BUCKEYE PARTNERS, L.P.

BUCKEYE TERMINALS, LLC

BUCKEYE PIPE LINE HOLDINGS, L.P.

TABLE I
MARINE TERMINAL PRODUCT RECEIPT SPECIFICATIONS

Albany, NY	Baltimore, MD	Bahamas Hub
Bayonne, NJ	Charleston, SC	Chesapeake, VA
Cincinnati, OH	Corpus Christi, TX	Ft Lauderdale, FL
Groton, CT	Jacksonville, FL	Louisville, KY
Marrero, LA	New Haven, CT	Pennsauken, NJ
Perth Amboy, NJ	Port Reading, NJ	Pt Wilmington, DE
Rensselaer, NY	Roseton, NY	
S. Portland, ME	St. Louis, MO	St. Lucia
Tampa North, FL	Tampa South, FL	Yabucoa, PR

7.1 MARINE TERMINAL PRODUCT GRADE SPECIFICATIONS

This section contains specifications for products which are delivered into a Buckeye Marine Terminal via a water bourn vessel which is handled on a fungible or common-stream basis.

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BUCKEYE PARTNERS, L.P.
MARINE RECEIPT SPECIFICATIONS FOR ULSD 15 PPM MVNRLM

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	MAXIMUM	NOTE
Gravity, API @ 60°F	D4052	30		
Flash Point, °F	D93, D3828, D7094	130		1, 9
Color, ASTM	D1500, D6045		2.5	3
Viscosity, cst @ 104°F	D445, D7042	1.9	4.1	9
Cloud Point, °F (Sept thru March)	D2500, D5773		+15.8 °F	9
(April thru August)			+20 °F	
Pour Point, °F (Sept thru March)	D5985, D5949, D5950, D97		0 °F	
(April thru August)			+10°F	
Total Sulfur, ppm (at receipt)	D5453, D2622, D4294		15	
(Port Reading only)			11	2
Corrosion, 3 hrs. @ 122°F	D130		1	
Oxidation Stability, mg/100 ml OR	D2274		2.5	2
Thermal Stability, 90 minutes				
150°C Pad rating OR	DuPont		7	2
Thermal Stability, Y/Green	D6468	73%		2
W Unit		65%		
Carbon Residue, wt. % on 10% bottom	D524		0.35	
Ash, wt. %	D482		0.01	
Sediment and Water, % by volume	D2709, D4007, D6304		0.05	
Cetane Number or Index	D613	40		
Aromatics (Vol%)	D1319		35.0	
or Aromatics by Cetane Index	D976	40		
Distillation, °F	D86			12
50% recovered		Report		
90% recovered		540	640	
End Point			700	
Haze Rating @ 77°F	D4176		2	
Procedure 2				
Color Visual		Undyed		3
Additives				4
Electrical Conductivity, pS/m @ 70°F	D2624		250	4
NACE	TM0172	B+		5

Intended to be consistent with ASTM D975 Grade No. 2 middle distillate fuels (unless otherwise noted) and must also comply with specifications under distillate oil definition as specified in 40 CFR 1090.

NOTES:

1. Test method D-93 is the referee method.
2. Only required at Port Reading due to pipeline connectivity.
3. Product must exhibit no visible evidence of dye. Must be clear and bright.
4. Use of lubricity improver additive is prohibited. Product may, but is not required to, contain static dissipator/electrical conductivity additive (SDA). The only approved SDAs for use is Innospec Stadis 450 and AvGuard SDA and origin maximum concentration of either SDA is 0.75 mg/l.
5. All products (except aviation grades) must meet a minimum level of corrosion protection, indicated by a minimum rating of B+ as determined by NACE Standard Test Method TM0172 (Determining Corrosive Properties of Cargoes in Petroleum Product Pipelines).
6. Biofuel Components (e.g. biodiesel) are not permitted in this product.
7. Shipments of this Grade Code are limited to less than 5.0% renewable diesel. Renewable diesel is a liquid fuel derived from 100% hydrotreated biomass that meets the registration requirements for fuels and fuel additives established by the EPA under Section 211 of the Clean Air Act and the requirements of ASTM D975. Fuel containing fatty acid esters (FAME, FAEE, or other esters) is prohibited.
8. This product is for Motor Vehicle use and is designated as ULSD (Max 15 ppm sulfur ULSD)
9. For Maine from Dec 1 through March 14, if blended with K-1 or ULSD1, Cloud Point max is -16F, Flash point minimum is 120F and viscosity minimum is 1.7 cst (@104F).
11. Buckeye will accept test method results as listed in ASTM D975 (most recent version). Test methods listed in this specification are considered the referee methods by Buckeye.
12. Simulated distillation (D2887) is allowed, but must be correlated to D86.

BUCKEYE PARTNERS, L.P.
MARINE RECEIPT SPECIFICATIONS FOR ULTRA LOW SULFUR HEATING OIL
CERTIFIED NTDF - 15 PPM SULFUR (UNDYED)

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	TEST RESULTS MAXIMUM	NOTE
Gravity, API @ 60ºF	D4052	30		
Flash Point, ºF	D93, D3828, D7094	130		1
Color, ASTM	D1500, D6045		2.5	3
Viscosity, cst @ 104ºF	D445, D7042	1.9	4.1	
Cloud Point, ºF (Sept thru March)	D2500, D5773		+15.8 ºF	
(April thru August)			+20 ºF	
Pour Point, ºF (Sept thru March)	D5985, D5949, D5950, D97		0 ºF	
(April thru August)			+10ºF	
Total Sulfur, ppm (at receipt)	D5453, D2622, D4294		15	
(Port Reading only)			11	2
Corrosion, 3 hrs. @ 122ºF	D130		1	
Oxidation Stability, mg/100 ml OR	D2274		2.5	2
Thermal Stability, 90 minutes				
150ºC Pad rating OR	DuPont		7	2
Thermal Stability, Y/Green	D6468	73%		2
W Unit		65%		
Carbon Residue, wt. % on 10% bottom	D524		0.35	
Ash, wt. %	D482		0.01	
Sediment and Water, % by volume	D2709, D4007, D6304		0.05	
Cetane Number or Index	D613	40		
Aromatics (Vol%)	D1319		35.0	
or Aromatics by Cetane Index	D976	40		
Distillation, ºF	D86			10
50% recovered		Report		
90% recovered		540	640	
End Point			700	
Haze Rating @ 77ºF	D4176		2	
Procedure 2				
Color Visual		Undyed		3
Additives				4
Electrical Conductivity, pS/m @ 70°F	D2624		250	4
NACE	TM0172	B+		5

Intended to be consistent with ASTM D975 Grade No. 2 middle distillate fuels (unless otherwise noted) and must also comply with specifications under distillate oil definition as specified in 40 CFR 1090.

NOTES:

1. Test method D-93 is the referee method.
2. Only required at Port Reading due to pipeline connectivity.
3. Product must exhibit no visible evidence of dye. Must be clear and bright.
4. Use of lubricity improver additive is prohibited. Product may, but is not required to, contain static dissipator/electrical conductivity additive (SDA). The only approved SDAs for use is Innospec Stadis 450 and AvGuard SDA and origin maximum concentration of either SDA is 0.75 mg/l.
5. All products (except aviation grades) must meet a minimum level of corrosion protection, indicated by a minimum rating of B+ as determined by NACE Standard Test Method TM0172-2001 (Determining Corrosive Properties of Cargoes in Petroleum Product Pipelines).
6. Biofuel Components (e.g. biodiesel) are not permitted in this product.
7. Shipments of this Grade Code are limited to less than 5.0% renewable diesel. Renewable diesel is a liquid fuel derived from 100% hydrotreated biomass that meets the registration requirements for fuels and fuel additives established by the EPA under Section 211 of the Clean Air Act and the requirements of ASTM D975. Fuel containing fatty acid esters (FAME, FAEE, or other esters) is prohibited.
8. This fuel is designated for non-transportation use (Certified NTDF – 15 ppm sulfur Max) and for heating oil use (Heating Oil (Max 15 ppm sulfur ULSHO)).
9. Buckeye will accept test method results as listed in ASTM D975 (most recent version). Test methods listed in this specification are considered the referee methods by Buckeye.
10. Simulated distillation (D2887) is allowed, but must be correlated to D86.

BUCKEYE PARTNERS, L.P.
SPECIFICATIONS FOR ULSD #1 15 PPM MVNRLM

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	TEST RESULTS MAXIMUM	NOTE
Appearance	White Bucket	Report		1
Gravity, API @ 60ºF	D4052	37	51	
Color, at origin	D156	18		1
Corrosion, 2 hrs. @ 212ºF	D130		1	
One of the following properties shall be met:				
(1) Cetane Number	D613	40		
(2) Cetane Index	D976/D4737	40		
(3) Aromatics, vol. %	D1319/D5186		35	
Total Sulfur, ppm (at receipt)	D5453, D2622, D4294		15	
(Port Reading only)			11	2
Doctor Test	D4952		Negative	
OR				
Mercaptan Sulfur, wt. %	D3227		0.003	
Flash Point, ºF	D56, D3828	108		
(Pennsauken only)		123		
Distillation, ºF	D86			6
10% recovered		Report	400	
50% recovered		Report		
90% recovered		Report	550	
95% recovered		Report		
End Point			572	
Residue, %			1.5	
Loss, %			1.5	
Freezing Point, ºF	D2386		-22	
Viscosity, cst. @ 104ºF	D445, D7042	1.3	1.9	
Ash, wt %	D482		0.01	
Sediment and Water, % by volume	D2709, D4007, D6304		0.05	
Carbon residue, wt % on 10% bottom	D524		0.15	
Thermal Stability, 90 minutes				
150ºC Pad rating	DuPont		7	2
Burning Quality	D187	Report		
Electrical Conductivity	D2624	Report		
Additives		Report		
NACE	TM0172	B+		4

NOTES:

1. Product shall be clear (referring to clarity, not color) and bright and free of suspended matter.
2. Only required at Port Reading due to pipeline connectivity
3. Buckeye will accept test method results as listed in ASTM D975 (most recent version). Test methods listed in this specification are considered the referee methods by Buckeye.
4. All products (except aviation grades) must meet a minimum level of corrosion protection, indicated by a minimum rating of B+ as determined by NACE Standard Test Method TM0172 (Determining Corrosive Properties of Cargoes in Petroleum Product Pipelines).
5. Biofuel Components (e.g. biodiesel) are not permitted in this product
6. Simulated distillation (D2887) is allowed, but must be correlated to D86.
7. Intended to be consistent with ASTM Grade No. 1 middle distillate fuels, unless otherwise noted.
8. This product is for Motor Vehicle use and is designated as ULSD1 (Max 15 ppm sulfur).
9. Because ULSD1 and ULSK are co-mingled in tank, specifications must meet both ULSD1 and ULSK ASTM requirements.

BUCKEYE PARTNERS, L.P.
SPECIFICATIONS FOR ULTRA LOW SULFUR KEROSENE
CERTIFIED NTDF

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	MAXIMUM	NOTE
Appearance	White Bucket	Report		1
Gravity, API @ 60°F	D4052	37	51	
Color, at origin	D156	18		1
Corrosion, 2 hrs. @ 212°F	D130		1	
One of the following properties shall be met:				
(1) Cetane Number	D613	40		
(2) Cetane Index	D976/D4737	40		
(3) Aromatics, vol. %	D1319/D5186		35	
Total Sulfur, ppm (at receipt)	D5453, D2622, D4294		15	
(Port Reading only)			11	2
Doctor Test	D4952		Negative	
OR				
Mercaptan Sulfur, wt. %	D3227		0.003	
Aromatics, vol. %	D1319		25	
Flash Point, °F	D56, D3828	108		
(Pennsauken only)		123		
Distillation, °F	D86			6
10% recovered		Report	400	
50% recovered		Report		
90% recovered		Report	550	
95% recovered		Report		
End Point			572	
Residue, %			1.5	
Loss, %			1.5	
Freezing Point, °F	D2386		-22	
Viscosity, cst. @ 104°F	D445, D7042	1.3	1.9	
Ash, wt %	D482		0.01	
Sediment and Water, % by volume	D2709, D4007, D6304		0.05	
Carbon residue, wt % on 10% bottom	D524		0.15	
Thermal Stability, 90 minutes				
150°C Pad rating	DuPont		7	2
Burning Quality – either the properties of D187 and IP10 shall be reported, or the property of D1322 (Smoke Point) shall be reported. D187 shall be the referee method.	D187/IP10	Report		
Smoke Point	D1322	Report		
Electrical Conductivity	D2624	Report		
Additives		Report		
NACE	TM0172	B+		4

NOTES:

1. Product shall be clear (referring to clarity, not color) and bright and free of suspended matter.
2. Only required at Port Reading due to pipeline connectivity
3. Buckeye will accept test method results as listed in ASTM D975 (most recent version). Test methods listed in this specification are considered the referee methods by Buckeye.
4. All products (except aviation grades) must meet a minimum level of corrosion protection, indicated by a minimum rating of B+ as determined by NACE Standard Test Method TM0172 (Determining Corrosive Properties of Cargoes in Petroleum Product Pipelines).
5. Biofuel Components (e.g. biodiesel) are not permitted in this product
6. Simulated distillation (D2887) is allowed, but must be correlated to D86.
7. Intended to be consistent with ASTM Grade No. 1 middle distillate fuels, unless otherwise noted.
8. This fuel is designated for non-transportation use (Certified NTDF – 15 ppm sulfur Max) and kerosene.
9. Because ULSD1 and ULSK are co-mingled in tank, specifications must meet both ULSD1 and ULSK ASTM requirements.

BUCKEYE PARTNERS, L.P.
MARINE RECIEPT SPECIFICATIONS FOR
No. 1 KEROSENE FUEL OIL (400 ppm sulfur)

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	MAXIMUM	NOTE
Color	D156, D6045	18		1
Gravity, API @ 60ºF	D287, D1298, D4052	37	51	
Corrosion, 3 hrs. @ 212ºF	D130		1	
Sulfur, ppm	D2622, D4294, D5453 D1266, D1552		400	
Doctor Test	D4952		Negative	
OR				
Mercaptan Sulfur, mass %	D3227		0.003	2
Flash Point, ºF	D56, D3828	108		
Physical Distillation, ºF	D86			
10% recovered			419	
90% recovered			550	
End Point			572	
Freezing Point, ºF	D5972, D7153, D7154, D2386		-22	
Viscosity, cst. @ 104ºF	D445, D7042	1.0	1.9	
Carbon residue, wt % on 10% bottom	D524		0.15	
Burn Quality – either the properties of D187 And IP10 shall be reported, or the property Of D1322 (Smoke Point) shall be reported. D187 shall be the referee method.				
Time of Burning	D187	Min 16 h continuous after first weighing		
Burning Quality	IP 10	18 to 26 g/h after first weighing		
Chimney Appearance	D187	Max light white deposit (at end of test)		
Flame Characteristics	D187	Maximum variance of flame width (6mm) & flame height lowered (5 mm)		
Smoke Point	D1322	25.0		
Sediment and Water, % by volume	D2709, D4007, D6304		0.05	
NACE	TM0172	B+		

NOTES:

1. Product shall be clear (referring to clarity, not color) and bright and free of suspended matter.
2. Mercaptan Sulfur waived if fuel is negative by Doctor test.
3. Reserved
4. This product should be designated as “Kerosene” in the EPA’s Designate and Track reporting system.
5. Biofuel Components (e.g. biodiesel) are not permitted in this product.

BUCKEYE PARTNERS, L.P.
MARINE RECIEPT SPECIFICATIONS FOR FUNGIBLE AVIATION KEROSENE (JET FUEL)

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	MAXIMUM	NOTE
Appearance	White Bucket	Undyed		1
Color	D156, D6045	18		1
Gravity, API @ 60°F	D1298, D4052	37	51	
Net Heat of Combustion, BTU/lb.	D3338	18,400		
Corrosion, 2 hrs. @ 212°F	D130		1	
MSEP (refinery origin)	D3948	85		
(downstream of refinery)	D7224, D3948	85		
Sulfur, wt. %	D4294, D5452, D2622		0.30	
Doctor Test		D4952		Negative
OR				
Mercaptan Sulfur, wt. %	D3227		0.003	3
Aromatics, vol. %, OR	D1319 IP156, D8267, D8305		25	
Aromatics, vol. %	D6379, IP436		26.5	
Total Acidity, mg. KOH/g	D3242		0.10	
Existent Gum, mg/100 ml.	D381		7	
THERMAL STABILITY (JFTOT)	D3241			4
(2.5 hrs at control temperature 275°C)				
Filter Pressure drop, mm/Hg			25	
Tube Rating: One of the following requirements shall be met:				
(1) Annex A1 VTR, VTR color code			Less than 3 No peacock or abnormal color deposits	
(2) Annex A2 ITR or Annex 3 ETR nm average over area of 2.5 mm^2			85	
Flash Point, °F	D56, D3828	105		
Distillation, °F	D86			7
10% recovered			401	
50% recovered		Report		
90% recovered		Report		
End Point			572	
Residue, %			1.5	
Loss, %			1.5	
Freezing Point, °F	D2386		-40	
Viscosity, cst. @ -4°F	D445, D7042		8.0	
Smoke Point or	D1322	25.0		
Smoke Point and	D1322	18.0		
Naphthalenes, vol. %	D1840		3.0	
Electrical Conductivity	D2624	Report		2
Additives		Report		2

NOTES:

1. Product shall be clear (referring to clarity, not color) & bright, free of suspended matter, and not exhibit various shades of green, blue or red.
2. Product shall only contain antioxidants and metal deactivators specified and within the concentration noted in the latest ASTM D1655 with advance approval from Buckeye prior to shipment. Use of these additives is expected to be short term at reasonable treat levels, and is to be clearly indicated on the CoA. All other additives are prohibited. Buckeye reserves the right to deny shipment of product containing these additives. In addition, scheduling and Measurement & Quality Control must be notified at least 72 hours prior to the scheduled shipment of any batches containing Metal Deactivator Additive (MDA). If MDA has been added to the product, Buckeye reserves the right to refuse shipment. If requesting to move a batch that has been treated with MDA, supply the following information to Buckeye Measurement & Quality Control: (1) the purpose for adding MDA, (2) JFTOT test results both prior to and after adding MDA, (3) MDA treat rate, and (4) MDA product used.
3. Mercaptan Sulfur waived if fuel is negative by Doctor test.
4. Refer to ASTM D1655 Table 1 Thermal Stability note ~~M~~ for referee method.
5. Product must comply with ASTM D1655 specifications in addition to Buckeye product specifications. Buckeye will accept test methods that are listed in ASTM D1655. Test methods listed above are considered referee methods by Buckeye.
6. Designated as Jet Fuel. This fuel is for aviation use only. Not for use in highway vehicles or engines, or NRLM engines.
7. Simulated distillation (D2887) is allowed, but must be correlated to D86.
8. Biofuel Components (e.g. biodiesel, FAME) are not permitted in this product.

BUCKEYE PARTNERS, L.P.
MARINE RECEIPT SPECIFICATIONS FOR ULTRA LOW SULFUR MARINE DIESEL OIL (MDO)
CERTIFIED NTDF - 15 PPM SULFUR

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	TEST RESULTS MAXIMUM	NOTE
Gravity, API @ 60ºF	D287, D4052, D1298	30		
Flash Point, ºF	D93, D56, D3828, D7094	140		1
Color, ASTM	D1500		2.5	2
Viscosity, cst @ 104ºF	D445, D7042	1.9	4.1	
Cloud Point, ºF (Sept thru March)	D2500, D5771, D5772, D5773		+15.8 ºF	
(April thru August)	D5773, D3117		+20 ºF	
Pour Point, ºF (Sept thru March)	D5985, D5949, D5950, D97		0 ºF	
(April thru August)			+10ºF	
Total Sulfur, ppm (at receipt)	D5453, D2622, D7039, D4294		15	
Ash, wt. %	D482		0.01	
Sediment and Water, % by volume	D2709, D4007, D6304		0.05	
Distillation, ºF	D86			
50% recovered		Report		
90% recovered		540	640	
End Point			690	
Haze Rating @ 77ºF Procedure 2	D4176		2	
Dye Content, ppm (when required)	D6258 or Petrospec DT100	11.1	16.0	2
NACE	TM0172-2001	B+		

NOTES:

1. Test method D-56 may be used. Test method D-93 is the referee method.
2. Dye requirement is terminal specific, as some terminals may allow for dyed product, and some may only allow undyed product. Check with Terminal Scheduling for exact requirements. When dye is required, use standard solvent Red 26 or solvent Red 164, in concentrations of 3.9 lbs. or 6.6 lbs., respectively, of active dry ingredient per 1,000 barrels. Product must meet a maximum color of 2.5 per ASTM D1500 prior to introduction of dye.
3. This fuel is designated for non-transportation use (Certified NTDF – 15 ppm sulfur Max)

BUCKEYE PARTNERS, L.P.
MARINE RECEIPT SPECIFICATIONS FOR SEGREGATED RESIDUAL FUEL
#6 FUEL OIL, RESIDUAL BLEND STOCKS, BUNKER FUEL, HCO, CSO

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	MAXIMUM	NOTE
Gravity, API @ 60ºF	D287, D4052	10.0	28	3
Flash Point, ºF	D93, D3828, D7094	140		
Viscosity, cst (ssf) @ 122ºF	D445, D2161, D7042		1000 (470)	6
Pour Point, ºF	D5985, D5949, D5950, D97		60 ºF	4
Total Sulfur, wt. %	D4294, D5453, D3120, D2622		Report	2
Hydrogen Sulfide, ppm	D5705		100	7
Basic Sediment and Water, % by volume	D1796		2.0	
Ash, wt. %	D482		Report	5
Cleanliness & Compatibility Spot Test	D4740		Report	
Product Temperature, ºF		Report		1

NOTES:
1. Product temperature must not exceed 10 ºF below actual flash point, and shall not be less than 30 ºF above pour point.
2. Sulfur limits vary by state, terminal or customer.
3. API Gravity below 10.0 may be allowed if approved by Buckeye Operations, Scheduling and Tank Integrity for tank integrity limitations.
4. Pour points higher than 60F may be allowed if approved by Buckeye Operations, Scheduling and M&QC.
5. Ash testing may be waived if Aluminum and Silicon results (IP470) are provided.
6. At Yabucoa, maximum viscosity is 600 cst at product temperature.
7. At Yabucoa and BBH, maximum H2S content is 10 ppm (ASTM D5705).

MARINE RECEIPT SPECIFICATIONS FOR SEGREGATED
DISTILLATE BLENDSTOCK, DISTILLATE BLEND COMPONENTS, LCO

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	MAXIMUM	NOTE
Gravity, API @ 60ºF	D287, D4052	29	51	
Flash Point, ºF	D93, D3828, D7094	125		
Viscosity, cst @ 104ºF	D445, D7042	1.0	6.0	
Pour Point, ºF	D5985, D5949, D5950, D97		+10ºF/ -12 ºC	2
Total Sulfur, wt. %	D4294, D5453, D3120, D2622		Report	1
NACE	TM0172-2001	B+		4

NOTES:
1. Sulfur limits vary by state, terminal or customer.
2. Pour points higher than +10F may be allowed if approved by Buckeye Operations, Scheduling and M&QC.
3. Hydrogen sulfide is prohibited in these products. Buckeye must be notified if hydrogen sulfide is present.
4. For this product specification, vessels with unknown NACE results may be discharged into Buckeye marine sites provided all receipt tanks are tested by the Customer within 48 hours of receipt. Tanks not meeting the B+ must be treated or blended to at least a B+ within 72 hours of receipt.

BUCKEYE PARTNERS, L.P.
MARINE RECEIPT SPECIFICATIONS FOR SEGREGATED GASOLINE OR SEGREGATED UNFINISHED GASOLINE BLEND COMPONENTS

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	TEST RESULTS MAXIMUM	NOTE
Gravity, API @ 60°F	D287, D1298, D4052	Report	85	2
NACE	TM0172-2001	B+		4
RVP, psi	D5191, D5482, D323		Report	

NOTES:

1. This specification shall include segregated finished gasolines and gasoline blendstocks, such as naphtha, reformate, alkylate, condensate, etc. These products may not contain oxygenates, such as ethers or alcohols.
2. Maximum API may vary by tank. Check with Scheduling/Facility to ensure delivery does not exceed tank's maximum API.
3. Hydrogen sulfide is prohibited in these products. Buckeye must be notified if hydrogen sulfide is present.
4. For this product specification, vessels with unknown NACE results may be discharged into Buckeye marine sites provided all receipt tanks are tested by the Customer within 48 hours of receipt. Tanks not meeting the B+ must be treated or blended to at least a B+ within 72 hours of receipt.

BUCKEYE PARTNERS, L.P.
MARINE RECEIPT SPECIFICATIONS FOR SEGREGATED ASPHALT

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	TEST RESULTS MAXIMUM	NOTE
Gravity, API @ 60°F	D70, AASHTO T228	Report		1
Temperature (F)		Report		1
Hydrogen Sulfide, ppm	D5705 MOD		100	2

NOTES:

1. Minimum API and minimum temperature may vary by tank or facility. Check with Scheduling/Facility to ensure delivery does not exceed tank's minimum specification.
2. Test temperature for D5705 MOD needs to be appropriate for the product temperature as determine by local Buckeye Operations.

BUCKEYE PARTNERS, L.P.
MARINE RECEIPT SPECIFICATIONS FOR #4 FUEL OIL

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	TEST RESULTS MAXIMUM	NOTE
Gravity, API @ 60°F	D287, D4052	16.0	30.0	
Flash Point, °F	D93, D3828, D7094	131		
Viscosity, ssu @ 100°F (cst @ 104°F)	D88 (D445), D7042	45 (5.5)	125 (24.0)	
Pour Point, °F	D5950, D97		21 °F	
Total Sulfur, wt. %	D4294, D5453, D3120, D2622		See Table	1

Maximum Sulfur Table

Grade Code	Max Sulfur, wt %
0.3% Sulfur	0.30
0.5% Sulfur	0.50

Ash, wt. %	D482		0.10	
Basic Sediment and Water, % by volume	D1796		0.50	

NOTES:

1. Sulfur limits vary by state, terminal or customer.

BUCKEYE PARTNERS, L.P.
MARINE RECEIPT SPECIFICATIONS FOR DENATURED ETHANOL
IN ACCORDANCE WITH ASTM D4806

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	MAXIMUM	NOTE
Gravity, API @ 60°F	D1298, D4052		Report	
Ethanol, volume %	D5501	95.0		
Methanol, volume %	D5501		0.5	
Solvent-washed gum, mg/100 mL	D381		5.0	
Water content, volume % (mass %)	E203, E1064, D7923		1.0 (1.26)	
Denaturant content, volume %	Calculated	1.96	3.0	1,2
Inorganic Chloride content, mass ppm (mg/L)	D7319, D7328		6.7 (5)	
Copper content, mg/kg	D1688		0.1	
Acidity (as acetic acid CH3COOH), mass % (mg/L)	D7795		0.0070 (56)	
pHe	D 6423	6.5	9.0	
Sulfur, mass ppm	D2622, D3120, D5453, D7039		10	
Sulfate, mass ppm	D7318, D7319, D7328		4	
Benzene, vol%	D7576-10		0.06	4
Olefins, vol%	D7347-07		0.5	4
Aromatic Hydrocarbons, vol%	D7576-10		1.7	4
Appearance		Visibly free of suspended or precipitated contaminants (clear and bright)		

NOTES:

1. Refer to most current ASTM D-4806 specifications regarding permitted and prohibited denaturants. Denaturant is added in the specified range to comply with federal regulations, and the content is set by volumetric addition during the denaturing process. There is no standardized test procedure to directly determine the denaturant content of the ethanol. Current analytical procedures only provide a calculated estimate of the denaturant content, which is not sufficiently accurate for determining compliance.
2. Only previously certified gasoline, gasoline blendstocks or natural gas liquids may be used as denaturant. Product may not be denatured, wholly or partially, with MTBE.
3. This product is a terminal specification only, not a pipeline product specification.
4. California terminals only. Does not apply to terminals outside of California.
5. For California Terminals, D5453-93 shall be used to determine sulfur content.

BUCKEYE PARTNERS, L.P.
MARINE RECEIPT SPECIFICATIONS FOR BIODIESEL FUEL BLEND STOCK IN ACCORDANCE WITH ASTM D6751

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	MAXIMUM	NOTE
Gravity, API @ 60°F	D287, D4052, D1298		Report	
Calcium and Magnesium, combined ppm (µg/g)	EN 14538		5	
Flash point °C (°F)	D93, D3828, D7094	93°C (199°F)		
Alcohol control, One of the following must be met:				
1. Methanol content, mass %	EN 14110		0.2	
2. Flash point °C (°F)	D93, D3828, D7094	130°C (266°F)		
Water and sediment, % volume	D2709, D4007, D6304		0.050	
Kinematic viscosity, 40°C mm2/s	D445, D7042	1.9	6.0	
Sulfated ash, % mass	D874		0.020	
Sulfur, % mass (ppm)	D5453, D2622, D4294		0.0015 (15)	
Copper strip corrosion	D130		No. 3	
Cetane number	D613	45		
Cloud point - Winter °C (°F)	D2500, D5773		2°C (36°F)	1,3
- Summer °C (°F)	D2500, D5773		10°C (50°F)	1,3
Carbon residue, % mass	D4530		0.050	5
Acid number, mg KOH/g	D664		0.50	
Cold soak filterability seconds - Winter	D7501		200 (Winter)	1
- Summer	D7501		360 (Summer)	1
Free glycerin, % mass	D6584		0.020	
Total glycerin, % mass	D6584		0.240	
Phosphorus content, % mass	D4951		0.001	
Distillation temperature AET °C (°F) 90 % recovered	D1160		360°C (680°F)	
Sodium and Potassium, combined ppm (µg/g)	EN 14538		5	
Oxidation stability hours	EN15751	3		
Monoglyceride % mass - Winter	D6584		0.5 (Winter)	1
-Summer	D6584		0.8 (Summer)	1

NOTES:

1. Summer is April 1 through September 30. Winter is October 1 through March 31.
2. Supplier must be BQ9000 producer certified.
3. No cold flow additives are permitted.
4. This product is a terminal specification only, not a pipeline product specification.
5. Carbon residue shall be run on the 100% sample (see ASTM D6751).
6. Product shall meet ASTM D6751 Grade 2B S15 Specification.

BUCKEYE PARTNERS, L.P.
MARINE RECEIPT SPECIFICATIONS FOR
FUNGIBLE GASOLINE CONVENTIONAL BOB (CBOB)
REGULAR AND PREMIUM GRADES

SPECIFICATIONS FOR CBOB GASOLINE PRIOR TO ETHANOL ADDITION

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	MAXIMUM	NOTE
Color			Undyed	
Gravity, API @ 60ºF	D4052		Report	9
Oxygen Content, weight %	D5599		0.05	2,4
Oxidation Stability, minutes	D525	240		
NACE	TM0172	B+		1,8
RVP, psi (without ethanol)	D5191		See Table CB-1	11,12
Sulfur, ppm	D2622, D4294		80	13
Corrosion (Copper), 3 hrs. @ 122ºF	D130		1	1,13
Corrosion (Silver Strip) 3 hrs. @ 122ºF	D7671		1	1,13
Benzene, vol. %	D3606		3.8	13
Doctor Test	D4952		Negative	3,13
Or Mercaptan Sulfur, wt. %	D3227		0.002	13
Lead Content, gms/gal	D3237, D5059		0.01	13,14
Phosphorous, gms/gal	D3231		0.004	10,13
Solvent washed Gum, mg/100ml	D381		4	
Premium Grade only:				
Distillation T50, Deg F	D86, D7345	170		
TV/L 20, Deg F	D5188	Refer to Table CB-2		
(Neat TV/L must meet minimum monthly limit found in Table CB-2)				
Albany Premium Grade only:				
Octane Rating for Premium Octane Grades (Neat)				
Research Number	D2699, D2885	Report		
Motor Number	D2700, D2885	Report		
Index, (R+M)/2		91.0		

Table CB-1 – MAX RVP (psi) BEFORE BLENDING WITH 10% ETHANOL

Destination		*Jan*	*Feb*	*Mar*[4]	*Apr*[4]	*May 1 Through Sept 15*	*Sep 16-30*	*Oct*	*Nov 1-15*	*Nov 16-30*	*Dec*
Florida Terminals	**RVP psi**	**13.5**	**13.5**	**13.5**	**11.5**	**9.0**	**11.5**	**11.5**	**13.5**	**13.5**	**13.5**
South Carolina Terminals	**RVP psi**	**13.5**	**13.5**	**13.5**	**11.5**	**9.0**	**11.5**	**13.5**	**13.5**	**13.5**	**13.5**
North Carolina Terminals	**RVP psi**	**13.5**	**13.5**	**13.5**	**13.5**	**9.0**	**11.5**	**13.5**	**13.5**	**13.5**	**13.5**
Kentucky Terminals	**RVP psi**	**15.0**	**15.0**	**13.5**	**13.5**	**9.0**	**11.5**	**13.5**	**13.5**	**13.5**	**15.0**
Virginia Terminals	**RVP psi**	**15.0**	**15.0**	**13.5**	**13.5**	**9.0**	**11.5**	**13.5**	**13.5**	**15.0**	**15.0**
New Jersey Terminals	**RVP psi**	**15.0**	**15.0**	**15.0**	**13.5**	**7.8**	**13.5**	**13.5**	**15.0**	**15.0**	**15.0**
Maine Terminals	**RVP psi**	**15.0**	**15.0**	**15.0**	**15.0**	**7.8**	**13.5**	**13.5**	**15.0**	**15.0**	**15.0**
Maryland Terminals	**RVP psi**	**14.5**	**14.5**	**14.5**	**12.9**	**7.8**	**10.5**	**12.9**	**12.9**	**14.5**	**14.5**
New York Terminals	**RVP psi**	**14.5**	**14.5**	**14.5**	**12.9**	**7.8**	**12.9**	**12.9**	**14.5**	**14.5**	**14.5**
Ohio Terminals	**RVP psi**	**15.0**	**15.0**	**15.0**	**13.5**	**7.8**	**11.5**	**13.5**	**15.0**	**15.0**	**15.0**

(1) Not all Grade Codes (and RVPs) are available at all Terminals. Lower Summer RVP limits may only apply to certain counties - the Terminal may not have storage capacity for all RVP grades.

(2) Summer Grade gasoline discharged in March and April shall have Maximum RVPs with minimum 0.2 psi buffer for tank turn (i.e. Max RVP of 8.8 will be accepted for 9.0 RVP product).

BUCKEYE PARTNERS, L.P.
MARINE RECEIPT SPECIFICATIONS FOR
FUNGIBLE GASOLINE CONVENTIONAL BOB (CBOB)
REGULAR AND PREMIUM GRADES

SPECIFICATIONS WITH 10% DENATURED ETHANOL AS DEFINED IN ASTM D4806

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	MAXIMUM	NOTE
Octane Rating with 10% Denatured Fuel Ethanol				5,6
Regular Grades				
Research Number	D2699, D2885	Report		
Motor Number	D2700, D2885	82.0		
Index, (R+M)/2		87.0		
Premium Grades				13
Research Number	D2699, D2885	Report		
Motor Number	D2700, D2885	Report		
Index, (R+M)/2		93.0		
Albany Premium Grade only:				
Octane Rating for Premium Octane Grades (Neat)				
Research Number	D2699, D2885	Report		
Motor Number	D2700, D2885	Report		
Index, (R+M)/2		94.0		
RVP, psi with 10% Denatured Fuel Ethanol	D5191	Refer to Table CB-2		11,12
Distillation	D86, D7345	Refer to Table CB-2		
TV/L 20, Deg F	D5188	Refer to Table CB-2		10
Driveability Index	D4814	Refer to Table CB-2		

NOTES:

1. No additives or corrosion inhibitors containing phosphorus may be used in this gasoline.
2. This product may not contain oxygenates, such as ethers or alcohols. The use of non-hydrocarbon blending components is prohibited. The di minimis limit of MTBE, ETBE, and TAME allowed is 0.3 vol. % maximum at origin.
3. Mercaptan Sulfur waived if fuel is negative by Doctor test.
4. Any gasoline exhibiting an offensive odor and/ or poses a personal health hazard will not be accepted for shipment. Any gasoline containing more than 0.50 wt. % of dicyclopentadiene will not be accepted. The referee method will be based on a gas chromatograph test.
5. The use of Port Fuel Injector (PFI) and intake valve detergent additives is prohibited.
6. The use of MMT octane enhancing additive is prohibited.
7. Buckeye will accept test method results as listed in ASTM D4814 (most recent version). Test methods listed in this specification are considered the referee methods by Buckeye.
8. All gasoline must meet a minimum level of corrosion protection, indicated by a minimum rating of B+ as determined by NACE Standard Test Method TM0172 (Determining Corrosive Properties of Cargoes in Petroleum Product Pipelines).
9. Maximum API may vary by tank. Check with Scheduling/Facility to ensure delivery does not exceed tank's maximum API.
10. Phosphorous testing may be waived if source refinery is a phosphorous-free facility and stipulates on CoA that all gasoline will meet EPA phosphorous requirements without testing. Testing will not be waived for internationally sourced vessels.
11. Beginning Sept 16 (Non-Summer season), low RVP grades may be comingled with corresponding next higher RVP grade. Buckeye reserves the right to regrade to higher RVP during seasonal RVP limit increases, provided destination RVP compliance is maintained at time of delivery.
12. This gasoline is for blending with between 9 and 10 vol % ethanol. Base gasoline - Not for sale to the ultimate consumer. Summer grades of this product do not meet the requirements for summer reformulated gasoline, and may not be used in any reformulated gasoline covered area.
13. Results may be reported "neat" (prior to blending with 10% ethanol), or with 10% ethanol. Same limit applies to either.
14. Heavy Metals are not allowed to be present. Lead content results are not required for domestic vessels, but must be included for imported vessels.

BUCKEYE PARTNERS, L.P. - MARINE RECEIPT SPECIFICATIONS FOR FUNGIBLE GASOLINE CONVENTIONAL BOB (CBOB) REGULAR AND PREMIUM GRADES - CONTINUED

CBOB TABLE CB-2 - SEASONAL GASOLINE REQUIREMENTS

[redacted]

REID VAPOR PRESSURE (RVP) (ALL LIMITS WITH 10% ETHANOL)

The following schedule denotes the volatility properties as required by Buckeye and will coincide with dates specified by appropriate government agencies. Terminal tanks must be compliant with the monthly maximum or minimum requirements prior to the start of the month. Customers must schedule accordingly and higher volatile product must be removed from tankage prior to a more stringent month beginning. Buckeye will use a Grabner vapor pressure instrument to monitor RVP compliance, per ASTM D5191, but will use the coefficients recommended by EPA, i.e. 956X - 0.347.

DISTILLATION CLASSES: ASTM D-86 (ALL LIMITS WITH 10% ETHANOL)

CLASS	A	C	D	E
10% Evap., Deg F (Deg C) Max.	158 (70)	140 (60)	131 (55)	122 (50)
50% Evap, Deg F (Deg C) Min. (1)	150 (66)	150 (66)	145.0 (62.8)	145.0(62.8)
50% Evap., Deg F (Deg C) Max.	250 (121)	240 (116)	235 (113)	230 (110)
90% Evap., Deg F (Deg C) Max.	374 (190)	365 (185)	365 (185)	365 (185)
End Point, Deg F (Deg C) Max.	**430 (221)**	**430 (221)**	**430 (221)**	**430 (221)**
Driveability Index Deg F (Deg C) Max. (2)	1250 (597)	1230 (586)	1220 (580)	1200 (569)

CLASS	1	2	3	4	5
Min Vapor/Liquid Ratio (TV/L) with 10% Ethanol,20 °F (°C) [ASTM D-5188][1]	129 (54)	122 (50)	116 (47)	107 (42)	102(39)

Maximum RVP and Distillation Requirements[1]- Tanks must be turned to more stringent Class before first of month

Destination		Jan	Feb	Mar[4]	Apr[4]	May	Jun	Jul	Aug	Sep 1-15	Sep 16-30	Oct	Nov 1-15	Nov 16-30	Dec
Florida Terminals	RVP psi	14.5	14.5	14.5	12.5	10.0	10.0	10.0	10.0	10.0	12.5	12.5	14.5	14.5	14.5
	dist	D-4	D-4	D-4	C-3	A-3	A-3	A-3	A-3	A-3	C-3	C-3	D-4	D-4	D-4
South Carolina Terminals	RVP psi	14.5	14.5	14.5	12.5	10.0	10.0	10.0	10.0	10.0	12.5	14.5	14.5	14.5	14.5
	dist	D-4	D-4	D-4	C-3	A-3	A-3	A-3	A-2	A-2	C-3	D-4	D-4	D-4	D-4
North Carolina Terminals	RVP psi	14.5	14.5	14.5	14.5	10.0	10.0	10.0	10.0	10.0	12.5	14.5	14.5	14.5	14.5
	dist	D-4	D-4	D-4	D-4	A-3	A-3	A-3	A-2	A-2	C-3	D-4	D-4	D-4	D-4
Kentucky Terminals	RVP psi	15.5	15.5	14.5	14.5	10.0	10.0	10.0	10.0	10.0	12.5	14.5	14.5	14.5	15.5
	dist	E-5	E-5	D-4	D-4	A-3	A-3	A-3	A-3	A-3	C-3	D-4	D-4	D-4	E-5
Virginia Terminals	RVP psi	15.5	15.5	14.5	14.5	10.0	10.0	10.0	10.0	10.0	12.5	14.5	14.5	15.5	15.5
	dist	E-5	E-5	D-4	D-4	A-3	A-3	A-3	A-3	A-3	C-3	D-4	D-4	E-5	E-5
New Jersey Terminals	RVP psi	15.5	15.5	15.5	14.5	9.0	9.0	9.0	9.0	9.0	14.5	14.5	15.5	15.5	15.5
	dist	E-5	E-5	E-5	D-4	A-4	A-3	A-3	A-3	A-3	D-4	D-4	E-5	E-5	E-5
Maine Terminals	RVP psi	15.5	15.5	15.5	15.5	9.0	9.0	9.0	9.0	9.0	14.5	14.5	15.5	15.5	15.5
	dist	E-5	E-5	E-5	E-5	A-4	A-3	A-3	A-3	A-3	D-4	D-4	E-5	E-5	E-5
Maryland Terminals	RVP psi	15.0	15.0	15.0	13.5	9.0	9.0	9.0	9.0	9.0	13.5	13.5	13.5	15.0	15.0
	dist	E-5	E-5	E-5	D-4	A-3	A-3	A-3	A-3	A-3	D-4	D-4	D-4	E-5	E-5
New York Terminals	RVP psi	15.0	15.0	15.0	13.5	9.0	9.0	9.0	9.0	9.0	13.5	13.5	15.0	15.0	15.0
	dist	E-5	E-5	E-5	D-4	A-4	A-3	A-3	A-3	A-3	D-4	D-4	E-5	E-5	E-5
Ohio Terminals	RVP psi	15.5	15.5	15.5	14.5	9.0	9.0	9.0	9.0	9.0	12.5	14.5	15.5	15.5	15.5
	dist	E-5	E-5	D-4	D-4	A-4	A-3	A-3	A-3	A-3	C-3	D-4	E-5	E-5	E-5

(1) Computer and Linear methods may be used to determine TV/L value. D5188 will be the referee method. Maximum Distillation residue is 2% Vol for all base gasoline.

(2) The DI (Driveability Index) specification limits are not subject to correction for precision of the test method.

(3) Not all Grade Codes (and RVPs) are available at all Terminals. Lower Summer RVP limits may only apply to certain counties - the Terminal may not have storage capacity for all RVP grades.

(4) Summer Grade gasoline discharged in March and April shall have Maximum RVPs with minimum 0.2 psi buffer for tank turn (i.e. Max RVP of 9.8 will be accepted for 10.0 RVP product).

BUCKEYE PARTNERS, L.P.
MARINE RECEIPT SPECIFICATIONS FOR FUNGIBLE GASOLINE REFORMULATED BOB (RBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL AS DEFINED IN ASTM D4806

SPECIFICATIONS FOR RBOB GASOLINE PRIOR TO ETHANOL ADDITION

PRODUCT PROPERTY	ASTM TEST METHODS	TEST RESULTS MINIMUM	TEST RESULTS MAXIMUM	NOTE
Color			Undyed	
Gravity, API @ 60°F	D4052	Report		13
Oxygen Content, weight %	D5599		0.05	2,4
Oxidation Stability, minutes	D525	240		
NACE	TM0172	B+		1,8
Sulfur, ppm	D2622, D4294		80	
Solvent washed Gum, mg/100ml	D381		4	

SPECIFICATIONS FOR RBOB WITH 10% DENATURED ETHANOL AS DEFINED IN ASTM D4806

Corrosion (Copper), 3 hrs. @ 122°F	D130		1	1,15
Corrosion (Silver Strip) 3 hrs. @ 122°F	D7671		1	1,15
Benzene, vol. %	D3606		3.8	15
Doctor Test	D4952		Negative	3,15
Or Mercaptan Sulfur, wt. %	D3227		0.002	15
Lead Content, gms/gal	D3237, D5059		0.01	14,15,16
Phosphorous, gms/gal	D3231		0.004	14,15
Octane Rating with 10% Denatured Fuel Ethanol				5,6
Regular Grades				
Research Number	D2699, D2885	Report		
Motor Number	D2700, D2885	82.0		
Index, (R+M)/2		87.0		
Premium Grades				13
Research Number	D2699, D2885	Report		
Motor Number	D2700, D2885	Report		
Index, (R+M)/2		93.0		
RVP, psi with 10% Denatured Fuel Ethanol	D5191	Refer to Table RB-1		9,11,12
Distillation	D86, D7345	Refer to Table RB-1		
TV/L 20, Deg F	D5188	Refer to Table RB-1		10
Driveability Index	D4814	Refer to Table RB-1		

This RBOB may not be combined with any other RBOB except RBOB having the same requirement for oxygenate type and amount.

All parameters must be met after blending with 10% denatured fuel ethanol unless otherwise noted.

NOTES:

1. No additives or corrosion inhibitors containing phosphorus may be used in this gasoline.
2. Before blending with denatured ethanol, this product may not contain oxygenates, such as ethers or alcohols. Refer to test methods published in 40 CFR Part 1090. The use of non-hydrocarbon blending components is prohibited. The di minimis limit of MTBE, ETBE, and TAME allowed is 0.3 vol. % maximum at origin.
3. Mercaptan Sulfur waived if fuel is negative by Doctor test.
4. Any gasoline exhibiting an offensive odor and/ or poses a personal health hazard will not be accepted for shipment. Any gasoline containing more than 0.50 wt. % of dicyclopentadiene will not be accepted for shipment. The referee method will be based on a gas chromatograph test.
5. The use of Port Fuel Injector (PFI) and intake valve detergent additives is prohibited.
6. The use of MMT octane enhancing additive is prohibited.
7. Buckeye will accept test method results as listed in ASTM D4814 (most recent version). Test methods listed in this specification are considered the referee methods by Buckeye.

8. All products (except aviation grades) must meet a minimum level of corrosion protection, indicated by a minimum rating of B+ as determined by NACE Standard Test Method TM0172-2001 (Determining Corrosive Properties of Cargoes in Petroleum Product Pipelines).
9. Not all Grade Codes (and RVPs) are available on all pipeline systems.
10. Computer and Linear methods may be used to determine TV/L value. D5188 will be the referee method.
11. Beginning Sept 16 (Non-Summer-season), low RVP grades may be comingled with corresponding next higher RVP grade. Buckeye reserves the right to regrade to higher RVP during seasonal RVP limit increases, provided destination RVP compliance is maintained at time of delivery.
12. This gasoline is for blending with between 9 and 10 vol % ethanol. Suitable for the special RVP provisions for ethanol blends that contain between 9 and 10 vol% ethanol. Base gasoline - Not for sale to the ultimate consumer.
13. Maximum API may vary by tank. Check with Scheduling/Facility to ensure delivery does not exceed tank's maximum API.
14. Phosphorous testing may be waived if source refinery is a phosphorous-free facility and stipulates on CoA that all gasoline will meet EPA phosphorous requirements without testing. Testing will not be waived for internationally sourced vessels.
15. Results may be reported "neat" (prior to blending with 10% ethanol), or with 10% ethanol. Same limit applies to either.
16. Heavy Metals are not allowed to be present. Lead content results are not required for domestic vessels, but must be included for imported vessels.

BUCKEYE PARTNERS, L.P. - MARINE RECEIPT SPECIFICATIONS FOR FUNGIBLE GASOLINE REFORMULATED BOB (RBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL AS DEFINED IN ASTM D4806 -CONTINUED

RBOB TABLE RB-1 - SEASONAL GASOLINE REQUIREMENTS

REID VAPOR PRESSURE (RVP)

The following schedule denotes the volatility properties as required by Buckeye and will coincide with dates specified by appropriate government agencies. Terminal tanks (with 10% ethanol) must be compliant with the monthly maximum or minimum requirements prior to the start of the month. Customers must schedule accordingly and higher volatile product must be removed from tankage prior to a more stringent month beginning. Buckeye will use a Grabner vapor pressure instrument to monitor RVP compliance, per ASTM D5191, but will use the coefficients recommended by EPA, i.e. 956X - 0.347.

DISTILLATION CLASSES: ASTM D-86

CLASS	A	C	D	E
10% Evap. with 10% Ethanol, Deg F (Deg C) Max.	158 (70)	140 (60)	131 (55)	122 (50)
50% Evap with 10% Ethanol, Deg F (Deg C) Min. (1)	150 (66)	150 (66)	145.0 (62.8)	145.0 (62.8)
50% Evap. with 10% Ethanol, Deg F (Deg C) Max.	250 (121)	240 (116)	235 (113)	230 (110)
90% Evap. with 10% Ethanol, Deg F (Deg C) Max.	374 (190)	365 (185)	365 (185)	365 (185)
End Point with 10% Ethanol, **Deg F (Deg C) Max.**	**437 (225)**	**437 (225)**	**437 (225)**	**437 (225)**
Driveability Index with 10% Ethanol, Deg F (Deg C) Max. (2)	1250 (597)	1230 (586)	1220 (580)	1200 (569)

TV/L CLASSES: ASTM D-5188

CLASS	1	2	3	4	5
Min Vapor/Liquid Ratio (TV/L) with 10% Ethanol,20 °F (°C) [ASTM D-5188][1]	129 (54)	122 (50)	116 (47)	107 (42)	102(39)

Maximum RVP (with 10% Ethanol), and Max Distillation Requirements (with 10% Ethanol) - Tanks must be turned to more stringent Class before first of month

Destination		Jan	Feb	Mar[5]	Apr[5]	May	Jun	Jul	Aug	Sep 1-15	Sep 16-30	Oct	Nov 1-15	Nov 16-30	Dec
New Jersey	RVP psi dist	15.5 E-5	15.5 E-5	15.5 E-5	14.5 D-4	7.4 A-4	7.4 A-3	7.4 A-3	7.4 A-3	7.4 A-3	14.5 D-4	14.5 D-4	15.5 E-5	15.5 E-5	15.5 E-5
New York, Connecticut (New Haven)	RVP psi dist	15.0 E-5	15.0 E-5	15.0 E-5	13.5 D-4	7.4 A-4	7.4 A-3	7.4 A-3	7.4 A-3	7.4 A-3	13.5 D-4	13.5 D-4	15.0 E-5	15.0 E-5	15.0 E-5
Delaware	RVP psi dist	15.0 E-5	15.0 E-5	15.0 E-5	13.5 D-4	7.4 A-4	7.4 A-3	7.4 A-3	7.4 A-3	7.4 A-3	11.5 C-3	13.5 D-4	15.0 E-5	15.0 E-5	15.0 E-5
Maryland	RVP psi dist	15.0 E-5	15.0 E-5	15.0 E-5	13.5 D-4	7.4 A-3	7.4 A-3	7.4 A-3	7.4 A-3	7.4 A-3	11.5 C-3	13.5 D-4	13.5 D-4	13.5 D-4	15.0 E-5
Virginia	RVP psi dist	15.5 E-5	15.5 E-5	14.5 D-4	14.5 D-4	7.4 A-3	7.4 A-3	7.4 A-3	7.4 A-3	7.4 A-3	12.5 C-3	14.5 D-4	15.5 E-5	15.5 E-5	15.5 E-5
Kentucky	RVP psi dist	15.5 E-5	15.5 E-5	14.5 D-4	14.5 D-4	7.4 A-4	7.4 A-3	7.4 A-3	7.4 A-3	7.4 A-3	12.5 C-3	14.5 D-4	14.5 E-5	15.5 E-5	15.5 E-5

(1) Computer and Linear methods may be used to determine TV/L value. D5188 will be the referee method. Maximum Distillation residue is 2 % Vol.

(2) The DI (Driveability Index) specification limits are not subject to correction for precision of the test method.

(3) For products blended to meet EPA or state imposed volatility requirements, RVP test must be performed in accordance with methods published in 40 CFR Part 1090.

(4) Not all Grade Codes (and RVPs) are available at all Terminals. Terminal may not have storage capacity for all RVP grades.

(5) Summer Grade RBOB gasoline discharged in March and April shall have Maximum RVPs with minimum 0.2 psi buffer for tank turn (i.e. Max RVP of 7.2 psi will be accepted for 7.4 RVP product).

RESERVED