

## Diesel Engine Mechanic POA (2011) Subtask to Unit Comparison

POA Subtask		Manitoba Unit(s)
<b>Task 1 – Uses, selects and maintains tools and equipment.</b>		
1.01	Operates access equipment.	A7 Access, Hoisting, Lifting and Rigging Equipment
1.02	Maintains and inspects tools.	A4 Tools and Equipment
1.03	Calibrates tools.	A2 Trade Safety Awareness
		A4 Tools and Equipment
		A11 Standards and Regulations (General and Industry Specific)
1.04	Uses hoisting, lifting and rigging equipment.	A7 Access, Hoisting, Lifting and Rigging Equipment
1.05	Uses welding and cutting equipment.	A13 Welding
1.06	Uses computers.	A8 Computer Applications
1.07	Uses Personal Protective Equipment (PPE).	A2 Trade Safety Awareness
		A4 Tools and Equipment
<b>Task 2 - Organizes work.</b>		
2.01	Interprets technical documents and qualification protocols.	A9 Trade Related Documents
		A11 Standards and Regulations (General and Industry Specific)
		A12 Commissioning and Decommissioning Equipment
2.02	Communicates with others.	A1 Orientation I: Structure and Scope of Diesel Engine Mechanic Trade Learning
		A3 Orientation II: The Job of Journeywork
		A5 Planning and Communication Skills
2.03	Plans daily project tasks.	A5 Planning and Communication Skills
2.04	Interprets general standards and regulations.	A9 Trade Related Documents
		A11 Standards and Regulations (General and Industry Specific)
2.05	Complies with mining resource sector-specific standards and regulations.	A9 Trade Related Documents
		A11 Standards and Regulations (General and Industry Specific)
2.06	Complies with railway-sector specific standards and regulations.	A9 Trade Related Documents
		A11 Standards and Regulations (General and Industry Specific)
2.07	Complies with hydro-sector specific standards and regulations.	A9 Trade Related Documents
		A11 Standards and Regulations (General and Industry Specific)
<b>Task 3 - Performs routine trade activities.</b>		
3.01	Uses fasteners, adhesives and other consumables.	A10 Fasteners, Adhesives and other Consumables
3.02	Cleans and prepares parts and components.	A10 Fasteners, Adhesives and other Consumables
		B2 Diesel Engine Internal Components

<b>POA Subtask</b>		<b>Manitoba Unit(s)</b>
3.03	Maintains safe work environment.	A2 Trade Safety Awareness
3.04	Commissions/decommissions equipment.	A12 Commissioning and Decommissioning Equipment
<b>Task 4 - Overhauls engine blocks.</b>		
4.01	Removes/installs engine.	B2 Diesel Engine Internal Components
4.02	Disassembles/reassembles engine.	B1 Fundamentals of Diesel Engines B2 Diesel Engine Internal Components
4.03	Tests, repairs and requalifies mechanical engine components.	B2 Diesel Engine Internal Components
4.04	Welds engine block.	A13 Welding B2 Diesel Engine Internal Components
4.05	Tests water and fuel systems of block.	B1 Fundamentals of Diesel Engines B2 Diesel Engine Internal Components B3 Diesel Engine Support Systems
<b>Task 5 - Qualifies internal engine components.</b>		
5.01	Removes, washes and measures camshaft and crankshaft.	B2 Diesel Engine Internal Components
5.02	Removes, washes and inspects gears.	B2 Diesel Engine Internal Components
5.03	Removes and measures power assemblies (cylinder packs)	B2 Diesel Engine Internal Components
5.04	Rebuilds cylinder heads.	B2 Diesel Engine Internal Components
5.05	Rebuilds injectors/injector pumps.	B4 Diesel Engine Fuel and Exhaust Systems
<b>Task 6 - Aligns crankshaft.</b>		
6.01	Assesses crankshaft bore.	B2 Diesel Engine Internal Components
6.02	Welds crankshaft bore and/or cap.	A13 Welding B2 Diesel Engine Internal Components
6.03	Machines crankshaft bore and/or cap.	B2 Diesel Engine Internal Components
<b>Task 7 - Measures and qualifies counterbore.</b>		
7.01	Assesses counterbore.	B2 Diesel Engine Internal Components
7.02	Welds counterbore.	A13 Welding B2 Diesel Engine Internal Components
7.03	Machines counterbore.	B2 Diesel Engine Internal Components
<b>Task 8 - Machines intake/exhaust manifold.</b>		
8.01	Assesses intake/exhaust manifold.	B1 Fundamentals of Diesel Engines B4 Diesel Engine Fuel and Exhaust Systems
8.02	Welds intake/exhaust manifold.	A13 Welding B4 Diesel Engine Fuel and Exhaust Systems
8.03	Machines intake/exhaust manifold base.	B2 Diesel Engine Internal Components
8.04	Removes/installs intake/exhaust manifold.	B4 Diesel Engine Fuel and Exhaust Systems
<b>Task 9 - Measures and qualifies head-pot seat.</b>		
9.01	Assesses head-pot seat.	B2 Diesel Engine Internal Components
9.02	Welds head-pot seat.	A13 Welding B2 Diesel Engine Internal Components
9.03	Machines head-pot seat.	B2 Diesel Engine Internal Components
<b>Task 10 - Maintains/troubleshoots lube systems.</b>		
10.01	Diagnoses lube system.	B1 Fundamentals of Diesel Engines B3 Diesel Engine Support Systems
10.02	Services lube system.	B1 Fundamentals of Diesel Engines B3 Diesel Engine Support Systems
<b>Task 11 - Maintains/troubleshoots cooling systems.</b>		

<b>POA Subtask</b>		<b>Manitoba Unit(s)</b>
11.01	Diagnoses cooling system.	B1 Fundamentals of Diesel Engines
		B3 Diesel Engine Support Systems
11.02	Services cooling system.	B1 Fundamentals of Diesel Engines
		B3 Diesel Engine Support Systems
<b>Task 12 - Maintains/troubleshoots fuel systems.</b>		
12.01	Diagnoses fuel systems.	B3 Diesel Engine Support Systems
		B4 Diesel Engine Fuel and Exhaust Systems
12.02	Services fuel system.	B3 Diesel Engine Support Systems
		B4 Diesel Engine Fuel and Exhaust Systems
12.03	Conducts emission testing.	A12 Commissioning and Decommissioning Equipment
		B4 Diesel Engine Fuel and Exhaust Systems
<b>Task 13 - Maintains/troubleshoots air systems.</b>		
13.01	Diagnoses air system.	B1 Fundamentals of Diesel Engines
		B3 Diesel Engine Support Systems
13.02	Services air system.	B1 Fundamentals of Diesel Engines
		B3 Diesel Engine Support Systems
<b>Task 14 - Qualifies supercharger/turbocharger systems.</b>		
14.01	Diagnoses supercharger/turbocharger system.	B4 Diesel Engine Fuel and Exhaust Systems
		C2 Drivetrains
14.02	Services supercharger/turbocharger system.	B4 Diesel Engine Fuel and Exhaust Systems
		C2 Drivetrains
<b>Task 15 - Maintains/troubleshoots exhaust system components.</b>		
15.01	Diagnoses exhaust system.	B4 Diesel Engine Fuel and Exhaust Systems
15.02	Services exhaust system.	B4 Diesel Engine Fuel and Exhaust Systems
<b>Task 16 - Maintains/troubleshoots engine protection devices.</b>		
16.01	Diagnose engine protection devices.	A8 Computer Applications
		B3 Diesel Engine Support Systems
		E1 Basic Electrical Principles and Testing
		E2 Electronic Control Systems
16.02	Services engine protection devices.	A8 Computer Applications
		B3 Diesel Engine Support Systems
		E1 Basic Electrical Principles and Testing
		E2 Electronic Control Systems
<b>Task 17 - Inspects and qualifies wheel assemblies (draft systems).</b>		
17.01	Performs non-destructive testing of wheel axle assembly.	D3 Wheel Assemblies / Traction-Motor
17.02	Disassembles/reassembles traction-motor and wheel assembly.	D3 Wheel Assemblies / Traction-Motor
		D4 Undercarriage trucks
17.03	Diagnoses and qualifies wheel sets and traction motor.	D3 Wheel Assemblies / Traction-Motor
17.04	Services wheel sets and traction motor.	D3 Wheel Assemblies / Traction-Motor
		D4 Undercarriage trucks
17.05	Diagnoses and qualifies draft-gear and system components.	D4 Undercarriage trucks
<b>Task 18 - Maintains trucks/suspension and their components.</b>		
18.01	Diagnose shocks, springs, stabilizers and trucks.	D2 Trucks and Suspension Systems
		D4 Undercarriage trucks
18.02	Services shocks, spring, stabilizers and	D2 Trucks and Suspension Systems

POA Subtask		Manitoba Unit(s)
	trucks.	
		D4 Undercarriage trucks
<b>Task 19 - Troubleshoots braking systems.</b>		
19.01	Diagnoses hydraulic braking systems.	D1 Braking Systems
19.02	Diagnoses mechanical braking systems.	D1 Braking Systems
19.03	Diagnoses electric braking systems.	D1 Braking Systems
		E1 Basic Electrical Principles and Testing
		E2 Electronic Control Systems
19.04	Diagnoses pneumatic braking systems.	D1 Braking Systems
		D4 Undercarriage trucks
<b>Task 20 - Maintains braking systems.</b>		
20.01	Services hydraulic braking systems.	C3 Diesel Engine Hydraulic and Hydrostatic Drive Systems
		D1 Braking Systems
		D4 Undercarriage trucks
20.02	Services mechanical braking systems.	D1 Braking Systems
		D4 Undercarriage trucks
20.03	Services electric braking systems.	D1 Braking Systems
		D4 Undercarriage trucks
		E1 Basic Electrical Principles and Testing
		E2 Electronic Control Systems
20.04	Services pneumatic braking systems.	D1 Braking Systems
		D4 Undercarriage trucks
<b>Task 21 - Maintains/troubleshoots air compressors.</b>		
21.01	Inspects air compressor system components.	C1 Driven Systems
21.02	Performs scheduled maintenance of air compressor.	C1 Driven Systems
21.03	Assembles/disassembles air compressor system components.	C1 Driven Systems
21.04	Qualifies air compressor system components.	C1 Driven Systems
21.05	Aligns air compressor to engine.	C1 Driven Systems
21.06	Removes/installs air compressor.	C1 Driven Systems
21.07	Tests air compressor operation.	C1 Driven Systems
		E2 Electronic Control Systems
<b>Task 22 - Maintains/troubleshoots main generator/alternator.</b>		
22.01	Inspects main generator/alternator components.	E5 Diesel Engine Power Generator Systems
22.02	Performs scheduled maintenance of main generator/alternator.	E5 Diesel Engine Power Generator Systems
22.03	Assembles/disassembles main generator/alternator components.	E5 Diesel Engine Power Generator Systems
22.04	Qualifies main generator/alternator components.	E2 Electronic Control Systems
		E5 Diesel Engine Power Generator Systems
22.05	Aligns main generator/alternator to engine.	C1 Driven Systems
22.06	Removes/installs main generator/alternator.	C1 Driven Systems
22.07	Tests main generator/alternator operation.	E1 Basic Electrical Principles and Testing
		E2 Electronic Control Systems
		E5 Diesel Engine Power Generator Systems
22.08	Verifies voltage regulator (VR) function.	E1 Basic Electrical Principles and Testing

POA Subtask		Manitoba Unit(s)
		E2 Electronic Control Systems
22.09	Balances rotor.	E5 Diesel Engine Power Generator Systems
<b>Task 23 - Maintains/troubleshoots electric drive motors.</b>		
23.01	Inspects electric drive motor components.	D3 Wheel Assemblies / Traction-Motor
		E1 Basic Electrical Principles and Testing
23.02	Performs scheduled maintenance of electric drive motor.	D3 Wheel Assemblies / Traction-Motor
		E1 Basic Electrical Principles and Testing
23.03	Assembles/disassembles electric drive motor components.	D3 Wheel Assemblies / Traction-Motor
		E1 Basic Electrical Principles and Testing
23.04	Qualifies electric drive motor components.	D3 Wheel Assemblies / Traction-Motor
		E1 Basic Electrical Principles and Testing
23.05	Removes/installs electric drive motor.	D3 Wheel Assemblies / Traction-Motor
		E1 Basic Electrical Principles and Testing
23.06	Tests electric drive motor.	D3 Wheel Assemblies / Traction-Motor
		E1 Basic Electrical Principles and Testing
23.07	Renews shaft using hydraulic press.	D3 Wheel Assemblies / Traction-Motor
23.08	Qualifies stator frame.	A9 Trade Related Documents
		D3 Wheel Assemblies / Traction-Motor
		E1 Basic Electrical Principles and Testing
23.09	Machines commutator.	A9 Trade Related Documents
		D3 Wheel Assemblies / Traction-Motor
		E5 Diesel Engine Power Generator Systems
23.10	Assemble armature and frame.	A9 Trade Related Documents
		D3 Wheel Assemblies / Traction-Motor
		E5 Diesel Engine Power Generator Systems
<b>Task 24 - Maintains/troubleshoots hydraulic motors and pumps.</b>		
24.01	Inspects hydraulic motors and pump components.	B4 Diesel Engine Fuel and Exhaust Systems
		C3 Diesel Engine Hydraulic and Hydrostatic Drive Systems
		E1 Basic Electrical Principles and Testing
24.02	Performs scheduled maintenance of hydraulic motors and pumps.	B4 Diesel Engine Fuel and Exhaust Systems
		C3 Diesel Engine Hydraulic and Hydrostatic Drive Systems
		E1 Basic Electrical Principles and Testing
24.03	Assembles/disassembles hydraulic motors/pump components.	B4 Diesel Engine Fuel and Exhaust Systems
		C3 Diesel Engine Hydraulic and Hydrostatic Drive Systems
		E1 Basic Electrical Principles and Testing
24.04	Qualifies hydraulic motors and pump components.	A9 Trade Related Documents
		B4 Diesel Engine Fuel and Exhaust Systems
		C3 Diesel Engine Hydraulic and Hydrostatic Drive Systems
		E1 Basic Electrical Principles and Testing
24.05	Removes/installs hydraulic motors and pump.	A9 Trade Related Documents
		B4 Diesel Engine Fuel and Exhaust Systems
		C3 Diesel Engine Hydraulic and Hydrostatic Drive Systems
		E1 Basic Electrical Principles and Testing
24.06	Tests hydraulic motors and pump.	A9 Trade Related Documents
		B4 Diesel Engine Fuel and Exhaust Systems
		C3 Diesel Engine Hydraulic and Hydrostatic Drive Systems
		E1 Basic Electrical Principles and Testing

<b>POA Subtask</b>		<b>Manitoba Unit(s)</b>
<b>Task 25 - Maintains/troubleshoots drivetrains.</b>		
25.01	Inspects drivetrain components.	B1 Fundamentals of Diesel Engines B2 Diesel Engine Internal Components C2 Drivetrains
25.02	Performs scheduled maintenance of drivetrains.	B2 Diesel Engine Internal Components C2 Drivetrains
25.03	Assembles/disassembles drivetrain components.	B2 Diesel Engine Internal Components C2 Drivetrains
25.04	Qualifies drivetrain components.	B1 Fundamentals of Diesel Engines B2 Diesel Engine Internal Components C1 Driven Systems C2 Drivetrains
25.05	Aligns drivetrain to engine.	C1 Driven Systems C2 Drivetrains
25.06	Removes/installs drivetrain.	C1 Driven Systems C2 Drivetrains
25.07	Tests drivetrain operation.	C1 Driven Systems C2 Drivetrains
<b>Task 26 - Maintains/troubleshoots engine-mounted cooling fans.</b>		
26.01	Inspects engine-mounted cooling fan components.	B3 Diesel Engine Support Systems
26.02	Performs scheduled maintenance of engine-mounted cooling fans.	B3 Diesel Engine Support Systems
26.03	Assembles/disassembles engine-mounted cooling fan components.	B3 Diesel Engine Support Systems
26.04	Qualifies engine-mounted cooling fan components.	B3 Diesel Engine Support Systems
		E1 Basic Electrical Principles and Testing
26.05	Aligns engine-mounted cooling fan to engine.	B3 Diesel Engine Support Systems
26.06	Removes/installs engine-mounted cooling fans.	B3 Diesel Engine Support Systems
26.07	Tests engine-mounted cooling fan operation.	B3 Diesel Engine Support Systems
		E1 Basic Electrical Principles and Testing E2 Electronic Control Systems
<b>Task 27 - Overhaul, clean and qualify governor drive.</b>		
27.01	Inspects governor drive components.	B3 Diesel Engine Support Systems E2 Electronic Control Systems
27.02	Performs scheduled maintenance of governor drive.	B3 Diesel Engine Support Systems
27.03	Assembles/disassembles governor drive components.	B3 Diesel Engine Support Systems
27.04	Qualifies governor drive components.	A9 Trade Related Documents B3 Diesel Engine Support Systems E1 Basic Electrical Principles and Testing E2 Electronic Control Systems
27.05	Aligns governor drive to engine.	B3 Diesel Engine Support Systems C2 Drivetrains
27.06	Removes and installs governor drive.	B3 Diesel Engine Support Systems C2 Drivetrains
<b>Task 28 - Troubleshoots electrical control systems.</b>		
28.01	Diagnoses electrical starting systems.	E1 Basic Electrical Principles and Testing E2 Electronic Control Systems

POA Subtask		Manitoba Unit(s)
		E3 Diesel Engine Starting and Charging Systems
28.02	Diagnoses electrical charging systems.	E1 Basic Electrical Principles and Testing
		E2 Electronic Control Systems
		E3 Diesel Engine Starting and Charging Systems
28.03	Diagnoses electrical accessory systems.	E1 Basic Electrical Principles and Testing
		E2 Electronic Control Systems
		E3 Diesel Engine Starting and Charging Systems
28.04	Diagnoses electrical power generator systems.	E1 Basic Electrical Principles and Testing
		E2 Electronic Control Systems
		E5 Diesel Engine Power Generator Systems
<b>Task 29 - Maintains electrical control systems.</b>		
29.01	Services electrical starting systems.	E1 Basic Electrical Principles and Testing
		E2 Electronic Control Systems
		E3 Diesel Engine Starting and Charging Systems
29.02	Services electrical charging systems.	E1 Basic Electrical Principles and Testing
		E2 Electronic Control Systems
		E3 Diesel Engine Starting and Charging Systems
29.03	Services electrical accessory systems.	E1 Basic Electrical Principles and Testing
		E2 Electronic Control Systems
		E3 Diesel Engine Starting and Charging Systems
29.04	Services electrical power generator systems.	E1 Basic Electrical Principles and Testing
		E2 Electronic Control Systems
		E5 Diesel Engine Power Generator Systems
<b>Task 30 - Troubleshoots pneumatic control systems.</b>		
30.01	Diagnoses pneumatic starting systems.	E3 Diesel Engine Starting and Charging Systems
30.02	Diagnoses pneumatic accessory systems.	E3 Diesel Engine Starting and Charging Systems
<b>Task 31 - Maintains pneumatic control systems.</b>		
31.01	Services pneumatic starting systems.	A9 Trade Related Documents
		E3 Diesel Engine Starting and Charging Systems
31.02	Services pneumatic accessory systems.	A9 Trade Related Documents
		E3 Diesel Engine Starting and Charging Systems
<b>Task 32 - Troubleshoots mechanical control systems.</b>		
32.01	Diagnoses mechanical starting systems.	E3 Diesel Engine Starting and Charging Systems
32.02	Diagnoses mechanical charging systems.	E3 Diesel Engine Starting and Charging Systems
32.03	Diagnoses mechanical accessory systems.	E4 Diesel Engine Accessory Systems
32.04	Diagnoses mechanical power generator systems.	E5 Diesel Engine Power Generator Systems
<b>Task 33 - Maintains mechanical control systems.</b>		
33.01	Services mechanical starting systems.	E3 Diesel Engine Starting and Charging Systems
33.02	Services mechanical charging systems.	E3 Diesel Engine Starting and Charging Systems
33.03	Services mechanical accessory systems.	E4 Diesel Engine Accessory Systems
33.04	Services mechanical power generator systems.	E5 Diesel Engine Power Generator Systems
<b>Task 34 - Assesses damage and extent of repair required.</b>		
34.01	Removes components to provide	A7 Access, Hoisting, Lifting and Rigging Equipment

POA Subtask		Manitoba Unit(s)
	access.	
		A12 Commissioning and Decommissioning Equipment
		F1 Diesel Engine Cab Structures and Interiors, Buildings, and Related Components
34.02	Applies/installs components.	A7 Access, Hoisting, Lifting and Rigging Equipment
		A12 Commissioning and Decommissioning Equipment
		F1 Diesel Engine Cab Structures and Interiors, Buildings, and Related Components
34.03	Verifies integrity and functionality of repair.	A11 Standards and Regulations (General and Industry Specific)
		A12 Commissioning and Decommissioning Equipment
		F1 Diesel Engine Cab Structures and Interiors, Buildings, and Related Components
<b>Task 35 - Performs steel fabrication.</b>		
35.01	Lays out workpiece on replacement material.	A5 Planning and Communication Skills
		A6 DEM Trade Related Mathematics
		A7 Access, Hoisting, Lifting and Rigging Equipment
		A13 Welding
		F1 Diesel Engine Cab Structures and Interiors, Buildings, and Related Components
35.02	Estimates and specifies required repair materials.	A5 Planning and Communication Skills
		A6 DEM Trade Related Mathematics
		F1 Diesel Engine Cab Structures and Interiors, Buildings, and Related Components
35.03	Sets up required tooling and equipment.	A4 Tools and Equipment
		A5 Planning and Communication Skills
		A7 Access, Hoisting, Lifting and Rigging Equipment
		A13 Welding
		F1 Diesel Engine Cab Structures and Interiors, Buildings, and Related Components
<b>Task 36 - Changes out components.</b>		
36.01	Installs replacement components.	A12 Commissioning and Decommissioning Equipment
		D2 Trucks and Suspension Systems
		D3 Wheel Assemblies / Traction-Motor
		E4 Diesel Engine Accessory Systems
		F1 Diesel Engine Cab Structures and Interiors, Buildings, and Related Components
		F2 Diesel Engine Climate Control Systems
36.02	Verifies integrity and function of replacement components.	A8 Computer Applications
		A9 Trade Related Documents
		A11 Standards and Regulations (General and Industry Specific)
		A12 Commissioning and Decommissioning Equipment
		E2 Electronic Control Systems
		F1 Diesel Engine Cab Structures and Interiors, Buildings, and Related Components
<b>Task 37 - Maintains cab accessories.</b>		
37.01	Inspects cab components and related equipment.	F1 Diesel Engine Cab Structures and Interiors, Buildings, and Related Components
		F2 Diesel Engine Climate Control Systems
37.02	Changes out cab components and related equipment.	F1 Diesel Engine Cab Structures and Interiors, Buildings, and Related Components
		F2 Diesel Engine Climate Control Systems



<b>POA Subtask</b>		<b>Manitoba Unit(s)</b>
37.03	Fabricates floor and ceiling materials.	A5 Planning and Communication Skills
		A13 Welding
		F1 Diesel Engine Cab Structures and Interiors, Buildings, and Related Components
37.04	Inspects/services air conditioning and heating components.	F1 Diesel Engine Cab Structures and Interiors, Buildings, and Related Components
		F2 Diesel Engine Climate Control Systems