MASAR تقنيات مسار Technologies, Inc.

Membrane Desalination Plants Design, Operation & Performance

Monitoring, Optimization & Innovative Fouling Solutions

TWO-DAY TRAINING COURSE AGENDA

By: Eng. Mohamad Amin Saad - MASAR Technologies, Inc., USA

http://www.masar.com/training/cdorder/

Day 1	0900-1700
WELCOME & INTRODUCTION – COURSE & CD REVIEW	0900-0915
I. MEMBRANE PLANT DESIGN CONSIDERATIONS ❖ Technical Parameters ❖ Feed Chemistry & Characteristics ❖ Feed Sources –Wells & Open Intakes	0915-1030
REFRESHMENTS BREAK	1030-1100
❖ Pretreatment Requirements ➢ Value & Objectives of Pretreatment ➢ Biological Control ♦ Disinfection ➢ Colloidal Control ♦ Filtration Systems ♦ Coagulation & Flocculation ➢ Scale Control ♦ Acidification ♦ Softening ➢ Anti-Scale Treatments	1100-1230
LUNCH BREAK	1230-1400
II. SYSTEM OPERATION OPTIMIZATION ❖ Membrane System ➢ Recovery Ratio Impact ➢ Optimization Considerations ➢ Brine & Product Staging Configurations ➢ System Integration – Hybrid Plants ➢ Pilot Systems – Surface Seawater RO Plants ➢ Membrane Selection, Additions & Replacements	1400-1530
III. ENERGY CONSUMPTION OPTIMIZATION ❖ Energy Recovery	1530-1630
OPEN DISCUSSION, QUESTIONS AND FEEDBACK	1630-1700
CONCLUSION	1700

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Day 2	0900-1700
IV. PERFORMANCE MONITORING & EVALUATION ❖ Data Collection, Monitoring & Reporting ❖ ASTM Data Normalization ❖ Performance Trending ❖ Real-Time, Early-Warning Monitoring & Fouling Detection ➢ Silent Alarm™ Monitoring & Optimization Technology ➢ MASAR® Program Applications	0900-1030
 REFRESHMENTS BREAK 	1030-1100
V. MEMBRANE FOULING CONTROL STRATEGIES ❖ Control & Prevention Philosophy ❖ Types of Fouling & Scaling ➢ Biological Fouling ➢ Organic Fouling ➢ Colloidal Fouling ➢ Metal Oxide Fouling ➢ Scaling (Chemical Fouling)	1100-1230
 LUNCH BREAK 	1230-1400
VI. RO PLANT CASE STUDIES ❖ Case Study A: Fouling Seawater RO Plant ❖ Case Study B: Fouling Brackish RO Plant ❖ Case Study C: Non-Fouling Brackish RO Plant	1400-1430
VII. SYSTEM TROUBLE-SHOOTING GUIDELINES ❖ 7 Golden Rules ❖ Symptoms & Solutions ❖ Specialized Testing	1430-1530
VIII. TOP 30 PRACTICAL PLANT GUIDELINES ❖ Design ❖ Operation ❖ Maintenance	1530-1600
OPEN DISCUSSION, QUESTIONS AND FEEDBACK	1600-1630
CERTIFICATE AWARDS	1630-1700
CONCLUSION	1700