SOP for CrystaCIL - As ™

Mineral based media for Arsenic removal from drinking water

Instructions:

- Select the appropriate adsorbent quantity and respective column mentioned in the below table.
- Remove fines generated in adsorbent media during transportation or handling by screening or manually de-dusting.
- Standard process should be adopted to set column using gravels in high capacity columns.
- Fill media inside column using funnel or appropriate available device to avoid adsorbent media spillage.
- Fit inlet and outlet piping connections and respective pumps, etc. To maintain mentioned flow rates.
- Flush with 2-2.5 BV backwash and 0.5-1 BV rinse water (non-contaminated) until the clear water is observed at output, since chance of initial turbid water is due to natural adsorbent behaviour.
- Feed the arsenic contaminated water through the pre-filled media column downward flow and collect clean arsenic free water within desired limit. For better results pre-filter must be used.
- Measure the arsenic content periodically based on treatable volume mentioned in reference table.
- Once media is exhausted old media can be replaced by new media as per above mentioned steps.
- In case of regeneration of the media service executive from Aeon Procare to be contacted.

Example of 50 Kg column installation and operation

I. Column installation:

1. Using funnel pour pre-weight of **CrystaCIL-As ™** granules media into the column.

2. Tighten the Column Cap/multiport valve.

3. Check for O-rings in all pipe joints and connect and tightened.

4. Connect **pipes** at feed line/inlet and treat/outline/outlet pipe positions.

5. Check connections valve openings in with multiport valve positioned in backwash mood.

6. Run Column for **100L-120L water at ~500 LPH for backwash** and then **rinse by 30 L-50 L** for **Rinse mood** depending upon **clear water/ quality**. If satisfied with quality of clear water, then **set to filter mode** by multiport valve. Check for any leakage or pressure generation. If there is no leak then proceed. Column is ready for operation.

II. SOP for Column Operation (50 Kg column capacity)

1. Collect Effluent in 1000L/2000L Drum as feed.
2. Check for pH, EC, arsenic content by ICP-OES/ICP-MS.
3. If **turbidity** is there in effluent, **then pilot plant should be operated using cartridge filters** as associated with pilot plant else cartridges could be bypassed.
4. If **pH** is within **6.6-8.5** and feed water arsenic concentration up to **100 ppb** (if excess arsenic present then treated volume will be less) then start operation at **250 LPH in filter mode.**
5. Sampling need to be carried out as per requirement at regular interval till cut off point based on average volume of water treated.