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7 Identified Diseases Information as it Pertains to Woronecki Ranch Quarter Horses

At Woronecki Ranch Quarter Horses we take an ethical response to any genetic diseases as they are identified. AQHA previously had a 5-panel test requirement for breeding stallions since 2015. Two more diseases have been identified and AQHA has now required a 6-panel test. A 7th disease has been identified and could soon be added to the panel. We, as well as many other breeders, have decided to test for that (EJSCA). We also know that there could be many more diseases yet to be discovered. We order our tests through the VGL laboratory of the School of Veterinary Medicine at the University of California, Davis and provide those results to AQHA and buyers. VGL is internationally recognized as a pioneer and expert in DNA-based animal testing. The effects of these equine diseases are wide-ranging, from mild and manageable to severe and terminal. We have compiled a short description of each disorder tested. **In many instances we only test the necessary specific test based upon the parents' test results. If both parents are N/N on all or some diseases then the offspring is also N/N on those diseases by default. Please see ALL PAGES of this document link.**

Glycogen Branching Enzyme Deficiency (GBED) is a fatal genetic disorder that results from the inability to correctly store glycogen in several organs of the body. Most die within couple weeks of age, but none have been known to survive more than 2 months of age. These foals are often still born. **GBED is a recessive trait and only horses that inherit both recessive genes from each parent (G/G) will be afflicted. Carriers (N/G) and non-carriers (N/N) will have no problems in their lives as they will NOT be afflicted at all, and they will be able to perform all performance activities. If you decide to breed a carrier (N/G) it is highly advised to not breed to another carrier to avoid producing afflicted offspring.**

Hereditary Equine Regional Dermal Asthenia (HERDA) is an inherited skin condition primarily found in Quarter Horses that is characterized by hyperextensible skin, scarring, and severe lesions along the back of affected horses. **HERDA is a recessive trait and only horses that inherit both recessive genes from each parent (HDR/HDR) will be afflicted. Carriers (N/HDR) and non-carriers (N/N) will have no problems in their lives as they will NOT be afflicted at all, and they will be able to perform all performance activities. If you decide to breed a carrier (N/HDR) it is highly advised to not breed to another carrier to avoid producing afflicted offspring.**

Hyperkalemic Periodic Paralysis (HYPP) is an inherited disease of the muscles primarily found in Quarter Horses which is characterized by sporadic episodes of muscle tremors or paralysis. **HYPP is a dominant trait and carriers (N/H) will be afflicted but can be managed with careful nutritional care. It is highly recommended NOT to breed a carrier.**

Formerly known as IMM, Myosin-heavy chain myopathy (MYHM) is a muscle disease in Quarter Horses and related breeds that results in two distinct clinical disease presentations. The first presentation is called immune-mediated myositis or IMM and it is characterized by episodes of severe muscle atrophy following an autoimmune event. The second is severe muscle pain and damage termed non-exertional rhabdomyolysis or "tying-up" that is not associated with exercise and may or may not have muscle atrophy. **MYHM is a codominant trait and carriers (N/My) may develop a myosin-heavy chain myopathy. Horses with (My/My) may develop a more severe form of a myosin-heavy chain myopathy. It is highly recommended NOT to breed a carrier.** After consulting with veterinarians and experts in breeding who deem this disorder to not be as severe or common as HYPP or PSSM1, we have decided at this time to continue to breed certain individuals identified at WRQH. We will not breed carriers to carriers to minimize the potential. We have several aged horses that carry MYHM and have had no problems with them. If things prove differently, we will adjust at that time.

Malignant Hyperthermia (MH) is an inherited disease in which affected horses can be triggered by halogenated anesthetics, succinylcholine, stress, or excitement, which can induce a hyper-metabolic state characterized by symptoms including muscle contracture, elevated temperature, and an irregular heart rhythm. **MH is a dominant trait, and carriers (N/MH) will be afflicted if undergoing surgery or extreme stress. It is highly recommended NOT to breed a carrier.**

Polysaccharide Storage Myopathy (PSSM1) is a glycogen storage disease that results in the accumulation of abnormal complex sugars in muscle cells, which can lead to muscle pain, weakness, and reluctance to move. **PSSM1 is a dominant trait but carriers (N/PSSM1) can be managed with proper diet and exercise. It is highly recommended NOT to breed a carrier.**

Equine Juvenile Spinocerebellar Ataxia (EJSCA) is an inherited neurologic disease that causes ataxia. Affected foals develop ataxia, or incoordination, between 1 and 4 weeks of age. The disorder progresses within a few days until affected foals are unable to stand without assistance. **EJSCA is a recessive trait and only horses that inherit both recessive genes from each parent (JSA/JSA) will be afflicted. Carriers (N/JSA) and non-carriers (N/N) will have no problems in their lives as they will NOT be afflicted at all and they will be able to perform all performance activities. If deciding to breed a carrier (N/JSA) it is highly advised to not breed to another carrier to avoid producing afflicted offspring.**

Fangorn Bartender JW (AQHA)

2025 Bay Roan Stallion

GBED Status	N/N
HERDA Status	N/N
HYPP Status	N/N
MYHM Status	N/N
MH Status	N/N
PSSM1 Status	N/N
EJSCA Status	N/N

All NN by parentage. Parents' tests included.

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AQHA GENETIC DISEASE PANEL TEST RESULTS

AMERICAN QUARTER HORSE ASSOCIATION P.O. BOX 200 AMARILLO, TX 79168-0001	Case: QHA168729 Date Received: 04-Dec-2014 Print Date: 08-Dec-2014 Report ID: 0461-4992-5772-4006 Verify report at www.vgl.ucdavis.edu/myvgl/verify.html
Horse: JACKS OUR BARTENDER YOB: 2003 Breed: QH Sex: S Alt. ID: 5198859	Reg: 4425254
Sire: BARTENDERS MEMORY Dam: WATCH MISS JO JACKIE	Reg: 3736501 Reg: 3301428

GBED	N/N	N/N - Normal - Does not possess the disease-causing GBED gene
HERDA	N/N	N/N - Normal - horse does not have the HERDA gene
HYPP	N/N	N/N - Normal - Does not possess the disease-causing HYPP gene
MH	N/N	N/N - Normal - horse does not have the MH gene
PSSM1	N/N	N/N - Normal - horse does not have the PSSM1 gene

GBED - Glycogen Branching Enzyme Deficiency. Fatal disease of newborn foals caused by defect in glycogen storage. Affects heart and skeletal muscles and brain. Inherited as recessive disease.

HERDA - Hereditary Equine Regional Dermal Asthenia. Skin disease characterized by hyperextensible skin, scarring, and severe lesions along the back of affected horses. Typical onset is around 2 years of age. Inherited as a recessive disease.

HYPP - Hyperkalemic Periodic Paralysis. Muscle disease caused by defect in sodium channel gene that causes involuntary muscle contraction and increased level of potassium in blood. Inherited as dominant disease. Two copies of defective gene produce more severe signs than one copy.

MH - Malignant Hyperthermia. Rare but life-threatening skeletal muscle disease triggered by exposure to volatile anesthetics (halothane), depolarizing muscle relaxants (succinylcholine), and stress. Presumed inheritance as dominant disease.

PSSM1 - Polysaccharide Storage Myopathy Type 1. Muscle disease characterized by accumulation of abnormal complex sugars in skeletal muscles. Signs include muscle pain, stiffness, skin twitching, sweating, weakness and reluctance to move. Inherited as a dominant disease.

GBED testing performed under a license agreement with the University of Minnesota.
 HERDA testing performed under a license agreement with the University of California, Davis.
 PSSM1 testing performed under a license agreement with the American Quarter Horse Association.

**MYOSIN-HEAVY CHAIN MYOPATHY (MYHM)
 TEST REPORT**

Provided Information:		Case:	NQ122908
Name:	JACKS OUR BARTENDER	Date Received:	21-Apr-2025
Registration:	4425254	Report Issue Date:	25-Apr-2025
		Report ID:	1659-1778-5993-4131
Verify report at vgl.ucdavis.edu/verify			
DOB: 04/25/2003 Sex: Stallion Breed: Quarter Horse			
Sire:	BARTENDERS MEMORY	Dam:	WATCH MISS JO JACKIE
Reg:	3736501	Reg:	3301428
Microchip:		Microchip:	

RESULT

INTERPRETATION

Myosin-Heavy Chain Myopathy (MYHM)	N/N
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Normal. No copies of the MYHM allele detected. Horse does not have increased susceptibility for immune mediated myositis or nonexertional rhabdomyolysis caused by the MYHM allele.

EQUINE JUVENILE SPINOCEREBELLAR ATAXIA TEST REPORT

<p><i>Provided Information:</i></p> <p><i>Name:</i> JACKS OUR BARTENDER</p> <p><i>Registration:</i> 4425254</p>	<p><i>Case:</i> NQ122908</p> <p><i>Date Received:</i> 21-Apr-2025</p> <p><i>Report Issue Date:</i> 25-Apr-2025</p> <p><i>Report ID:</i> 1027-5249-1863-0073</p> <p style="text-align: center; font-size: small;">Verify report at vgl.ucdavis.edu/verify</p>
<p><i>DOB:</i> 04/25/2003 <i>Sex:</i> Stallion <i>Breed:</i> Quarter Horse</p>	
<p><i>Sire:</i> BARTENDERS MEMORY</p> <p><i>Reg:</i> 3736501</p> <p><i>Microchip:</i></p>	<p><i>Dam:</i> WATCH MISS JO JACKIE</p> <p><i>Reg:</i> 3301428</p> <p><i>Microchip:</i></p>

RESULT

INTERPRETATION

<p>Equine Juvenile Spinocerebellar Ataxia</p>	<p>N/N</p>
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Normal. No copies of the allele associated with equine juvenile spinocerebellar ataxia (EJSCA) detected.

Malignant Hyperthermia (MH) is an inherited disease in which affected horses can be triggered by halogenated anesthetics, succinylcholine, stress, or excitement, which can induce a hyper-metabolic state characterized by symptoms including muscle contracture, elevated temperature, and an irregular heart rhythm. **MH is a dominant trait, and carriers (N/MH) will be afflicted if undergoing surgery or extreme stress. It is highly recommended NOT to breed a carrier.**

Polysaccharide Storage Myopathy (PSSM1) is a glycogen storage disease that results in the accumulation of abnormal complex sugars in muscle cells, which can lead to muscle pain, weakness, and reluctance to move. **PSSM1 is a dominant trait but carriers (N/PSSM1) can be managed with proper diet and exercise. It is highly recommended NOT to breed a carrier.**

Equine Juvenile Spinocerebellar Ataxia (EJSCA) is an inherited neurologic disease that causes ataxia. Affected foals develop ataxia, or incoordination, between 1 and 4 weeks of age. The disorder progresses within a few days until affected foals are unable to stand without assistance. **EJSCA is a recessive trait and only horses that inherit both recessive genes from each parent (JSA/JSA) will be afflicted. Carriers (N/JSA) and non-carriers (N/N) will have no problems in their lives as they will NOT be afflicted at all and they will be able to perform all performance activities. If deciding to breed a carrier (N/JSA) it is highly advised to not breed to another carrier to avoid producing afflicted offspring.**

Whiskey Up Aspen JW (AQHA # 6034620)

2020 Buckskin Mare

GBED Status	N/N
HERDA Status	N/N
HYPP Status	N/N
MYHM Status	N/N
MH Status	N/N
PSSM1 Status	N/N
EJSCA Status	N/N

EQUINE DISEASE TEST REPORT

<p>Provided Information:</p> <p><i>Name:</i> WHISKEY UP ASPEN JW</p> <p><i>Registration:</i> AQHA Pending</p>	<p>Case: NQ58048</p> <p><i>Date Received:</i> 04-Jun-2020</p> <p><i>Report Issue Date:</i> 17-May-2025</p> <p><i>Report ID:</i> 6944-4384-3203-0040</p> <p><i>Reissue of:</i> 7078-0053-2572-4035</p> <p style="text-align: center; font-size: small;">Verify report at vgl.ucdavis.edu/verify</p>
<p><i>DOB:</i> 04/29/2020 <i>Sex:</i> Mare <i>Breed:</i> Quarter Horse</p>	
<p><i>Sire:</i> WHOOP UP WHISKEY</p> <p><i>Reg:</i> 5359075</p> <p><i>Microchip:</i></p>	<p><i>Dam:</i> LILLY DANCER DRIFT JW</p> <p><i>Reg:</i> 5670541</p> <p><i>Microchip:</i></p>

RESULT

INTERPRETATION

Glycogen Branching Enzyme Deficiency (GBED)	N/N
Myosin-Heavy Chain Myopathy (MYHM)	N/N

Normal. No copies of the GBED allele detected.

Normal. No copies of the MYHM allele detected. Horse does not have increased susceptibility for immune mediated myositis or nonexertional rhabdomyolysis caused by the MYHM allele.

EQUINE JUVENILE SPINOCEREBELLAR ATAXIA TEST REPORT

<p><i>Provided Information:</i></p> <p><i>Name:</i> WHISKEY UP ASPEN JW</p> <p><i>Registration:</i> AQHA Pending</p>	<p><i>Case:</i> NQ58048</p> <p><i>Date Received:</i> 04-Jun-2020</p> <p><i>Report Issue Date:</i> 17-May-2025</p> <p><i>Report ID:</i> 4984-8463-6681-5080</p> <p style="text-align: center; font-size: small;">Verify report at vgl.ucdavis.edu/verify</p>
<p><i>DOB:</i> 04/29/2020 <i>Sex:</i> Mare <i>Breed:</i> Quarter Horse</p>	
<p><i>Sire:</i> WHOOP UP WHISKEY</p> <p><i>Reg:</i> 5359075</p> <p><i>Microchip:</i></p>	<p><i>Dam:</i> LILLY DANCER DRIFT JW</p> <p><i>Reg:</i> 5670541</p> <p><i>Microchip:</i></p>

RESULT

INTERPRETATION

<p>Equine Juvenile Spinocerebellar Ataxia</p>	<p>N/N</p>
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Normal. No copies of the allele associated with equine juvenile spinocerebellar ataxia (EJSCA) detected.



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AQHA GENETIC DISEASE PANEL TEST RESULTS

AMERICAN QUARTER HORSE ASSOCIATION P.O. BOX 200 AMARILLO, TX 79168-0001	Case: QHA192968 Date Received: 11-May-2015 Print Date: 15-May-2015 Report ID: 0187-9866-2321-9024 Verify report at www.vgl.ucdavis.edu/myvgl/verify.html
Horse: WHOOP UP WHISKEY Reg: 5359075 YOB: 2010 Sex: Stallion Breed: Quarter Horse Ait. ID: 6281311	
Sire: PADDYS IRISH WHISKEY Reg: 2983308 Dam: MY LITTLE SUGAR BABE Reg: 3179872	

GBED	N/G	N/G - Carrier - Heterozygous (one normal and one GBED gene)
HERDA	N/N	N/N - Normal - horse does not have the HERDA gene
HYPP	N/N	N/N - Normal - Does not possess the disease-causing HYPP gene
MH	N/N	N/N - Normal - horse does not have the MH gene
PSSM1	N/N	N/N - Normal - horse does not have the PSSM1 gene

GBED - Glycogen Branching Enzyme Deficiency. Fatal disease of newborn foals caused by defect in glycogen storage. Affects heart and skeletal muscles and brain. Inherited as recessive disease.

HERDA - Hereditary Equine Regional Dermal Asthenia. Skin disease characterized by hyperextensible skin, scarring, and severe lesions along the back of affected horses. Typical onset is around 2 years of age. Inherited as a recessive disease.

HYPP - Hyperkalemic Periodic Paralysis. Muscle disease caused by defect in sodium channel gene that causes involuntary muscle contraction and increased level of potassium in blood. Inherited as dominant disease. Two copies of defective gene produce more severe signs than one copy.

MH - Malignant Hyperthermia. Rare but life-threatening skeletal muscle disease triggered by exposure to volatile anesthetics (halothane), depolarizing muscle relaxants (succinylcholine), and stress. Presumed inheritance as dominant disease.

PSSM1 - Polysaccharide Storage Myopathy Type 1. Muscle disease characterized by accumulation of abnormal complex sugars in skeletal muscles. Signs include muscle pain, stiffness, skin twitching, sweating, weakness and reluctance to move. Inherited as a dominant disease.

GBED testing performed under a license agreement with the University of Minnesota.
 HERDA testing performed under a license agreement with the University of California, Davis.
 PSSM1 testing performed under a license agreement with the American Quarter Horse Association.



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5 Panel Information as it Pertains to Woronecki Ranch Quarter Horses

At Woronecki Ranch Quarter Horses we order a genetic kit through AQHA and the results are sent to VGL laboratory of the School of Veterinary Medicine at the University of California, Davis. VGL is internationally recognized as a pioneer and expert in DNA-based animal testing. The effects of these equine diseases are wide-ranging, from mild and manageable to severe and terminal. We have compiled a short description of each disorder tested. In many instances we only test the necessary specific test based upon the parents test results. If both parents are N/N on all or some diseases then the offspring is also N/N on those diseases by default. Please see ALL PAGES of this document link.

Glycogen Branching Enzyme Deficiency (GBED) doesn't allow a foal to store enough sugar in its cells for energy, function of the brain, heart and skeletal muscles. Most die within couple weeks of age, but none have been known to survive more than 2 months of age. These foals are often still born. GBED is a recessive trait and only horses that inherit both recessive genes from each parent (G/G) will be afflicted. Carriers (N/G) and non-carriers (N/N) will have no problems in their lives as they will NOT be afflicted at all and they will be able to perform all performance activities. If deciding to breed a carrier (N/G) it is highly advised to not breed to another carrier to avoid producing afflicted offspring.

Hereditary Equine Regional Dermal Asthenia (HERDA) causes the skin on a horse's back to literally peel away. The skin will slough becoming loose and tented to never return to its original position. HERDA is a recessive trait and only horses that inherit both recessive genes from each parent (HDR/HDR) will be afflicted. Carriers (N/HDR) and non-carriers (N/N) will have no problems in their lives as they will NOT be afflicted at all and they will be able to perform all performance activities. If deciding to breed a carrier (N/HDR) it is highly advised to not breed to another carrier to avoid producing afflicted offspring

Hyperkalemic Periodic Paralysis (HYPP) is a muscle condition that leads to weak muscles or severe twitching of the muscles. In most cases symptoms include tremors, weakness, cramping, sweating and inability to relax. In severe cases horse can collapse from a heart attack or respiratory failure and die. HYPP is a dominant trait and carriers (N/H) will be afflicted, but can be managed with careful nutritional care. It is highly recommended NOT to breed a carrier.

Malignant Hyperthermia (MH) is a rare but deadly disorder triggered by the use of anesthesia, muscle relaxant succinylcholine and stress. The horse will often experience high heart rate along with rapid breathing and extreme fever. This can also lead to death in some cases. Some horses are also a carrier of PSSM along with MH. MH is a dominant trait and carriers will be afflicted if undergoing surgery or extreme stress. It is highly recommended NOT to breed a carrier.

Polysaccharide Storage Myopathy (PSSM1) is when the muscles store too much glycogen causing muscle stiffness and muscle tying up. Most horses experience pain with strenuous exercise. PSSM1 is a dominant trait but carriers (N/PSSM1) can be managed with proper diet and exercise. It is highly recommended NOT to breed a carrier.

Lily Dancer Drift JW	(AQHA 5670541)	All NN by parentage. Parents' tests included
2015 Palomino Filly		
GBED Status	N/N	
HERDA Status	N/N	
HYPP Status	N/N	
MH Status	N/N	
PSSM1 Status	N/N	

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AQHA GENETIC DISEASE PANEL TEST RESULTS

AMERICAN QUARTER HORSE ASSOCIATION P.O. BOX 200 AMARILLO, TX 79168-0001	Case: QHA192970 Date Received: 11-May-2015 Print Date: 15-May-2015 Report ID: 9633-4604-1417-2011 Verify report at www.vgl.ucdavis.edu/myvgl/verify.html
Horse: WALTER O RIELLY YOB: 2000 Sex: Stallion Breed: Quarter Horse Alt. ID: 5067985	Reg: 4343282
Sire: BRADYWOOD Dam: LACYS KEEPSAKE	Reg: 3190953 Reg: 3169660

GBED	N/N	N/N - Normal - Does not possess the disease-causing GBED gene
HERDA	N/N	N/N - Normal - horse does not have the HERDA gene
HYPP	N/N	N/N - Normal - Does not possess the disease-causing HYPP gene
MH	N/N	N/N - Normal - horse does not have the MH gene
PSSM1	N/N	N/N - Normal - horse does not have the PSSM1 gene

GBED - Glycogen Branching Enzyme Deficiency. Fatal disease of newborn foals caused by defect in glycogen storage. Affects heart and skeletal muscles and brain. Inherited as recessive disease.

HERDA - Hereditary Equine Regional Dermal Asthenia. Skin disease characterized by hyperextensible skin, scarring, and severe lesions along the back of affected horses. Typical onset is around 2 years of age. Inherited as a recessive disease.

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AQHA GENETIC DISEASE PANEL TEST RESULTS

AMERICAN QUARTER HORSE ASSOCIATION P.O. BOX 200 AMARILLO, TX 79168-0001	Case: QHA206629 Date Received: 31-Aug-2015 Print Date: 07-Sep-2015 Report ID: 8499-7882-0881-8128 Verify report at www.vgl.ucdavis.edu/myvgl/verify.html
Horse: MUJER LILY DANCER JW Reg: 4857421 YOB: 2006 Sex: Mare Breed: Quarter Horse Alt. ID: 5702686	
Sire: MUJER TACKY JAY Reg: 2580521 Dam: SAMIS LILY JAY Reg: 3186751	

GBED	N/N	N/N - Normal - Does not possess the disease-causing GBED gene
HERDA	N/N	N/N - Normal - horse does not have the HERDA gene
HYPP	N/N	N/N - Normal - Does not possess the disease-causing HYPP gene
MH	N/N	N/N - Normal - horse does not have the MH gene
PSSM1	N/N	N/N - Normal - horse does not have the PSSM1 gene

GBED - Glycogen Branching Enzyme Deficiency. Fatal disease of newborn foals caused by defect in glycogen storage. Affects heart and skeletal muscles and brain. Inherited as recessive disease.

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