



SQUARE
PHARMACEUTICALS LTD.
BANGLADESH

Case Study: Square Pharma



Project ID:

Company:	Square Pharmaceuticals
Location:	Gazipur, Bangladesh
Year:	2014
Description:	Pre-treatment for Reverse Osmosis and UV
Goal:	Protect the UV-unit and the membranes from ferric and bio fouling
Capacity:	60 m ³ /hour
Water Source:	Ground Water

The Problems:

Square Pharmaceuticals, the largest pharmaceutical company in Bangladesh, had an existing pre-treatment to a Reverse Osmosis and UV system, which included:

- Multimedia filter
- Activated Carbon Column
- 5 micron Cartridge Filter

The main problem was Pseudomonas bacteria growth in sand and carbon filters.

Items	Existing Values	Required Value
Fe (mg/L)	10	< 0.3
As (ug/L)	8-10	< 5
Turbidity (NTU)	Up to 10	< 3
Pseudomonas bacteria (units/100 ml)	>1000	<1

Technical Solutions:

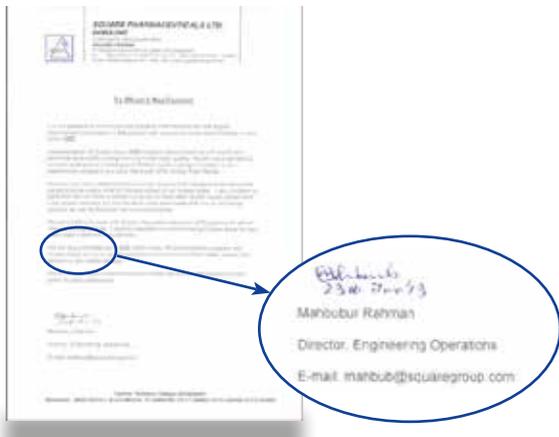
The existing pre-treatment was replaced with the following system:

- Aeration of the ground water with a detention time of two (2) hours using Dryden Aqua Air Diffusers. Aeration capacity: 60 m³/hr
- Pre-coagulation of the water with Poly Aluminum Chloride (PAC), followed by mixing the chemical in a Dryden Aqua's Zeta Potential Mixer (ZPM)
- Filtration with a pressure filter using Dryden Aqua Activated Filter Media (AFM[®]) Grade 1, at 5 meters/hour filtration velocity
- There is also a Dryden Aqua DryOx treatment once a week to deal with bacteria in the aeration tanks, and on filter shell / laterals.



Results:

Items	Existing Values	Required Values	After Treatment
Fe (mg/L)	10	<0.3	0.03 ✓
As (ug/L)	8-10	<5	3 ✓
Turbidity (NTU)	Up to 10	<3	< 0.6 ✓
Pseudomonas bacteria (units/100 ml)	>1000	<1	<1 ✓



Testimonials:

"...implementation of the Dryden Aqua AFM[®] systems has provided us with significant performance benefits..."

"...we will continue to work with Dryden Aqua and implement AFM[®] systems for all our manufacturing facilities..."

"...we are now committed to a multi-million dollar effluent treatment program with Dryden Aqua as one of our key partners..."