



STATE OF IDAHO  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706 • (208) 373-0502

C.L. "Butch" Otter, Governor  
Toni Hardesty, Director

November 24, 2008

Ms. Sandra Schuler  
MBR Process Engineer  
Huber Technology, Inc.  
9805 NorthCross Center Court, Suite H  
Huntersville, NC 28078

RE: Acceptance of Huber Vacuum Rotation Membrane (VRM<sup>®</sup>) Bioreactor for Class A effluent to comply with Idaho Wastewater Reuse regulatory criteria.

Dear Ms. Schuler:

The Idaho Department of Environmental Quality (DEQ) received a request for approval from Rob Young, Goble Sampson, Inc., for the Huber Technologies Vacuum Rotation Membrane (VRM<sup>®</sup>) Bioreactor (MBR), as required by Idaho's Rules for the Reclamation and Reuse of Municipal and Industrial Wastewater (IDAPA 58.01.17). Mr. Young supplied DEQ with a copy of the June 22, 2006 letter from Jeffery L. Stone, California Department of Health Services. This letter stated the acceptance of this technology for water recycling in California. Additionally, the package contained the Montgomery Watson Harza's (MWH) assessment report, dated April 2006.

This submittal fulfills the requirements stipulated in Idaho Reuse Rules (IDAPA 58.01.17.601.04.a). DEQ accepts this particular membrane filtration technology under the following conditions for Class A wastewater projects in Idaho.

This acceptance is limited to the Huber Technology's Vacuum Rotation Membrane (VRM<sup>®</sup>) Bioreactor (MBR) filtration treatment system utilizing the Polyethersulfone (PES) flat sheet NADIR-P150F ultra-filtration membrane with a nominal pore size of 0.038 micron ( $\mu\text{m}$ ). The PES flat sheet NADIR P-150F ultra-filtration membrane must:

1. Compliment the disinfection process such that system disinfection limits stipulated in IDAPA 58.01.17.600.07 are met.
2. Adhere to the turbidity performance limits stipulated in IDAPA 58.01.17.601.06.b,
  - a. Daily arithmetic mean of all daily turbidity measurements shall not exceed 0.2 NTU, and
  - b. Turbidity shall not exceed 0.5 NTU at any time,
3. Maintain product approval status per IDAPA 58.01.17.601.04.a.iii.

The MWH assessment report specifies the operational parameters for the PES flat sheet NADIR-P150F ultra-filtration membrane's as:

Huber Technology's NADIR-P150F Membrane		
Parameter	Value	Unit
Shape	Flat-Sheet	
Membrane Material	Polyethersulfone (PES)	
Nominal Pore Size	0.038	micron
Absolute Pore Size	0.09	micron
Design Flux	18	GPD/ft <sup>2</sup>
Peak Flux	33	GPD/ft <sup>2</sup>
Trans-membrane Pressure Range	0.7 - 6.5	PSI
Maximum Temperature	95	°C
pH Range	1 thru 14	SU

Idaho DEQ's acceptance is not an endorsement of this technology, nor is it an approval of any other portion of the equipment or of any specific proposed project. Be advised that Idaho has modified its rules regarding disinfection requirements for Class A effluent to require the entire treatment train to achieve 5-log virus removal in addition to the reuse and wastewater rule requirements.

Sincerely,



A.J. Maupin, P.E.  
Wastewater Program Engineering Lead  
Idaho DEQ, Water Quality Division

- C: Steve Tanner, P.E., DEQ CDA Regional Office  
Tom Moore, P.E., DEQ Lewiston Regional Office  
Mark Mason, P.E., DEQ Boise Regional Office  
Dave Anderson, DEQ Twin Falls Regional Office  
Tom Hepworth, P.E., DEQ Pocatello Regional Office  
Greg Eager, P.E., DEQ Idaho Falls Regional Office  
Rick Huddleston, P.E., DEQ Wastewater Program Manager  
Robert Young, Goble Sampson Assoc., 3500 S. Main #200, SLC, UT 84115