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Merlin Diamonds received 31.2 kg. of kimberlite from CKA which was fused in our ovens for micro diamonds at a lower cut-off of 0.08mm using polypropylene mesh backed with 0.1mm Stainless Steel mesh.

On receiving the sample the material was weighed and a data record was created.

The sample core was washed and crushed in a slow jaw crusher to ~10 mm then to 3mm in decreasing size stages with a roll crusher; this is to avoid damaging diamonds which might be released in crushing.

Three millimetres was chosen this time for the fusion feed, as the previous “test sample” had not completely digested in one fusion when using a larger feed size.

This sizing would expect to pass an approximately 0.3 to 0.4 carat stone, if present; in the feedstock.

After roll crushing to 3mm the whole sample including fines < 0.08mm were then put into fusion vessels ...1 Kg ore, to each caustic filled fusion vessel.

When the fusion product comes from the ovens, it is allowed to cool; we then add water to the 6 Kg block of caustic and dissolved rock.

This now muddy water, is then is wet screened at 0.08mm which takes away the dissolved, soluble minerals and newly created precipitates below 0.08mm.

As is normally the case; some few resistant crystalline minerals can survive (~12 gr. in this case) which, with the diamond, is fused again for a short period in a more aggressive “peroxide” process; which eliminates all but the most resistant materials (diamond, very good zircon, tough chromites) and occasionally large garnets (although all greatly reduced in size now, except the diamonds).

After washing over a 0.08mm sieve, the post fusion product (now <0.01gr.) is dried in a glass beaker which is sealed and picked up by the observing personnel from IDL, who carefully brush the beaker empty into a Petri dish for observing under a microscope.

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