

QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

**Skill Council for Mining Sector (SCMS)
FIMI House, B-311, Okhla Industrial, Phase-1
New Delhi-110020**

Name and contact details of individual dealing with the submission

Name: A. K. Bhandari

Position in the organisation: Chief Executive Officer

Address if different from above

Same as above

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List of documents submitted in support of the Qualifications File

1. Sector Profiling
2. Occupational Map & Progression matrix
3. Protocol for Affiliation of Assessment Bodies and Assessment Framework
4. List of Companies which participated in the NOS development process including validation
5. Validation of Occupational Standards by Industry
6. Putting up the Occupational Standards in public view and declaration of Standard as NOS
7. Recommendation from QRC

1. QUALIFICATION FILE SUMMARY

Qualification Type			
Qualification Title	Grader Operator		
Classification code	MIN/Q 0430		
Body/bodies which will assess candidates	SCMS affiliated Assessment Agency		
Body/bodies which will award the certificate for the qualification.	SCMS		
Body which will accredit providers to offer the qualification.	SCMS		
Occupation(s) to which the qualification gives access	Has been developed following all guidelines laid down by NSDC for NOS and Qualification Pack development. Has been validated by 30 Industry representatives.		
Occupation(s) to which the qualification gives access	Open Cast and Underground		
Proposed level of the qualification in the NSQF.	Level 4		
Anticipated volume of training/learning required to complete the qualification.	120 hours		
Entry requirements / recommendations.	Preferably Class X, 0-10 years of Experience desirable		
Minimum Job Entry Age	+ 18 Years		
Progression from the qualification.	Overman / Foreman - Level 6		
Planned arrangements for RPL.	RPL arrangements and policies are in process		
International recognitions.	In progress		
Formal structure of the qualification			
Title of unit or other component (include any identification code used)	Mandatory/ Optional	Estimated size (learning hours)	Level
MIN/ N0483 (Prepare Grader for operations and conduct routine maintenance)	Mandatory	120 hours	4
MIN/ N0484 (Perform grader Operations)			
MIN/ N0485 (Transport Grader)			
MIN / N 0901 (Health and Safety)			

Please attach any document giving further detail about the structure of the qualification – eg a Curriculum or Qualification Pack.

Give details of the document here: [Grader Operator](#)

SECTION 1

ASSESSMENT

Name of assessment body:

If there will be more than one assessment body for this qualification, give details.

1. **Anant Learning and Development, New Delhi**
2. **Navriti Technologies Private limited, Bangalore**
3. **Aspiring minds, New Delhi**
4. **Trendsetters Skill Assessors Pvt. Ltd.**

Will the assessment body be responsible for RPL assessment?

Give details of how RPL assessment for the qualification will be carried out and quality assured.

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, consistent and fair and show that these are in line with the requirements of the NSQF:

Please attach any documents giving further information about assessment and/or RPL.

Give details of the document(s) here: [Protocol Document](#) and [RPL Assessment Document](#)

ASSESSMENT POLICY

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, consistent and fair and show that these are in line with the requirements of the NSQF:

The emphasis is on practical demonstration of skills and knowledge based on the performance criteria. The assessment papers are developed by Subject Matter Experts (SME) available with the Assessment Agency as per the performance and assessment criteria mentioned in the Qualification Pack. The assessments papers are also checked for the various outcome based parameters such as quality, time taken, precision, tools & equipment requirement etc.

The assessment results are backed by evidences collected by assessors.

1. The assessor needs to collect a copy of the attendance for the training done under the scheme. The attendance sheets are signed and stamped by the In-charge / Head of the Training Centre.
2. The assessor needs to verify the authenticity of the candidate by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central/Government. The same needs to be mentioned in the attendance sheet. In case of suspicion, the assessor should authenticate and cross verify trainee's credentials in the enrolment form.
3. The assessor needs to punch the trainee's roll number on all the test pieces.
4. The assessor can take a photograph of all the students along with the assessor standing in the middle and with the centre name/banner at the back as evidence.
5. The assessor also needs to carry a photo ID card.

The assessment agencies are instructed to hire assessors with integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments.

Detail any particular arrangements relating to candidates with disabilities or other special needs:

Based on the requirement, the candidates with disabilities or other special needs can be exempted

from written/viva test and the same will be facilitated by assessor through best possible alternative means.

ASSESSMENT EVIDENCE

Complete the following grid for each grouping of NOS, assessment unit or other component as listed in the entry on the structure of the qualification on page 1.

Title of NOS/Unit/Component:

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role: Grader Operator

Job Code: MIN/ Q0430

Sector Skill Council: Skill Council for Mining Sector

Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on this criteria
5. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

Assessable Outcome	Assessment criteria	Marks Allocation			
		Total Mark (100)	Out Of	Theory	Skills Practical
1. MIN/N0483 (Prepare Grader for operations and conduct routine maintenance)	PC1. Understand the different types and sizes of graders, e.g. rigid articulating etc., and relevant manufacturers specifications as required.	30	2	1.5	0.5

	PC2. Understand the function of major components, such as circle, mould board, ripper, scarifier, drive train and their importance.		2	1.5	0.5
	PC3. Understand common types of ground engaging tools, such as mouldboard cutting edges (e.g., carbide, standard etc.), ripper tooth.		2	1.5	0.5
	PC4. Identify different types of attachments and accessories: and such as V-blades, one-way blades, push-blades, ripper, scarifier, grade control system [e.g., Global Positioning System (GPS), laser],shouldering boot etc.		2	1	1
	PC5. Understand the purpose of attachments and accessories such as shouldering boot is used to prevent spillage etc.		2	1.5	0.5
	PC6. Understand the basic tools and supplies associated with Grader, such as hammer, screwdrivers, pliers, self-locking pliers, adjustable wrench, assorted other wrenches, grease gun etc.		2	1	1
	PC7. Understand tyre conditions and inflation pressure.		2	1	1
	PC8. Identify the regulatory documents required for the vehicle.		2	1	1
	PC9. Inspect and service lubrication system to: <ul style="list-style-type: none"> • identify service needs, defects, and hazardous conditions through visual inspection, such as low oil levels, dirty filler cap • perform basic service, such as adjust oil levels • perform or arrange for repair or replacement of defective components, such as seals, gaskets, lines. 		2	1	1
	PC10. Inspect and service electrical system to: <ul style="list-style-type: none"> • identify service needs, defects, and hazardous conditions through visual inspection, and brief operation in idle condition • perform or arrange for repair or replacement of defective components, such as batteries 		2	1	1

	<p>PC11. Inspect and service hydraulic systems & suspension systems to:</p> <ul style="list-style-type: none"> • inspect and service hydraulic system and suspension systems through visual inspection and brief operation if required • perform basic maintenance, such as grease pivot points, check hydraulic oil levels, use spill kit, • perform or arrange for repair or replacement of defective components, such as grease fittings and hoses.
	<p>PC12. Inspect and service engine & transmission system to:</p> <ul style="list-style-type: none"> • locate components to be inspected, select and use appropriate tools • identify service needs, defects, and hazardous conditions through visual inspection and brief period of idle running • perform basic service, such as add coolant, use spill kit • perform or arrange for repair or replacement of • Defective components, such as hoses, belts.
	<p>PC13. Inspect and service fuel system & air intake system to:</p> <ul style="list-style-type: none"> • locate components to be inspected, select and use appropriate tools • identify service needs, defects, and hazardous conditions through visual inspection and brief period of idle running • perform basic service, such as fill fuel, clean air filter • perform or arrange for repair or replacement of fuel/air filter if required.
	<p>PC14. Maintain a checking/maintenance log book to record all activities to be performed before starting the Grader.</p>

2	1	1
2	1	1
2	1	1
1	0.5	0.5

	PC15. Read indicators that signal need for replacement.		1	0.5	0.5
	PC16. Read maintenance records and documentation relating to service, such as log books and equipment manual.		1	0.5	0.5
	PC17. Arrange for or perform scheduled maintenance.		1	0.5	0.5
		Total	30	17	13
2. MIN/ N0484(Perform grader Operations)	PC1. Recognize symbols and markings used on job site.	30	1	0.5	0.5
	PC2. Interpret survey markers, construction grades, and stakes to differentiate between types of survey markers, construction grades, and stakes identify what is indicated by different types of survey markers, construction grades, and stakes.		1.5	1	0.5
	PC3. Mark stakes/surface with appropriate symbols or markings, such as coloured paint, ribbons.		1	0.5	0.5
	PC4. Demonstrate use of grade-checking devices such as laser levels, line levels, sight levels and check grades using information on stakes and plans.		1.5	1	0.5
	PC5. Set up equipment correctly to adjust to factors affecting safe operation of equipment, maintain stability of equipment, position equipment correctly communicate with traffic control person/signaller.		1.5	1	0.5
	PC6. Install attachments to the equipment following correct procedures and mechanisms specified by the equipment manufacturer		1.5	1	0.5
	PC7. Use tools effectively to for installing attachments, positions equipment and attachments for installation and installs attachments safely.		1	0.5	0.5
	PC8. Use Operating controls safely and smoothly, use different operating controls simultaneously and react to changing conditions/situations.		1.5	1	0.5

	PC9. Monitor performance of equipment from gauges and symbols, and using own senses and judgment to monitor/ adjust performance and identify equipment problems.		1	0.5	0.5
	PC10. Identify and troubleshoot equipment problems and possible solutions, communicate problems accurately to others, such as maintenance personnel if required.		1	0.5	0.5
	PC11. Observe and respond to movement of others (people, vehicles, and other equipment in work area while performing tasks.		1	0.5	0.5
	PC12. Communicate with others, such as site personnel, signaller, traffic control person use and respond to hand and audible signals.		1	0.5	0.5
	PC13. Optimize equipment capabilities by position equipment correctly by adjusting operation to accommodate weather conditions, materials being handled, limitations of equipment, ground conditions, seasonal conditions, and stability characteristics adjust work procedures as necessary.		1	0.5	0.5
	PC14. Scarify and rip surface materials, such as reclaiming road surface materials to maintain road within the capabilities and limitations of equipment and site obstructions and hazards, such as underground utilities.		1	0.5	0.5
	PC15. Strip/windrow surface materials according to job specifications while avoiding site obstructions and hazards.		1.5	1	0.5
	PC16. Work surface materials, such as combine, separate, windrow and spread materials as per the job specifications.		1.5	1	0.5
	PC17. Create rough/finish grade ditches in accordance with job specifications.		1.5	1	0.5
	PC18. Create slopes (also known as inclines) by cutting or filling and blending materials in accordance with job specifications.		1.5	1	0.5
	PC19. Establish grade profiles by reading site plans and positioning attachments of the equipment correctly to generate rough/finish grades to job specifications, such as correct		1.5	1	0.5

	elevation.				
	PC20. Clean wheels and attachments according to manufacturers' specifications and company policies and procedures.		1.5	1	0.5
	PC21. Identify appropriate parking location and park equipment according to company policies and procedures, lower attachments before shutting down.		1	0.5	0.5
	PC22. Shut down and secures equipment as per company policy and procedures and manufacturer's specification to protect against movement, theft and vandalism.		1.5	1	0.5
	PC23. Perform housekeeping of the equipment as per the manufacturer's specification and cleans items such as windshields, rails, steps, instrument panel.		1	0.5	0.5
	PC24. Perform visual inspection, identify existing or potential problems communicate concerns to appropriate personnel, such as supervisor, mechanic.		1	0.5	0.5
		Total	30	18	12
3. MIN/ N0485(Transport Grader)	PC1. Prepare to load grader and attachments for transport such as clean blades and wheels.	15	1	0.5	0.5
	PC2. Load or assist with loading Grader and attachments while avoiding hazards such as uneven ground, utility lines etc.		2	1.5	0.5
	PC3. Use and respond to code of signals (Hand/audible sounds etc.).		2	1.5	0.5
	PC4. Protect equipment from damage, such as cover exhaust pipe etc.		1	0.5	0.5
	PC5. Assist with securing Grader and attachment to transport vehicle driver as required, such as attach warning flags and reflectors.		2	1.5	0.5
	PC6. Unload or assist with unloading grader and attachments and assist transport driver as required.		1	0.5	0.5

	PC7. Assess and adjust to hazards, such as overhead obstructions, narrow landing areas.		1	0.5	0.5
	PC8. Understand the working of visual attachments, rear view camera etc.		1	0.5	0.5
	PC9. Prepare Grader for road travel: <ul style="list-style-type: none"> • Secure attachments in proper positions for road travel • Complete inspection, such as check brakes, steering, lights, tires, and Back-up warnings • Clean equipment. 		2	1.5	0.5
	PC10. Drive Grader on public road: <ul style="list-style-type: none"> • Comply with applicable legislation, such as possess appropriate and valid driver's licence • Follow route to destination • Adjust to road and weather conditions, such as adjust speed • Recognize and avoid potential hazards. 		2	1.5	0.5
		Total	15	10	5
4. MIN/ N0901 (Health and Safety)	PC1. Comply with occupational health and safety regulations adopted by the employer.	25	2	1	1
	PC2. Follow mining operations procedures with respect to materials handling and accidents.		2	1	1
	PC3. Follow the correct safety steps in case of fire, accident, and major failure.		2	1	1
	PC4. Work responsibly and carefully so as not to put the health and safety of self or others at risk.		3	2	1
	PC5. Perform storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS.		2	1	1
	PC6. Comply with safety regulations and procedures in case of fire hazard.		2	1	1
	PC7. Operate various grades of fire extinguishers.		3	2	1

	PC8. Work responsibly and as safe and careful as possible so as not to put the health and safety of self or others at risk, including members of the public.		3	2	1
	PC9. Demonstrate careful practices in handling explosives and heavy machinery.		3	2	1
	PC10. Identify characteristics of post-blast fumes and take necessary precautions.		3	2	1
		Total	25	15	10

SECTION 2

EVIDENCE OF NEED

<p>What evidence is there that the qualification is needed? Feedback from industry was collected with respect to roles for which qualification packs development was to be prioritized.</p>
<p>What is the estimated uptake of this qualification and what is the basis of this estimate?</p> <ul style="list-style-type: none"> • Skills Gap analysis Reports for industry demand • Training duration and current and potential capacity envisaged for potential supply
<p>What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF?</p> <ul style="list-style-type: none"> • NSDC list of Approved and Under-Development QPs was checked prior to commissioning the work • NSDC QRC team also confirmed the same
<p>What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?</p> <ul style="list-style-type: none"> • In depth understand of minimum requisites to perform in a Job role • Companies included in the research represents pan India. • Language of the QP is gender neutral, and no religion or such terminology is referred to in the entire documentation and development process.
<p>Has the qualification been through a formal approval procedure(s)? (If so, explain the process and the outcome.)</p> <p>Yes, NSDC QRC process was adhered to. This included minimum 30 validations for the QP from employers in the sector. This was across small, medium and large companies.</p>
<p>What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?</p> <ul style="list-style-type: none"> • Feedback from the Industry and Industry Association • Recommendation and suggestions from the Industry Player and Industry Association
<p>What arrangements are in place to inform people about the qualification(s) and the advantages it offers?</p> <ul style="list-style-type: none"> • Employer workshops for buy-in and recognition • Training centres are being enrolled and informed of the potential • Counselling sessions by training provider for potential recruits are being encouraged

Please attach any documents giving further information about any of the topics above.
Give details of the document(s) here:

SECTION 3

SUMMARY EVIDENCE OF LEVEL

Grader Operator - MIN/Q 0430					
Process required	Professional Knowledge	Professional Skills	Core Skills	Responsibility	Level
The Grader Operator is required to operate the grader and other heavy equipment in a safe and effective manner in order to ensure the roadways are accessible, safe and in good operating condition.	The operators must have professional knowledge of electrical system, components, and functions, hydraulic systems, components, and functions, cooling system, components, and functions, such as that fan belts are used to turn fan for cooling, Load bearing structure of the machine, operator station and components, such as seat, instrument panel and control systems, operating levers, communication devices etc. Knowledge of monitoring and warning systems and components and its impact of weather and seasonal conditions on start-up procedures as well as knowledge of various technical aspects like Road gradient, turning angle, Road Geometry etc.	Identify different types of accessories: V-blades, one-way blades, push-blades, ripper, scarifier, grade control system [e.g., Global Positioning System (GPS), laser], shouldering boot etc. Understand the different types and sizes of graders, e.g. rigid articulating etc., relevant manufacturers specifications as required for functioning of major components, such as circle, mould board, ripper, scarifier, drive train and their importance and operators must understand common types of ground engaging tools, such as mould board cutting edges (e.g., carbide, standard etc.), ripper tooth the purpose of attachments and accessories such as shouldering boot is used to prevent spillage etc.	Use of various systems like lubrication system, electrical systems, hydraulic systems, cooling systems, load bearing structure of the machine, monitoring & warning systems, brake systems, and operator station and components, such as seat, instrument panel and control systems, operating levers, communication devices etc.	This job requires the individual to concentrate on the job at hand and complete it efficiently and effectively without any accidents so diligence and hard-work are desired attributes for individuals performing this role. He must also demonstrate strong work ethics, an ability to communicate courteously with co-workers, and must be good behaviours.	4
4	4	4	4	4	4

Summary of Direct Evidence (from learning outcomes):

Skills required to fulfilling roles and responsibilities along with activities matched with NSQF Level 4

Summary of other evidence (if used):

QUALIFICATION FILE SECTION 5

EVIDENCE OF RECOGNITION AND PROGRESSION

In the course of the research and/or development was there any direct evidence that the qualification(s) will be recognised by particular bodies – eg for entry to work or further study?

- Endorsed and accepted by the Industry players
- Formal recognition from the Industry players

List any agreements which have been reached with regulatory bodies on recognition.

Benchmarked and moderated skill recognition based on DGMS guidelines and international best practices.

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

Horizontal and vertical mobility options are available.

Please attach any documents giving further information about any of the topics above.
Give details of the document(s) here:

QUALIFICATION FILE SECTION 6

EVIDENCE OF INTERNATIONAL COMPARABILITY

List any comparisons which have been established.

Under process