

Material	Form	Composition	Management/Containment Measures	Potential Priority Hazardous Substances within Discharge
Raw Materials				
Limestone (Aberthaw/ Cornelly/Ruthin Stone – 5,000-10,000t)	Crushed powder/ Granular	Typical Bulk composition: CaO 40-60% SiO ₂ 2-17% Al ₂ O ₃ 2% Fe ₂ O ₃ 1% MgO 1% K ₂ O 1% SO ₃ 1% Na ₂ O 1% Trace elements: <1%	Imported limestone (from Aberthaw) is tipped directly onto a reception hopper and stored in concrete bunkers. Then transported along a conveyor belt to a surge bin feeding the Humbolt mill. Dust emissions from the transport system around the mill are controlled by venting directly into the turbo separator cyclone system. (Type HK mill fan to electro-static precipitator) Imported clean limestone is stored in an open stock pile on the concrete yard. A covered area contains crushed limestone and gypsum stockpiles, with a DCE dust plant over the stone which then enters the cement mill. The input of the material into the cement mill is connected to a Mill feed conveyor dust plant. Discarded filter bag material plus occasional raw material spillage is taken to the works tip.	Fugitive dust emissions and run-off from stockpiles, and arrestment plant with deposition on to site surfaces, with subsequent entrainment into run-off to discharge point W1. Potential for trace priority hazardous substance to enter run-off – include cadmium, lead and nickel and their compound
Gypsum – 1,000t	Crushed rock	Typical composition: SO ₃ 46% CaO 33% H ₂ O 21%	Storage in within covered bunkers with a concrete pad. The input of the material into the cement mill is connected to a Mill feed conveyor dust plant.	Fugitive dust emissions and run-off from stockpiles, and arrestment plant with deposition on to site surfaces, with subsequent entrainment into run-off to discharge point W1. Potential for trace priority hazardous substance to enter run-off – include cadmium, lead and nickel and their compound

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Air cooled blast furnace Slag. Celsa slag - 150t Tarmac steel slag - 200t Margham slag – 1,500t Bauxite – 2,000t	Size grading of 0-50mm	Typical composition: Fe_2O_3 25-45% CaO 20-30% SiO_2 10-15% Al_2O_3 8-12% MgO 0-10% MnO 0-8% S 0-1%	Stockpiles over permeable ground in the quarry. Dust arrestment filters in crusher discharge areas. Extractor fan and chimney.	Fugitive dust emissions and run-off from stockpiles, and arrestment plant with deposition on to site surfaces, with subsequent entrainment into run-off to discharge point W1. Potential for trace priority hazardous substance to enter run-off – include cadmium, lead and nickel and their compound
Coal – 5,000t	Raw coal (Lumps) and Grinded coal (powder)	Typical composition: Carbon (C) 70-90% Oxygen (O) 10-20% Hydrogen (H) 5% Nitrogen (N) 1% Sulphur (S) 1% Small amounts of other materials including quartz. Other key trace elements include As, Hg & Se, Cl, Na	Coal stock received either by rail delivery to the discharge facility or by road delivery to a coal stockpile on a concrete yard. At the raw coal bunker, there is a vacuum cleaning plant for dust collection. Any runoff from the coal stockpile area is returned to the works aqueduct via settlement pits (discharge point W1)	Fugitive dust emissions and run-off from stockpiles, and arrestment plant with deposition on to site surfaces, with subsequent entrainment into run-off to discharge point W1. Potential for PAHs and trace priority hazardous substances (cadmium, lead and nickel and their compound) to enter run-off – include
Iron Oxide – 425t		Typical composition: Combination of Iron (Fe) and oxygen (O_2)	Stored in an open stockpile on permeable ground in quarry.	Fugitive dust emissions and run-off from stockpiles, and arrestment plant with deposition on to site surfaces, with subsequent entrainment into run-off to discharge point W1. Potential for trace priority hazardous substance to enter run-off – includes cadmium, lead, mercury and nickel and their compound

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Iron stone – 1,000t		Bulk composition: Iron (Fe) Typically, a sedimentary rock which contains a substantial proportion of an iron compound. The iron minerals comprising of either: oxides, carbonates, silicates or some combination of these minerals.	Stored in an open stockpile on permeable ground in quarry.	Fugitive dust emissions and run-off from stockpiles, and arrestment plant with deposition on to site surfaces, with subsequent entrainment into run-off to discharge point W1. Potential for trace priority hazardous substance to enter run-off – include cadmium, lead, mercury and nickel and their compound
Pig iron – 40t		Bulk composition: Iron (Fe) 92% Trace elements: <2% Carbon (C) Silicon (Si) Manganese (Mn) Sulphur (S) Phosphorous (P)	Stored in a covered stockpile on a concrete pad in the DR building garage.	Potential for spillages and fugitive dust exiting storage area access point and depositing onto external site surfaces where it enters runoff for discharge at W1. Potential for trace priority hazardous substance to enter run-off – include cadmium, lead, mercury and nickel and their compound
Iron fines – 100t		Bulk composition: Iron (Fe) 62% LOI 4% SiO ₂ 4% Trace elements: <1% Al ₂ O ₃ P S	Stored in an open stockpile on a concrete pad in the coal yard.	Direct infiltration and run-off to surface water drainage system discharging to W1. Potential for trace priority hazardous substance to enter run-off – include cadmium, lead, mercury and nickel and their compounds

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SRF (Solid Recovered Fuel) – 50t		Various - primarily solid organic wastes with less than 10% moisture. Typical total metals content: Group 1 <10 ppm Group 2 <10 ppm Group 3 <2000 ppm	Located at the SRF offloading booths surrounded by concrete pavement. Offload booths fitted with active extraction systems for odour and dust management	Limited potential through dust extraction exhausts then deposition onto external surfaces with subsequent emissions in exhausted flue gases then deposition on to site surfaces.
Forged steel/ Cast steel balls – 100t	Solid	(Usually made of alloy steel, high manganese steel, cast iron and other materials)	Stored in steel drums in the coal yard.	Limited potential to enter surface water run-off
Ammonia solution – 84t	Liquid 10% - 25% conc.	Ammonia NH ₄ OH	Stored in a tank in a concrete bund.	Does not comprise any priority hazardous substances
Limbox Extra – 50t	Powder	Bulk composition: Calcium hydroxide Ca(OH) ₂ 98%	Stored in steel silo.	Does not comprise any priority hazardous substances
Sorbical Lime – 50t	Powder	Typical composition: Hydrated lime or calcium hydroxide Ca(OH) ₂	Stored in steel silo, yard by kiln filter.	Does not comprise any priority hazardous substances
Chryso Ama 30 L (trade name) – 30,000L	Liquid	Typical composition contains: Chloride content <0.05% Alkali content <0.10%	Stored in a double skinned tank on a concrete bund.	Does not comprise any priority hazardous substances
HEA2 M (trade name) – 30,000L	Liquid	Dangerous components: Acetic acid 10-20% Diethanolamine 0.5-10%	Stored in a double skinned tank on a concrete bund.	Does not comprise any priority hazardous substances
Synchro 205 (trade name)	Liquid	Dangerous component: Tin sulphate	Stored in cubic tanks sometimes on a portable bund.	Does not comprise any priority hazardous substances
Ferropowder 30 (trade name) – 48t	Crystalline	Dangerous component: Ferrous sulphate monohydrate	Stored in a steel silo at the cement mill yard.	Does not comprise any priority hazardous substances
Caustic Soda Liquid	Liquid	Typical composition: Water 48-94% Sodium hydroxide 5-51% Sodium chloride 1-5%		Does not comprise any priority hazardous substances
Glyphosphate pesticide	Spraying solution	Typical composition:	The use of herbicides has been controlled under the existing environmental management system. Safe for use within close proximity to surface waters	Does not comprise any priority hazardous substances

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		Synthetic organic compound containing phosphorus (C ₃ H ₈ NO ₅ P)		
Tyres – 150t	Whole tyres	Typical composition of a modern pneumatic tyre is synthetic rubber, natural rubber, fabric and wire, along with carbon black and other chemical compounds. Low leachable fractions	Stored in an open stockpile in the concrete yard.	Very unlikely during normal operations.
Polymer Chip – 150t	Solid – granular	Polyethylene Terephthalate	Stored in steel silo.	Does not comprise any priority hazardous substances
Products and by-products				
Clinker Product – 50,000t	Grinded	Bulk composition: CaO 65% SiO ₂ 21% Al ₂ O ₃ 4% Fe ₂ O ₃ 2% MgO SO ₃ Free Lime K ₂ O Na ₂ O Trace elements: <2%	Imported clinker is stored in the clinker shed with a concrete pad surface. The site has a main covered clinker storage facility and a secondary covered clinker storage area. There is a dust plant/extractor on the conveyor, and the input of the material into the cement mill is connected to a Mill feed conveyor dust plant. Vehicles transporting clinker are required to remain sheeted during the journey and discharge of material.	Limited potential through dust extraction exhausts then deposition onto external surfaces Potential for trace priority hazardous substance to enter run-off – include cadmium, lead, mercury and nickel and their compounds
Cement – 25,000t	Powder	Typical composition: Calcium silicates (CaO ₄ Si) Sulphates (SO ₂ -4) Aluminates Ferro aluminates CaO – SiO ₂ CaO – Al ₂ O ₃	The cement mill has a mill dust plant and a separator dust plant, both with extractor fans and chimneys. Cement is located in the cement silos and palletiser building, stored in steel silos, the warehouse and yard.	Limited potential through dust extraction exhausts then deposition onto external surfaces
Celtic Ash – 1,400t	Fly Ash	Bulk composition: 82% SiO ₂ Al ₂ O ₃ Fe ₂ O ₃	Stored in steel silo in the Cement Mill Yard with ...	Limited potential through dust extraction exhausts then deposition onto external surfaces Potential for trace priority hazardous substance to enter run-off – include cadmium,

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Light oil	Liquid	Typical composition: Liquid petroleum with a high proportion of light hydrocarbon fractions. Some nitrogen, oxygen and sulphur, and trace amounts of metals such as iron, nickel, copper and vanadium.	Three storage tanks, connected to Kiln oil firing control. Oil spill contingency plan set up.	Very unlikely during normal operations.
Kerosene – 160m ³	Liquid	Typical composition: Hydrocarbon liquid from petroleum.	Stored in tank over concrete bund and surfacing. Spill kits and emergency procedures in place.	Very unlikely during normal operations.
Lubricating oils and diesel	Liquid	Typical composition: Hydrocarbon	Stored in drums/cans in designated areas and protected against spillage by double-skinned tanks and bunds. A containment inspection procedure is carried out once a month and an oil spill contingency plan is set up. Spill kits and emergency procedures in place.	Very unlikely during normal operations, although potential of leaks and spills from plant, equipment and other vehicles on site. Potential for priority hazardous substance to enter run-off – includes PAHs and benzene
Wastes				
Process waste – 1,000t	Granular/ powder form	Various – influenced by all raw materials	Stored in an open stockpile located in the coal yard.	Fugitive dust emissions and run-off from stockpiles. Potential for priority hazardous substance to enter run-off – includes PAHs, cadmium, lead, mercury and nickel and their compounds
Project waste – 1,500t	Granular/ powder form	Various – influenced by all raw materials	Stored in an open stockpile located in the quarry.	Fugitive dust emissions and run-off from stockpiles. Potential for trace priority hazardous substance to enter

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Hazardous waste	Solid or liquid	Various	Securely stored in the K5 building in Hazardous waste store/bunded storage.	Very unlikely to be released during normal operations.
Refractory Brick	Bricks	Typical composition: Refractory ceramic, Alumina (Ap) and (AR), potentially contaminated with clinker	Stored in an open stockpile in the coal yard.	Fugitive dust emissions and run-off from stockpiles. Potential for priority hazardous substance to enter run-off – includes cadmium, lead, mercury and nickel and their compounds