

PROJECT PROFILE

ON

PACKAGED DRINKING WATER (MINERAL WATER)

Month & Year
Aug 2010

**PREPARED BY
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Supported by

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STIFTUNG **FÜR DIE FREIHEIT**

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1. Introduction

Availability of good potable water without any contaminants directly from any water source is difficult. This calls for purification of water before consumption at the consumer level. In households, various mechanisms are adopted such as boiling, filtration etc., but in offices and during travel the process of purification is difficult. In such situations, the availability of mineral water is advantageous and therefore mineral water finds a wide market acceptance.

2. Market

The market for the supply of potable mineral water is wide. In all metropolitan cities and towns, the product is widely accepted in offices, restaurants, railway stations, bus stands, and hospitals. Bottled water is also available in all “A”, “B” and “C” class retail outlets; bakeries and sweet shops; pharmacies; petrol bunks and telephone booths. Many households have resorted to purchasing purified water in cans.

3. Packaging

Drinking water is packed in PET or LDPE bottles of 1 litre, 2 litres and 5 litres capacity. It is also filled in PET jars and food grade carboys of 10 to 12 litres capacity. It can also be supplied in pouches of 200 ml and 500 ml capacity. The present project envisages filling drinking water in carboys of 25 litres capacity.

4. Production capacity

- The plant will be in operation for one shift a day of 12 hours duration.
- The plant operates to a production capacity of 1500 litres per hour.
- The estimated production per day is 18000 litres.
- The total production per month will be 4.5 lakh litres, while the annual production is estimated at 5.4 million litres.
- The time period required for achieving full capacity utilization is one year.

5. Sales revenue

- The project envisages filling in cans or carboys.
- The ex factory selling price per 25 litre carboy is Rs. 23.00
- The total sales revenue per month for 4.5 lakh litres of water will be Rs. 4.14 lakhs while that per annum will be Rs. 49.68 lakhs.

6. Production process outline.

The raw water is purified by using the “reverse osmosis” system. Adoption of this system is obligatory for any processor. Raw water to be processed is first collected in tanks. The water is pumped into the processing line at a specific flow rate adjusted to 1500 litres per hour. The water first passes through sand filters for trapping undissolved impurities. The water after filtration is passed through an activated carbon filter for removal of colour and odour. It is then passed through a series of micro filters comprising 5 microns, 1 micron and 0.4 micron followed by passage through the reverse osmosis membrane. The water free from heavy metals and other contaminants finally passes through the ultraviolet disinfecting system for terminal purification and the ozonisation apparatus before being packed in bottles of 1 litre capacity. The bottles after being capped are placed in cartons with a dozen bottles in each carton.

7. Quality specifications

Drinking water must conform to the guidelines laid down by the World Health Organization, which is reproduced below.

SI	Characteristics	Value
1	Arsenic	0.050 mgms per litre
2	Cadmium	0.005 mgms per litre
3	Chromium	0.050 mgms per litre
4	Cyanide	0.100 mgms per litre
5	Flouride	1.500 mgms per litre
6	Lead	0.050 mgms per litre
7	Mercury	0.001 mgms per litre
8	Nickel	0.100 mgms per litre
9	Nitrate and nitrite nitrogen	10.00 mgms per litre
10	Chlorides	250 mgms per litre
11	Nitrite nitrogen	1.00 mgms per litre
12	Sulphates	400 mgms per litre
13	Chlorides	250 mgms per litre
14	Hardness as calcium carbonate	500 mgms per litre
15	Total dissolved solids	1000 mgms per litre
16	Aluminum	0.200 mgms per litre
17	Copper	1.00 mgms per litre
18	Iron	0.300 mgms per litre
19	Manganese	0.100 mgms per litre
20	Sodium	200 mgms per litre
21	Zinc	5.00 mgms per litre
22	Chlorophenols	0.100 mcgs per litre
23	Chloroform	30.0 mcgs per litre
24	D.D.T.	1.000 mcgs / litre
25	Heptachlor	30.00 mcgs / litre
26	Lindane	3.000 mcgs / litre
27	Monochlorobenzene	3.000 mcgs / litre
28	1-4 di chloro benzene	0.100 mcgs / litre
29	Colour	15 T.C.U
30	Turbidity	5 N.T.U
31	Taste	not objectionable
32	pH	6.5 to 8.5
33	Coliforms	absent

8. Pollution control measures

Not necessary as there are no pollutants or effluents.

9. Energy conservation measures

Common measures will do.

10. Land and construction cost for the proposed unit

Land - 0.5 acres Rs. 2.00 lakhs

SI	Description	Sq. feet
1	Processing area	1000
2	Carboy store room	200
3	Other raw materials storage room	200
4	Finished goods storage room	200
5	Finished goods storage room	200
6	Laboratory	200
7	Office space	200
8	Machinery spares room	100
9	Toilet space	100
10	Miscellaneous space	100
11	Total	2500

Construction cost – Rs. 800 per square foot

Total cost of civil works - 20.00 lakhs

Total cost of land and civil works – Rs. 22.00 lakhs.

11. Costing of machinery and equipment

- Complete reverse osmosis system with activated carbon filter, sand filter, reverse osmosis membranes; filters 0.5, 0.2 microns; UV disinfecting system; ozonator; stainless steel storage tanks; pile lines and accessories. The entire system is rated to process at 1500 to 2000 litres per hour. Cost of machinery – Rs. 10.80 lakhs.
- Laboratory equipment – Rs. 1.00 lakh
- Total cost of machinery and equipment – Rs. 11.80 lakhs.

12. Project cost

SI	Description	Rs. lakhs
1	Land	2.000
2	Civil works	20.000
3	Plant machinery	10.800
4	Laboratory equipment	1.000
5	Transport vehicle (1 LCV)	7.500
6	Pollution control equipment	0.000
7	Energy conservation equipment	0.000
8	Cost of power connection	0.250
9	Cost of electrification	0.500
10	Erection and commissioning	0.900
11	Cost of machinery spares	0.500
12	Cost of office equipment	1.000
13	Cost of 2000 carboys of 25 litres capacity	2.000
14	Company formation expenses	0.100
15	Gestation period expenses	0.500
16	Sales tax registration expenses	0.100
17	Initial advertisement and publicity	2.000
18	Contingencies	0.500
19	Working capital margin money	1.100
20	Total	50.750

13. Working capital requirements per month

a. Salaries and wages

SI	Description	No of persons	Total salary / month (Rs. lakhs)
1	Production Supervisor	1	0.150
2	Chemist	1	0.100
3	Skilled workers	2	0.120
4	Unskilled workers	2	0.080
5	Packing workers	2	0.080
6	Administrative staff	1	0.100
7	Sales coordinators	3	0.300
8	Van driver	1	0.070
9	Total	13	1.000

b. Raw material requirement per month

SI	Description	Qty	Rate / kl (Rs)	Value (Rs. lakhs)
1	Water	500 KL	10.00	0.050
2	Regeneration chemicals	100 kgs	15.00	0.015
3	Activated carbon	50 kgs	35.00	0.018
4	Total raw material			0.083

d. Utilities per month

SI	Description	Rs. lakhs
1	Power 5000 kwh @ Rs. 5.50 per unit	0.275
2	Water	0.000
3	Boiler fuel	0.000
4	Total utilities	0.275

e. Contingent expenses per month

SI	Description	Rs. lakhs
1	Rent for processing shed	0.000
2	Postage and stationery	0.010
3	Telephones, fax etc.	0.050
4	Consumable stores	0.010
5	Repairs and maintenance	0.075
6	Local transports, loading and unloading	0.100
7	Advertisement and publicity @ 3% of sales	0.135
8	Insurance	0.008
9	Sales expenses @ 3% of sales	0.135
10	Miscellaneous expenses @ 3% of sales	0.135
11	Trade incentives @ 3% of sales	0.135
12	Taxes	0.000
13	Replacement of damaged carboys	0.600
13	Total contingent expenses	1.393

f. Total working capital requirement per month

SI	Description	Rs. lakhs
1	Salaries and wages	1.000
2	Raw material and packaging material	0.083
3	Utilities	0.275
4	Contingent expenses	1.393
5	Total	2.751

14. Means of finance

SI	Description	Rs. lakhs
1	Total Project Cost	50.750
2	Equity	16.747
3	Debt	34.003
4	Working capital margin money	1.100

15. Financial analysis

SI	Description	Rs. lakhs
1	Total recurring cost per year	33.012
2	Depreciation on land and building	2.200
3	Depreciation on machinery and vehicle	1.930
4	Depreciation on furnaces	0.000
5	Depreciation on moulds and fixtures	0.020
6	Depreciation on office equipment	0.100
7	Interest on long term loan @ 13.5%	4.590
8	Interest on short term borrowings@ 13.5%	0.223
9	Total cost of production	42.075

16. Turnover per year

SI	Item	Qty	Rate/unit (Rs)	Total Rs. lakhs
1	Mineral water	5.4 million litres	Rs. 23 per 25 litres	49.68

17. Viability analysis

SI	Description	Value
1	Net profit before income tax (Rs. lakhs)	7.605
2	Net profit ratio	15.3%
3	Internal rate of return	23.8%
4	Break even percentage	48%
5	Debt service coverage ratio	2.104

List of machinery suppliers for Mineral Water

1. Aqua Filsep, A / 1 / 1, Chinubhai Towers, Opp. Handloom House, Above IOB, Ashram Road, Ahmedabad 380009, Gujarat.; Tel: 079 - 26580047; Fax: 079 - 26584069
2. Aqua Purification Systems, 23, Kumaran Nagar, Reddipatty, Jagir Ammapalayam, Salem 636302, Tamil Nadu.; Tel:0427 - 2341911; Fax:0427 - 2341911
3. Aqua Tech Industries India Private Limited, 221 - 224, Unique Industrial Estate, Prabhadevi, Veer Savarkar Marg, Mumbai. 400025.; Tel: 022 - 24222049; Fax: 022 - 24361778
4. Aquazone Systems and Engineering, 46 - 52, Cellar Shalimar Complex, Mahalakshmi Cross Roads, Paldi, Ahmedabad. 380007, Gujarat.; Tel: 079 - 26612574; Fax: 079 - 26614644
5. CWG Water Treatment Private Limited, 291 - Phase II, Industrial Area, Panchkula 134113, Haryana.; Tel: 0172 - 2570029; Fax: 0172 - 2563559
6. Clear Ion Private Limited, Plot No. 28, Sector 24, Faridabad 121005, Haryana.; Tel: 0129 - 2231500; Fax: 0129 - 2231499
7. Metito Water Care India, Ansari Compound, Shivaji Nagar, Jarimari, Andheri - Kurla Road, Mumbai 400069.; Tel: 022 - 26043914; Fax: 022 - 26458870
8. Microfilt India Private Limited, 23, Vardhaman Service Industries, L.B.S. Marg, Vikhroli West, Mumbai 400083.; Tel: 022 - 25773021; Fax: 022 - 25787251
9. Indian Ion Exchange and Chemical Industries, D-11, Diamond Park, GIDC, Naroda, Ahmedabad 382325, Gujarat.; Tel: 079-2819065; Fax: 079-22816470
10. Shivsu Watek Private Limited, 14, Spur Tank Road, Chennai 600031.; Tel: 044-28362461; Fax: 044 - 28362470
11. U.V.Tech Systems and Water Technologies, 160 / 3, Rajani House, Opp. Don Bosco High School, L.T.Road, Borivali West, Mumbai 400091.; Tel: 022 - 28013601; Fax: 022 - 28621506