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AguaRaider (E&P West Texas Produced Water) Test (Pre/Post Wastewater Pretreatment Module)
'Clean Brine' Projected Quality

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Unit	Pre-Result	Post-Result	MDL
1,2,4-Trimethylbenzene	ug/L	103	ND	0.170
1,3,5-Trimethylbenzene	ug/L	39.3	ND	0.170
2-Butanone (MEK)	ug/L	127	12.5	2.64
4-Isopropyltoluene	ug/L	7.80	ND	0.170
Acetone	ug/L	2070	719	2.66
Benzene	ug/L	1590	ND	0.200
Carbon disulfide	ug/L	0.512	ND	0.220
Cyclohexane	ug/L	1400	ND	0.130
Ethylbenzene	ug/L	62.3	ND	0.190
Isopropylbenzene	ug/L	13.7	ND	0.330
m,p-Xylene	ug/L	238.00	ND	0.38
Methylcyclohexane	ug/L	3290	ND	0.09
o-Xylene	ug/L	106.00	ND	0.2
sec-Butylbenzene	ug/L	7.98	ND	0.17
Toluene	ug/L	1220.0	ND	0.17
Xylenes, Total	ug/L	344.00	ND	0.58

% Reduction

99.8%
99.6%
97.9%
97.8%
99.9%
100.0%
57.0%
100.0%
99.7%
97.6%
99.8%
100.0%
99.8%
97.9%
100.0%
99.8%

Average 96.7%

Conc in Clean Brine
Based on 50% Evaporation Eff

Organics will remain in the steam out the AguaRadier Evaporation Unit Stack

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Unit	Pre-Result	Post-Result	MDL
2-Methylnaphthalene	ug/L	29.60	ND	0.302
3 & 4 Methylphenol	ug/L	93.60	ND	3.23
Naphthalene	ug/L	9.25	ND	0.386
Phenanthrene	ug/L	5.08	ND	0.333
Phenol	ug/L	94.50	ND	3.35

% Reduction

99.0%
96.5%
95.8%
93.4%
96.5%

Average 96.3%

Conc in Clean Brine
Based on 50% Evaporation Eff

Organics will remain in the steam out the AguaRadier Evaporation Unit Stack

AguaRaider (E&P West Texas Produced Water) Test (Pre/Post Wastewater Pretreatment Module)

'Clean Brine' Projected Quality

Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Unit	Pre-Result	Post-Result	MDL
Methanol	mg/L	6.74	ND	4.000

% Reduction

40.7%

Conc in Clean Brine
Based on 50% Evaporation Eff

<8.0 mg/L

Method: 300.0 - Anions, Ion Chromatography

Analyte	Unit	Pre-Result	Post-Result	MDL
Bromide	mg/L	525	242	10
Chloride	mg/L	61,000	30,400	1,400
Sulfate	mg/L	311.0	147.0	12

% Reduction

53.9%

50.2%

52.7%

Conc in Clean Brine
Based on 50% Evaporation Eff

484 mg/L
60,800 mg/L
294 mg/L

Average 52.3%

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Unit	Pre-Result	Post-Result	MDL
Barium	mg/L	2.63	1.88	0.025
Boron	mg/L	36.9	15.60	0.02
Calcium	mg/L	1490	658	0.5
Iron	mg/L	67.4	0.275	0.05
Lead	mg/L	0.0355	0.0100	0.01
Lithium	mg/L	33.6	15.60	0.02
Magnesium	mg/L	207	95.40	0.25
Manganese	mg/L	2.18	1.8100	0.025
Potassium	mg/L	565	255	2.5
Sodium	mg/L	36,400	16,300	20
Strontium	mg/L	486	248	0.3

% Reduction

28.5%

57.7%

55.8%

99.6%

71.8%

53.6%

53.9%

17.0%

54.9%

55.2%

49.0%

Conc in Clean Brine
Based on 50% Evaporation Eff

3.76 mg/L
31.2 mg/L
1316 mg/L
0.55 mg/L
0.02 mg/L
31.2 mg/L
190.8 mg/L
3.62 mg/L
510 mg/L
32,600 mg/L
496 mg/L

Average 54.3%

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Unit	Pre-Result	Post-Result	MDL
Iron, Dissolved	mg/L	52.0	0.264	0.0500

% Reduction

99.5%

Conc in Clean Brine
Based on 50% Evaporation Eff

0.528 mg/L

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Unit	Pre-Result	Post-Result	MDL
Hardness as calcium carbonate	mg/L	4,570	2,040	5.00

% Reduction

55.4%

Conc in Clean Brine
Based on 50% Evaporation Eff

4,080 mg/L

AguaRaider (E&P West Texas Produced Water) Test (Pre/Post Wastewater Pretreatment Module)

'Clean Brine' Projected Quality

General Chemistry

Analyte	Unit	Pre-Result	Post-Result	MDL
Specific Conductance	umhos/cm	137	73.7	10.0
HEM (Oil & Grease)	mg/L	68.9	ND	1.27
Acidity as CaCO3	mg/L	338	79.7	10.0
Alkalinity	mg/L	353	192	5.00
Total Dissolved Solids	mg/L	99,900	50,400	700
Total Suspended Solids	mg/L	143	9.80	0.700
Ph	SU	6.5	7.200	0.100
Ammonia (as N)	mg/L	210	120	1.20
Chemical Oxygen Demand	mg/L	2,110	438	40.0
Nitrite as N	mg/L	0.0800	ND	0.0400

% Reduction	Conc in Clean Brine Based on 50% Evaporation Eff	
46.2%		
98.2%	2.54	mg/L
76.4%	159.4	mg/L
45.6%	384	mg/L
49.5%	100,800	mg/L
93.1%	19.6	mg/L
42.9%	240	mg/L
79.2%	876	mg/L
50.0%	0.8	mg/L