Appendix 4

SRK Independent Report on the Potential for Polyhalite Exploration in North Yorkshire
AN INDEPENDENT REPORT ON THE POTENTIAL FOR POLYHALITE EXPLORATION IN NORTH YORKSHIRE, ENGLAND WITH PARTICULAR REFERENCE TO THE YORK POTASH PROJECT

Prepared For
York Potash Limited

Report Prepared by
SRK Consulting (UK) Limited
UK05678
COPYRIGHT AND DISCLAIMER

Copyright (and any other applicable intellectual property rights) in this document and any accompanying data or models which are created by SRK Consulting (UK) Limited ("SRK") is reserved by SRK and is protected by international copyright and other laws. Copyright in any component parts of this document such as images is owned and reserved by the copyright owner so noted within the document.

This document may not be utilised or relied upon for any purpose other than that for which it is stated within and SRK shall not be liable for any loss or damage caused by such use or reliance. In the event that the recipient of this document wishes to use the content of this document in support of any purpose beyond or outside that which it is expressly stated or for the raising of any finance from a third party where the document is not being utilised in its full form for this purpose, the recipient shall, prior to such use, present a draft of any report or document produced by it that may incorporate any of the content of this document to SRK for review so that SRK may ensure that this is presented in a manner which accurately and reasonably reflects any results or conclusions produced by SRK.

The use of this document is strictly subject to terms licensed by SRK to its Client as the recipient of this document and unless otherwise agreed by SRK, this does not grant rights to any third party. This document shall only be distributed to any third party in full as provided by SRK and may not be reproduced or circulated in the public domain (in whole or in part) or in any edited, abridged or otherwise amended form unless expressly agreed in writing by SRK. Any other copyright owner’s work may not be separated from this document, used or reproduced for any other purpose other than with the document in full as licensed by SRK. In the event that this document is disclosed or distributed to any third party, no such third party shall be entitled to place reliance upon any information, warranties or representations which may be contained within this document and the recipient of this document shall indemnify SRK against all and any claims, losses and costs which may be incurred by SRK relating to such third parties.

© SRK Consulting (UK) Limited 2014
EXECUTIVE SUMMARY
AN INDEPENDENT REPORT ON THE POTENTIAL FOR POLYHALITE EXPLORATION IN NORTH YORKSHIRE, ENGLAND WITH PARTICULAR REFERENCE TO THE YORK POTASH PROJECT

1 INTRODUCTION

York Potash Ltd (YPL or the Company) is currently preparing an application to the North York Moors National Park Authority (NYMNPA) in relation to its York Potash Project (YPP or the Project). Specifically this application seeks planning permission to develop a Mine Head at Doves Nest to access the polyhalite YPL has identified in the immediate vicinity of this site following a three year period of exploration and assessment.

Following the submission of an earlier application, and comments received on this from NYMNPA, YPL has requested SRK Consulting (UK) Ltd (SRK) to provide it with an independent opinion on the polyhalite resource identified in the region to date and the process followed to discover and delineate this, the likelihood of discovery of additional resources of this mineral following further exploration in the region, and also the potential for either the existing resource or any potential additional resource to be exploited from a Mine Head located outside of the North York Moors National Park (NYMN). This document presents the independent conclusions of SRK’s work.

2 SRK QUALIFICATIONS

SRK is an associate company of the international group holding company SRK Consulting (Global) Limited. The SRK Group comprises over 1,600 staff, offering expertise in a wide range of resource engineering disciplines with 50 offices located on six continents. The SRK Group’s independence is ensured by the fact that it holds no equity in any project. This permits the SRK Group to provide its clients with conflict-free and objective recommendations on crucial judgement issues. The SRK Group has a demonstrated track record in undertaking independent assessments of exploration projects, resources and reserves, project evaluations and audits, Mineral Experts’ Reports, Competent Persons’ Reports, Mineral Resource and Ore Reserve Compliance Audits, Independent Valuation Reports and independent feasibility evaluations to bankable standards on behalf of exploration and mining companies and financial institutions worldwide.
3 SCOPE OF WORK

In producing this report, SRK has:

1. Reviewed the exploration and evaluation programme followed by YPL over the last three years that resulted in the preparation of the most up to date polyhalite Mineral Resource estimate by SRK in May, 2013. This resource lies within the NYMNP and YPL is proposing to access and mine this from two vertical shafts with a Mine Head located at the Doves Nest site which is within the NYMNP.

2. Developed a regional three dimensional (3D) model of the sub-surface geology of the North Yorkshire area focused on the orebody that hosts the polyhalite mineralisation and based on the results of YPL’s exploration work, geological interpretive work completed by FWS Consultants Ltd (FWSC) and historical information available in the public domain.

3. Used the above 3D model to comment upon the potential for the discovery of additional polyhalite resources in the region as a whole and on the geological features in the area that have the potential to hinder the development of the above resources.

4. Commented upon the potential for the development of a polyhalite mine to exploit the already identified Mineral Resource and any potential nearby resource from various other site locations outside of the NYMNP.

5. Estimated the cost of project development for each of two preferred alternative sites (one at Whitby and one at Cloughton) and also the time required for this and compared this to the project development cost of the currently proposed site and allowing for the possibility that additional mineable polyhalite mineralisation may be identified nearer these sites.

6. Made conclusions regarding the likelihood that an exploration or mining company acting reasonably would commit to the exploration and assessment required to investigate the feasibility of extracting polyhalite mineralisation from these sites.

4 MINERAL RESOURCE TERMINOLOGY

Throughout this report references are made to “Mineral Resources” and for the potential to discover “Mineral Resources”. Specifically, references are made in this report to the JORC Code which is one of the established internationally accepted codes used to report estimates of the amount of a given material in the ground that has potential to be exploited by a mining operation.

Getting to a position when a Mineral Resource, as this is defined by the JORC Code, can be reported is a key step in the development of a mineral exploration project and prerequisite of obtaining debt or equity funding to develop a mine. The Code sets out criteria that are required to be assessed when reporting estimates of tonnes and grade, inclusive of criteria regarding the quality and quantity of data, the geological understanding and the work done to demonstrate that the mineralisation has potential to be mined economically, and also minimum levels of disclosure to ensure transparency in reporting and also minimum qualifications and experience required of those responsible for producing the estimates. Most notably the aim of the JORC Code is to prevent disclosure of estimates of tonnes and grade based on too little or poor quality data or produced by individuals without the experience to understand all of the issues that could impact on the resulting estimates.
Given the above, it should be understood that the reporting of a Mineral Resource estimate requires the completion of a significant amount of exploration work typically inclusive of multiple intersections of the target orebody by drillholes or underground development, and certainly not single drillholes, which in turn requires significant expenditure.

The JORC Code defines a Mineral Resource as “a concentration or occurrence of material of intrinsic economic interest in or on the Earth’s crust in such form, quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.”

This definition of a Mineral Resource is reasonably well agreed by the majority of the internationally accepted codes used in the exploration and mining industry to report material being explored as a potential mining target and is therefore in common usage throughout the industry.

A key part of this definition is the requirement that mineralisation has not only been identified as being present but that it has been sufficiently explored to enable estimates of tonnage and quality to be established to a reasonable degree of confidence. Fundamental to reporting a Mineral Resource therefore is establishing the continuity of mineralisation between observation points which therefore requires multiple drillhole intersections rather than single drillhole intersections.

Mineral Resources are reported in three categories dependent upon the confidence the expert who produced the estimate has in the estimates of tonnage and quality derived. The highest confidence category is “Measured”, the second highest “Indicated” and the third “Inferred”.

The key distinction however is between the Indicated and Inferred categories as once a tonnage of mineralisation is reported as Indicated, this means that the material has been delineated to level of confidence needed to be used as the basis of a Pre-Feasibility Study (PFS) or Feasibility Study (FS) which in turn are the documents typically produced by mining companies to support a decision on the development of a mine.

In the case of YPL, as commented upon below, SRK has already reported an Indicated Mineral Resource as defined by the JORC Code which has been demonstrated by a PFS to be sufficient to support a viable mining operation. The establishment of this Mineral Resource is a pre-requisite of a mining operation and in SRK’s opinion it would not be possible to obtain the funding required to develop a mine to exploit the polyhalite in North Yorkshire without this.
5 EXPLORATION WORK COMPLETED BY YPL

The Area of Interest (AOI) outlined by YPL encompassed the areas in the region with the best potential for the delineation of a Mineral Resource and the establishment of a mining operation given the data available to YPL at the time. While all of this area had been identified by YPL as having potential to contain polyhalite mineralisation, the more promising historical data (in terms of consistent results, with the additional benefit of good sylvite potential) was in the north of the AOI, and in SRK’s opinion this would have appeared to be the most attractive from an exploration perspective and indeed, as demonstrated by results, remains the most attractive from both an exploration and a mining perspective. The prioritisation of polyhalite over sylvite was the result of a conscious decision to focus on the horizons where it was most likely that a Mineral Resource could be delineated by drilling from surface.

The exploration programme followed by YPL was planned and carried out in a professional manner. It began by stepping out from an area where there was a good expectation of initial success and was modified in response to results obtained. New and plausible geological models were continually developed and refined to explain these new results, the historical drillhole data, and the new seismic interpretations and exploration was focussed in the north of the AOI and on the Shelf Seam where there was best potential to delineate sufficient material to a sufficient level of confidence to justify the establishment of a mining operation.

The results of this exploration programme, which as commented in this report have contributed to YPL’s total expenditure to date on the project of some GBP60 million, now form the basis of a Mineral Resource, and subsequently an Ore Reserve which a PFS has demonstrated to be economic to exploit from a mine head at Dove’s Nest. This is a major step forwards in terms of the Project as a whole and justifies the exploration strategy developed by YPL and the decisions made during the exploration programme itself.

6 SRK ASSESSMENT OF REGIONAL POLYHALITE POTENTIAL

In order to properly assess the potential for the development of a Mine Head at locations outside of the NYMNP, SRK has reviewed all of the relevant geological data it understands is available in the region to determine whether there is potential for the delineation of a Mineral Resource in areas other than that outlined by YPL to date. This has enabled SRK’s assessment of these alternative Mine Head sites, to be informed not just by their relative location to the Mineral Resource already delineated but also to areas where there is potential for a Mineral Resource to be outlined following further exploration.

SRK has restricted its assessment to the area to the south of the southerly limit of the Boulby Mine licence area and specifically to three areas where in SRK’s opinion there appears to be some potential for exploitation from outside of the NYMNP. These have been termed the Whitby Area, the Lockton-Cloughton Area and the Fordon Area respectively.
SRK’s conclusions from this work were that:-

- There are several areas in the vicinity of the AOI and further south that have potential to contain polyhalite mineralisation. In all cases, however, the indications are that the mineralisation is either deeper, geologically more complex or constrained by geological features. Further, in the Whitby Area, where there is some reliable quality data, while two of the three drillholes in the area intersected polyhalite seams of reasonable thickness and potentially economic grades, one intersected a very wide zone of very low grade polyhalite that would clearly not be economic to exploit.

- None of these areas have been sufficiently explored to date to enable the quantity or quality of the in situ polyhalite to be assessed.

- All these areas would therefore require a significant amount of exploration work to be undertaken, and thus expenditure, before a Mineral Resource could be delineated of the size and to the level of confidence required to support a decision on establishing a mine. Notably this would require multiple polyhalite intersections, one drillhole would be insufficient, and multiple parent and daughter drillholes would be required.

- Given the issues mentioned above, even if a significant amount of expenditure is incurred, the likelihood of being able to report a Mineral Resource estimate of sufficient size and quality to justify the establishment of a mine on completion of this is unlikely. Certainly none of these areas are in SRK’s opinion as prospective as the area drilled to date by YPL.

- Finally, some of these areas would need to be both explored, and if exploration was successful, also potentially be developed from within the NYMNP.

Given the above, in SRK’s opinion it would be unreasonable to expect a company such as YPL that has already delineated a significant Mineral Resource elsewhere to explore in any of the areas identified and highly unlikely that any other exploration company would risk the expenditure required to commit to this in the foreseeable future or indeed that it would be able to raise the money required to fund this if required.

7 ASSESSMENT OF SHORTLISTED MINEHEAD SITES

The four alternative mine head sites to Doves Nest assessed by SRK are the results of a comprehensive study for such undertaken by NLP on behalf of YPL. Two of these are in the Cloughton area, one west of the village of Burniston and one west of the village of Cloughton; and two in the so-called Whitby Enclave, one to the north, and the other to the northeast of the village of Briggswath. For the purpose of its more detailed technical and economic comparison with the Doves Nest site SRK has selected the most promising site at each of these two areas.

In order to make this comparison, SRK has planned the surface infrastructure required at each site and also the shaft and underground development required in each case which clearly varies between the sites. In doing this, SRK has planned the development in such a way so that if there is polyhalite mineralisation present between the shaft and the YPL Mineral Resource area, the development is placed within this such that the amount of waste material mined is minimised.
Further, while SRK has assumed that the primary intent of any mine development at these locations would be to access the Mineral Resource already delineated by YPL, as this is the only Mineral Resource delineated to date, SRK has also assumed that prior to any construction commencing, a programme of exploration and evaluation would be required such as has already been conducted at Doves Nest. This reflects SRK’s opinion that it would be inconceivable, given that these sites are further from the Mineral Resource than the proposed site at Doves Nest and therefore clearly less attractive from a safety and technical perspective, that any mining company acting reasonably would not first explore the potential of the immediate area to contain polyhalite mineralisation that could be mined using the same infrastructure.

SRK conclusions from its assessment were that:

- The Cloughton site would effectively be a completely new project, requiring geological exploration and a full feasibility study before a decision could be made on implementation. This process, which SRK estimates might take at least five years and cost some GBP 100 million, carries a substantial risk that the outcomes may prove to be unfeasible.

- The Whitby Enclave site would also require significant geological exploration, geotechnical investigations and feasibility studies to develop sufficient confidence in the achievability of a life of mine plan, which includes access through the Donovan Fault. SRK estimates this process might take some four years and cost in excess of GBP 70 million.

In addition to the above, the overall project risk profile of the two sites is significantly higher when compared with the Doves Nest Site. Notably, at the Whitby Enclave there is added risk of tunnelling through the Donovan Fault. Unless this can be effectively mitigated with investigations from surface and project planning, effectively all the project capital investment, including the large scale investment for sinking a shaft, is at risk and the project may prove to be technically and economically unfeasible.

Similarly, at the Cloughton site there is risk that any exploration programme undertaken to develop a Mineral Resource to support mining of polyhalite accessed from outside the NYMNP is completely unsuccessful. Further, should a Mineral Resource be defined, there remains risk that the project site cannot be developed for other reasons that arise from the feasibility studies that would have to be completed, although this risk cannot be quantified at this stage.

8 CONCLUSIONS

SRK’s overall conclusions are as follows:-

1. The exploration programme followed by YPL was planned and carried out in a professional manner, was initially and properly focussed in an area where there was a good expectation of success, was then adapted as results became available to demonstrate both continuity between intersections and prove up a sufficient tonnage to justify the establishment of a mining operation and now forms the basis of a mining plan which has been demonstrated to be economic to exploit from a mine head at Doves Nest.
2. While there are several other areas in the vicinity of the AOI and further south that have potential to contain polyhalite mineralisation, none of these have been sufficiently explored to date to enable the quantity or quality of the available polyhalite to be assessed and all would therefore require a significant expenditure to be committed before their potential could be properly assessed. Further, all of these areas are for geological reasons less attractive targets than the Doves Nest area.

3. All of these areas would need to be explored, and if exploration was successful, some also potentially be developed from within the NYMNP. Other areas could be explored, and if the exploration was successful, potentially be developed from outside the NYMNP.

In SRK’s opinion, however, none of these areas represent attractive exploration targets; it would be unreasonable to expect a company that had already delineated a significant Mineral Resource elsewhere such as YPL to explore these and it would be unrealistic to expect that any exploration company new to this region would risk the expenditure required to commit to this in the foreseeable future or that it would be able to raise the money required to fund this if needed.

Further, given the limited quantity and poorer quality of the polyhalite that could be present north of the Donovan Fault and therefore the reliance of any mine established in this area to be mining material south of the Donovan Fault early in the mine life with the risk of both first negotiating, and then maintaining safe operations beyond the fault, it is in SRK’s opinion of SRK that further exploration of this area by YPL is not justified at this time.

4. Four alternative sites have been identified in the region where mine heads could be located to access the existing Mineral Resource and/or the other areas with potential to host polyhalite resources in the region. There are however significant technical challenges associated with all of these. Notably, these are all further from the delineated Mineral Resource than the Doves Nest site and any access development to this would need to negotiate some major structural features. Technically this is likely to be possible but a significant amount of further technical work inclusive of drilling needs to be done in all cases to investigate these features and the local stratigraphy generally which would delay the Project by four years, longer in the case of the Cloughton sites, and incur considerable additional expenditure before a decision could be made on developing the mine. In addition there is a substantial risk that this work may prove these sites not to be technically viable.

In this regard it should be noted that the development of and production ramp up of a mine is funded by capital investment into the project. More extensive development requirements have longer development periods and incur greater cost before revenue is earned and returns are made to investors and financiers. This can in turn reduce the number of potential investors that are willing to invest and either increase the cost of finance or make financing impossible.

Accessing the YPL Mineral Resource from the sites at Cloughton would for example almost certainly be economically unviable even if this work yielded positive results, while accessing this from the Whitby sites would both be less economic than accessing this from the currently proposed site at Doves Nest, possibly to the point that it would be uneconomic, and would require the access infrastructure to negotiate a major fault the characteristics of which are currently unknown.
In fact, in all cases, the practicality and additional safety issues incurred would likely render access from these sites inappropriate from a mining perspective. Establishing a mine head at all these sites therefore requires a Mineral Resource to be delineated in these areas which, as commented above, SRK considers would not be an attractive proposition to a mining company at this time and which SRK would not recommend YPL or any other exploration or mining company to embark upon.

5. Given all the above, SRK would not recommend that YPL undertakes any more work to investigate the viability of establishing a mine head at any of the locations commented upon in this report. It is also SRK’s opinion that it would be unrealistic to expect that any other exploration or mining company would risk the expenditure required to commit to the exploration and development work required to assess the merits of establishing a mine head at any of these at the present time, or indeed in the foreseeable future, or that it would be able to raise the funds to do so if required.
Table of Contents

1  INTRODUCTION ........................................................................................................ 1
   1.1 Background .............................................................................................................. 1
   1.2 Summary of Work Completed and Findings ......................................................... 1
   1.3 Qualifications of Consultants ................................................................................ 2
   1.4 Mineral Resource Terminology ............................................................................. 3

2  EXPLORATION WORK COMPLETED BY YPL .................................................. 4
   2.1 Background .............................................................................................................. 4
   2.2 Historical Exploration in the Region ....................................................................... 4
   2.3 Identification of an Area of Interest (AOI) ............................................................. 6
   2.4 Exploration Drilling ............................................................................................... 9
   2.5 Exploration Seismics ............................................................................................ 14
   2.6 Mineral Resource/Ore Reserve Estimation ......................................................... 17
      2.6.1 Introduction ...................................................................................................... 17
      2.6.2 Available data .................................................................................................. 18
      2.6.3 Resource Estimation Methodology .................................................................. 19
      2.6.4 SRK Mineral Resource Statement ................................................................ 20
      2.6.5 Ore Reserve Estimation .................................................................................. 22
      2.6.6 Ore Reserve Reporting ................................................................................... 23

3  SRK ASSESSMENT OF REGIONAL POLYHALITE POTENTIAL .................... 23
   3.1 Introduction ............................................................................................................. 23
   3.2 SRK 3D Geological Model ..................................................................................... 24
      3.2.1 Introduction ...................................................................................................... 24
      3.2.2 Regional Geological History ......................................................................... 26
      3.2.3 Interpreted Regional Structure ...................................................................... 26
      3.2.4 Summary ......................................................................................................... 30
   3.3 Additional Polyhalite Potential ............................................................................. 30
      3.3.1 Introduction ...................................................................................................... 30
      3.3.2 Whitby Area .................................................................................................... 33
      3.3.3 Lockton-Cloughton Area .............................................................................. 40
      3.3.4 Fordon Area .................................................................................................... 48
   3.4 Summary Comments ............................................................................................. 53

4  CRITERIA FOR ASSESSING MINE HEAD LOCATIONS .............................. 54
   4.1 Introduction ............................................................................................................. 54
   4.2 General Comments ............................................................................................... 54
   4.3 Proximity of the shaft to the Mineral Resource .................................................... 55
   4.4 Presence of major geological features .................................................................. 58

5  ASSESSMENT OF SHORTLISTED MINEHEAD SITES ............................... 64
   5.1 Introduction ............................................................................................................. 64
5.2 Site Descriptions .............................................................................................................. 64
  5.2.1 Cloughton Area ...................................................................................................... 64
  5.2.2 Whitby Enclave .................................................................................................. 68
  5.2.3 Summary Comments ......................................................................................... 72
5.3 Alternative Site Assessments ..................................................................................... 73
  5.3.1 Introduction ........................................................................................................... 73
  5.3.2 Surface Footprint ................................................................................................. 73
  5.3.3 Assumed Mining target ....................................................................................... 74
  5.3.4 Development Requirements ............................................................................... 74
  5.3.5 Mining/Surface infrastructure assumptions ....................................................... 76
  5.3.6 Technical comparison summary .......................................................................... 76
  5.3.7 Economic comparison ......................................................................................... 82
  5.3.8 Summary comments ............................................................................................ 85
  5.3.9 Technical risks ..................................................................................................... 85
  5.3.10 Summary Comments ......................................................................................... 87

6 CONCLUSIONS ...................................................................................................................... 89
List of Tables

Table 2-1: Summary of YPL’s 2011 - 2013 exploration drill programme ......................................................... 18
Table 3-1: Summary of Drillhole Data in Whitby Area .................................................................................... 33
Table 3-2: Mining Factors Applied at Doves Nest and Whitby Enclave .......................................................... 37
Table 3-3: Lockton-Cloughton Area Historical Drillhole Information ............................................................... 45
Table 3-4: Lockton-Cloughton Area Basin Seam drillhole information ............................................................. 46
Table 3-5: Fordon South Historical Drillhole Information ................................................................................. 51
Table 5-1: Physicals for Site 1 and Site 3 compared with Doves Nest ................................................................ 77
Table 5-2: Qualitative comparisons of alternative shaft location options with Doves Nest ......................... 78
Table 5-3: Estimated pre-construction timeframe for alternative sites from receipt of planning permission, compared with Doves Nest ................................................................. 83
Table 5-4: Estimated pre-construction costs compared with Doves Nest ....................................................... 84

List of Figures

Figure 2-1: Geographic location of the AOI ......................................................................................................... 8
Figure 2-2: Drillhole collar positions completed by YPL .................................................................................. 13
Figure 2-3: West-East 2D geological cross-section through the AOI ............................................................. 14
Figure 3-1: North Yorkshire Stratigraphic Column .......................................................................................... 25
Figure 3-2: Map showing the location of faults and dykes used in the 3D regional model. All faults have been projected up-dip to surface. A-A’ is the cross-section line used in Figure 3-3 ........................................................ ......................................................... 29
Figure 3-3: North-South section (A-A’) through the regional model (looking west) illustrating how the stratigraphy is offset by the faults ................................................................................. 30
Figure 3-4: YPL AOI and surrounds, showing the current Mineral Resource location, and areas of exploration potential .................................................................................................................. 32
Figure 3-5: Location of the Whitby Area in its geological and structural context with drillhole collar positions delineated .......................................................................................................................... 34
Figure 3-6: Location of the Lockton Area in its geological and structural context ............................................ 42
Figure 3-7: Location of the Fordon area in its geological and structural context ............................................. 49
Figure 3-8: Cloughton site locations relative to the Doves nest site ............................................................... 65
Figure 3-9: Cloughton sites in detail ................................................................................................................ 65
Figure 3-10: Major features in the vicinity of Cloughton ................................................................................. 66
Figure 3-11: Potential Site 1 Shaft infrastructure layout .................................................................................... 67
Figure 3-12: Site 2 Shaft Infrastructure layout ................................................................................................ 68
Figure 3-13: Whity Enclave sites relative to the Doves Nest site ................................................................. 69
Figure 3-14: Faulting in the Whitby Enclave .................................................................................................. 69
Figure 3-15: Site 3 Infrastructure .................................................................................................................... 71
Figure 3-16: Site 4 Infrastructure .................................................................................................................... 72

List of Technical Appendices

A HISTORICAL DRILLHOLE LOGS .............................................................................................................. A-1
AN INDEPENDENT REPORT ON THE POTENTIAL FOR POLYHALITE EXPLORATION IN NORTH YORKSHIRE, ENGLAND WITH PARTICULAR REFERENCE TO THE YORK POTASH PROJECT

1 INTRODUCTION

1.1 Background

York Potash Ltd (YPL or the Company) is currently preparing an application to the North York Moors National Park Authority (NYMNPA) in relation to its York Potash Project (YPP or the Project). Specifically this application seeks permission to develop a Mine Head at Doves Nest to access the polyhalite YPL has identified in the immediate vicinity of this site following a three year period of exploration and assessment.

Following the submission of an earlier application, and comments received on this from NYMNPA, YPL has requested SRK Consulting (UK) Ltd (SRK) to provide it with an independent opinion on the polyhalite resource identified in the region to date and the process followed to discover and delineate this, the likelihood of discovery of additional resources of this mineral following further exploration in the region, and also the potential for either the existing resource or the potential additional resource to be exploited from a Mine Head located outside of the North York Moors National Park (NYMNP). This document presents the independent conclusions of SRK’s work.

1.2 Summary of Work Completed and Findings

In producing this report, SRK has:

1. Reviewed the exploration and evaluation programme followed by YPL over the last three years that resulted in the preparation of the most up to date polyhalite Mineral Resource estimate by SRK in May, 2013. This resource lies within the NYMNP and YPL is proposing to access and mine this from a vertical shaft with a Mine Head located at the Doves Nest site which is within the NYMNP.

2. Developed a regional three dimensional (3D) model of the sub-surface geology of the North Yorkshire area focused on the orebody that hosts the polyhalite mineralisation and based on the results of YPL’s exploration work, geological interpretive work completed by FWS Consultants Ltd (FWSC) and historical information available in the public domain.

3. Used the above 3D model to comment upon the potential for the discovery of additional polyhalite resources in the region as a whole and on the geological features in the area that have the potential to hinder the development of the above resources.
4. Concluded from this that while there is likely additional polyhalite material yet to be discovered in the region, this is unlikely to be sufficiently attractive as an exploration project to enable a company acting reasonably to justify a surface based exploration programme at the present time.

5. Based on all the above, commented upon the potential for the development of a polyhalite mine to exploit the already identified Mineral Resource from various other site locations outside of the NYMNP. Specifically SRK has assessed the relative technical merits of four alternative site locations identified as a result of a study of potential alternative minehead sites undertaken by Nathaniel Lichfield & Partners (NLP), two near the town of Whitby and two near the village of Cloughton.

6. Determined which site from each of the two areas has the best potential to provide an alternative access point to the currently defined Mineral Resource.

7. Estimated the cost of project development (specifically the costs of the technical work still required to be completed to enable a decision on mine construction to be made) for each of the two preferred alternative sites (one at Whitby and one at Cloughton) and also the time required for this and to access the Mineral Resource and compared this to the project development cost of the currently proposed site and allowing for the possibility that additional mineable polyhalite mineralisation may be identified nearer these sites.

8. Concluded that the only realistic option for establishing a mine to exploit polyhalite in the region in the foreseeable future is via a shaft location at Doves Nest Farm as currently planned.

1.3 Qualifications of Consultants

SRK is an associate company of the international group holding company SRK Consulting (Global) Limited. The SRK Group comprises over 1,600 staff, offering expertise in a wide range of resource engineering disciplines with 50 offices located on six continents. The SRK Group’s independence is ensured by the fact that it holds no equity in any project. This permits the SRK Group to provide its clients with conflict-free and objective recommendations on crucial judgement issues. The SRK Group has a demonstrated track record in undertaking independent assessments of exploration projects, resources and reserves, project evaluations and audits, Mineral Experts’ Reports, Competent Persons’ Reports, Mineral Resource and Ore Reserve Compliance Audits, Independent Valuation Reports and independent feasibility evaluations to bankable standards on behalf of exploration and mining companies and financial institutions worldwide. The SRK Group has also worked with a large number of major international mining companies and their projects, implementing and managing exploration programmes and providing mining industry consultancy service inputs.

This work has been prepared based on input of a team of consultants specialised in the fields of sylvinite and polyhalite geology and resource and reserve estimation all of whom have extensive experience in the mining industry and are members in good standing of appropriate professional institutions.

SRK is not an insider, associate or affiliate of YPL. The results of the work undertaken by SRK are not dependent on any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings.
1.4 Mineral Resource Terminology

Throughout this report references are made to “Mineral Resources” and for the potential to discover “Mineral Resources”. Specifically, references are made in this report to the JORC Code which is one of the established internationally accepted codes used to report estimates of the amount of a given material in the ground that has potential to be exploited by a mining operation.

Getting to a position when a Mineral Resource, as this is defined by the JORC Code, can be reported is a key step in the development of a mineral exploration project and prerequisite of obtaining debt or equity funding to develop a mine. The Code sets out criteria that are required to be assessed when reporting estimates of tonnes and grade, inclusive of criteria regarding the quality and quantity of data, the geological understanding and the work done to demonstrate that the mineralisation has potential to be mined economically, and also minimum levels of disclosure to ensure transparency in reporting and also minimum qualifications and experience required of those responsible for producing the estimates. Most notably the aim of the JORC Code is to prevent disclosure of estimates of tonnes and grade based on too little or poor quality data or produced by individuals without the experience to understand all of the issues that could impact on the resulting estimates.

Given the above, it should be understood that the reporting of a Mineral Resource estimate requires the completion of a significant amount of exploration work typically inclusive of multiple intersections of the target orebody by drillholes or underground development, and certainly not single drillholes, which in turn requires significant expenditure. Notably the reporting of a Mineral Resource for the YPP as given in Section 2.6 of this report marks the culmination of three years of exploration and the expenditure of some GBP60 million.

The JORC Code defines a Mineral Resource as “a concentration or occurrence of material of intrinsic economic interest in or on the Earth's crust in such form, quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.”

This definition of a Mineral Resource is reasonably well agreed by the majority of the internationally accepted codes used in the exploration and mining industry to report material being explored as a potential mining target and is therefore in common usage throughout the industry.

A key part of this definition is the requirement that mineralisation has not only been identified as being present but that it has been sufficiently explored to enable estimates of tonnage and quality to be established to a reasonable degree of confidence. Fundamental to reporting a Mineral Resource therefore is establishing the continuity of mineralisation between observation points which therefore requires multiple drillhole intersections rather than single drillhole intersections.

Mineral Resources are reported in three categories dependent upon the confidence the expert who produced the estimate has in the estimates of tonnage and quality derived. The highest confidence category is “Measured”, the second highest “Indicated” and the third “Inferred”.


The key distinction however is between the Indicated and Inferred categories as once a tonnage of mineralisation is reported as Indicated, this means that the material has been delineated to level of confidence needed to be used as the basis of a Pre-Feasibility Study (PFS) or Feasibility Study (FS) which in turn are the documents typically produced by mining companies to support a decision on the development of a mine.

In the case of YPL, as commented upon below, SRK has already reported an Indicated Mineral Resource as defined by the JORC Code which has been demonstrated by a PFS to be sufficient to support a viable mining operation. The establishment of this Mineral Resource is a pre-requisite of a mining operation and in SRK’s opinion it would not be possible to obtain the funding required to develop a mine to exploit the polyhalite in North Yorkshire without this.

2 EXPLORATION WORK COMPLETED BY YPL

2.1 Background

The geology of North Yorkshire is dominated by a succession of sedimentary, largely evaporite, rocks which were deposited from an inland body of water (termed the Zechstein Sea) between 250 and 300 million years ago. At the time of this deposition, this sea occupied what is now the North Sea plus areas of Britain, inclusive of North Yorkshire, and the north European plain through Germany and Poland.

The resulting sedimentary succession is comprised predominantly of a sequence of relatively shallow dipping beds of evaporite rocks such as halite, anhydrite and, most notably in the context of this report, polyhalite, which were deposited in five distinct cycles which have been labelled Z1 to Z5, respectively, Z1 being the first deposited and therefore now the deepest and Z5 being the youngest and therefore now the shallowest.

The shallow dipping beds containing polyhalite, occur in the Z2 cycle, are located between 1,000 and 2,500 m below surface in the North Yorkshire region and would therefore require the development of a vertical or inclined shaft to be accessed and exploited.

Polyhalite is a hydrated, potassium, calcium and magnesium sulphate with the formula $K_2Ca_2Mg(SO_4)_3\cdot 2H_2O$ and it is a typically minor constituent of many ancient evaporite sequences. Its chemical composition lends itself to use as a direct application fertilizer and also as a source of potassium for the production of blended fertilizers. It is for this reason that it is currently a much sought after commodity.

2.2 Historical Exploration in the Region

Evaporite successions such as that formed in the Zechstein Basin represent excellent exploration targets for a variety of minerals many of which occur much more commonly in economic quantities in these rocks than polyhalite. Notably this includes sylvite, which is another and more established source of potassium for fertilizer and which is already being exploited at Boulby Mine near Whitby, but they can also contain oil reservoirs and act as a cap to underlying gas fields.
The Zechstein Basin is no exception, the North Yorkshire region has consequently been subject to intermittent exploration for sylvite, oil and gas over the past 80 years and it is this exploration work that first led to the intersection of polyhalite mineralisation.

Notably, three companies explored for sylvite in and around the AOI during the 1960s. These comprised:

- Cleveland Potash Ltd (CPL), owned initially by Imperial Chemical Industries (ICI) and Charter Consolidated Ltd (though later ICI’s shares were bought by Minorco/Anglo-American Corporation);
- Whitby Potash Ltd (WPL), owned by Armour Chemical Industries (and later by Shell and then Consolidated Goldfields).

WPL applied for planning consent for solution mining in 1962, however the application was later withdrawn. WPL also established a pilot solution mining plant on Egton High Moor in 1966, this closed down in 1970; and
- Yorkshire Potash Ltd (YSL), owned by Rio-Tinto Zinc Corporation.

All of the above companies submitted, and were granted, planning applications following public inquiries in the late 1960s but while CPL commenced construction of the Boulby Mine in 1969, both the WPL and YSL permissions lapsed. Boulby Mine initially had an expected life of 20 to 30 years but in 1997 consents were granted to extend the existing licence area including taking up some of WPL’s original ground and the mine is still in operation today.

The main orebody mined at Boulby is a sylvite seam which is present in the Z3 cycle and the bulk of the historical exploration activity in the region has therefore been focussed on the Z3 and overlying cycles. A certain body of information was however also collected on the underlying Z2 cycle which confirmed the presence of seams of polyhalite within this. This information, combined with indications from both mining at Boulby, and the historical exploration drilling, indicated that the Z3 Sylvite Seam, generally referred to as the Boulby Potash Seam, was both generally very variable in thickness and grade over short distances and thinner and poorer in quality to the south of the Boulby Mine licence, and suggested to YPL that the Boulby Potash Seam would be a challenge to explore.

Given this, and the fact that the other known sylvite seam, which is in the Z4 cycle and generally referred to as the Sneaton Potash Seam, was lower grade and situated very near to the top of the evaporites (i.e. close to the overlying aquifers which would cause challenges from a mining perspective in that it would need to be ensured that the mining does not impact on the integrity of these), YPL’s strategy from the outset was to target not only these sylvite seams, as had been done by previous explorers, but also the underlying polyhalite. Historical drilling had shown this to be present in the deeper Fordon Sequence, part of the Z2 Cycle, and YPL considered this would be more consistent and less prone to variation over short distances, an observation SRK understands is supported by the results of trial mining of this seam already carried out at Boulby Mine.

SRK considers the initial strategy developed by YPL based on its assessment of the available data and its identification of polyhalite as a prime exploration target to be reasonable given the nature of that data and indeed given the results of the exploration work it has since carried out.
2.3 Identification of an Area of Interest (AOI)

The broad onshore extent of the Zechstein evaporites had already been reasonably defined by historical drilling and, although the quality of the old logs was variable and often poor, approximate geographical limits could be placed on each seam. Exploration between the 1950s and 1970s for sylvite in the Z3 and Z4 seams had concentrated around Eskdale, and drillhole records from ICI, Fisons, WPL and YSL included intersections of Z3 at depths below surface which were comparable in terms of thickness and quality with those at the working Boulby Mine. Records of the Z2 polyhalite were sparser – and, with a few exceptions, tended to comprise wireline geophysical logs from which the presence, thickness and quality of polyhalite had to be inferred. Taken in conjunction with offshore hydrocarbon well records, this was, however, sufficient to enable YPL’s consultants to develop a simple geological model which suggested that polyhalite had potential to be present throughout an area of some 350 x 50 km in extent wrapping around the NW corner of the Zechstein Basin. Most of this would lie offshore but it also extended across some 90 km of the Yorkshire coastline between Staithes and Humberside, and inland for up to 20 km. No complete assays of polyhalite cores were available, but published descriptions of cores from boreholes at Atwick, Eskdale and Fordon, and examination of historical wireline logs, suggested that at least some of this polyhalite could be of good quality.

The aim of the AOI outlined by YPL therefore was to encompass the entire area within which it was conceivable that potentially workable thicknesses and grades of sylvite (in Z3 and Z4) and polyhalite (in Z2) could occur at a mineable depth – the maximum depth at that time being considered to be around 1,900 m. This approach seems perfectly reasonable and in line with that typically used, the aim being to tie up as much ground as possible and to prevent any areas being taken up by competitors before the mineral potential has been fully evaluated.

The northern AOI limit was set at or about the southern limit of CPL’s mineral licenses and planning permission, a few kilometres north of the River Esk and capturing the area to the west of Robin Hood’s Bay which had been explored previously for sylvite by WPL, and YSL (and others, even earlier).

The fact that both WPL and YSL had applied for, and eventually won, planning permissions in the 1970s for mining the Z3 sylvite was highly encouraging (and indeed is what had drawn the attention of the original promoters to this area) – though it was quickly recognised that subsequent discoveries and mining experience at Boulby Mine meant that much less reliance could be placed nowadays on those old borehole records for resource estimation. In fact, the unusual degree of small scale variation in thickness and grade of the Z3 sylvite led YPL to conclude fairly quickly that it would be very difficult to prove up a JORC compliant Mineral Resource for this horizon by drilling from surface alone and that whilst the sylvite potential was recognised, it was understood from an early stage that polyhalite had to be the primary target on which any future mine had to be based; and that sylvite presented a secondary target to be explored in detail only after commencement of polyhalite mining. Any early reticence about polyhalite as a primary target was also dispelled by research showing that polyhalite – whilst lower in potassium content than traditionally mined potash salts – could yield a premium priced SOP fertilizer product, and valuable by-products.
Historical records from Eskdale, and Robin Hoods Bay, approaching the northern AOI boundary, showed thick, well-defined, polyhalite intersections; and some spot cores assayed in the 1940s and 1950s had proved to be comprised of 90% polyhalite which is an exceptionally high grade material in world terms.

Both the polyhalite and the sylvite seams had been shown by historical drillholes near Staithes, again in Eskdale and at Lockton, and further south in the Vale of Pickering to nip-out, or thin and disappear inland approaching the former edge of the Permian evaporite basin and there was reasonable constraint on the inland limit of exploration potential – enabling the western boundary of the AOI to be drawn with confidence.

There was also convincing evidence from historical gas exploration holes that the Z3 sylvite decreases in quality and thickness southwards from about Harwood, and it seems that the seam was not deposited in a broad east-west zone through Scarborough. The Z2 polyhalite also showed signs of deterioration at the old Lockton Gasfield, where it is clearly present but occurs in several seams that are difficult to correlate between boreholes. Beyond that it could be traced south of Scarborough, through Fordon, and down the coast as far as about Withernsea.

The southern limit of the YPL AOI was drawn along the Vale of Pickering. This valley follows a major east-west fault zone that is strongly developed in, and highly disruptive of, the evaporite sequence. This Vale of Pickering Fault Zone would not only likely form a barrier to mining, but it displaces the polyhalite much deeper to the south, and beyond what was considered to be the reasonable limit of mineability (notably, the polyhalite described from boreholes at Fordon and Atwick lies more than 2,000 m below surface). Furthermore, there is a thick halite horizon above the polyhalite along this section of coast, and this hosts numerous, high pressure, gas storage caverns of national strategic importance. It is for these reasons that the area south of the Vale of Pickering was excluded from the AOI.

Offshore mining was considered feasible, as currently practiced in the Z3 sylvite seam at Boulby Mine, and formerly for coal for up to 11 km offshore in the Durham and Northumberland Coalfield, and for this reason the AOI was also extended offshore. CPL’s offshore rights extended south to Ravenscar, but YPL was able to option adjacent rights in an irregular outline between CPL to about Scarborough and extending 12 km offshore. Historical hydrocarbon wells had confirmed the presence of polyhalite, at depths of <1,700 m below the sea bed, in this area and this therefore became the eastern boundary of the AOI.

Once delineated, YPL sought to obtain exploration licences and mineral options throughout the AOI. Once a point was reached when contracts had been exchanged covering an area of some 600 km², a review of JORC-compliant Exploration Targets was commissioned from FWSC. That exercise, completed in January 2011, identified the potential for between 3.3 and 6 billion tonnes of polyhalite-mineralised material (ranging between 67 and 94% polyhalite); 330 to 400 million tonnes of sylvite mineralisation at 35 to 40% KCl in the Z3 seam; and 140 to 180 million tonnes of sylvite mineralisation at 10 to 20 KCl in the K4 seam, within the area then “under contract”. Exploration Targets are statements, or estimates, of exploration potential only. They are not mineral resources, are purely conceptual in nature, and serve to guide and inform exploration strategy. It was understood that detailed exploration was then needed to prove the concept that polyhalite was present at workable depth, thickness, and quality to enable a Mineral Resource to be delineated with sufficient confidence to in turn attract the significant investment funding needed for such an enterprise in a previously unmined deposit.
The AOI boundary, and also the Boulby Mine licence boundary, is shown on Figure 2-1. SRK understands that the AOI boundary has recently been adjusted to avoid RAF Fylingdales but the boundary as shown in Figure 2-1, and indeed all of the figures in this report, that show this boundary reflect the position prior to this last adjustment.

Figure 2-1: Geographic location of the AOI
In SRK’s opinion the AOI outlined by YPL encompassed the areas in the region with the best potential for the delineation of a Mineral Resource and the establishment of a mining operation given the data available to YPL at the time. While all of this area had been identified by YPL as having potential to contain polyhalite mineralisation, the more promising historical data (in terms of consistent results, with the additional benefit of good sylvite potential) was in the north of the AOI, and in SRK’s opinion this would have appeared to be the most attractive from an exploration perspective and indeed, as demonstrated by results, remains the most attractive from both an exploration and a mining perspective. The prioritisation of polyhalite over sylvite was the result of a conscious decision to focus on the horizons where it was most likely that a Mineral Resource as defined by the JORC Code could be delineated by drilling from surface.

2.4 Exploration Drilling

YPL initially designed its drilling programme primarily to infill the areas between the historical boreholes throughout the whole AOI, in the expectation that this would yield an improved geological model from which to identify the best place for the follow-up drilling needed to delineate a Mineral Resource. Actual borehole sites, however, also needed to take account of other factors, notably the mineral rights status and access. Specifically, YPL therefore focussed on areas where land and mineral agreements were already in place, and away from moorland. Since the majority of positive drillhole information on sylvite and polyhalite, available at the time YPL was planning its exploration, was centred on the northern part of the AOI, this was naturally the area targeted to commence exploration.

Once the first group of drillhole sites had been selected, approvals were applied for and granted, allowing drilling operations to commence. As the drilling programme advanced, and results were received, YPL was able to develop a new and more detailed conceptual model of the formation of polyhalite, and its disposition. In response to this, as will be described later, the exploration programme was continually modified as results became available. This is a standard exploration approach to take.

The initial plan was to drill each hole in two stages, using different drilling rigs; as this was believed to be the quickest and most cost-effective strategy. Each hole was to be drilled ‘openhole’ (i.e. without coring) to a depth of about 700 m (equivalent to the base of the second casing string) using a light-weight ‘top-hole’ rig; and handed over to a heavy duty, oil-field type rig to complete, with core sampling through the evaporites of interest. Five holes (SM 1 to 5) were progressed by the top-hole rig before that strategy was abandoned as being too inflexible. The top-hole drilling had been so speedy that, by SM5, it was already three holes ahead of the deep drilling and, if had it continued, it would have removed any opportunity for YPL to adjust its drillhole locations in response to the results being obtained.

The first drillhole (SM 1) was located at Pasture Beck; inside the area for which YSL had formerly been granted permission to mine sylvite, and in the general vicinity of historical hydrocarbon test holes that had recorded the presence of thick seams of polyhalite. Drilling commenced 29 July 2011, some seven months after YPL’s Exploration Target report, and about 18 months after commencement of work in the region. The borehole ended at a total depth (TD) of 1,669 m and was complete by 29 October 2011.
Prior to drilling starting, YPL’s economic model suggested that any polyhalite seams intersected needed to be able to provide a minimum mining thickness of polyhalite of 5 m, which YPL estimated might require a seam at least some 10 m thick given the likely variations in thickness along strike. This was a judgemental estimate, but in retrospect has been demonstrated to be a reasonable starting assumption. In general terms, the thicker the seam (within sensible limits) the better - since less development is required to excavate the same tonnage and mining costs are therefore reduced.

A complete core was recovered through the evaporites in SM1, and results exceeded expectations in terms of polyhalite grade and thickness. The drillhole had to be abandoned prematurely, for operational reasons, while still in polyhalite; but nevertheless the entire cored section of seam (from top to bottom) was 49 m thick with an overall mean grade of 66% polyhalite. It consisted of sections of high grade polyhalite, separated by lower grade bands of polyhalite mixed with halite. Three particularly high grade sections could be identified and gave a combined (or aggregate) thickness of 23.3 m and a mean grade of 95% polyhalite. The Z3 sylvite seam was of poor quality; but the Z4 seam was 2.1 m thick with a mean grade of 37% KCl.

The second drillhole (SM2 at Howlet Hall) was located on arable land close to some historical drillholes that had intersected sylvite and polyhalite, and therefore again represented a good location. Operational problems affected the drilling progress and it took nearly five months to complete, from start of top-hole, to its final depth 1,598 m below surface. No usable quality data were recovered for the two sylvite seams (both were present, but neither was cored), but the results from the Z2 polyhalite were again excellent. Two high grade seams were intersected separated by about 60 m of much lower grade, mixed halite and polyhalite, an upper seam, some 32.6 m thick and comprising 83.1% polyhalite and a lower seam some 34.3 m thick with a mean grade of 78.3% polyhalite.

SM3 (at Raikes Lane) had good access and though adjacent to moorland was again on agricultural land. This intersected a single polyhalite seam that was 25 m thick overall, with a mean grade of 87.5% polyhalite. Continuity over a short distance was confirmed by a deflection (SM3A) that showed comparable seam depth, thickness and grade. The Z3 and Z4 sylvite seams were cored through but in neither case were the grades of economic interest.

SM4 (at Gough, or Jugger Howe) followed and was ultimately the most southerly hole drilled by YPL. This intersected a much thinner seam (5.1 m with a mean grade of 89.4% polyhalite) while the deflection from this similarly intersected a seam with a thickness of 5.7 m with a mean grade of 86.2% polyhalite. The Z3 and Z4 sylvites again showed grades that were sub-economic. A new sylvite seam – that became known as the Gough Seam – was also intersected at the top of the Fordon Formation where it was 9 m thick with a mean grade of 21.6% KCl.
By this time a new and more robust conceptual geological model of the genesis and disposition of polyhalite in the Z2 Fordon Formation had been developed by YPL and FWSC. Notably it had become apparent that two distinct sub-parallel seams of polyhalite, rather than one, were being intersected and while not always both present (in fact the overlap zone is quite small) they were interpreted to be tabular, gently dipping, sub-parallel seams separated by approximately 80 m of sulphatic halite. The uppermost of these seams was termed the Shelf Seam and the lowermost the Basin Seam. The two seams have different characteristics with respect to roof and floor conditions, and to the degree of halite inter-banding. Reprocessing of historical seismic data had been concurrent with drilling, and provided a clearer picture of the disposition (and overall thickness) of the Fordon Formation as a whole and provided useful support of the model – in particular by helping to predict the likely boundaries of the Shelf and Basin seams (as well as determining locations of faults in the polyhalite). The Shelf Seam was chosen as the more attractive exploration target, since it was at shallower depth, lies entirely onshore, has stronger roof and floor conditions (for mining), and contains less halite impurity.

Given this, and the fact that the polyhalite intersections in the first four holes were much better than expected in terms of both grade and width, the exploration strategy was reappraised. All the data now available (including the historical data from the Eskdale and Lockton regions) was suggesting that the Shelf seam was becoming progressively thinner southwards from Eskdale to SM4 and splitting up in the vicinity of Lockton and given this, SM5 (which was located even further south than SM4) was abandoned and the northern part of the AOI became the prime focus. It should be noted that while polyhalite had been intersected in several holes the vicinity of Lockton, the widest single intersection logged as polyhalite was 14m in thickness and in all cases the polyhalite seams were split and intercalated with halite or anhydrite (as shown in Table 3-2 later in this report). Further there is no information available with regards the quality of polyhalite in this area. Given this, even if potentially mineable polyhalite does occur in this area, which is unknown, the work required to confirm the continuity of the individual horizons and enable the production of a resource estimate for these would be significant.

SM6 (at Newton House Plantation) was drilled to test the south-western limit of potentially mineable polyhalite and indeed intersected a thin, and split, seam of polyhalite (one with a thickness of 0.5 m and a grade of 64% and one with a thickness of 2.2 m and a grade of 85.6%, separated by 5 m of very low grade mineralisation). Not only were these seams very thin but they were accompanied by the appearance of kalistrontite. This is an unusual mineral, of no known commercial value, that appeared to have developed at the expense of (or replacing) polyhalite. Since the historical boreholes at Lockton, due south of SM6, also showed split seam conditions it seemed likely this would continue through the unexplored ground separating the two locations. Even the sylvite grades in SM6 were disappointing, both seams showing grades of less than 20% KCL.
Exploration effort returned, therefore, to focus on the north where good polyhalite results had
been found. SM7 (at Mortar Hill) was drilled to define the eastern extent of the Shelf Seam
and further understand the relationship between the Shelf and Basin seams. Although
complicated by the proximity of an unexpected fault, it intersected the thickest seam of
polyhalite drilled to date. The Shelf Seam intersected in SM7, and its first deflection, SM7A,
was 42.5 m thick with a mean grade of 85.2%, and 53 m with a mean grade of 93% polyhalite
respectively. A second deviation (SM7B) was also drilled, but was not core-sampled. This
exercise extended the known extent of the Shelf Seam eastwards and confirmed the
continuity and quality of the deposit in the north of the AOI.

Additional 2D seismic survey lines were run across the area between Eskdale and Harwood,
to improve the definition of faults affecting the Fordon sequence, and identify fault-free areas
that might be suitable for mining and SM9, plus deflections 9A and 9B (at Maybeck), were
then drilled, to prove continuity between SM6 and SM3 and add further confidence to the
geological model being built up. This drillhole however intersected four thin and highly
variable seams, and – like SM6 – with kalistrontite substituting for polyhalite. The best seam
intersected was 5.5 m thick and had a mean grade of 76% polyhalite but this was not
repeated in the deflections, where the best intersection was only 2.1 m containing 71%
polyhalite.

Thus at this point in time, the three southernmost drillholes completed by YPL had intersected
thin, or thin and split, polyhalite; and at two of the locations had yielded the unwelcome
appearance of kalistrontite at the expense of polyhalite. Drilling was therefore again focussed
to the north and SM11, and deflections 11A and 11B, drilled at Dove’s Nest and the last hole
completed by YPL, intersected a thick Shelf Seam variously between 51 and 59 m thick with
excellent grades.

In summary therefore to date YPL has now drilled at nine sites for a total of 16,009 m that
have provided 16 intersections of the polyhalite seam(s) and it is information from these
drillholes that has been used directly to derive the polyhalite Mineral Resource estimate
presented below. The orebody model is based on a cut-off grade of 80% polyhalite and most
of the intersections in the south in particular (notably SM9A and SM9B) did not meet these
requirements and were therefore not used. The 80% polyhalite cut-off grade was selected so
as to constrain the resource (and resulting mined product) to material of sufficient quality to be
attractive to a purchaser and reflects discussions and off-take agreements between YPL and
potential purchasers of the product. The cost of completing the drillhole programme alone was
approximately GBP25 million and the programme took over three years to complete.

Sylvite has been cored in two or three seams, but, as expected, is variable in thickness and
grade and the drilling has been insufficient to confirm the continuity of a potentially economic
zone or therefore to enable a Mineral Resource to be reported. This therefore confirms YPL’s
supposition that even if there is a mineable zone of this present (which is possible but
unknown), it would be very difficult to confirm this by drilling from surface.

Figure 2-2 shows the collar positions of the drillholes completed by YPL and Figure 2-3 is an
East-West geological section through the AOI showing the geometry of the orebody
intersected.
Figure 2-2: Drillhole collar positions completed by YPL
In SRK’s opinion the exploration programme followed by YPL was planned and carried out in a professional manner. It began by stepping out from an area where there was a good expectation of initial success and was modified in response to results obtained. New and plausible geological models were continually developed and refined to explain these new results, the historical drillhole data, and the new seismic interpretations and exploration was focussed in the north of the AOI and on the Shelf Seam where there was best potential to delineate sufficient material to a sufficient level of confidence to justify the establishment of a mining operation. The results of this exploration programme, which as commented earlier in this report have contributed to YPL’s total expenditure to date on the project of some GBP60 million, now form the basis of a Mineral Resource which a PFS has demonstrated to be economic to exploit from a mine head at Dove’s Nest.

2.5 Exploration Seismics

In addition to drilling data, there is also a significant amount of data from seismic surveys available to assist in understanding the geology of the region. Seismic surveys involve propagating controlled seismic waves into the earth. When these seismic waves intersect physical contrasts such as a change in rock type, some of the waves are reflected back up to the surface. The time taken for these waves to return to the surface is related to the depth of the geological feature, allowing the geologist to develop an understanding of the subsurface geology.

Data from a total of 71 seismic lines (a 2D seismic survey) have been reviewed by SRK in preparing this report. These are a combination of historic seismic lines and more recent seismic lines collected by YPL. All but three of these seismic lines were collected onshore and due to planning and logistical constraints all of these onshore lines were recorded in ‘crooked line’ mode i.e. they follow roads rather than going in straight lines. The historic seismic lines can be broadly subdivided into two groups based on their age:

1) Seismic lines collected during the 1960s and early 1970s which were used for hydrocarbon and sylvite exploration and which were predominantly shot using dynamite such that the original images are generally of a low quality at the target depths for polyhalite; and
2) Seismic lines collected during the late 1970’s and 1980’s as part of several hydrocarbon exploration programmes most of which were shot using a truck-mounted seismic source, as opposed to dynamite, and are of a fair quality at the target depths for polyhalite.

Spectrum Geo Ltd (Spectrum) was contracted by YPL to process these historic seismic lines. Most lines were initially processed from the raw stacks, which is the data produced at the time of collection after an initial processing stage, although a few were processed from the original field tapes. Processing from the original field tapes produced a significant improvement in quality and this was subsequently applied to a number of key historic seismic lines. Even with reprocessing, there were still significant limitations in the resolution and coverage of the historic seismic lines. Therefore, in 2012 YPL collected an additional five seismic lines that covered a large portion of the northern half of the AOI, where YPL’s drilling programme was focussed. These lines were shot by CGG-Veritas using a truck mounted seismic source and subsequently processed by Spectrum. These new seismic lines have excellent resolution and the quality is probably as good as can be economically and reasonably achieved with currently available technologies. Figure 2-4 below shows the extent of seismic line data available for the region.
Figure 2-4: Seismic Line Data
Despite the large number of seismic lines, it is important to understand that the dataset still has several key limitations. In order to image geological contacts, seismic reflection surveys rely on physical contrasts between adjacent rock units. When two rocks with similar physical properties are juxtaposed, the contact is difficult to image. As such contacts such as the top and bottom of the polyhalite cannot currently be directly imaged. Steeply-dipping to sub-vertical structures are also often difficult to image. When combined with the resolution limits for vertical offset (which is approximately 15 m), this can make identification of low displacement faults difficult. Finally, 2D seismic still requires the geologist involved to interpret how structural features link up between seismic lines. This is a partially subjective process, particularly for smaller faults, so the interpretations are necessarily non-unique.

*In summary, therefore, a reasonable amount of seismic data is available and this has proved very useful to SRK in interpreting the stratigraphy and structure of the region and thereby its assessment of the regional potential for polyhalite mineralisation. While 3D seismic data could be collected, and while this might improve SRK’s understanding further, time and cost constraints make 3D seismic unfeasible at this point in time and even 3D seismic data would not resolve the structure definitively and an uncertainty would remain until the faults were intersected during mining.*

### 2.6 Mineral Resource/Ore Reserve Estimation

#### 2.6.1 Introduction

The most up to date Mineral Resource estimate for the Project was prepared by SRK in May 2013 and is based on a combination of exploration work done by YPL as commented upon above and SRK and YPL’s review of exploration work completed historically. The data this estimate is based on, the methodology used by SRK to derive this and the estimate itself is summarised here but presented in full in SRK’s report “Mineral Resource Estimate on the York Potash Project, Yorkshire, United Kingdom” dated May 2013.

Given that certain large scale fault features had been identified from an interpretation of available seismic data and that these were considered likely to both displace the polyhalite seams significantly and disturb the rock quality (and therefore could represent barriers to mining), these were used to limit the extent of the resource where present. Notably the Donovan Fault acts as the limit of the resource to the north and was used as a bounding feature as the significant offset associated with the fault has been interpreted to have resulted in displacement of the polyhalite down to the north.

SRK’s resulting Mineral Resource estimate includes both the Shelf and Basin polyhalite seams, for a total of 2.66 Billion tonnes (Bt) of polyhalite with a mean grade of 85.7%. The Shelf Seam comprises 62% of the current Mineral Resource, and, given the shallower depth and more extensive development of this seam in this area, has been the main focus of the 2011 – 2013 drilling programme conducted by YPL. The estimate was derived by SRK and reported using the JORC Code, which, as already commented, is an internationally accepted code for the reporting of Mineral Resources.
In addition to producing a Mineral Resource estimate, SRK has also produced an Ore Reserve estimate and again reported this using the JORC Code. While a Mineral Resource estimate comprises that material with potential to be exploited, an Ore Reserve comprises that material which technical studies, undertaken to at least PFS level, have already demonstrated can be exploited.

The most up to date Ore Reserve estimate for the Project was derived by SRK reported in the public domain in September 2013 and totalled 250Mt with a mean grade of 87.8% Polyhalite. This was derived from the Indicated Mineral Resource derived by SRK for the Shelf Seam only (some 820Mt with a mean grade of 87.3% Polyhalite) and was reported as a Probable Ore Reserve as defined by the JORC Code. This section also contains a summary of the process used to derive this Ore Reserve from the Mineral Resource.

2.6.2 Available data

The Mineral Resource itself is located primarily in the north of the AOI to the south west of Whitby and is centred around Doves Nest which is where the currently proposed shaft location is. Results from the southernmost drillholes, SM4, SM6, SM9, SM9A, and SM9B have confirmed that the Shelf Seam is present towards the south of the AOI but it is clear that it becomes thinner, more discontinuous and of a lower quality in this area. Table 2-1 below summarises the drilling intersections obtained by YPL to date and which were used to derive the Mineral Resource estimate presented below.

Included in this table are the results from four historical drillholes (E5, E11, E13 and SB1) where SRK considered the data of sufficient quality to be used in the estimation process.

Table 2-1: Summary of YPL’s 2011 - 2013 exploration drill programme

<table>
<thead>
<tr>
<th>BHID</th>
<th>Hole Type</th>
<th>Seam</th>
<th>Seam Thickness (m)</th>
<th>Mean Grade (%)</th>
<th>Length of Hole Depth (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM1</td>
<td>Parent</td>
<td>Basinal Seam Only</td>
<td>31</td>
<td>81.8</td>
<td>1664.6</td>
</tr>
<tr>
<td>SM2</td>
<td>Parent</td>
<td>Shelf and Basin Seam</td>
<td>Shelf: 33.74 / Basin: 27.3</td>
<td>Shelf: 82.9 / Basin: 82.7</td>
<td>1597.93</td>
</tr>
<tr>
<td>SM3</td>
<td>Parent</td>
<td>Shelf Seam Only</td>
<td>17.67</td>
<td>94.6</td>
<td>1652.21</td>
</tr>
<tr>
<td>SM3a</td>
<td>Daughter</td>
<td>Shelf Seam Only</td>
<td>35.14</td>
<td>87.2</td>
<td>423.6</td>
</tr>
<tr>
<td>SM4</td>
<td>Parent</td>
<td>Shelf Seam Only</td>
<td>5.13</td>
<td>88.8</td>
<td>1665.51</td>
</tr>
<tr>
<td>SM4a</td>
<td>Daughter</td>
<td>Shelf Seam Only</td>
<td>7.16</td>
<td>85.6</td>
<td>352.6</td>
</tr>
<tr>
<td>SM6</td>
<td>Parent</td>
<td>Shelf Seam Only</td>
<td>1.9</td>
<td>87.9</td>
<td>1698.6</td>
</tr>
<tr>
<td>SM7</td>
<td>Parent</td>
<td>Shelf Seam Only</td>
<td>56.9</td>
<td>85.7</td>
<td>1625.44</td>
</tr>
<tr>
<td>SM7a</td>
<td>Daughter</td>
<td>Shelf Seam Only</td>
<td>60.48</td>
<td>91.0</td>
<td>358.13</td>
</tr>
<tr>
<td>SM7b</td>
<td>Daughter</td>
<td>Shelf and Basin Seam</td>
<td>Shelf: 28.04 / Basin: 27.44</td>
<td>Shelf: 86.5 / Basin: 83.6</td>
<td>422.6</td>
</tr>
<tr>
<td>SM9</td>
<td>Parent</td>
<td>Shelf Seam Only</td>
<td>2.5</td>
<td>88.0</td>
<td>1663.2</td>
</tr>
<tr>
<td>SM9A</td>
<td>Daughter</td>
<td>Shelf Seam Only</td>
<td>Not used in estimate</td>
<td>-</td>
<td>198.01</td>
</tr>
<tr>
<td>SM9B</td>
<td>Daughter</td>
<td>Shelf Seam Only</td>
<td>Not used in estimate</td>
<td>-</td>
<td>225.13</td>
</tr>
<tr>
<td>SM11</td>
<td>Parent</td>
<td>Shelf Seam Only</td>
<td>20.8</td>
<td>90.1</td>
<td>1580</td>
</tr>
<tr>
<td>SM11A</td>
<td>Daughter</td>
<td>Shelf Seam Only</td>
<td>35.7</td>
<td>82.3</td>
<td>347.5</td>
</tr>
<tr>
<td>SM11B</td>
<td>Daughter</td>
<td>Shelf Seam Only</td>
<td>43.6</td>
<td>87.7</td>
<td>353.5</td>
</tr>
<tr>
<td>E5</td>
<td>Parent</td>
<td>Shelf Seam only</td>
<td>0.91</td>
<td>80.4</td>
<td>1535.28</td>
</tr>
<tr>
<td>E11</td>
<td>Parent</td>
<td>Shelf Seam Only</td>
<td>9.1</td>
<td>79.0</td>
<td>1849.83</td>
</tr>
<tr>
<td>E13</td>
<td>Parent</td>
<td>Shelf Seam Only</td>
<td>20.0</td>
<td>82.9</td>
<td>2067.0</td>
</tr>
<tr>
<td>SB1</td>
<td>Parent</td>
<td>Basin Seam Only</td>
<td>26.0</td>
<td>64.0</td>
<td>2025.0</td>
</tr>
</tbody>
</table>
2.6.3 Resource Estimation Methodology

SRK’s Mineral Resource estimate is the result of a significant amount of data review, three dimensional geological modelling, statistical and geostatistical assessment and grade interpolation. Specifically, SRK:-

1. Reviewed the historical data available and that obtained by YPL during the 2011-2013 exploration programme inclusive of the drilling, logging, sampling and assaying procedures employed.

2. Composited all of the assay data from the drillholes listed in Table 2-1 into equal 1.5m lengths so that each was given equal weighting in the statistical and geostatistical analyses and grade interpolation procedures commented upon below.

3. Reviewed the geological setting of the mineralisation inclusive of the lithological succession and the faulting and folding this had been subjected to, to help in the geological modelling process commented upon below.

4. Identified the potentially mineable polyhalite intersections in each drillhole from the drilling logs and assay results and using a 80% polyhalite cut-off to determine limits for the orebody modelling procedure.

5. Reviewed the available specific gravity data, collected during associated geotechnical testwork completed on samples of drill core by YPL, to enable the density of the polyhalite to be determined which is an input to the tonnage calculation process.

6. Modelled the footwall (bottom) and hangingwall (top) of the intersected polyhalite horizons in three dimensions using mine design software and the knowledge of the geological setting gained as commented above so as to demonstrate the continuity of these in three dimensions and to create a volume for these.

7. Undertook a classical statistical analysis of the composited sample data (2,539 continuous samples in the case of the Shelf Seam and 361 continuous samples in the case of the Basin Seam) to determine the mean grade and also the distribution characteristics of these which are important parameters in determining the most appropriate methodology for interpolating the assay data into the modelled volumes.

8. Undertook a geostatistical (variography) study of the composited assay data to determine how the grades vary spatially and so enable appropriate algorithms to be used when interpolating this data into the interpreted volumes.

9. Created a three dimensional block model within the mining software package with dimensions of 50m by 50m laterally and 3m vertically covering the extent of the modelled volumes.

10. Interpolated the composited grades from each drillhole into the three dimensional block model to give each block a unique grade and thereby create a model reflecting the variation in grade across the deposit and using algorithms determined form the statistical and geostatistical analyses and by applying rules such that information from several drillholes were used in deriving the grades for each block but at the same time preventing “over-smoothing” by not using drillholes too far from each block. Notably this process not only resulted in an estimate of the total quantity of polyhalite mineralisation present but also a model of how this varies in thickness and quality across the area explored.
11. Verified the resulting model by comparing individual block grades with composited grades in nearby drillholes and by comparing the resulting mean block grades with the mean composited sample grades.

12. Reported the resulting total tonnage in each seam by applying the derived density to the modelled volumes and reporting these along with the mean block grades using the guideline proposed by the JORC Code.

2.6.4 SRK Mineral Resource Statement

Following all of the above, SRK reported an Indicated and Inferred Mineral Resource. The reporting of the mineralisation as a Mineral Resource reflects the fact that SRK considers this material has reasonable prospect for eventual economic extraction. This conclusion was supported by the results of the PFS completed by YPL earlier in 2013 which demonstrated the economic viability of exploiting this Mineral Resource from the Doves Nest site.

SRK’s limiting of the Mineral Resource and the categorisation of this into Indicated and Inferred categories was based on its confidence in the continuity of the polyhalite horizons themselves and the accuracy of the grade and tonnage estimation. Specifically the following factors were considered:

- The quality and quantity of data used in the estimation;
- The geological knowledge and understanding, focusing on geological and grade continuity at the 80% cut-off grade used;
- The geostatistical analyses completed and interpolation accuracy; and
- Experience with other deposits of similar style.

Quality and Quantity of Data

SRK considered that both Sirius and FWSC used industry best practice methodologies during the 2011-2013 drilling programme and to monitor the precision, accuracy and repeatability of data collected. The historical drillholes used were validated by both FWSC and SRK, and SRK is of the opinion that they are of a suitable quality and the data reliable to be used for estimation purposes.

The results from the QAQC programme showed no evidence of material bias within the laboratory, no significant precision or accuracy issues, and no problems in terms of sample swaps in the drilling programme.

The electronic drilling database provided to SRK was relatively simple, the systems used for data capture and storage appeared to have been satisfactory and there were no observable errors when importing the data into mining software packages.

Due to planning and permitting restrictions, the deposit has not been drilled on a regular grid. The current spacing between parent drillholes ranges from 1.1 to 5.7 km, and between daughter drillholes 30 to 60 m.

Bulk density measurements were undertaken as part of the SRK Geotechnical Departments investigations. These results were used to calculate the density of the polyhalite for both seams as 2.75 g/cm³.
Geological Knowledge and understanding /geological and grade continuity

The geology of the polyhalite seams in the area of interest is complex and numerous faults have been identified using seismic survey interpretations. Although polyhalite had been shown to be widely distributed throughout the area, there are variations in seam thickness between mother holes and the associated deflections at a mining scale. However the SM11, SM11A and SM11B drillholes demonstrated good continuity over a short scale, and this has been taken into account whilst classifying the resource.

SRK has used all identified large scale faults to bound the resource area. Within the resource area there are also estimated to be 125 lower displacement faults (throw 15-60m) of which 15 are traced and 110 untraced and in addition significantly more faults less with than 15m throw which are sub-resolution.

SRK has relied on estimates of the hangingwall and footwall locations which are solely reliant on the drilling and analytical information available and could change with further infill and delineation drilling.

Quality of Geostatistics and Grade Interpolation

The results of the geostatistical analysis produced variograms of poor quality. SRK noted that this is due to the wide spaced nature of the drilling and limited number of drillholes. However, short scale structures could be modelled which reflect the short scale drilling between parent and daughter holes.

The resultant block model validates well when compared to the input sample data. The validation process was completed visually and statistically, and SRK considers the model to be as robust and unbiased as possible considering the data available.

Given all of the above, SRK defined areas within the Shelf and Basin seams where intersections of polyhalite have been intersected and where it considers it prudent to extend the reported resource to laterally. Specifically, SRK’s Indicated Resource comprised those areas drilled at an approximate 1-1.5km spacing and where close spaced, daughter holes had confirmed the continuity of the horizons at a mining scale while SRK’s Inferred Mineral resource comprised extensions to this area where the drillhole spacing was up to 4km, in the case of the YPL drillholes, or 2km, in the case of historical holes. SRK did not include any areas where the estimate would have been based on historical data only, as the information available for these holes is less reliable (and in some cases poor) or where the intersected seams are very thin (less than 2m) or areas where there were only isolated intersections unsupported by adjacent holes. SRK’s classified estimate is tabulated in Table 2-2 below. The Indicated Mineral Resource covers a total area of some 1,230 Hectares (Ha), the Shelf Seam Inferred Mineral Resource covers a total area of some 2,950 Ha and the Basin Seam Inferred Mineral Resource covers an area of some 1,380 Ha.
2.6.5 Ore Reserve Estimation

As already commented upon in this report, while the Mineral Resource represents that portion of a deposit which has potential to be exploited at a profit, the Ore Reserve represents that portion of the Mineral Resource that has been demonstrated by a detailed technical and financial assessment, of at least PFS standard, to be economic to exploit at the present time. As such it requires the completion of a significant amount of technical work covering all aspects of a project, not just geological and mining aspects but also mineral processing, tailings management, water and environmental management, infrastructure and transport requirements and capital and operating cost estimation. YPL concluded its PFS in March 2013.

In practice the reporting of an Ore Reserve also requires the application of a series of largely mining adjustments to the Mineral Resource estimate to reflect the tonnage and quality of material that will actually be removed from the mine and delivered either to a plant for processing or directly to the customer. Following its geotechnical assessment, SRK based its mine design on a maximum mining height of 40m and a pillar width of 40m between panels. Given this the application of the factors used by SRK to derive an Ore Reserve from the 820Mt Mineral Resource in this case comprised the removal of:

- 46Mt of material below an 81% mining cut off (applied so as to ensure a mining grade of 88%).
- 44Mt of material that would be contained in the shaft pillar to ensure stability of the shaft.
- 25Mt of material in fault pillars to ensure stability around these features.
- 92Mt of development pillars and as a function of the mining method and to ensure stability of workings.
- 336Mt of material in barrier and in-panel pillars and in remnant areas between panels as a function of the mining method.
- 27Mt of material assumed to be blasted but left behind in stopes as a function of mining practicalities.
- A mining stand-off distances around boreholes comprising 0.5 Mt.