



SERVICIO PARA INTEGRAR  
LA INDUSTRIA CON EL PETROLEO  
México



**ZERO**  
EMISSIONS TECHNOLOGY

© SIIP-MEX SA

# WE TRANSFORM

URBAN/INDUSTRIAL AND PETROLEUM WASTEWATER

# DRINKING WATER



**SOLUTIONS THAT IMPACT LIFE**



# Who we are

**We are a 100% MEXICAN company that was born thanks to the merger of Czech-Mexican capital, focused on the development, production and installation of technologies to process any type of raw water, even contaminated with heavy metals, minerals and biological contaminants on site; using the principle of quantum physics, using electrolytic reactors and Chemical Coagulation of Water.**

**SIIP-MX S.A. DE C.V., is a leading company in the production of Water Treatment and Purification Plants for human consumption, as well as wastewater treatment and congenital water treatment represented by Mexican capital; is part of the corporate integrated by 8 companies..**

**Following a very long tradition of Czech, German and Russian industrial companies, recognized for their great experience in most European countries for the development of electrolysis/flocculation-coagulation/adsorption-filtration processes, under atomic principles to obtain Drinking or Purified Water of excellence.**



# Installations

## Offices SIIP México



## SIIP Mexico Assembly Plant

# Installations



# Our technology



Conventional  
coagulation

Accelerated  
coagulation

**Accelerated coagulation in the water treatment process aims to group the particles dispersed in the water (by canceling out the surface loads), to achieve later, by flocculation, other bulkier and heavier particles that can be separated more easily from the water.**

**The neutralization of the electrical charge of the colloid object of coagulation, is carried out by applying to the water certain salts of aluminum or iron (coagulants); so that trivalent iron aluminum cations neutralize the negative electrical charges that usually surround colloidal particles dispersed in water. Coagulation reactions are very fast lasting fractions of a second from when the particles are put in contact with the coagulant, inside the reactor.**

**Coagulation is achieved by rapid diffusion of coagulant substances in the water, subject to treatment, using means of rapid stirring (static mixer). After the neutralization of the colloidal particles, that is, once the colloidal destabilization has been achieved, the formed particles are in a position to agglomerate, this agglomeration of the discharged particles now helped by a slow agitation. Flocculation is related to the transport phenomena of the particles within the liquid, which are what cause the contact of the coagulated particles.**





# Our technology

## Coagulation / Flocculation

**A series of equipment such as hydrocyclone, static and dynamic mixers, flocculation reactor and filtering supported by electronic dosing pumps, operated by a software of own design.**

**Stabilizing factors are those forces that cause repulsion between the particles of electrostatic forces and the hydration itself. The destabilizing factors are on the contrary the forces of attraction that give rise to the union, among these are the Brownian movement, of the Van der Waals forces and also to a lesser degree the forces of gravity. Coagulation is therefore the process of destabilization of the colloidal particles in order to annul or decrease the repulsion forces.**

- **100% automated process.**
- **Ideal for the Mining-Metallurgical-Petroleum Industry.**
- **Ideal for schools, hospitals, pharmaceuticals, restaurants.**
- **Ideal for natural disaster emergencies.**



# Advantages

- **Cost of m3 treated water \$2.50**
- **Cost of m3 drinking water \$2.00**
- **VERY LOW ENERGY CONSUMPTION**
- **DOES NOT GENERATE ACTIVATED SLUDGE**
- **TAKES UP VERY LITTLE SPACE**



**The development of technologies with the use of electrolysis and coagulation has proven its great efficiency in removing contaminants, BOD/COD, COT, heavy metals, for more than a century in Eastern Europe, with great success.**

**The use of electrolysis/coagulation for drinking water treatments reduces 100% contaminants such as:**

- **Arsenic**
- **Dissolved**
- **Salts Fluorides**
- **Mercury-Cyanide**
- **Ammoniacal Nitrogen**
- **SDT**



# Success Cases



**Contingency 2014  
Chemical waste spill  
from Cananea mine, Sonora**  
Ciudad Obregón  
Álamos  
Etchojoa  
Huatabampo  
Masiaca

**Puebla**  
Antiguo Morelos  
Xicotencatl  
Nuevo Morelos

**Querétaro**  
Querétaro

**Morelos**  
Ocuituco Temixco (Cuentepéc)  
Tetecala de la Reforma Emiliano Zapata  
Temoac Tepalcingo  
Zacatepec Yautepec  
Zacualpan de Amilpas Tlalnepantla  
Atlatlahucan Tezoptlán

**Contingency 2014  
Hurricane Odil,  
Baja California Sur**  
La Paz  
Los Cabos  
San José del cabo

**EDOMEX**  
Nezahualcoyotl  
Chalco  
Ixtlahuaca  
Jocotitlán  
Xonacatlán

**Sinaloa**  
Mazatlán  
Navolato  
Culliacán  
Guasave  
San Ignacio  
Mocorito  
El Fuerte  
Choix  
Guamuchil

**Veracruz**  
Tlacotalpan Jaltipán  
Huatusco Maltrata  
Alvarado Nogales  
Amatitlán Álamo Temapache  
Cosamaloapan Castillo de Teayo

**Yucatán**  
Tepemaxalco  
Teopantlán

**Ciudad de México**  
Ixtacalco

**Quintana Roo**  
Cancún

**Jalisco**

**Puebla**  
Tepemaxalco  
Teopantlán

Nuevo Vallarta  
Barra de Navidad  
La Barca  
Atotonilco El Alto  
Chapala  
Cocula  
Ocotlán  
Poncitlán  
Pihuamo  
Tuxcueta  
Lagos de Moreno  
La Huerta  
Zapotlanejo  
Tamazula de Gordiano  
Tepatitlán de Morelos  
El Salto  
Zapotlán del Rey  
Jamay  
Tototlán  
Gómez Farías

**Michoacán**  
Tancitaro Nocupétaro  
Purépeo Churumuco  
Venustiano Carranza Susupuato  
Brietas Zináparo  
Buenvista Tzitzio

**Contingency 2013  
Hurricane Manuel and Ingrid  
Guerrero**

Copanatoyac  
Pilcaya  
Pedro Ascencio Alquiciras  
Quechultenango  
Chilapa de Alvarez  
Acapulco  
Chilpancingo  
Tixtla  
General Canuto A. Neri  
Cuetzala del Progreso

**Tabasco**  
Villahermosa  
Balancán  
Huimanguillo  
Emiliano Zapata

**Chiapas**  
Tuxtla Gutiérrez  
Amatlán  
El Bosque  
Huitiupán  
Ixhuatlán

**Nayarit**  
Acaponeta  
Santiago Ixcuintla

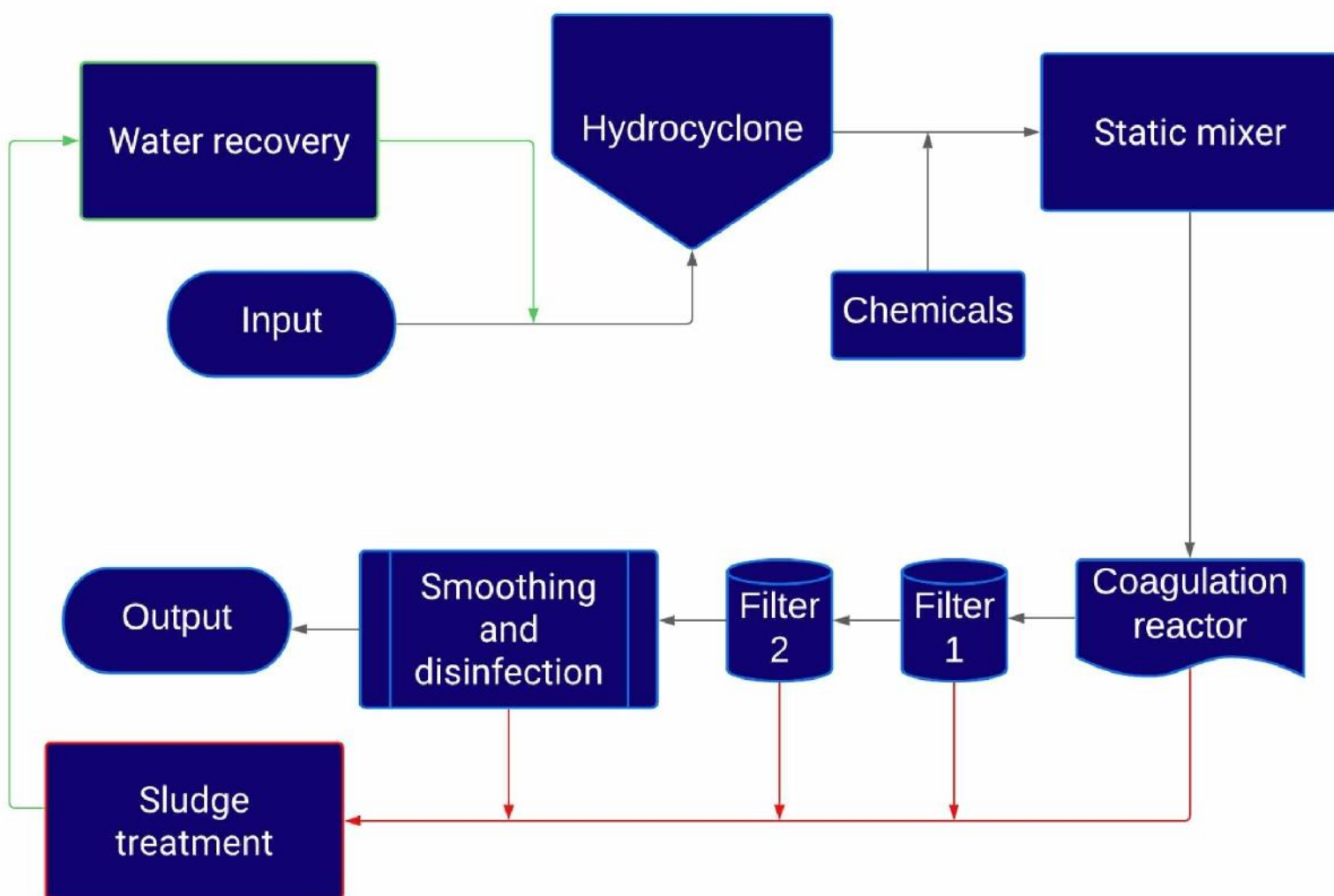
**Aguascalientes**  
Aguascalientes  
jesús María

**Oaxaca**  
San Miguel El Grande  
Teposcolulala  
San Pedro Huilotepec  
Villa de Chilapa de Díaz  
Santa María Guienagati  
San Pablo Huixtepec  
Huaulla de Jimenez  
San Sebastian Nicananduta  
Tlacolula de Matamoros  
Guelatao de Juárez





# Coagulation train SIIP-MX



# URBAN AND INDUSTRIAL WASTEWATER TREATMENT PLANT

EUR/MEX/USA-PTAR-10 LPS

## NEW COMPACT ELECTROLYSIS WASTEWATER TREATMENT SYSTEM

### CAPACITY

10 Lps

### DIMENSIONS AND WEIGHT

Longitude: 20 m

Width: 7 m

Height: 4 m

Normal weight: 24 t

Operating weight: 48 t

### TYPE

Fixed / Mobile

### PROCESSES

Electrolysis

Sedimentation

Oxygenation

Ph estabilización

Filtration

### CHEMICAL ELEMENTS REQUIRED

Sodium Hydroxide

Calcium Hydroxide



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Wastewater treatment plant complying with the standards Clean Water Act (CWA), NSF/ANSI Standard 350 On-site Water Reuse Treatments, Safe Drinking Water Act (SDWA). Drinking Water Contaminants - Standards and Regulations.

# WATER TREATMENT AND PURIFICATION PLANT

## MODEL EUR/MEX/USA-RWT-01

**VERY LOW MAINTENANCE COST**  
**IDEAL FOR EMERGENCIES**  
**LOW POWER CONSUMPTION**



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### CAPACITY

**1.000 LTS/HOUR**

### DIMENSIONS AND WEIGHT

**Length: 6 m**

**Wide: 2.5 m**

**Height: 2.1 m**

**Normal Weight: 820 kg**

**Weight Operation: 2,500 kg**

### TYPE

**Fixed**

**Mobile**

### STORAGE CONDITIONS

**Room temperature**

**+2 as far as +55 C**

**Relative humidity**

**10-95 %**

### PROCESSES

**Chemical Coagulation**

**Silica sand filter**

**Cation resin filters**

**UV filter**

**Activated carbon filter**

### CHEMICAL ELEMENTS REQUIRED BY THE SYSTEM

**Sodium Hypochlorite**

**Flocculant PAC**

**Sodium Hydroxide**

**Sulfuric Acid**



**Water treatment plant / Purifier to process water for human use and consumption, with the standards CLEAN WATER ACT (CWA) and Standard 350 On.site Water Reuse Treatments and Safe Drink Water Act (SDWA) Drinking Water Contaminants - Standards and Regulations. Technology and unique patent in Mexico. Capable of processing contaminated water on site in minutes, resulting in quality water ready to be packaged.**

[www.siip-mx.com](http://www.siip-mx.com)

# WATER TREATMENT AND PURIFICATION PLANT

## MODEL EUR/MEX/USA-RWT-03

**VERY LOW MAINTENANCE COST**  
**IDEAL FOR EMERGENCIES**  
**LOW POWER CONSUMPTION**

### **CAPACITY**

**3.000 LTS/HOUR**

### **DIMENSIONS AND WEIGHT**

**Length: 8 m**

**Wide: 2.5 m**

**Height: 2.5 m**

**Normal Weight: 3,950 kg**

**Weight Operation: 4,500 kg**

### **TYPE**

**Fixed**

**Mobile**

### **STORAGE CONDITIONS**

**Room temperature**

**+2 as far as +55 C**

**Relative humidity**

**10-95 %**

### **PROCESSES**

**Chemical Coagulation**

**Silica sand filter**

**Cation resin filters**

**UV filter**

**Activated carbon filter**

### **CHEMICAL ELEMENTS REQUIRED BY THE SYSTEM**

**Sodium Hypochlorite**

**Flocculant PAC**

**Sodium Hydroxide**

**Sulfuric Acid**



**Water treatment plant / Purifier to process water for human use and consumption, with the standards CLEAN WATER ACT (CWA) and Standard 350 On.site Water Reuse Treatments and Safe Drink Water Act (SDWA) Drinking Water Contaminants - Standards and Regulations. Technology and unique patent in Mexico. Capable of processing contaminated water on site in minutes, resulting in quality water ready to be packaged.**

# WATER TREATMENT AND PURIFICATION PLANT

## MODEL EUR/MEX/USA-RWT-05

**VERY LOW MAINTENANCE COST**  
**IDEAL FOR EMERGENCIES**  
**LOW POWER CONSUMPTION**

### **CAPACITY**

**5.000 LTS/HOUR**

### **DIMENSIONS AND WEIGHT**

**Length: 8 m**

**Wide: 2.6 m**

**Height: 4.5 m**

**Normal Weight: 7,400 kg**

**Weight Operation: 11,500 kg**

### **TYPE**

**Fixed**

**Mobile**

### **STORAGE CONDITIONS**

**Room temperature**

**+2 as far as +55 C**

**Relative humidity**

**10-95 %**

### **PROCESSES**

**Chemical Coagulation**

**Silica sand filter**

**Cation resin filters**

**UV filter**

**Activated carbon filter**

### **CHEMICAL ELEMENTS REQUIRED BY THE SYSTEM**

**Sodium Hypochlorite**

**Flocculant PAC**

**Sodium Hydroxide**

**Sulfuric Acid**



**Water treatment plant / Purifier to process water for human use and consumption, with the standards CLEAN WATER ACT (CWA) and Standard 350 On.site Water Reuse Treatments and Safe Drink Water Act (SDWA) Drinking Water Contaminants - Standards and Regulations. Technology and unique patent in Mexico. Capable of processing contaminated water on site in minutes, resulting in quality water ready to be packaged.**

# WATER TREATMENT AND PURIFICATION PLANT

## MODEL EUR/MEX/USA-RWT-15

**VERY LOW MAINTENANCE COST**  
**IDEAL FOR EMERGENCIES**  
**LOW POWER CONSUMPTION**

### **CAPACITY**

**15.000 LTS/HOUR**

### **DIMENSIONS AND WEIGHT**

**Length: 14 m**

**Wide: 3.10 m**

**Height: 4.10 m**

**Normal Weight: 11,000 kg**

**Weight Operation: 22,000 kg**

### **TYPE**

**Fixed**

**Mobile**

### **STORAGE CONDITIONS**

**Room temperature**

**+2 as far as +55 C**

**Relative humidity**

**10-95 %**

### **PROCESSES**

**Chemical Coagulation**

**Silica sand filter**

**Cation resin filters**

**UV filter**

**Activated carbon filter**

### **CHEMICAL ELEMENTS REQUIRED BY THE SYSTEM**

**Sodium Hypochlorite**

**Flocculant PAC**

**Sodium Hydroxide**

**Sulfuric Acid**



**Water treatment plant / Purifier to process water for human use and consumption, with the standards CLEAN WATER ACT (CWA) and Standard 350 On.site Water Reuse Treatments and Safe Drink Water Act (SDWA) Drinking Water Contaminants - Standards and Regulations. Technology and unique patent in Mexico. Capable of processing contaminated water on site in minutes, resulting in quality water ready to be packaged.**

# WATER TREATMENT AND PURIFICATION PLANT MODEL EUR/MEX/USA-RWT-15



# WATER TREATMENT AND PURIFICATION PLANT

## MODEL EUR/MEX/USA-RWT-15

### MAIN COMPONENTS

- Digital DOSING PUMP for OXIDANT with Redox controller.
- Filtration by zeolite bed (5  $\mu$ m), housed in a polyamide tank.
- Digital DOSING PUMP for CHLORINE REDUCER with Redox controller.
- Analog dosing pump for ANTIFOULING.
- Polypropylene MICROFILTRATION cartridges (1  $\mu$ m), housed in PVC or polyamide housings.
- HIGH PRESSURE PUMP in stainless steel SUPER DUPLEX, with frequency inverter and energy recuperator.
- Reverse OSMOSIS membranes in polyamide, housed in pressure tubes of polyester reinforced with fiberglass.
- PLC with touch control panel. Monitoring of operation parameters.
- Electrical cabinet with transformer, protections and starts.
- STRUCTURE: Carbon steel skid with protective paint.
- Pump and Tank for the Sweeping of Reverse Osmosis Membranes.



### OPTIONS

- Acid/Base Dosage for Ph ADJUSTMENT.
- Residual CHLORINE dosage for the disinfection of treated water.
- Remineralization with CALCITE BED (calcium carbonate).
- Silex and PYROLISITE filter bed, for the removal of suspended solids and reduction of iron and manganese.
- GSM REMOTE CONTROL SYSTEM. Includes display, remote control license, SD memory card and GPRS router.
- ModBus TCP/IP or RTU communication.
- Equipment installed in Maritime Container from 20 to 40 feet with thermal, acoustic insulation and air conditioning equipment options.
- Skid automated CIP cleaning composed of pump, tanks, dispensers, immersion resistance and electrical cabinet.



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México



# Success cases

## Oil Industry



**WE SOLVE OIL SPILLS, RECOVER OIL AND REMEDY THE ENVIRONMENT  
(PEMEX, SEP. 2017)**



[www.sip-mx.com](http://www.sip-mx.com)

# Success cases

Transformation of wastewater with hydrocarbons in drinking water



# Main elements of our technology



**Hydrocyclone**



**Static Mixer**



**Coagulation Reactor**



**Sand/Carbon Filter**

# We are distributors of filter material, chemicals and spare parts.



# We are distributors of filter material, chemicals and spare parts



Aigua  
Nanotech

**BENEFITS OF USING Aigua**  
A wastewater treatment plant (WWTP) is designed mainly based on the organic load, organic load measured through a chemical analysis to determine the Biological Oxygen Demand (BOD) and this measurement will give us the size of the WWTP (tank size, residence times, etc.) With Aigua we lower the BOD within a range of between 70% -85% so that, the residence time drops in the same proportion with what:

- Saving in electrical energy
- Saving in mechanical maintenance
- Saving in the handling and final disposal of sludge
- Savings in the maintenance of metal structures by corrosion
- Increase in water production with the same facilities
- Bactericidal effect better than with chlorine without hazardous waste
- Elimination of bad odors within the WWTP
- Elimination of mosquito larvae
- Operating costs begin to decrease from 3 - 4 months by 25% - 30%
- Wastewater already treated can be reused for services, irrigation, washing patios and sidewalks or re-injected into aquifers since being an effective bactericide, re-injected water will not contaminate aquifers.
- It can be used in any body of water that contains organic matter to be degraded.



# We are distributors of filter material, chemicals and spare parts

## NanoTech Eco Liner Coating:

NanoTech Coatings Eco-Liner is a high-performance membrane that has many applications including protecting pipes, storage tanks, springs, cables, boat bridges, concrete pillars and other surfaces from corrosion caused by liquids and sediments including salt water, oil, other corrosives and chemicals, Eco-Liner provides a thick coating (10 mils) that gives greater long-term performance than other similarly tested systems.



## Technical Details

- Finish Color: Opaque
- Application: All Metals, Steel, Stainless Steel, Galvanized Steel, Aluminum, Copper, Brass, Wood, Concrete, Asphalt, Tar, Paints and more.

ECO LINER



# WATER TREATMENT AND PURIFICATION PLANT

# MODEL EUR/MEX/USA-RWT-15

## Rental of mobile water treatment plants



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# Supply of purified water in emergencies



SERVICIO PARA INTEGRAR  
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# We are distributors of chemical products



**PAC**  
POLIHIDROXICLORURO DE ALUMINIO



**NaOH**  
HIDRÓXIDO DE SODIO



**NaClO**  
HIPOCLORITO DE SODIO

## Electric generators



# Additional services we offer

Rental of Vactor trucks and water pipes



[www.sip-mx.com](http://www.sip-mx.com)

# Additional services we offer

Freight to the whole republic



# Additional services we offer

Equipment rental in contingencies. (FLOODS, EARTHQUAKES, and other similar things.)



Oaxaca



Guerrero



Tabasco y Chiapas

# Solution for wastewater from industrial parks or industry in general.

## Industries:

- Textile
- Soft drink/brewery
- Metal-Mechanical
- Metallurgical
- Mining
- Paints
- Chemical Pharmaceutical
- Fishing
- Dairy
- Pig
- Livestock
- Paper
- Automotive



# River remediation



Lerma River, Edo. de Mex.



Coatzacoalcos River, Veracruz



Atoyac River, Puebla.



Apatlaco River, Morelos.



San Pedro River, Aguascalientes



Santiago River, Jalisco