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FERROUS RAW MATERIALS MANUAL

PART 3

FERROUS RAW MATERIALS SPECIFICATIONS

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PART 3 SPECIFICATIONS OF...

CHAPARRAL STEEL MIDLOTHIAN, LP, AND ITS AFFILIATED COMPANIES (HEREINAFTER REFERRED TO AS “CHAPARRAL” OR “BUYER”):

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GENERAL SPECIFICATIONS

INTRODUCTION

CHAPARRAL STEEL MIDLOTHIAN, LP, AND ITS AFFILIATED COMPANIES
(HEREINAFTER REFERRED TO AS “CHAPARRAL” OR “BUYER”) ...

Purchases scrap materials solely for shredding, remelting and other recycling purposes.

Scrap purchased for shredding, remelting and other recycling purposes may be referred to herein as “Ferrous Raw Materials”.

Without Chaparral’s prior written approval, all purchased Ferrous Raw Materials must meet Chaparral Specifications.

Chaparral expects every Supplier to provide materials that consistently meet our Specifications and that conform with Chaparral Safety & Environmental Quality Requirements (Part 2 of Ferrous Raw Materials Manual (“FRMM”)).

It is our goal that imposition of a downgrade and / or monetary penalty for failure to meet specifications or other requirements shall be a rare occurrence. Suppliers who do not consistently meet our specifications and other requirements will be disqualified. See Item 10 of the Commercial Terms & Conditions of Purchase (Part 1 of FRMM).

GENERAL SPECIFICATIONS FOR RAW MATERIAL SUPPLIED FOR SHREDDING

1) PRINCIPAL CHARACTERISTICS DESIRED

- a) Cars and light truck bodies must be crushed to a maximum thickness of 24" (twenty-four inches). Minimum thickness is 8" (eight inches).
- b) A car or light truck body may contain only the same number of seats with which such former vehicle was originally equipped.
- c) Maximum dimensions for non-automotive scrap: 8' (eight feet) long X 24" (twenty-four inches) wide X ½ inch thick.
- d) Crushed car and light truck bodies should be delivered on flat bed trucks or trailers. Minimum truck payload: 30,000 pounds. Chaparral normally uses forklifts to unload flat bed trucks and trailers containing crushed cars and light truck bodies.
 - i) Place enough dunnage on a completely clean truck or trailer bed prior to loading to insure safe, efficient unloading, and minimize risk of damage to the bed. A 4 (four) inch clearance between truck or trailer bed and each stack of crushed car & light truck bodies is recommended.
 - ii) Visually inspect to insure that all other crushed car & light truck bodies and / or detached scrap items have been stacked and hydraulically compressed between the top and bottom bodies, and the stack placed intact on the truck or trailer bed.
 - iii) Make sure that adjacent stacks of crushed cars are kept separate from each other. DO NOT overlap crushed cars or other scrap between stacks. Each stack must have integrity sufficient to withstand truck unloading and transport to storage areas without falling apart. A forklift must be able to cleanly lift each stack of material off the truck bed without disturbing the stack next to it.
 - iv) Properly secure each hydraulically compressed stack to the truck or trailer bed using at least three rated metallic tie-down assemblies that include appropriate combinations of DOT approved chains, binders, cables, winches, etc. (Do not use belt strapping).
 - v) Visually inspect after loading is completed to insure that there are no loose pieces that could fall off during transport.
- e) Requirements of Carrier and / or truck driver when Chaparral receives crushed car and light truck bodies and other scrap that is unloaded using a forklift: See Item 8.4 of the, Commercial Terms & Conditions of Purchase,.

2) DANGEROUS, DAMAGING OR VERY COSTLY “CONSEQUENCES OF USE”:

If one of the events listed below is traced to a particular shipment, then, in addition possible immediate disqualification of the shipper and / or Vendor, a non-negotiable monetary penalty may be imposed pursuant to Section 10 of the Commercial Terms & Conditions of Purchase (Part 1 of FRMM) to recover costs, including but not limited to, cleanup, administrative, legal, and enforcement costs which result from requirements that may be imposed under law by any government agency. The penalty shall be in addition to any other rights and remedies which Chaparral may have under the terms of the FRMM Parts 1-3, by agreement, or at law.

- a) Shredding of a radioactive source contained in the shipment
- b) Release of toxic substance(s) or hazardous waste(s) contained in the shipment
- c) Explosions and / or other damage caused on Chaparral plant property

3) PROHIBITED ITEMS AND SUBSTANCES THAT ARE “ZERO TOLERANCE” AT ALL TIMES. “ZERO TOLERANCE” MEANS: DISCOVERY OF THE LISTED ITEMS OR SUBSTANCES IN SHIPMENTS MAY RESULT IN THE IMMEDIATE DISQUALIFICATION OF THE SHIPPER AND / OR VENDOR.

- a) Radioactive sources
- b) PCB capacitors
- c) Other “PCB Items”
- d) Asbestos
- e) Other toxic substances and / or hazardous wastes
- f) Closed Container(s), i.e. anything designed to hold liquid or gas under pressure
- g) Scrapped items that contain CFC, HCFC & other refrigerants
- h) Explosive or highly flammable substances. Includes engine and transmission oil, gasoline, diesel fuel, propane and other fuels.

4) PROHIBITED ITEMS AND SUBSTANCES WHOSE REPEATED DISCOVERY IN SHIPMENTS MAY RESULT IN THE DISQUALIFICATION OF THE SHIPPER AND / OR VENDOR.

- a) Mercury, including mercury-containing capsules from motor vehicle convenience light switches.
- b) Undrained used oil filters and free organic liquids.
- c) Scrap contaminated with NORM (Naturally Occurring Radioactive Material).
- d) Non-PCB capacitors.
- e) Metallic lead and lead oxide, including lead-acid batteries.
- f) Non-ferrous metal oxides, including slags, drosses and related residues.
- g) No individual scrapped motor vehicle may contain more tires and seats than the former vehicle was originally equipped with.
- h) Heavy pieces of steel crushed between or inside car or light truck bodies. “Heavy piece of steel” means any non-automotive piece of steel over 1/2” (one half inch) thick.
- i) Copper-wound electric motors larger than 10 inches in diameter.

- j) Truck engines or larger. Scrapped automobiles and light trucks may contain the engine with which each former vehicle was originally equipped
 - k) Coils of strip, banding material, or sheet steel. Rolls or coils of wire or cable of any kind. "Wire or cable" includes barbed wire, baling wire, welding rod, chain link fencing, crane cable, etc.
 - l) Refrigeration Compressor Units, also known as... "refrigeration units", "air conditioner compressors", "HVAC" units, "condensing" units, "hermetic" units, "sealed units", or simply... "compressors".
- 5) ITEMS AND SUBSTANCES THAT MAY BE TOLERATED IN NEGLIGIBLE AMOUNTS, BUT IF DISCOVERED REPEATEDLY IN SHIPMENTS IN EXCESSIVE AMOUNTS MAY RESULT IN THE DISQUALIFICATION OF THE SHIPPER AND / OR VENDOR.

Unless otherwise indicated, "Negligible" shall mean any amount less than, and "Excessive" shall mean amounts greater than...

0.05% by weight: 20 Lb. in 40,000 Lb., or 70 Lb. in 140,000 Lb.

- a) Concrete, dirt, mud, sand, gravel, rocks, asphalt, etc.
 - b) Newspaper, wood, furniture, trash or other waste materials.
 - c) Flashlight batteries and the like.
 - d) Detached Used Oil Filters
 - e) Combustible non-metallic substances (oil, grease, tar, tar paper, rubber, plastic, etc.) that is attached to or adheres to the scrap in such a way that our shredder cannot mechanically separate the non-metallic from the metallic materials.
 - f) Turnings, borings, chips, etc. from iron or steel machining, drilling, or cutting operations
 - g) Wire from motor vehicle tire shredding operations.
 - h) Concrete reinforcing bar (REBAR) and other steel bars
 - i) Iron oxide in any form except for nominal amounts of surface rust arising from outside storage of prepared scrap under normal atmospheric conditions for a period usually not exceeding six months. Heavily rusted shipments will be rejected.
 - j) Waste or industrial byproducts containing iron in a form not economically recoverable via Electric Arc Furnace Steelmaking. Includes, but may not be limited to: Waste or byproducts arising from steel melting, heating, surface conditioning (including scarfing), grinding, sawing, welding and torch cutting operations, including: slag, mill scale, baghouse dust, grinder dust, sludge, welding flashings and kerf.
- 6) ITEMS ALLOWED TO BE COMINGLED WITH OTHER SHREDDER RAW MATERIAL ITEMS IF PROPERLY PREPARED
- a) Used Steel Containers, but only in the scrap grades in which Used Steel Containers are permitted.
- 7) ITEMS ALLOWED TO BE SUPPLIED AS A SEPARATE ITEM IF PROPERLY PREPARED
- a) Detached Used Oil Filters.

GENERAL SPECIFICATIONS FOR PREPARED FERROUS RAW MATERIAL SUPPLIED FOR DIRECT FURNACE CHARGING

1) PRINCIPAL CHARACTERISTICS DESIRED

- a) All ferrous scrap must be prepared in a fashion that insures efficient magnet handling and compact furnace charging. Shipments must not contain badly tangled material, or material that would tend to become badly tangled, in amounts that would appreciably increase material handling or furnace charging times (by comparison to average shipments of the same grade.) If the maximum piece size and minimum bulk density requirements given in Chaparral grade-by-grade Specifications are met, the scrap should be acceptable. However, the principles of efficient magnet handling and compact furnace charging override the specific size and density requirements given in the grade-by-grade specs.
- b) Bulk Density: Is an important dimension of scrap quality. Shippers are encouraged to determine the bulk density of each shipment, and to rework shipments that fail to meet requirements before forwarding to Chaparral. See Part 3, Appendix 1, "How Do I Check The Bulk Density Of My Shipment ?"

2) Chemistry, including residual elements:

Scrap must be free of all but negligible amounts of high alloy steels, including stainless steels, tool and die steels, manganese steel, and high-temperature alloys. In addition, unless otherwise indicated by the Chaparral Specification for a given scrap grade, or by mutual agreement between Chaparral and the Seller, the average chemical analysis for any scrap shipment must not exceed the levels shown below:

Element	Max. %
C	1.00%
S	0.05%
P	0.05%
Mn	1.65%
Si	0.60%
Cu	0.35%
Ni	0.15%
Cr	0.25%
Cu + Ni + Cr	0.70%
Mo	0.05%
Al	0.05%
Zn	0.05%
Sn	0.02%
Cd	0.02%
Pb	0.01%
Sb	0.01%

NOTE: 0.01% Max =
Not more than one pound in
ten thousand pounds.

3) DANGEROUS, DAMAGING OR VERY COSTLY “CONSEQUENCE OF USE”:

If one of the events listed below is traced to a particular shipment, then, in addition possible immediate disqualification of the shipper and / or Vendor, a non-negotiable monetary penalty may be imposed pursuant to Section 10 of the Commercial Terms & Conditions of Purchase (Part 1 of the FRMM) to recover costs, including but not limited to, cleanup, administrative, legal, and enforcement costs which result from requirements that may be imposed under law by any government agency. The penalty shall be in addition to any other rights and remedies which Chaparral may have under the terms of the FRMM Parts 1-3, by agreement, or at law.

- a) Melting of a radioactive source contained in the shipment
- b) Release of toxic substance(s) or hazardous waste(s) contained in the shipment
- c) Explosions and / or other damage caused on Chaparral plant property
- d) “Missed Chemistry” event that resulted in the scrapping or major loss in value of a heat of steel.

4) PROHIBITED ITEMS AND SUBSTANCES THAT ARE “ZERO TOLERANCE” AT ALL TIMES. “ZERO TOLERANCE” MEANS: DISCOVERY OF THE LISTED ITEMS OR SUBSTANCES IN SHIPMENTS MAY RESULT IN THE IMMEDIATE DISQUALIFICATION OF THE SHIPPER AND / OR VENDOR.

- a) Radioactive sources
- b) PCB capacitors
- c) Other “PCB Items”
- d) Asbestos
- e) Any other toxic substances and / or hazardous wastes
- f) Explosive or highly flammable substances
- g) Scrapped items that contain CFC, HCFC & other refrigerants
- h) Closed Container(s), i.e. anything designed to hold liquid or gas under pressure. All “Closed Containers” must be obviously cut wide open. Tiny holes are not enough. “Closed containers” include, but are not limited to, hydraulic cylinders, fire extinguishers, fuel storage tanks, oxygen or propane tanks, etc.

5) PROHIBITED ITEMS AND SUBSTANCES WHOSE REPEATED DISCOVERY IN SHIPMENTS MAY RESULT IN THE DISQUALIFICATION OF THE SHIPPER AND / OR VENDOR.

- a) Mercury, including mercury-containing capsules from motor vehicle convenience light switches.
- b) Undrained used oil filters and free organic liquids.
- c) Chlorinated plastics.
- d) Scrap contaminated with NORM (Naturally Occurring Radioactive Material)
- e) “Brick-sized” or larger pieces that don’t conduct electricity, and that present risk of electrode breakage during electric arc furnace remelting. Examples: rubber tires, pipes filled with cement, wood, railroad car scrap with wood attached, etc.
- f) Metallic lead and lead oxide, including lead-acid batteries, battery cables, and wheel weights.
- g) Scrapped items that contained CFC, HCFC & other refrigerants
- h) Automotive “Air Bag” propellant canisters

6) ITEMS THAT MAY BE TOLERATED IN NEGLIGIBLE AMOUNTS, BUT IF DISCOVERED REPEATEDLY IN SHIPMENTS IN EXCESSIVE AMOUNTS MAY RESULT IN THE DISQUALIFICATION OF THE SHIPPER AND / OR VENDOR.

Unless otherwise indicated, "Negligible" shall mean any amount less than, and "Excessive" shall mean amounts greater than...

0.05% by weight: 20 Lb. in 40,000 Lb., or 70 Lb. in 140,000 Lb.

- a) Metallic Copper (Cu) and Aluminum (Al). Includes Copper-wound and Aluminum-wound motors larger than 10 inches in diameter; Copper, Brass, or Aluminum wire, insulated wire, tubing, and other Copper, Brass, or Aluminum items mixed with, attached to, or coating ferrous scrap
- b) Flashlight batteries and the like.
- c) Other non-ferrous metals and non-ferrous metal oxides, including slags, drosses and related residues.
- d) Due to high Copper content, loose motor vehicle brake shoes and clutch plates, unless the pads have been completely removed. (see Part 3, Appendix 2, page 13 for clutch plate photos)
- e) Engine, transmission, and other parts produced by the "Powder Metallurgy" process. (Copper is frequently used to bind the steel powder in the manufacturing process and the Copper content of such parts can be 2% or more.)
 - i) How would you know whether scrapped parts have been manufactured using the "Powder Metallurgy" process? The answer is: unless you chemically analyze the steel, most of the time you won't know ! See Part 3, Appendix 2, page 14, for photographs of parts that we have confirmed contain at least 2% Copper.
 - ii) Chaparral can recycle such parts, but in very limited quantity in any one shipment. We can safely recycle shipments that contain about 2% by weight of such parts. 2% by weight means about:

900 pounds in a 45,000-pound shipment
2,800 pounds in a 140,000-pound shipment
 - iii) The problem of high Copper "Powder Metallurgy" parts will be of greatest concern primarily to scrap Suppliers who collect or buy scrap that originates from engine and/or transmission rebuilding businesses. Sellers to Chaparral will have to take care to assure that scrap originating from engine and/or transmission rebuilding businesses does not get concentrated in any one shipment, but rather "spread out" over many shipments in order to keep overall Copper contents acceptably low.
- f) Tin-coated (Sn-coated) scrap.
- g) Loose (i.e., detached) motor vehicle shock absorbers.
- h) Iron oxide in any form except for nominal amounts of surface rust arising from outside storage of prepared scrap under normal atmospheric conditions for a period usually not exceeding six months. Heavily rusted shipments will be rejected.
- i) Waste or industrial byproducts containing iron in a form not economically recoverable via Electric Arc Furnace Steelmaking. Includes, but may not be limited to the following: waste or byproducts arising from steel melting, heating, surface conditioning

(includes scarfing,) grinding, sawing, welding and torch cutting operations, including: slag, mill scale, baghouse dust, grinder dust, sludge, welding flashings, and kerf.

j) Detached Used Oil Filters.

k) Cast iron (including ductile iron) with a Phosphorous (P) content over 0.15%.

Examples: railroad brake shoes, soil pipe, cast iron radiators. Shipments of No.2 Heavy Melt or Mixed Heavy Melt scrap may contain not more than 2.5% (two and one half percent) by weight of "low Phosphorous" (i.e. less than 0.15% phosphorous) cast iron, e.g. clean auto cast.

l) Oil, grease, and other liquid or solid combustible and/or non-combustible non-metallic substances including tar, rubber, plastic, glass, concrete, paper, etc. attached to or adhering to scrap. Example: scrapped hand tools (screw drivers, hammers, etc.) with plastic handles.

m) Wire from motor vehicle tire shredding operations.

n) Municipal scrap.

7) ITEMS ALLOWED TO BE COMINGLED WITH OTHER PREPARED SCRAP ITEMS IF PROPERLY PREPARED

a) Used Steel Containers, but only in the scrap grades in which Used Steel Containers are permitted.

8) ITEMS ALLOWED TO BE SUPPLIED AS A SEPARATE ITEM IF PROPERLY PREPARED

a) Coils are a special consideration item that Chaparral Midlothian does not purchase on a consistent basis. Coils may occasionally be purchased as a separate item to be delivered by rail ONLY. Coils of any kind (wire, banding, cable, sheet, strip, etc.) must be securely bound to withstand magnet handling. Do not mix coils of any kind with other scrap grades.

9) Suppliers must not deviate from Chaparral's Specifications without prior approval.

APPENDIX 1 How Do I Check The Bulk Density Of My Shipment ?

1. **Calculate the volume of the trailer, railcar, or shipping container.**

Measure the inside length, width, and height of the container in feet. Multiply these three numbers together to get the volume of the container in cubic feet.

Example: Length: 20 feet
 Width: 8 feet
 Height: 8 feet
 Volume: $20 \times 8 \times 8 = 1,280$ cubic feet

2. **Determine the net weight of the shipment.**

Subtract the tare weight of the vehicle from the gross weight of the vehicle.

Example: Gross weight: 78,000 lbs
 Tare weight: 40,000 lbs
 Net weight: 38,000 lbs

3. **Ask yourself... “How full is the trailer (or railcar or container) ?”**

How full is the trailer if “0%” is empty, and “100%” is completely full ? Is the trailer at least 50% full ? Is it 90% full?

Example: Your trailer appears to be more than half-full, but not quite three-quarters full. You answer the question, “The trailer is 70% full.”

4. **Use the results from 1, 2, and 3 to calculate the bulk density.**

Multiply the volume obtained in step 1 by the answer from step 3. You now have the volume that the scrap actually occupies.

Example: Volume of trailer: 1280 cubic feet
 % full: 70% full
 Volume of scrap: $1280 \times 0.7 = 896$ cubic feet

Divide the net weight of the shipment by the answer above to obtain the bulk density of the shipment.

Example: Net weight: 38,000 lbs
 Volume of scrap: 896 cubic feet
 Bulk density: $38,000 / 896 = 42.4$ lbs / cubic foot

The bulk density of the scrap is 42 lbs / cubic foot. Compare this result to the value in the scrap specification to minimize the chance of a downgrade due to poor bulk density.

Note:

- If the grade in the trailer were P&S, for which we require a minimum bulk density of 44 lbs / cubic foot, this shipment would be downgraded at least to No. 1 Heavy Melt upon arriving at our plant site.
- If the grade in the trailer were No. 2 Heavy Melt, for which we require a minimum bulk density of 38 lbs / cubic foot, the shipment would be accepted as shipped, provided that no additional quality issues were discovered.

APPENDIX 2



Clutch Plate With Copper- or Brass-Impregnated Non-Metallic Pads



Clutch Plate With Copper Metal Pads

APPENDIX 2 (Cont.)



High-Copper "Powder Metallurgy" Motor Vehicle Engine/Transmission Parts

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	Crushed Car Bodies	(Includes crushed Light Truck Bodies)
Grade Code	650C	
Dimensions	Thickness	8" MINIMUM , 24" MAXIMUM,
	Width	8 Ft. MAXIMUM
Description	<p>Prepared (crushed) automobile & light truck bodies for shredding. 12 CRUSHED CAR BODIES MINIMUM PER TRUCKLOAD. May be layered with other clean automotive and non-automotive scrap metal.</p> <p>Proper layering and stacking of the scrap is required (see below). Stacks should be separate and easily handled with a forklift, and should maintain their integrity during unloading and subsequent handling. (Do NOT interlace / overlap crushed car bodies between stacks)</p> <p>30,000 Lb. MINIMUM payload per truckload.</p>	
Minimum Truck Payload	Trucks with payloads under 30,000 lbs will not be accepted.	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Raw Material Supplied for Shredding." See SPECIFICATIONS, pages 4-6.	
Grade-Specific Additional Requirements	<p>May include household or industrial appliances prepared in a fashion consistent with Chaparral Safety and Environmental Quality Requirements.</p> <p>Mercury (including mercury-containing capsules from convenience light switches), lead-containing components (except wheel weights and batter cables), and free organic liquids must be depleted, to the extent practicable, from the scrap.</p>	

Chaparral allows the inclusion of limited amounts of loose, clean automotive and non-automotive scrap metal to be supplied crushed between the car bodies. Inclusion of "too much" loose scrap in Crushed Car Body shipments can present costly handling problems.

Our pedestal crane can efficiently lift a "sandwich" consisting of a crushed car on the top and bottom, and up to an 18 inch thick layer of loose scrap in between. To be accepted and graded as a shipment of "Crushed Car Bodies", a truckload shipment should contain at least twelve car bodies, and loose scrap should be distributed between the car bodies as evenly as possible in "sandwiches", as illustrated below (Note: Each layer of "loose scrap" shown below is assumed to be 18 inches thick):

CORRECT WAYS:		EXAMPLES OF WRONG WAYS !!!		
"Two Stack" Shipment, At Least 6 Crushed Cars per Stack:	"Three Stack" Shipment, At Least 4 Crushed Cars per Stack:	"Loose Scrap" improperly distributed between the Crushed Car Bodies		
Crushed Car		Crushed Car	Crushed Car	
Loose Scrap		Loose Scrap	Loose Scrap	
Crushed Car		Crushed Car	Loose Scrap	Crushed Car
Crushed Car	Crushed Car	Loose Scrap	Crushed Car	Crushed Car
Loose Scrap	Loose Scrap	Crushed Car	Loose Scrap	Loose Scrap
Crushed Car	Crushed Car	Loose Scrap	Loose Scrap	Loose Scrap
Loose Scrap	Loose Scrap	Crushed Car	Loose Scrap	Crushed Car
Crushed Car	Crushed Car	Crushed Car	Crushed Car	Crushed Car

Truckload shipments containing FEWER than twelve Crushed Car Bodies OR with improper distribution of loose scrap crushed between the Car Bodies, may be downgraded.

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	Mixed Crushed Car Bodies (6 Cars Minimum) and No. 2 Light for Shredder		
Grade Code	650A		
Dimensions	Thickness	1/2" MAXIMUM (except crushed cars)	
	Maximum Length X Width	24" X 8' MAXIMUM Exceptions:	
		Plate:	3' X 3' MAXIMUM
		Sheet Clips:	5' X 8' MAXIMUM
Mass	Maximum Weight per Piece	90% of pieces under 100 lbs 400 lbs MAXIMUM	
Description	Prepared (crushed) automobile & light truck bodies for shredding. 6 CRUSHED CAR BODIES MINIMUM PER TRUCKLOAD. May be layered with other clean automotive and non-automotive scrap metal.		
	Stacks should be separate and easily handled with a forklift, and should maintain their integrity during unloading. (Do NOT interlace / overlap crushed car bodies between stacks)		
Minimum Truck Payload	Trucks with payloads under 30,000 lbs will not be accepted.		
General Requirements	All material supplied must meet Chaparral's "General Specifications for Raw Material Supplied for Shredding." See SPECIFICATIONS pages 4-6.		
Grade-Specific Additional Requirements	Not more than 10% by weight of cast iron, including whole automotive engine blocks ("dirty motors"). Maximum size of cast iron pieces other than "dirty motors": 1' X 3' X 6"		
	May include household or industrial appliances prepared in a fashion consistent with Chaparral Safety and Environmental Quality Requirements.		
	Mercury (including mercury-containing capsules from convenience light switches), lead-containing components (except wheel weights and batter cables), and free organic liquids must be depleted, to the extent practicable, from the scrap.		

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	No. 2 Light for Shredder	
Grade Code	602L	
Dimensions	Thickness	1/2" MAXIMUM
	Maximum Length X Width	24" X 8' MAXIMUM Exceptions:
		plate: 3' X 3' MAXIMUM sheet clips: 5' X 8' MAXIMUM
Mass	Maximum Weight per Piece	90% of pieces under 100 lbs 400 lbs MAXIMUM
Bulk Density (lbs/cu ft)	Aim	28+
	Downgrade: To "Loose Tin", if under...	24
Minimum Truck Payload	Trucks with payloads under 20,000 lbs will not be accepted.	
Description	<p>Clean steel scrap, including automobile scrap essentially free of non-metallic auto components, i.e. fabric, rubber, plastics, glass, etc. Examples: car or light truck frames, wheels free of tires, front & rear ends, drive shafts, etc.</p> <p>Semi-prepared (8' maximum length, 1/2" maximum thickness) No. 2 Heavy Melt.</p>	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Raw Material Supplied for Shredding." See SPECIFICATIONS, pages 4-6.	
Grade-Specific Additional Requirements	Any included car & light car bodies must be crushed or sheared to a maximum thickness of 24 inches.	
	25% maximum in shipment of obsolete sheet metal ("Loose Tin"), i.e. 10,000 lbs maximum in 40,000 lbs. Examples: galvanized and painted siding, lawn mowers, bicycle frames, automotive sheet metal including doors, hoods, trunk lids, fenders, oilpans, etc.	
	Not more than 10% by weight of cast iron, including whole automotive engine blocks ("dirty motors"). Maximum size of cast iron pieces other than "dirty motors": 1' X 3' X 6"	
	May include household or industrial appliances prepared in a fashion consistent with Chaparral Safety and Environmental Quality Requirements.	
Combustible Non- metallic Content	Mercury (including mercury-containing capsules from convenience light switches), lead-containing components (except wheel weights and batter cables), and free organic liquids must be depleted, to the extent practicable, from the scrap.	
	Aim for maximum of:	0.10% by weight: 40 lbs in 40,000 lbs, or 140 lbs in 140,000 lbs

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	Shredder Bundles	Shredder Logs
Grade Code	605E	
Dimensions	Maximum Length X Width	2' X 2' X 10' (See note under Description below)
Mass	Maximum Weight per Piece	2,400 lbs
Bulk Density (lbs/cu ft)	Aim	60 MAXIMUM
Minimum Truck Payload	Trucks with payloads under 20,000 lbs will not be accepted.	
Description	<p>Bundles produced using new and obsolete steel sheet metal scrap as raw material. Examples: galvanized and painted siding and roofing; black, painted, and galvanized clips; air conditioning ductwork; lawnmower decks; bicycles (free of tires); automotive sheet metal including doors, hoods, trunk lids, fenders, oilpans, etc.</p> <p>Shredder bundles should have a minimum ferrous metallic content of 85%.</p> <p>Shredder bundles may include obsolete terne sheet (e.g. motor vehicle gas tanks).</p> <p>May include household or industrial appliances prepared in a fashion consistent with Chaparral Safety and Environmental Quality Requirements.</p> <p>Note: Cross-sectional dimension requirements may be exceeded somewhat in the case of "low density" bundles / logs produced using certain balers / loggers, if used by qualified Suppliers with Chaparral's prior approval. Contact the Raw Materials Department if you wish to seek approval to supply larger cross-section "low density" bundles / logs.</p>	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Raw Material Supplied for Shredding." See SPECIFICATIONS, pages 4-6.	
Grade-Specific Additional Requirements	<p>May include tin-can (food can) bundles.</p> <p>All other coating substances require prior approval.</p> <p>Mercury (including mercury-containing capsules from convenience light switches), lead-containing components (except wheel weights and batter cables), and free organic liquids must be depleted, to the extent practicable, from the scrap.</p>	
Combustible Non-metallic Content	Aim for maximum of:	2.00% by weight: 800 lbs in 40,000 lbs, or 2,800 lbs in 140,000 lbs

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	"Loose Tin" for Shredder (Obsolete steel sheet metal scrap)	
Grade Code	651A	
Dimensions	Thickness	MAXIMUM 1/2"
	Maximum Length X Width	8' X 5'
Mass	Maximum Weight per Piece	90% of pieces under 100 lbs 400 lbs MAXIMUM
Bulk Density (lbs/cu ft)	Aim	20+
Minimum Truck Payload	Trucks with payloads under 20,000 lbs will not be accepted.	
Description	New and obsolete steel sheet metal scrap. Examples: galvanized and painted siding and roofing, black and galvanized clips, air conditioning ductwork, lawnmower decks, and bicycles (free of tires).	
	Other clean steel scrap, including automobile scrap essentially free of non-metallic components (fabric, rubber, plastics, glass, etc.) Examples: Car or light truck frames, wheels free of tires, front & rear ends, drive shafts, and automotive sheet metal including doors, hoods, trunk lids, fenders, oilpans, etc.	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Raw Material Supplied for Shredding." See SPECIFICATIONS, pages 4-6.	
Grade-Specific Additional Requirements	No car bodies or sheared auto slabs.	
	Not more than 10% by weight of cast iron, including whole automotive engine blocks ("dirty motors") Maximum size of cast iron pieces other than "dirty motors": 1' X 3' X 6"	
	May include household or industrial appliances prepared in a fashion consistent with Chaparral Safety and Environmental Quality Requirements.	
	Mercury (including mercury-containing capsules from convenience light switches), lead-containing components (except wheel weights and batter cables), and free organic liquids must be depleted, to the extent practicable, from the scrap.	
Combustible Non-metallic Content	Aim for maximum of:	2.00% by weight: 800 lbs in 40,000 lbs, or 2,800 lbs in 140,000 lbs

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	Oversized Clips for Shredder	
Grade Code	652A	
Dimensions	Thickness	Under 1/4"
	Maximum Length X Width	8' X 5'
Bulk Density (lbs/cu ft)	Aim	28+
	Downgrade: To Loose Tin, if under...	24
Minimum Truck Payload	Trucks with payloads under 20,000 lbs will not be accepted.	
Description	Mixed, coated and uncoated, new production, carbon steel sheet scrap. Only painted or galvanized coatings are permitted. All other coating substances require prior approval.	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Raw Material Supplied for Shredding." See SPECIFICATIONS, pages 4-6.	
Grade-Specific Additional Requirements	Free of combustible non-metallic materials.	
	Free of Tin (Sn), Cadmium (Cd), and Lead (Pb) coated steel	
	Mercury (including mercury-containing capsules from convenience light switches), lead-containing components (except wheel weights and batter cables), and free organic liquids must be depleted, to the extent practicable, from the scrap.	

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	No. 1 Heavy Melt	
Grade Code	601A	
Dimensions	Thickness	1/4" and over (Exception: May include Busheling, Clips, Railroad Heavy Melt, and P&S)
	Maximum Length X Width	Other than included Busheling, Clips, Railroad Heavy Melt, and P&S. 4' X 12", or 3' X 18", or 2' X 24"
		Included Busheling, Clips, Railroad Heavy Melt, and P&S must meet appropriate specification for grade.
Mass	Maximum Weight per Piece	90% of pieces under 200 lbs. 600 lbs MAXIMUM
Bulk Density (lbs/cu ft)	Aim	50+
	Downgrade:	
	• To No. 2 Heavy, if under...	42
	• IF SHREDDABLE, AND IF VENDOR AGREES TO ACCEPT THE DOWNGRADE, downgrade to No. 2 Light if under...	35
	• If UNSHREDDABLE, OR IF VENDOR DOES NOT ACCEPT THE DOWNGRADE TO NO. 2 LIGHT, reject shipment if under...	35
Description	Clean steel scrap not excessively rusted or corroded.	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.	
Grade-Specific Additional Requirements	Free of all but negligible amounts of... <ul style="list-style-type: none"> • Combustible non-metallic materials. • Rebar • Pipe and tubing over 3 Ft. • Manganese Steel and other non-magnetic metallic items • Cast Iron • Rail car brake shoes & pads • Automotive scrap other than crankshafts, wheels, and clean chassis scrap Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.	
Combustible Non-Metallic Content	Aim for maximum of:	0.025% by weight: 10 lbs in 40,000 lbs, or 35 lbs in 140,000 lbs.

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	Railroad Heavy Melt	
Grade Code	601B	
Dimensions	Thickness	3/16" and over
	Maximum Length X Width	4' X 18", or 3' X 24".
Mass	Maximum Weight per Piece	90% of pieces under 200 lbs 400 lbs MAXIMUM
Bulk Density (lbs/cu ft)	Aim	50+
	Downgrade:	
	• To No. 2 Heavy, if under...	42
	• IF SHREDDABLE, AND IF VENDOR AGREES TO ACCEPT THE DOWNGRADE, downgrade to No. 2 Light if under...	35
	• If UNSHREDDABLE, OR IF VENDOR DOES NOT ACCEPT THE DOWNGRADE TO NO. 2 LIGHT, reject shipment if under...	35
Description	Clean, obsolete rail car scrap, at least 90% uncoated except for paint, and not excessively rusted or corroded.	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.	
Grade-Specific Additional Requirements	<p>No uncut railroad steel wheels or axles (400 lbs MAXIMUM per piece.) Railroad wheels are "cut" if either the wheel is cut in half or the centers of the wheels have been cut out and removed.</p> <p>Free of all but negligible amounts of...</p> <ul style="list-style-type: none"> • Combustible non-metallic materials. • Bars under ¾ " in diameter, cable in any form, and free of rebar, wire, and wire rods, whether in bar or coil form • Pipe and tubing over 3 Ft. • Manganese Steel and other non-magnetic metallic items • Cast Iron • Rail car brake shoes & pads <p>Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.</p>	

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	Plate & Structural	
Grade Code	601C	
Dimensions	Thickness	1/8" & over (Exception: May include Busheling or Clips.)
	Maximum Length X Width	Other than included Busheling or Clips: 4' X 18", or 3' X 24"
		Included Busheling or Clips must meet appropriate specification for grade.
Mass	Maximum Weight per Piece	90% of pieces under 200 lbs 600 lbs MAXIMUM
Bulk Density (lbs/cu ft)	Aim	50+
	Downgrade:	
	• To No. 2 Heavy, if under...	42
	• IF SHREDDABLE, AND IF VENDOR AGREES TO ACCEPT THE DOWNGRADE, downgrade to No. 2 Light if under...	35
	• If UNSHREDDABLE, OR IF VENDOR DOES NOT ACCEPT THE DOWNGRADE TO NO. 2 LIGHT, reject shipment if under...	35
Description	Clean plate and / or structural steel scrap not excessively rusted or corroded.	
	May include rail car truck and structural scrap, but no rail car sides or tops.	
	May include Welded Structural Steel Tubing in 3 ft. max lengths.	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.	
Grade-Specific Additional Requirements	Free of combustible non-metallic materials.	
	Free of all but negligible amounts of... <ul style="list-style-type: none"> • Steel bars including rebar; cable; and wire & wire rods, whether in bar or coil form • Pipe and tubing other than Welded Structural Steel Tubing • Manganese Steel and other non-magnetic metallic items • Cast Iron & Steel Castings • Rail car brake shoes & pads 	
	Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.	

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	No. 1 Industrial	
Grade Code	601D	
Dimensions	Thickness	1/4" and over
	Maximum Length X Width	4' X 12", or 3' X 18", or 2' X 24"
Mass	Maximum Weight per Piece	90% of pieces under 200 lbs. 600 lbs MAXIMUM
Bulk Density (lbs/cu ft)	Aim	60+
	Downgrade:	
	• To No. 2 Heavy, if under...	42
	• IF SHREDDABLE, AND IF VENDOR AGREES TO ACCEPT THE DOWNGRADE, downgrade to No. 2 Light if under...	35
	• If UNSHREDDABLE, OR IF VENDOR DOES NOT ACCEPT THE DOWNGRADE TO NO. 2 LIGHT, reject shipment if under...	35
Description	Very clean, "high yield" scrap including forging scrap.	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.	
Grade-Specific Additional Requirements	Without Chaparral's prior approval, no automobile steel scrap	
	Free of combustible non-metallic materials.	
	Free of all but negligible amounts of...	
	<ul style="list-style-type: none"> • Manganese Steel and other non-magnetic metallic items • Rail car brake shoes & pads • Cast Iron • Steel bars under 3/4 " in diameter; rebar; cable; and wire & wire rods, whether in bar or coil form. 	
	Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.	

Chaparral Midlothian Specification for Ferrous Scrap

DERIVATIVE GRADE

Grade	Obsolete Track Material (OTM)
Grade Code	601H
General Requirements	<p>All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.</p> <p>Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.</p>
Grade Description	<p>Obsolete Track Material includes tie plates, angle bars, bolts, and spikes. May include 2 Ft. or 4 Ft. Rail Crops</p>
Derivative Grade	Material characterized by this specification must otherwise meet the specifications for grade code 601D

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	Chargeable Mixed Clips	
Grade Code	601 K	
Dimensions	Thickness	Under 1/8"
	Maximum Length X Width	6' X 12" or 5' X 18"
Mass	Maximum Weight per Piece	100 lbs MAXIMUM
Bulk Density (lbs/cu ft)	Aim	42+
	Downgrade:	
	• To No. 2 Heavy, if under...	42
	• To Oversized Clips for Shredder, if under...	32
	• To Loose Tin, if under...	24
	• If UNSHREDDABLE, reject if under...	32
Description	Clean, coated or uncoated, hot- or cold-rolled, new production, carbon steel sheet scrap.	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.	
Grade-Specific Additional Requirements	May be painted or galvanized. All other coating substances require prior approval.	
	Free of non-metallic materials.	
	Free of tin-coated steel.	
	Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.	

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	No. 2 Heavy Melt	
Grade Code	602A	
Dimensions	Thickness	Usually 1/8" and over
	Maximum Length X Width	Other than included No. 1 Heavy Melt: 3' X 18", or 2' X 24"
Mass	Maximum Weight per Piece	90% of pieces under 200 lbs 600 lbs MAXIMUM
Bulk Density (lbs/cu ft)	Aim	42+
	Downgrade:	
	<ul style="list-style-type: none"> IF SHREDDABLE, AND IF VENDOR AGREES TO ACCEPT THE DOWNGRADE, downgrade to No. 2 Light if under... 	35
	<ul style="list-style-type: none"> If UNSHREDDABLE, OR IF VENDOR DOES NOT ACCEPT THE DOWNGRADE TO NO. 2 LIGHT, reject shipment if under... 	35
Description	<p>Clean steel scrap, including all automobile scrap free of wiring and non-metallic auto components, i.e., fabric, rubber, plastic, glass, etc.</p> <p>May contain up to 20 percent Rebar if...</p> <ul style="list-style-type: none"> Rebar pieces are less than two Ft. in length the Rebar is distributed throughout the shipment Efficient handling of the shipment is not compromised by matted / tangled Rebar 	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.	
Grade-Specific Additional Requirements	Not more than 2.5% by weight of cast iron.	
	<p>Not more than 10% of automotive engine, transmission, and other parts produced by the "Powder Metallurgy" process, due to high Copper content.</p> <p>Free of...</p> <ul style="list-style-type: none"> Sheared auto slabs Whole engine blocks (dirty motors) White goods (household appliances) Loose (i.e. detached) motor vehicle shock absorbers <p>Free of all but negligible amounts of...</p> <ul style="list-style-type: none"> Manganese Steel and other non-magnetic metallic items Rail car brake shoes & pads 	
	Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.	
Combustible Non-metallic Content	Aim for maximum of:	0.05% by weight: 20 lbs in 40,000, or 70 lbs in 140,000

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	No. 1 and 2 Heavy Melt Mixed (Mixed Heavy Melt)	
Grade Code	602B	
Dimensions	Thickness	Usually 1/8" and over
	Maximum Length X Width	Other than included No. 1 Heavy Melt: 3' X 18", or 2' X 24"
Mass	Maximum Weight per Piece	90% of pieces under 200 lbs 600 lbs MAXIMUM
Bulk Density (lbs/cu ft)	Aim	47+
	Downgrade:	
	<ul style="list-style-type: none"> To No. 2 Heavy, if under... 	42
	<ul style="list-style-type: none"> IF SHREDDABLE, AND IF VENDOR AGREES TO ACCEPT THE DOWNGRADE, downgrade to No. 2 Light if under... 	35
	<ul style="list-style-type: none"> If UNSHREDDABLE, OR IF VENDOR DOES NOT ACCEPT THE DOWNGRADE TO NO. 2 LIGHT, reject shipment if under... 	35
Description	<p>Clean steel scrap, including all automobile scrap free of wiring and non-metallic auto components, i.e., fabric, rubber, plastic, glass, etc.</p> <p>May contain up to 20 percent Rebar if...</p> <ul style="list-style-type: none"> Rebar pieces are less than two Ft. in length the Rebar is distributed throughout the shipment Efficient handling of the shipment is not compromised by matted / tangled Rebar 	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.	
Grade-Specific Additional Requirements	<p>Not more than 2.5% by weight of cast iron.</p> <p>Not more than 10% of automotive engine, transmission, and other parts produced by the "Powder Metallurgy" process, due to high Copper content.</p> <p>Free of...</p> <ul style="list-style-type: none"> Sheared auto slabs Whole engine blocks (dirty motors) White goods (household appliances) Loose (i.e. detached) motor vehicle shock absorbers. <p>Free of all but negligible amounts of...</p> <ul style="list-style-type: none"> Combustible non-metallic materials Manganese Steel and other non-magnetic metallic items Rail car brake shoes & pads <p>Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.</p>	

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	No. 1 Bundles	
Grade Code	604A	
Dimensions	Maximum Length X Width	2' X 2' X 32"
Mass	Maximum Weight per Piece	1,000 lbs

Bulk Density (lbs/cu ft)	Aim	70+
	Reject if under...	50

Special Chemistry Requirements	Element	Maximum %
	Copper (Cu)	0.12 %
	Nickel (Ni)	0.12 %
	Chromium (Cr)	0.12 %
	Cu + Ni + Cr	0.30 %
	Tin (Sn)	0.02 %
	Silicon (Si)	0.60 %
	Manganese (Mn)	0.60 %
	Sulfur (S)	0.04 %
	Phosphorous (P)	0.04 %

Description Baled, "Completely Clean" obsolete and new production carbon steel sheet scrap, wire and / or wire rod. "Completely Clean" means free of non-metallic substances (coatings or attachments), free of Non-Ferrous Metals, and not excessively rusted or corroded.

General Requirements All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.

Grade-Specific Additional Requirements All bundles must have sufficient integrity to withstand magnet- or grapple-handling without coming apart. No cable is allowed in bundles of any kind due to deleterious effects on bundle integrity. **No. 1 Bundle raw material may be painted or galvanized. All other coating substances require prior approval.** Free of Tin-coated steel. Shipments of No. 1 Bundles must not contain coiled steel of any kind. Steel coils may be shipped by rail as a separate item, not mixed with any other grade. **Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.**

DERIVATIVE GRADES

Derivative grades of No. 1 Bundles include **No. 1 Painted Bundles (604B)** and **No. 1 Galvanized Bundles (604C)**. These grades are identified by their coatings (i.e., painted or galvanized coatings.)

Derivative Grade	Foundry Bundles	Mandrel-Wound Coils
Derivative Grade Code	604E	604D
Derivative Grade Description	Small bundles (12" X 12" X 32" to 18" X 18" X 32") weighing no more than 750 Lb. each, that contain new production sheet clips ONLY. Material characterized by this specification must otherwise meet the specifications given for grade code 604B (No. 1 Bundles) Mercury, lead, chlorinated plastics, and free organic liquids must be depleted, to the extent practicable, from the scrap.	Coils of slit steel or steel sheet edge trimmings from flat-rolled finishing operations, weighing no more than 1500 Lb. each. Ship by rail only. Material characterized by this specification must otherwise meet the specifications given for grade code 604B (No. 1 Bundles) Mercury, lead, chlorinated plastics, and free organic liquids must be depleted, to the extent practicable, from the scrap.

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	<p>No. 2 Bundles</p> <p>THIS GRADE NAME IS FOR DOWNGRADE PRICING PURPOSES ONLY</p> <p>Chaparral does not contract to buy “No. 2 Bundles”</p>
Grade Code	<p>605A</p>
Description	<p>This grade name is reserved for characterizing specific shipments for pricing purposes that do not meet No. 1 Bundles specifications.</p> <p>Shipments characterized as “No. 2 Bundles” that are not shreddable shall be rejected</p>
General Requirements	<p>All material supplied must meet Chaparral's “General Specifications for Prepared Ferrous Scrap”. See SPECIFICATIONS, pages 6-8.</p>

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	Shredded Steel	
Grade Code	606A	
Dimensions	Maximum Length X Width	90% under 8" Balance 24" MAXIMUM
Bulk Density (lbs/cu ft)	Aim	60+
	Downgrade:	
	• To No. 1 Heavy, if under...	50
	• To No. 2 Heavy, if under...	42
Special Chemistry Requirements	Element	Maximum %
	Carbon (C)	1.00 %
	Copper (Cu)	0.30 %
	Tin (Sn)	0.02 %
Description	Clean, dense, magnetically-separated, shredder-processed scrap essentially free of non-ferrous metals and non-metallic matter, particularly combustibles (rubber, plastic, fabric, etc.)	
	Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.	
Grade-Specific Additional Requirements	Free of tin-coated steel.	
Combustible Non-metallic Content	Aim for maximum of:	0.05% by weight: 20 lbs in 40,000 lbs, or 70 lbs in 140,000 lbs

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	Turnings (Mixed Short Shoveling & Machine Shop)	
Grade Code	607A	
Dimensions	Thickness	90% MINIMUM over 1/16" thick
Bulk Density (lbs/cu ft)	Aim	50+
	Reject if under...	40
Description	Clean, dense steel turnings, essentially free of non-ferrous metals and non-metallic matter. No excessive combustibles.	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.	
Grade-Specific Additional Requirements	Free of cast iron borings. Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.	

DERIVATIVE GRADE

Derivative Grade	Turnings (Mixed, Mostly Short Heavy Steel Turnings)
Derivative Grade Code	607C
Derivative Grade Description	Clean, dense, mostly short shoveling and / or heavy steel turnings, essentially free of non-ferrous metals and non-metallic matter. Essentially free of bushy machine shop steel turnings. No excessive combustibles. Material characterized by this specification must otherwise meet the specifications for grade code 607A (Mixed Short Shoveling & Machine Shop.) Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	2 Ft. Rail Crops and OTM (Obsolete Track Material)	
Grade Code	608 A	
Dimensions	Thickness	1/2" and over
	Maximum Length X Width	2' X 18"
Mass	Maximum Weight per Piece	90% of pieces under 100 lbs 300 lbs MAXIMUM
Bulk Density (lbs/cu ft)	Aim	70+
	Downgrade: To 4 ft. Rail Crops if over 2 Ft., or if Bulk Density under...	65

Special Chemistry Requirements	Element	Maximum %
	Copper (Cu)	0.12 %
	Nickel (Ni)	0.12 %
	Chromium (Cr)	0.12 %
	Cu + Ni + Cr	0.30 %
	Tin (Sn)	0.02 %
	Silicon (Si)	0.60 %
	Sulfur (S)	0.04 %
	Phosphorous (P)	0.04 %

Description	Must contain at least 90% Rail Crops.
	May include up to 10 % Obsolete Track Material (OTM), i.e., tie plates, angle bars, bolts, & spikes
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.
Grade-Specific Additional Requirements	Free of cast iron.
	Free of manganese steel (non-magnetic)
	Free of railroad car brake shoes and brake pads
	Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.

DERIVATIVE GRADE

Derivative Grade	4 Ft. Rail Crops and OTM (Obsolete Track Material)	
Derivative Grade Code	608B	
Bulk Density (lbs/cu ft)	Aim	60+
Derivative Grade Description	Material characterized by this specification must otherwise meet the specifications for grade code 608A	

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	2 Ft. Busheling	
Grade Code	608C	
Dimensions	Thickness	Under 1/8"
	Maximum Length X Width	2' X 2' or under
Bulk Density (lbs/cu ft)	Aim	60+
	Downgrade: To 4 Ft. Busheling if over 2 Ft., Or if Bulk Density under...	50
Description	Clean, coated or uncoated, hot- or cold-rolled, new production, carbon steel sheet scrap.	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.	
Grade-Specific Additional Requirements	May be painted or galvanized. All other coating substances require prior approval	
	Includes Slitter Scrap and Shredded Clips	
	Free of non-metallic materials	
	Free of Tin-coated steel and Silicon steel	
	Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.	

DERIVATIVE GRADE INFORMATION

Derivative Grade	4 Ft. Busheling	
Derivative Grade Code	608D	
Dimensions	Thickness	Under 1/8"
	Maximum Length X Width	4' X 2' or 3' X 3'
Bulk Density (lbs/cu ft)	Aim	47+
	Downgrade:	
	• To Chargeable Mixed Clips if under...	42
	• IF SHREDDABLE, AND IF VENDOR AGREES TO ACCEPT THE DOWNGRADE, downgrade to No. 2 Light if under...	35
	• If UNSHREDDABLE, OR IF VENDOR DOES NOT ACCEPT THE DOWNGRADE TO NO. 2 LIGHT, reject shipment if under...	35
Derivative Grade Description	Material characterized by this specification must otherwise meet the specifications for grade code 608C	

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	Low Residual 2 Ft. Plate Scrap	
Grade Code	608E	
Dimensions	Thickness	1/8" & over (Exception: May include 2 Ft. Busheling, per Grade Code 608C)
	Maximum Length X Width	2' X 2'
Mass	Maximum Weight per Piece	90% of pieces under 100 lbs 300 lbs MAXIMUM
Bulk Density (lbs/cu ft)	Aim	60+
	Downgrade: To 4 Ft. Plate Scrap if over 2 Ft., or if Bulk Density under...	50
Description	Clean plate scrap not excessively rusted or corroded. May include welded structural steel tubing.	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.	
Grade-Specific Additional Requirements	LOW RESIDUAL CHEMISTRY REQUIRED Must contain at least 90% low residual material to qualify. Chaparral may require testing as necessary to verify chemistry.	
	Residuals Elements - Max %: Cu .12, Ni .12, Cr .12, or Cu+Ni+Cr .30, Sn .02, Si .60, S .04, P .04	
	Free of combustible non-metallic materials.	
	Other than welded structural steel tubing, no pipe or tubing of any kind.	
	No cast iron or steel castings.	
	Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.	

Chaparral Midlothian Specification for Ferrous Scrap

DERIVATIVE GRADE

Derivative Grade	Low Residual 4 Ft. Plate Scrap	
Derivative Grade Code	608F	
Dimensions	Thickness	1/8" & over
	Maximum Length X Width	4' X 18" or 3' X 24"
Bulk Density (lbs/cu ft)	Aim	50+
	Downgrade:	
	• To No. 2 Heavy, if under...	42
	• IF SHREDDABLE, AND IF VENDOR AGREES TO ACCEPT THE DOWNGRADE, downgrade to No. 2 Light if under...	35
	• If UNSHREDDABLE, OR IF VENDOR DOES NOT ACCEPT THE DOWNGRADE TO NO. 2 LIGHT, reject shipment if under...	35
Derivative Grade Description	<p>Material characterized by this specification must otherwise meet the specifications for grade code 608E</p> <p>Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.</p>	

Chaparral Midlothian Specification for Ferrous Scrap

Grade	Chopped Steel Wire
Grade Code	608G
Grade Description	<p>Ferrous scrap from wire chopping operations, free of non-metallics</p> <p>Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.</p> <p>ONLY QUALIFIED VENDORS MAY SUPPLY THIS GRADE.</p> <p>CONTACT THE CHAPARRAL RAW MATERIALS DEPARTMENT TO REQUEST QUALIFICATION</p>

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	HBI / DRI
Grade Code	610A
Description	Virgin iron units produced via direct reduction or similar technology.
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.
Grade-Specific Additional Requirements	Due to variation in product from various Suppliers, complete description of the material purchased, including but not limited to chemistry and size distribution, will be agreed upon at time of purchase.

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	Steel Pit / Skull Scrap	
Grade Code	614A	
Dimensions	Maximum Length X Width	12" X 24"
Mass	Maximum Weight per Piece	1000 lbs
Description	Drop-broken or otherwise processed steel pit, transfer car, or runner skulls from steelmaking or steel foundry operations.	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.	
Grade-Specific Additional Requirements	Minimum metallic iron content of pieces: 85%.	
	Average metallic iron content of shipment: at least 87%.	
	Maximum average sulfur content of any 1000 lb. sample (including sulfur contained in any adhering or entrapped slag): 0.080%	
	Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.	

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	Pig Iron										
Grade Code	615A										
Description	<p>Virgin iron units in pig ingot form produced via blast furnace or similar technology.</p> <p>Chaparral seeks to purchase material that is low in phosphorous and sulfur.</p>										
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.										
Grade-Specific Additional Requirements	<p>Maximum pig weight: 50 lbs (unless otherwise agreed upon by Chaparral)</p> <p>Due to variation in product from various Suppliers, complete description of the material purchased, including but not limited to chemistry and size distribution, will be agreed upon at time of purchase.</p> <p>Nominal desired chemistry:</p> <table> <tr> <th>Element</th><th>Composition</th></tr> <tr> <td>Carbon (C)</td><td>3.5 – 4.5%</td></tr> <tr> <td>Sulfur (S)</td><td>0.05 % MAX</td></tr> <tr> <td>Phosphorous (P)</td><td>0.08 % MAX</td></tr> <tr> <td>Silicon (Si)</td><td>0.70 % MIN</td></tr> </table>	Element	Composition	Carbon (C)	3.5 – 4.5%	Sulfur (S)	0.05 % MAX	Phosphorous (P)	0.08 % MAX	Silicon (Si)	0.70 % MIN
Element	Composition										
Carbon (C)	3.5 – 4.5%										
Sulfur (S)	0.05 % MAX										
Phosphorous (P)	0.08 % MAX										
Silicon (Si)	0.70 % MIN										

DERIVATIVE GRADE

Derivative Grade	Beach Iron
Derivative Grade Code	615B
Derivative Grade Description	<p>Drop-broken or otherwise processed desulfurized iron from blast furnace operations. Material characterized by this specification must otherwise meet the specification for grade code 616D (Pig Iron) with the exception of the additional requirements below.</p>
Derivative Grade Additional Requirements	<p>Maximum piece size: 12" X 24"</p> <p>Maximum piece weight: 1000 lbs</p>

Chaparral Midlothian Specification for Ferrous Scrap

Grade Name	Iron Pit / Skull Scrap ("Processed Iron")	
Grade Code	617A	
Dimensions	Maximum Length X Width	12" X 24"
Mass	Maximum Weight per Piece	1000 lbs
Description	Drop-broken or otherwise processed desulfurized iron pit, transfer car, or runner skulls from ironmaking or foundry operations.	
General Requirements	All material supplied must meet Chaparral's "General Specifications for Prepared Ferrous Scrap". See SPECIFICATIONS, pages 6-8.	
Grade-Specific Additional Requirements	Minimum metallic iron content of pieces: 85%.	
	Average metallic iron content of shipment: at least 87%.	
	Maximum average sulfur content of any 1000 lb. sample (including sulfur contained in any adhering or entrapped slag): 0.080%	
	Mercury (including mercury-containing capsules from convenience light switches), lead-containing components, free organic liquids, and chlorinated plastics must be depleted, to the extent practicable, from the scrap.	