



Now offers  
**BIORESS TECHNOLOGY**  
An innovative blend of products and  
service for water and soil reclamation

\*Keeping up with our pledge to prosper by innovating for people and the planet

# BIORESS PRODUCT OVERVIEW

- ▶ · Is organic, non-pathogenic and non-toxic microbial composite per national science foundation
- ▶ · A composite of microorganisms approximately 80% aerobic and 20% anaerobic betel to plant life
- ▶ - bacteria decompose organic matter, fixate nitrogen and reduce soil salinity
- ▶ - fungi decompose organic matter and participate in the plant nutritional cycle
- ▶ - algae fixate nitrogen in soil and solubilize phosphates liberating phosphorous in soil
- ▶ -Archaea fixate nitrogen and play a role in the plant carbon cycle

# PRODUCT OVERVIEW (CON'D) What sets BIORESS apart from competitive systems?

## **DIVERSITY OF MICROORGANISMS**

- ▶ It includes over 68 species of bacteria
- ▶ 36 species of fungi
- ▶ 17 species of archaea
- ▶ 6 species of algae

## **METICULOUSLY DESIGNED**

- ▶ A carefully chosen wide range of microbial population to maintain the symbiotic interactions of species as they work together in nature. This designed exponentially improves the effectiveness of BIORESS.
- ▶ Single source products have very limited efficacy as they do not achieve symbiotic effect of multiple species in supporting biodiversity and reclamation.

# BIORESS PROCESS OVERVIEW

- ▶ Comprehensive Site Assessment
  - ▶ Samples collection and testing in our in-house laboratory
- ▶ Top Soil Removal
  - ▶ Utilizing Flowfect's special and efficient Vacuum Technology
- ▶ Delivering BIORESS remediation product
- ▶ Giving time for product to do its work
- ▶ Post Treatment Analysis
- ▶ Final Analysis
- ▶ Issuance of Documentation (from a neutral 3<sup>rd</sup> party laboratory) confirming successful results
- ▶ Same steps are followed for water reclamation

# Soil Reclamation Case Study # 1





# Soil Reclamation Case Study # 2



# Soil Reclamation Case Study # 3





# Water Reclamation Case Studies





# Water Reclamation Case Study # 1

## POND # 1

Day #	Alkalinity	BOD (%)	CBOD (%)	Nitrogen-Ammonia	Hydrocarbon	Phosphorus	TDS	TSS
1	1772	8923	8560	464	Too high to report	198.4	5170	38850
3	620	12410	10437	3.04	Too high to report	219.6	6840	17150
4	625	8467	7522	3.54	3103	203.2	6870	19750
5	630	4780	4393	0.09	381	134.8	6880	11350
6	625	4013	3473	0.46	356	295	7210	10750
7	790	3278	3052	10.6	286	132	7420	9950
9	900	1896	1539	86.8	22.4	160	5450	9100
13	1060	843	792	154	< 5	164	5100	8000
20	485	350	292	3.9	9.1	152	3440	5300
% Reduction	73	96	97	99	99.7	23	33	86

# Water Reclamation Case Study # 2

## POND # 3

Day #	Alkalinity	BOD (%)	CBOD (%)	Nitrogen-Ammonia	Hydrocarbon	Phosphorus	TDS	TSS
1	1200	1485	1277	288	6.8	151	4420	128
3	1425	102	71	236	< 5	130	3670	200
4	1415	68	41	212	< 5	128	3645	185
5	1330	50	41	138	< 5	212	3630	340
6	1320	46	42	122	< 5	124	3845	280
7	1305	44	42	122	< 5	130	3820	280
9	1210	55	46	89	< 5	131	3625	200
13	1090	41	38	48	< 5	138	3775	243
20	935	12	9	11.6	< 5	131	3380	98
% Reduction	22	99	99	96	99	13	24	23

# Compounds treated and degraded in both water reclamation studies

Styrene process tars	Bis(2chloroethylhexyl)phthalatc	Biphenyl	Ethyl methyphenol
Methacrylate process tars	Dichlorobenzene isomers	Acetone	Chlorobenzene
Methyl Ethyl Ketone	Di-n-butyl phthalates	Methyl pentanone isomers	Chloroform
Oxolane	Di-n-octyl phthalates	Methyl propano	Dichloroethane isomers
Benzene	Fluoranthene	Cyclohexane	Methylene chloride
Carbon Tetrachloride	Fluorene	Methyl cyclohexane	Methylene bromide
Toluene	Hexachlorobenzene	Benzenamine	Dichloroethylene isomers
Ethylbenzene	Naphthalene	Ethyl Cyclohezane	Trichloroethylene isomers
Styrene	Phenanthrene	Methycyclopentane	Vinyl Chloride
O,m,p Xylene	Pyrene	PCB	Tetrachloroethylene
Phenol	Dibenzofuran	Cresol	Anthracene
Methylstyrene isomers	Methylnaphthalene isomers	Cyanide	Benzo (a) anthacene
Dimethyl Benzenemethanol	Cyclohezene-1-yl-benzene	Oil and grease	Bis (2 chloroethyl) ether
Dimethyl phenol isomers		Produced Water (salt)	

# Samples of Reclaimed Water as a function of time





# Summary-Flowfect's BIORESS Soil and water reclamation system

- ▶ 2 Component System
  - ▶ Product and Process
- ▶ Carefully Designed Product
  - ▶ Non Pathogenic
  - ▶ Contains are large variety of microbes
- ▶ Expertise and Innovation Based Process
  - ▶ In-house laboratory facility
  - ▶ Comprehensive Assessment and Optimized Treatment
- ▶ In Case of Questions and Inquiries, Contact **FLOWFECT** at
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