully for some distance and that erosion control measures have been constructed. It seemed that only a small area of the sediment we had seen before remained between larger trees that obviously was inaccessible to mechanical equipment.



In the three lowest dams we observed sticks, leaves and a large log trapped in the rubble of the overflow drain indicate that this is at times a high energy system.





The middle dam has an overflow pipe that runs underground to an area outside and exits vertically to reduce flow velocity and erosion.

On observing and discussing the site, comparing this and the previous visit as well as numerous site photos, we could not understand how the sediment flow could possibly result from a breach in a bund wall. Above where this sediment was there is only the access road over the dam wall. The bund wall below is new.

The pH of the larger dam was 3.4 at 23.1 degrees Celsius.





Lower dam November 2013 with cracked sediment

March 2014. Cracked sediment removed, new bund walls beyond the dam

We are awaiting an explanation from DMO who have suggested it flowed from a broken containment cell bund wall. We maintain from the topography and our observations that this sediment was placed there inappropriately.

Despite this, it is our opinion the DMO has done a great job in rectifying the situation to minimize the impact. We hope that this experience leads to better certification and monitoring of contract works regardless of the cause.

This site has been described as an "open sore on the landscape" and we could see how the works help to channel water within the site and maintain it in a holding position until better remediation is developed.



One rock wallaby was seen and a few bird calls heard, but other than this the site is quite devoid of flora and fauna. There are only a few scattered areas of a low tussock grass and some acacias. We returned to the top of the site for lunch before the journey back down the Macleay for a quick drink and discussion at the Bellbrook Pub and then headed home.