

Rejuvenation of Media Filtration Systems and Cleaning of Filters & RO Membranes



A Non-toxic and Safe handling method of cleaning media systems

- > **Enables CIP cleaning**
- > **Restores media effectiveness**
- > **Improves system performance**
- > **Saves labour & replacement costs**

Cleaner Safer Greener

Product Application Sheet – REJUVENATION OF MEDIA FILTRATION SYSTEMS Cleaning of Filters & R.O. Membranes



triple⁷ Colloidal Concentrate is a low to moderate sudsing, highly concentrated organic release agent, which can be used in the most difficult cleaning situations for the removal of hydrocarbons.

The product is used in media filter rejuvenation & filter cleaning and it simply penetrates into the grease or oil and lifts the contamination away without harming media, filter vessels and filters.

Backwash Cycles

triple⁷ Colloidal Concentrate can be added to a backwash cycle using a low dilution of 50 to 200 parts per million.

Periodical Maintenance

Close off the system and recirculate a solution of 1 part triple⁷ Colloidal Concentrate to 300 parts water for badly contaminated systems. Allow the solution to recirculate for 2 hours before discarding. A typical rejuvenation 4 x 48" filter system will require approximately 20 litres of product for full organic release.

Where systems have no separate backwash tank, or system layout limits recirculation ability, add the product to the top of the filter bed and use an air spear to ensure adequate mixing. Close the backwash discharge valve and operate in the backwash mode to lift and resettle the bed. Leave for 20 minutes and open backwash valve to waste for final flush, prior to returning system to normal operation.

An added advantage is that triple⁷ Colloidal Concentrate cleans pipelines and reduces BOD loadings without harming sewer bacteria. The quality of effluent backwash flows to effluent ponds can be improved along with a subsequent odour reduction in holding lagoons and effluent tanks.

Descaling R.O. Membranes & Filters

When decaling R.O. filters, mix a 1:5 solution of triple⁷ Enviroscale with water. Set up a bath or re-circulating tank and immerse the filters. A rise in solution pH above 2.5 indicates that the cleaning solution is spent and more product must be added to reduce the pH below 2.5 if cleaning is not complete. Leave filters in the bath for 4-6 hours (or overnight) monitoring the pH and adjusting if required. If the solution becomes very contaminated with sludge or is badly discoloured, drain off and repeat the cleaning procedure.

Please note that a stronger solution may be needed for badly contaminated filters and the product may be used neat without damaging, filters or seals. Thoroughly rinse filters with clean water.

Product Application Sheet – REJUVENATION OF MEDIA FILTRATION SYSTEMS Cleaning of Filters & R.O. Membranes



Cleaning filters & R.O. Membranes

Clean filters using a backwash cycle and follow the cleaning procedure as for media cleaning.

Filter Media Rejuvenation – Case study 1.

Client: Water Corporation

Filter type: Dynasand DST150 Cone Shaped Open Top 6000 litre.

Problem: Every 2 days the filter was clogging up and was requiring attention. The procedure was to add chlorine to the sand filter, air sparge and then backwash.

Solution: Recommend to add 10 litres of triple⁷ Colloidal Concentrate (1:600) to the sand filter, air sparge to enable the product to work through the media leave for 20 minutes, then backwash.

Maintenance: Add triple⁷ Colloidal Concentrate either 2-3 monthly or as required. Alternatively, it may be added into the filter during the backwash cycle at a rate of 1 part product to 3000 parts water to reduce labour input and maintain the filtration system at optimum operating levels.

Why is triple⁷ Colloidal Concentrate so effective?

Media filters block with organic build up. When chlorine is added to the backwash cycle it kills the organic congestant but does little to remove it from the media. triple⁷ Colloidal Concentrate is a powerful release agent that cleans the media, bringing its effectiveness back to near new condition.

triple⁷ Colloidal Concentrate Vs chlorine for decongesting media filters

triple ⁷ Colloidal Concentrate	Chlorine
> Safe handling, Non-toxic	> Dangerous good
> High performance, Reduces odour	> Toxic
> Improves effluent quality	> Ineffective
> Reduces loading on system	> Reduces effluent quality
> Reduces labour input	> Increases loading on system
> Reduces B.O.D. levels	> Labour intensive
> Does not harm sewer bacteria	> Increases B.O.D. levels
> Increases soil percolation	> Harmful to sewer bacteria
> Readily biodegradable	

Product Application Sheet – REJUVENATION OF MEDIA FILTRATION SYSTEMS

Cleaning of Filters & R.O. Membranes



Removal of Ferric Iron from media filter – Case study 2.

Client: Major West Australian Irrigation Firm

Filter type: Amiad 3"/30" Model 38-90-303-00 Media Filter

Problem: Ferric Iron bacteria build up in media filter causing major reduction in throughput of filter. Ordinary backwash mode does very little to dislodge the bacteria congestant.

Solution: Recommend adding 5 litres of triple⁷ Colloidal Concentrate (1:600) ratio to the media filter, air sparge to enable the product to work through the media bed, leave for 20 minutes then backwash.

Result: A murky brown soup-like mixture was discharged and the iron bacteria in the system was removed.

Why is triple⁷ Colloidal Concentrate so effective?

Iron bacteria builds up in thick layers, each forming a slime around the bacteria cells preventing disinfectants from penetrating beyond the surface cells. triple⁷ Colloidal Concentrate cleans the media, restores its effectiveness and saves labour and replacement costs.

Product Application Sheet – REJUVENATION OF MEDIA FILTRATION SYSTEMS Cleaning of Filters & R.O. Membranes



Filter Media rejuvenation - Case study 3.

Client: Water Corporation / Waste water treatment plant

Filter type: Twenty five Amiad 48 Media Filters

Problem: The media filters were becoming congested or blocked and the backwash cycle throughput varied between 40-45 litres per second. The backwash cycle was also causing channeling, which resulted in effluent not being sufficiently filtered. The Water Corporation was faced with two options:

1. Replace the filter media or
2. Clean the filter media with triple⁷ Colloidal Concentrate

Solution: Recommend adding 5 litres of triple⁷ Colloidal Concentrate to each filter, air sparging to allow the product to work through the media and the solution allowed to work for 40 minutes before applying a backwash cycle.

Result: The throughput increased from 40-45 litres per second to 80-86 litres per second resulting in an increased performance of about 100%. The cost of cleaning compared to replacing and changing the media was approximately one-tenth.

It was recommended to dose triple⁷ Colloidal Concentrate at a rate of 1:3000 in the backwash cycle to keep the media filter running at optimum levels. This greatly reduced the labour input. The frequency of the back-wash cycle reduced from every 3 hours to only once a day, saving energy and increasing daily output.

What does an inefficient filtration system cost?

- > Increased energy consumption
- > Increased wear on pumping equipment
- > Reduction in effluent quality
- > Reduction in the throughput of the treatment plant.
- > Increased backwash water.

> *triple⁷ Colloidal Concentrate reduces the accumulation of contaminants in the ultraviolet filters, pipework and valves.*

> *triple⁷ Colloidal Concentrate will not deteriorate metal surfaces and may reduce the use of toxic additives such as Chlorine.*

Product Application Sheet – REJUVENATION OF MEDIA

FILTRATION SYSTEMS Cleaning of Filters & R.O. Membranes Filter Media Cleaning



Removal of sludge from the media filter at a remote tourist attraction, where the water is recycled and used for toilet flushing. The media filter unit is positioned after the sewerage treatment plant, filtering the water before it goes to the settling lagoons/wet lands.

Before cleaning



Artracite media dug out cleaning



Cleaning liquor showing released sludge into the water column



Backflush during



**After Cleaning
triple⁷ Colloidal Concentrate
was added to the media
filter,
then the back-wash cycle
was run constantly recycling
for
approx. 15 minutes, then the
water was dumped.
The process was repeated
twice.**

Product Application Sheet – REJUVENATION OF MEDIA FILTRATION SYSTEMS Cleaning of Filters & R.O. Membranes

Media Filters



Reverse Osmosis Filters



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or

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