ESK COALESCING SEPARATOR

2090 Sugarloaf Parkway, Suite 135 ◆ Lawrenceville, GA 30045 ◆ (800) 748-6945
engineering@crystalstream.com ◆ www.CrystalStream.com

WHY IS THE PRODUCT NEEDED?

- As EPA Regulations visible and enforcement of these regulations becomes more of a focus the need for quality products to help meet these regulations increases. Some regulations are already in place and are already being enforced. One of the key regulations is the Clean Waters Act of 1977 and the Water Quality Act of 1987 which states an illicit discharge of oil into our natural waterways is finable up to $37,000 per day and possibly time in jail.

  What is an illicit discharge? According to the Environmental Protection Agency a harmful quantity is an oil discharge that may cause a sheen or file upon, or discoloration of the surface of water. This is equal to 15 PPM (Parts Per Million) or 15mg/l.

ESK COALESCING SEPARATOR IN REVIEW

The ESK Coalescing Separator is housed in a single structure, either a manhole or vault that is typically pretreated by minimally a standard grit chamber. The ESK has standard model sizes capable o handling flows from 15 GPM(Gallons Per Minute) to 4700 GPM. A unique feature of the ESK is its integrated Spill Protection automatic shut off valve, designed so that once the unit reaches maximum storage capacity either through normal collection or during a catastrophic spill the valve completely shuts down the outflow. The ESK also offers additional features that can provide effluent limits as low as 0.5 PPM (0.5 MG/L).

HOW COALESCING WORKS

The ESK utilizes the difference in the specific gravity between oil and water. Using Stoke's Law you can predict how fast an oil droplet will rise or settle through water based on the density and size of the droplet, and the distance it must travel. The ESK is designed to exploit or manage these variables to enhance the separation process.

As oil and water enter the housing unit of the ESK from the grit and debris separation chamber, the oil only has to travel a short distance before it encounters the media utilized in the ESK. The media directs smaller droplets together allowing them to join into bigger droplets thereby increasing the speed at which the droplet will rise to the surface.

The ESK also utilizes a bottom outlet for drawing the clean water out of the system. This is critical in that in order for the oil droplets to exit the system they would have to work against gravity and the separation process previously described.

ESK Model and Data Table

ESK Model	Max. Flow (gpm)	Structure ID (in)	Sump Depth(in)	Inlet Min Cover Depth(in)	Outlet Min Cover Depth(in)	Outlet Pipe OD Dia(in)	Total Volume(gal)	Oil Storage Volume(Gal)
1.5	**24**	48	32	19	20	6	251	72
3	**48**	48	32	19	20	6	251	72
6	**95**	48	32	19	20	6	251	72
10	**159**	48	32	19	20	6	251	72
15	**238**	48	38	24	25	8	298	133
20	**317**	48	38	24	25	8	298	133
30	**476**	60	48	26	27	12	588	269
40	**634**	60	48	26	27	12	588	269
50	**793**	72	68	25	26	12	1199	426
65	**1030**	72	68	25	26	12	1199	426
80	**1268**	72	68	25	26	12	1199	426
100	**1585**	96	68	25	26	12	2131	758
110	**1744**	96	78	36	37	16	2444	988
120	**1902**	96	78	36	37	16	2444	988
130	**2061**	96	78	36	37	16	2444	988
140	**2219**	96	78	36	37	16	2444	988
150	**2378**	96	78	36	37	16	2444	988
160	**2536**	96	78	36	37	16	2444	988
170	**2695**	96	78	36	37	16	2444	988
180	**2853**	96	78	36	37	16	2444	988
190	**3012**	96	78	36	37	16	2444	988
200	**3170**	96	78	36	37	16	2444	988
225	**3566**	120	88	37	38	20	4308	2144
250	**3963**	120	88	37	38	20	4308	2144
275	**4359**	120	88	37	38	20	4308	2144
300	**4755**	120	88	37	38	20	4308	2144

Certifications

European CE – EN 858 Test Method – Gdansk, Poland

The ESK Coalescing Separator was tested Gdansk, Poland and received its CE Certification with a demonstrated performance of effluent limits as low as 4 PPM (Parts Per Million) or 4 MG/L. Testing was completed following CSN 75 7346 Testing Procedures for Dissolved Compounds. Testing was completed on the ESK Model 10 at flow rates up to 159 GPM.

Copies of the Full Reports are Available Upon request.

Credits

The ESK is a product of Ecol Ltd. And CrystalStream Technologies is a an approved Distributor of their products.