York Potash Limited

Technical Note 2: Construction and Operational Workforce Profiles

25 September 2014

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Contents

1 INTRODUCTION

1.1 In order to plan its transport, accommodation and associated development strategies, York Potash Ltd (YPL) has produced an updated assessment of the construction and operational workforce that would be required to build and operate the four components of the scheme – the Mine, Mineral Transport System (MTS), the Materials Handling Facility (MHF) and the Harbour Facility.

1.2 This paper sets out this information, produced by YPL with extensive input from contractors, together with Quod. This has been a "bottom-up" approach to gain the best understanding of the potential size, nature and timing of demand for the construction and operational workforce. The aim is to provide:

- A profile which shows the scale of the workforce during the construction and operational periods,
- An assessment of the current local labour supply; and
- The predicted mix of home-based (HB) and non-home based (NHB) recruitment to inform the project's approach to accommodation and transport strategies.

1.3 The findings of this note will be used to assess the likely demand for accommodation arising from the workers, and how this might be met, drawing on local tourist and private rental accommodation and any purpose-built accommodation that may be provided.

1.4 All this information will be incorporated into the technical assessment of the scheme and inform the detailed implementation in areas such as transport and accommodation.

The Project Components

1.5 The Project has four components:

- The Mine (and ancillary facilities) located at Dove's Nest Farm;
- An underground Mineral Transport System running from Dove's Nest Farm to Wilton, Teesside, which would include three intermediate access points located along the route in addition to access at Dove's Nest and at Wilton;

- The Minerals Handling Facility (MHF) located in Wilton, Teesside; and,
- The Harbour Facility, located at Bran Sands, Teesside.

1.6 This Technical Note assesses the employment demand for the construction and operation of each of these components.

1.7 For construction employment, the focus is on the overall peak employment scenario. At this peak, any associated impacts, for example on the wider labour market, or on transport or accommodation, would also be at their peak.

1.8 The peak workforce numbers for each component are set out in Table 1 on page 4. The key focus is the peak demand in the area around the Mine as this site, being within the National Park, is situated in a more sensitive location. The combined workforce for the Mine itself and the Dove's Nest MTS access point is approximately 795 workers at peak.

1.9 The following sections set out:

- The construction workforce demand;
- The operational workforce demand;
- The supply of labour; and
- The potential use of local labour.

2 DEMAND FOR LABOUR: CONSTRUCTION

a) Construction Workforce to Initial Production of 6.5mtpa

2.2 Informed by leading industry contractors, YPL has produced a best estimate of the amount of labour required to construct the four components of the scheme. This has been a bottom-up approach, drawing on detailed information provided by specialist contractors in the field. A bottom up approach is most appropriate because the proposed developments have very specific requirements and consequently workforce specialisms which can only be sensibly estimated by consulting with those specialist contractors with experience in the UK and world wide of similar operations, to supplement the in-house expertise of YPL. This has enabled YPL to estimate the build-up of the workforce requirement over a 58 month construction period, including site-preparation, construction and de-mobilisation.

2.3 Figure 1 in Appendix 1 sets out the Workforce Profile, by month, by site and by job type for the 58 month construction period leading to a production capacity of 6.5mtpa and the further 19 months to reach 13mtpa.

2.4 The peak for the Mine in that phase is estimated at 645 workers. There would also be up to 150 construction workers engaged in the MTS Access Point at Dove's Nest. The combined peak workforce in the area could therefore be up to 795 as shown in Table 1 (645 + 150).

Table 1: Peak Workforce

Main Components	Peak Workforce
Mine	645
MTS	
Dove's Nest	150
Intermediate Access Point 1	150
Intermediate Access Point 2	150
Intermediate Access Point 3	150
Wilton Portal	144
MHF	252
Harbour Facility	175
Total Peak	1,671**

*** The sum of these peaks does not equate to the overall project peak of 1,671 as the components peak at different times.*

b) Construction Workforce – Ramp-up to 13mtpa

2.5 The workforce for the installation of infrastructure and equipment to increase capacity to produce 13mtpa, is significantly smaller than for the initial construction and it would therefore have fewer impacts and/or impacts of a smaller magnitude. It includes work at the Mine, MHF, Harbour Facility but not the MTS.

2.6 Figure 1 in Appendix 1 sets out the Workforce Profile, by month, by site and by job type for the 19 month period and Table 2 summarises the workforce components for the peak:

Table 2: Peak Construction Workforce for Ramp up to 13mtpa

Component	Peak Workforce
Mine	80
Harbour Facility	175
MTS	0
MHF	123
TOTAL	**378***

**The sum of these peaks does not equate to the overall peak of 378 as the components peak at different times.*

3 SUPPLY OF LABOUR: CONSTRUCTION

a) Overall Supply

3.2 This section sets out the construction workforce that is resident within a reasonable commute of the Mine. According to the Construction Industry Training Board (CITB), construction workers in Yorkshire and the Humber (YH) have a mean commuting distance of 28 miles and a median of 20 miles (after discounting those in temporary accommodation). In total (i.e. including those in temporary accommodation) 51% travel less than 50 miles. For the North East the mean and median distances travelled (again excluding those in temporary accommodation) are 23 miles and 15 miles. In total 61% travel less than 50 miles.[2]

3.3 A transport model has been established for the Mine, estimating the number of people who would be willing and able to travel to the Mine site, taking account of the number of local people with relevant skills, weighted by the number of construction workers in each local area and discounted for travel time: the model assumes a greater number of workers would be drawn from areas with larger pools of labour; and fewer workers will travel from areas that have a longer travel time.

3.4 Table 3 overleaf shows the location and concentration of construction workers within wards within a 60 minute commuting time. This shows that there are 17,540 construction workers within the 60 minute zone from the Mine. The 60 minute zone is known as the Dove's Nest Commuting Zone (DNCZ).

3.5 Whilst the focus of this Technical Note is the Mine, due to the magnitude of the impact and the sensitivity of the local receptors, figures for the wider area are included to set out the context for the other components, such as the MHF and Harbour Facility. These 5 districts are all within the immediate area around the MHF, Harbour Facility and the northern access points the MTS. These districts are all within 60 minutes travel time of these components.

[2] CITB Workforce Mobility and Skills in the UK Construction Sector 2012

Table 3: Location of Construction Workers

Area	All Residents in Employment	Residents in Construction Employment
Mine Area		
Within 60 Minutes' Travel Time of the Mine - DNCZ	295,000	17,540
NYMNPA[3]	15,670	1,240
In the Wider Area		
Redcar and Cleveland	56,354	4,976
Stockton-on-Tees	87,122	7,200
Hambleton	45,255	3,415
Ryedale	25,504	2,094
Scarborough	48,359	3,914

3.6 There is therefore a significant supply of workers within a reasonable commute of the Mine Site.

3.7 Despite the significant pool of local labour, specialist contractors would be required to undertake the construction of certain elements of the Project; for some tasks, these contractors would bring with them specialist skilled and experienced labour. However, local labour would be used where this is practical and exists within the local skills base. The final section of this Technical Note sets out the extent of the potential for using local labour.

[3] As NYNMPA is not an established census boundary, relevant Output Areas have been used to estimate the number of residents living within the park boundary. These Output Areas have been carefully chosen to help to ensure a best fit, in an attempt to include or exclude settlements where appropriate. A full list of the OAs chosen is set out in Appendix 2.

4 DEMAND FOR LABOUR: OPERATIONAL

4.1 YPL's Operations team, consisting of experienced engineers has estimated the size and skills base of the operational workforce that would be required for output of 6.5mtpa and 13mtpa. The operational phase of the Project would require 701 employees to achieve 6.5mtpa and 1,039 employees for 13mtpa across all the sites. These are broken down as set out in Table 4.

Table 4: Operational Workforce

Area	6.5mtpa	13mtpa
Mine	435	725
MTS	90	90
MHF	86	109
Harbour Facility	26	34
Head Office (Not at Project Sites)	64	81
Total	**701**	**1,039**

4.2 These jobs would be across a wide range of roles. The majority of the workforce would need to have relevant experience for the jobs for which they are applying, but in most cases this would not need to be experience specific to the mining industry. These employees would be drawn from a wide range of other sectors including other manufacturing or engineering trades and business support services. This would reduce the potential for competition for skilled staff between YPL and other local mining operations. A small proportion would require no specific training and would be trained on the job. Table 5 sets out the types of positions that would require mining experience; specific job experience; and no specific experience, respectively, for operations up to 6.5mtpa.

Table 5: Requirement for Industry Specific Experience By Job Type (Examples, not exhaustive list)

Mining Experience Required (for all roles)	No Mining Experience Required (for a proportion of these roles)	
	Job Specific Experience Required	No Specific Experience Required/on-the job training
Level 4+ Roles	**Level 4+ Roles**	
Section Managers Mechanical & Electrical Engineers Senior Geologists Technical Assistants Surveyors Safety Officers	Chemist and Analysts MHF Mechanical, Electrical and Process Engineers Accountants	
Level 3 Roles	**Level 3 Roles**	
Miner Drivers Shift Managers and Foremen Shaftmen Chargehands Beltmen	Mechanical Fitters Electricians Winder drivers Underground Geologists Safety clerks Drillers IT Fabricators Accounts, Sales & Marketing	Level 3 Apprenticeship positions Graduate Positions
Level 2 Roles	**Level 2 Roles**	
	Equipment & Process Operators Control Room Operators Administration	Drivers Cleaners Level 2 Apprenticeship positions

4.3 Across all components, around 30% of workers would require prior mining sector specific experience for operations to reach 6.5mtpa of output. Of the remaining 70%, many would require some prior vocational experience relevant to their post which could be in a range of industries and who could be trained to gain the specific skills and qualifications required for the mining sector, as set out in Table 5. Table 6 sets out the estimated proportion and number of workers for each

component who would require previous mining experience at a production level of 6.5mtpa.

Table 6: Requirement for Industry Specific Experience by estimated number of employees

Area	6.5mtpa Mining Specific Experience	6.5mtpa Mining Experience not required
Mine	178 (40%)	257 (60%)
Tunnel	37 (41%)	53 (59%)
MHF	0	86 (100%)
Harbour Facility	0	26 (100%
Head Office	0	64 (100%)
Total	**215 (30%)**	**486 (70%)**

4.4 Once 6.5mtpa is reached, the operating mine would provide more opportunities for on-site training and YPL envisages that the number of new people who they can recruit at an entry level would increase i.e. more entry level recruitment is possible as the operation has the facilities and management in place to support on-the-job training. In addition, recruitment for the senior positions would come from promotion within the existing staff and it would not be necessary to recruit as many new employees into management/higher level positions.

4.5 As a result, in the production ramp up to 13mtpa, YPL expects to increase the proportion of new recruits who do not require previous mining experience significantly – down to a target of less than 20%. As a result, of the additional 350 workers required to increase output to 1,050, only 60 or so would require prior mining experience.

4.6 YPL is committed to sourcing local labour where this is possible and will deliver a wide ranging training programme which would include apprenticeship and graduate programmes and transferrable skills training. This will be set out in the YPL Skills Strategy.

4.7 By drawing people from a wide pool of skills and experience and providing entry level positions with opportunities for on-site training, YPL intends to achieve a target of 80% local recruitment by full production. Further detail is set out in the next section.

5 SUPPLY OF LABOUR: OPERATIONAL

5.1 The potential supply of labour to fill the operational positions is set out in Table 7. As outlined above, 70% of workers for the initial production would not require mining specific experience; including many of the operator and technician roles, and these workers could be drawn from a wide variety of industries. The second column of Table 7 therefore includes all employees resident within the study area. For the jobs that require industry specific experience, the relevant industrial classification is considered to be B: Mining and Quarrying, as set out in the table. To put this in context, those Mine workers who would require specific experience will represent 7.5% of the available already skilled workforce within the 60 minute zone. The is also a significant supply of labour who are currently working in manufacturing sectors who could have transferable skills that would be relevant for jobs on the Project. Those manufacturing professions considered most relevant area classed at C23-25 and set out in the table below. In addition there is pool of workers from former mining operations, and those proposed to close, outside the 60 minute zone. For example, closure plans have recently been announced by UK Coal at Kellingley (Selby, North Yorkshire) which employs 700 people and at Thoresby in Nottinghamshire that employs 600 people.

5.2 As set out above, once the Project is operational, it would provide opportunities for on-site training, and recruitment from within existing employees for senior positions, which would mean that the proportion of those requiring prior mining experience is likely to decrease in the production ramp up from 6.5mtpa to 13mtpa.

Table 7: Supply of Operational Workers

Area	All Residents in Employment	Residents Employed in Mining and Quarrying	Residents Employed in Relevant Manufacturing (C23-25)
NYMNPA[4]	15,670	238	278
Within 60 Minutes' Travel Time of the Mine	295,000	2,368	6,422
Redcar and Cleveland	56,354	1,126	299
Stockton-on-Tees	87,122	617	2,314
Hambleton	45,255	132	677
Ryedale	25,504	56	531
Scarborough	48,359	414	794

5.3 Within this employed labour there is a substantial amount of turnover or "churn." A 2003 ONS study (the most recent available) showed that just over 25% of private sector employees had changed job in the past year.[5] This means that, on average, of the nearly 300,000 residents within 60 minutes of the Mine that are in work, and the 75% of whom work in the private sector, around 56,000 of them will change jobs in any given year.. YPL's recruitment is therefore well within the likely natural churn of the labour market. Turnover in mining is likely to be lower, however, YPL requires only 7.5% of the total workforce in the 60 minute travel zone currently employed in mining and quarrying.

[4] As NYNMPA is not an established census boundary, relevant Output Areas have been used to estimate the number of residents living within the park boundary. These Output Areas have been carefully chosen to help to ensure a best fit, in an attempt to include or exclude settlements where appropriate. A full list of the OAs chosen is set out in Appendix 2.

[5] "Job mobility and job tenure in the UK" ONS 2003

5.4 In addition to residents in employment, there is a substantial reserve of under-used labour that is unemployed or economically inactive.

5.5 Within the York, North Yorkshire and East Riding LEP area in February 2014, 4,080 moved onto the Claimant Count register whilst 4,175 moved off.[6] Around a third of these claimants are registered as seeking jobs in roles that may be related to the Project, ranging from security and clerical staff to construction operatives, drivers, and managerial and engineering trades.

5.6 In addition there are significant levels of underemployment in the economies of Yorkshire and the Humber and the North East. Underemployment refers to people who are in work but who would want to move to more hours or from part to full-time employment if a position was available. Underemployment has become a particular feature/challenge of the recession and current post-recession period. Yorkshire and the Humber and the North East have the second and third highest rates of estimated underemployment in the UK, at 10.6% and 10.5% of those in work. Young people are especially likely to be underemployed[7].

5.7 The forecast closure of coal mines in the region will also increase the pool of available and trained employees from which the operational workforce could be drawn.

5.8 This demonstrates that the area around the Mine has a large, flexible and dynamic labour market that makes adjustments every month that are significantly larger than the total recruitment needs of YPL.

5.9 YPL is committed to recruiting and training as many local workless people as possible, including school-leavers. It has produced a skills development strategy that sets out the interventions it will make, in partnership with local stakeholders including colleges, local authorities, and Jobcentre Plus, that will make it possible for this large pool of labour to be drawn into the workforce.

[6] Source: NOMIS

[7] http://www.ons.gov.uk/ons/rel/lmac/underemployed-workers-in-the-uk/2012/sty-underemployed-workers-in-the-uk.html

5.10 It turn, this can also help achieve the Government's policy to achieve full employment by increasing the number of existing residents in work.

6 USE OF LOCAL LABOUR

a) Construction

6.2 The extent to which local residents will work on the Project will depend in part on the supply of labour but also on the requirements of contractors and the location of contractors in the supply chain. The Project includes construction techniques, for example shaft sinking and tunnel boring, that are highly specialised and there are relatively few firms that are able to undertake such work. As such it is likely that these specialist tier one contractors would not be based in the local area or necessarily within the region and would use a labour force from outside the area. Other less specialised elements of the construction, such as site preparation, landscaping and above ground buildings, would be more likely to be undertaken by contractors within the study area.

6.3 YPL has reviewed the workforce requirements with construction contractors and estimated the extent to which the roles at the Mine and Dove's Nest end of the MTS (identified as the most sensitive components as set out above) could be filled from the local workforce. This has been informed by YPL's own experience, consultation with contractors and review of the available labour market (as outlined above). The summary of those estimates is set out in Table 9.

Table 9: Construction: Local Workforce at the Mine and the MTS

Project Component	Total Workforce (6.5mtpa peak)	Local Proportion (within 60 minutes)	Local Number (within 60 minutes)	Non-Local Number
Mine: Shaft-Sinking	418	35%	146	272
Mine: Welfare Buildings Operative	98	65%	64	34
Mine: Management	129	10%	13	116
Mine: sub-total	*645*	*34%*	*223*	*422*
MTS (Dove's Nest): Operatives	115	30%	35	80

MTS (Dove's Nest): Management	35	10%	4	31
Total	**795**	**31%**	**251**	**502**

6.4 This suggests that at the peak of construction at the Mine, the total workforce that is likely to seek temporary local accommodation would be a maximum of 500.

b) Operation

6.5 The permanent operational workforce would be drawn from a travel to work area around the Mine. The operational travel-to-work area is derived from the ONS travel-to-work area that covers the NYMNP. This covers an area no more than 90 minutes from all elements of the project. In practice some people may travel further than that.

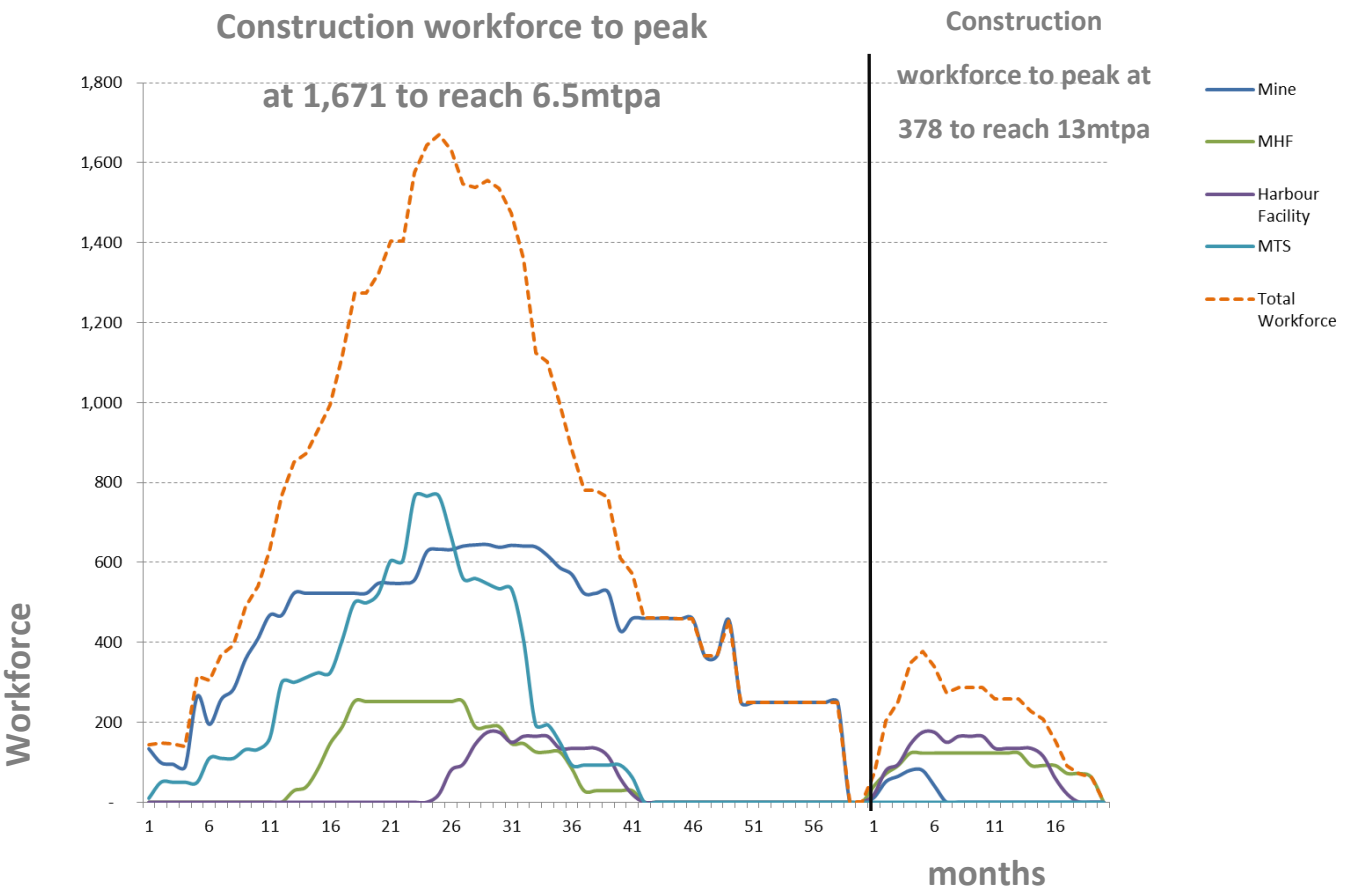
6.6 As outlined in the Operational Labour Supply Section above and in detail in the Baseline sections of the Socio-Economic Chapter of the ES, there is a large and dynamic labour force within travelling distance of the Mine. This includes a large number of workers with existing experience in the mining sector as well as the wider workforce that would be able to fill the majority of roles at the mine. The area also has a large number of people who move between employment and unemployment in any given month demonstrating a high level of flexibility within the labour force. There is also a large proportion of the workforce who are underemployed.

6.7 As set out in the Operational Labour Demand Section above, at least 70% of jobs would not require mining specific experience and a minority would not require any prior work experience (although Level 2 to 3 qualifications are generally required). As a result, a significant number of operational jobs would be accessible to people already living and/or working in the area in a range of occupations and sectors – not just those with a mining background. It is intended that this percentage will increase to 80% by full production.

6.8 On the job training, which would become increasingly possible once operations have begun, would also increase the proportion of locals with no experience at all who would be able to access jobs. This is set out in detail in the YPL Skills Strategy.

6.9 At initial production (6.5mtpa), the target number of recruits who would require some prior experience in mining is estimated at 169. This compares to a mining-related workforce of 2,370 living within an hour, a proportion of which could be expected to change jobs in any given year, as part of the natural churn of the labour market. Furthermore, some people could be recruited from outside the area.

APPENDIX 1: CONSTRUCTION RESOURCE LOADING



APPENDIX 2: NYMNPA OUTPUT AREA ASSUMPTIONS (2011)

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E00140603	E00141620	E00141731	E00140745
E00140682	E00141832	E00141830	E00141704
E00140600	E00141740	E00141684	E00141829
E00141911	E00141619	E00141621	E00141730
E00141683	E00141811	E00141623	E00141741
E00141787	E00141706	E00140679	E00141449
E00141788	E00141782	E00141624	E00141447
E00141838	E00141480	E00141491	E00141923
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E00061432	E00140520	E00141839	
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E00140512	E00140469	E00140739	
E00140684	E00141458	E00141739	
E00140680	E00141459	E00140519	
E00140601	E00140683	E00140598	
E00141455	E00140602	E00170106	
E00141827	E00141488	E00061142	
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E00141840	E00141461	E00141486	
E00141571	E00141682	E00141489	
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E00141686	E00141727	E00141784	
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E00061442	E00141734	E00141615	
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E00141736	E00141460	E00141612	
E00141831	E00141837	E00061183	
E00141783	E00141697	E00061185	
E00141828	E00141617	E00141737	
E00141786	E00141613	E00141836	
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