



Arsenic Removal: LayneRT

Arsenic Removal Media

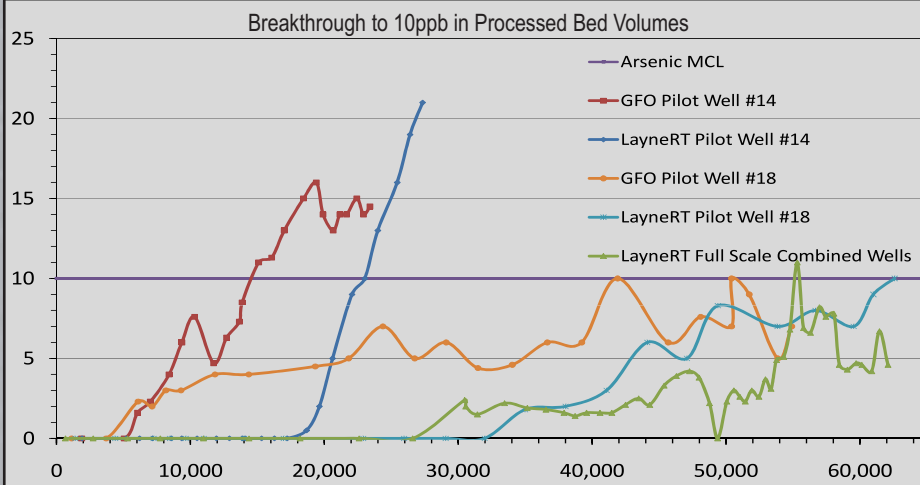


Meet the Arsenic MCL Using the Best Arsenic Removal Media Available

The LayneRT difference: LayneRT™ has been developed as a significant improvement in the efficiency and longevity of adsorptive arsenic media, thus lowering the operating cost associated with removing arsenic (arsenate and arsenite) from water. Its ideal blend of selectivity and durability means that LayneRT can reliably and efficiently reduce arsenic to safe consumption

LayneRT is a long lasting, high capacity technology that provides rapid adsorption kinetics without generating any fines. Not only does LayneRT provide optimal flow dynamics, no backwashing (no onsite residuals), and a low pressure drop, but it is also regenerable, thereby mitigating the liability associated with waste disposal.

LayneRT - the Best Selection for Blended or Full Flow Arsenic Treatment



Wells located in Tucson, Arizona area.

The LayneRT Difference:

- NSF/ANSI Standard 61 Certified
- Longer lasting
- Higher capacity
- Lower operating cost
- Proven iron chemistry
- No fines
- No backwash
- Regenerable
- Limits liability associated with disposal
- Optimal flow dynamics
- Rapid adsorption kinetics
- Low pressure drop
- Spent media passes Toxicity Characteristic Leaching Procedure (TCLP)



Certified to NSF/ANSI 61

Component	Well #14 mg/L	Well #18 mg/L
As	0.028-0.032	0.009-0.013
pH	8.2-8.4	7.6-8.1
SiO ₂	27	18
Fe	<0.010	<0.030
Mn	0.03	0.04
SO ₄	25	25
PO ₄	<0.150	<0.250
Species	V:100%	V:100%



Layne Christensen Company

Water Technologies:
Define
Develop
Deliver



Comparison of Arsenic Sorbents

Sorbent	LayneRT	GFO/Sorb33	GFH	Adsorbsia
Company	Layne Christensen	Severn Trent, AdEdge	Siemens	Dow
Material	Hybrid Resin Bead	Granular	Granular	Granular
Backwash	Not Required	Yes	Yes	Yes
Arsenic Residuals	No residuals or fines	Yes-backwashed fines	Yes-backwashed fines	Yes-backwashed fines
Disposal	Regenerable/Return/Landfill	Landfill	Landfill	Landfill
Regenerable	Yes	No	No	No
Minimum Contact Time	2 minutes	4 minutes	4 minutes	2 minutes
Chemistry	Hydrous Iron Oxide	Hydrous Iron Oxide	Hydrous Iron Oxide	Titanium Dioxide

Material: LayneRT is comprised of a hybrid resin bead that is attrition resistant and does not generate fines. Media comprised of granulated materials are friable and generate fines, which can lead to increased backpressure during operation requiring backwash, additional system complexity and more frequent maintenance.

No Backwash Required: Backwash requirements add operational complexity, and generate fines containing an arsenic residual.

Arsenic Residuals: LayneRT requires no backwash and does not generate arsenic-containing fines.

Disposal: LayneRT in residential systems may be returned for environmentally responsible disposal. Spent LayneRT in municipal systems is regenerable. Although most spent media pass TCLP, research supports that they leach arsenic under actual landfill conditions. "TCLP Underestimates Leaching of Arsenic from Solid Residuals Under Landfill Conditions" Ghosh A., Mukiibi M., Ela W., Environ. Sci. Technol., 2004, **38(17)**, pp 4677-82.

Regenerable: Regeneration lowers long-term operating and maintenance costs and reduces the volume of solid waste disposal by a factor of ten!

Minimum Contact Time: A lower contact time enables systems using LayneRT to have a smaller system footprint, reducing facility requirements and system costs.

Chemistry: Hydrous metal oxides are the industry accepted chemistry for binding arsenic.

The Layne Media Assurance Program

The annual media regeneration costs of PES systems using LayneRT can be determined by completing a pilot test.

Our Pilot/Performance program is unique in the industry and is illustrative of our confidence in our technologies and in the systems that we install.

Pilot evaluations, which are usually completed in 3-6 months, provide enough information for Layne to warrant your annual media regeneration costs under certain conditions.

Characteristic	Value
Structure	Macroporous Polystyrene Bead
Functional Group	Hydrous Iron Oxide
Bulk Density (as sold)	790–840 g/l (49–52 lb/cu.ft)
Specific Gravity	1.25–1.30 g/ml
Minimum Contact Time	2 minutes
Operating Temperature Range	1–80° C (33–172° F)
Particle Size	300–1200 microns
Operating pH Range	5.5–8.5

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Contact your
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