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STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

Matt Blunt, Governor • Doyle Childers, Director

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AUG 17 2007

Mr. Arthur C. Fink, Jr.  
VP of Engineering  
Husky Corporation  
2325 Husky Way  
Pacific, MO 63069

RE: Approval Letter 2007-1

2007-1

Dear Mr. Fink:

This letter is to inform you and Husky Corporation (Husky) of the approval of your Balance Stage II vapor recovery nozzle Model VLX (nozzle hose system). This Husky VLX nozzle/hose system is approved when installed and operated in accordance with manufacturer's recommendations. This nozzle, in both long and short spout, was previously tested and was scheduled for approval in 1996. However, Husky did not request it to be added to the Missouri Performance Evaluation Test Procedure (MOPETP) approval list at that time.

Since that time, Husky has improved the inner-connection between the liquid removal device in the hose, and that in the nozzle. The Missouri Department of Natural Resources' Air Pollution Control Program conducted an engineering review and determined that some limited additional testing would be required. Husky conducted back pressure and liquid removal testing on July 18, 2007, at the COSTCO research and development test site in St. Peters, Missouri. The favorable results of this testing along with the continuous monitoring data, and the engineering review was the basis of this approval determination.

The Husky VLX nozzle hose system features left-hand threading and must only be mated with Goodyear Premier LX hose, also left-hand threading. Left-Hand threading was employed to avoid any possibility of using a non-liquid extraction hose with this nozzle, or other unapproved combinations. This approval will also include the Goodyear Premier LX hose, and in addition the Husky Model 5827 fuel flow limiter (optional). The fuel flow limiter will generally not be necessary, unless a station would mix standard approved balance nozzles with Husky VLX system nozzle/hoses. The fuel flow rate through a VLX system is significantly higher, and therefore would exceed the ten gallons per minute upper limit (VLX without a limiter), while the standard nozzle hose combinations would remain under the ten gallons per minute limit. Use of the VLX nozzle hose system exclusively throughout the station will allow station owners to reduce the submerged pump speed, while maintaining the  $\leq$  ten gallon per minute standard, thus reducing the energy consumed by the pump(s), and reducing energy costs.

Back Pressure Test Results

Dispenser	Nozzle	40 SCFH ( $\leq 0.16$ "WC)	60 SCFH ( $\leq 0.35$ "WC)	80 SCFH ( $\leq 0.62$ "WC)
1	VLX	0.16	0.31	0.52
2	VLX	0.14	0.34	0.54
3	VLX	0.16	0.32	0.56
4	VLX	0.16	0.31	0.54
11	V	0.14	0.28	0.42
12	V	0.12	0.22	0.36

Liquid Removal Test Results

Dispenser	Grade	Make & Model of nozzle	Make and Model of hose	Volume drained from hose in ml	Volume Poured Into Hose ml (VI)	Gallons Dispensed (G)	Seconds to Dispense (T)	GPM ( $60*(G/T)$ )	Volume Remaining ml (VF)	Liquid Removal Rate $VR=(VI-VF)/G$ ml/gal ( $\geq 5$ ml/gal std)
1	87	VLX	Goodyear Premier LX	0	175	7.6	47	9.7	70	14
2	87	VLX	Goodyear Premier LX	0	175	7.5	50	9.0	80	13
3	87	VLX	Goodyear Premier LX	0	175	7.5	49	9.2	75	13
4	87	VLX	Goodyear Premier LX	0	170	7.6	49	9.3	55	15
7	87	V	Goodyear Premier	0	170	7.5	50	9.0	125	6

The Air Pollution Control Program approves the equipment listed below subject to the terms and conditions listed in this approval as well as those general conditions listed on Executive Order MOPETP APCP-0001-001-98 Balance Systems and the corresponding California Air Resources Board Executive Orders and certifications.

The following table contains the components of the Husky VLX Nozzle Hose Balance Vapor Recovery System, MOPETP approved for use in Missouri vapor control areas.

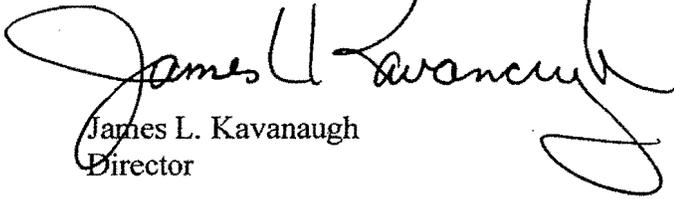
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Manufacturer	Model	Description
Husky	VLX (long or short spout)	Nozzle (internal liquid extraction connect)
Goodyear	LX Premier	VR Hose (Left-Hand threading, liquid extraction connect direct to nozzle)
Husky	#5827	VR flow limiter (to be used if there is a mixture of standard vapor recovery nozzles and hoses with VLX system to reduce the flow of the VLX to $\leq 10$ gpm while allowing the standard vapor recovery nozzles to reach 10 gpm).

Thank you for your cooperation in this matter. If you have questions about this approval, please contact Mr. Bud Pratt at the department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, or by telephone at (573) 751-4817.

Sincerely

AIR POLLUTION CONTROL PROGRAM



James L. Kavanaugh  
Director

c: All Stage II Contacts