PHA Campaign Comment on Keysource Minerals WUL application - November 2022

Contents

A. INTRODUCTION

The PHA Food & Farming Campaign ("the Campaign") is a voluntary association which works to protect the Philippi Horticultural Area ("PHA") for the benefit of all citizens of Cape Town. The Campaign was launched in 2012 as the successor to the Planning Committee of the Schaapkraal Civic and Environmental Association ("SCEA"). Its objectives include "to defend the ecological integrity of the Philippi Horticultural Area as a unique, historical agricultural area and promote the sustainable use of the PHA's natural resources.

Violations of Procedural Due Process

The Campaign was a registered interested and affected party ("I&AP") via the sheer coincidence of seeing a notice appended to the fencepost of the application property – this despite us being known to the applicant as a longstanding IAP via the EIA and previous WUL process when the applicant was still operating under the business auspices of CONSOL. We were not informed up front of this application, and the EAP relied on us driving past the application land and seeing their notice, in order to register as IAP's for this process.

I mention this because at every point in the permissions process, Consol and now Keysource Minerals have avoided informing us of the steps. It is only via this WUL process that we found out that the EIA which expired in November 2021, has been extended by DMR for 30 years, this despite MATERIAL changes in circumstance, including MAR, International Climate Change Treaties signed, and COCT policies regarding peri-urban environmental assets. No Climate Change assessment has been done at EIA level.

Section 3(2)(b) of the Promotion of Administrative Justice Act, 3 of 2000, requires that a person materially and adversely affected by administrative action must be given an opportunity to make representations on the proposed decision. In the case of the EIA application, the considerations are materially different to those in a WUL application process. Keysource Minerals made no effort to inform us of their EIA renewal.

Also of concern is that no comment has been sought from the two settlements that border the application land: Pineacres (South) and Sonnestraal (to the West). The EAPs stated that they gave notices to all water users in the area. This did not include those who will be most fundamentally affected by the physical presence of an open cast mine dredging 24/7 within 50m of their homes. Each settlement (highlighted in purple) has approximately 50 families in it. Given the history of the Mannenberg Consol mine which was

not fenced and affected the neighbouring suburb dreadfully (including drownings)[1] – this is an unacceptable omission on the part of the EAP.

Figure 2-3 Google Earth Imagery from August 2021 indicating wetlands in the area surrounding the PSM property.

This WUL application has been made previously to the Tribunal, and turned down by the tribunal on 20 March 2019 see **Appendix 1.**

B. HISTORICAL CONTEXT

The Campaign supports the Tribunal's original decision to refuse the Applicant's application for a water use licence for its proposed mining activities in the Philippi Horticultural Area, as set out in its refusal letter dated 31 October 2018, and its reasons for refusal set out in that letter and further in its "Record of Recommendation" with an "effective date" of 12 September 2018. Of particular importance to the Campaign are the conclusions reflected in the Record of Recommendation which lend justification to the Department's reasons for its decision, as follows:

1. the specialist's reports neither identify the associated risks and/or impacts to the water resources in relation to the quality characteristics;

2. the loss of the ecological corridor has not been identified and/or mitigated for;

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3. the losses of the ecological drivers and/or responses have not been identified and/or mitigated for;

4. an acceptable offset has not been proposed;

5. risks and impacts to post mine closure have not been identified or mitigated for; and

6. the risk of pollution to groundwater and to the False Bay Ecological Park, a RAMSAR site, have not been identified or mitigated for;[2]

7. the groundwater assessment is mainly a desktop study with emphasis on the modelling, that may not be a true reflection of the aquifer and its characteristics or its behaviour under certain conditions;

8. the Cape Flats Aquifer is a major aquifer, with a high vulnerability and high susceptibility for pollution and degradation as a result of human activities;

9. the recent drought has shown the importance of protecting groundwater resources, and the recent developments by the City of Cape Town to use the water from the Cape Flats Aquifer to augment the water supply to the city is now a compelling argument against activities that may potentially pollute the water quality of the aquifer;

10. the risk of salinization and pollution as a result of the activity is too high;

11. there is very little potential for the remediation or recovery of the system, as the impact will change it permanently; and

12. the Cape Flats Aquifer is an important source of groundwater that is now also targeted by the City of Cape Town to augment municipal supply.[3]

The Campaign also notes that Consol was at the time it submitted its paperwork on the previous WUL application, undertaking consultation regarding the wetland offset. In this application, no information has

[2] Page 27 of the Record of Recommendation.
[3] Page 28 of the Record of Recommendation.

been provided on the material existence of such. It is put forward in concept form only, as no such offset is possible as these wetlands on the application land represent the last such in existence.

C. NEW INFORMATION

Material developments since the previous WUL application was submitted.

1. On 24 May 2017, the Western Cape was declared as a provincial disaster area due to the drought which befell the province. On 13 March 2018, the hard-hitting drought was declared a national disaster. The importance of the aquifer as an alternative, affordable water supply for the City became undeniable, and was confirmed by the City of Cape Town in a letter to the Minister of Water and Sanitation dated 12 January 2018. Specifically, the Cape Flats Aquifer is envisaged to supply 80 million litres of water per day.
2. In the second instance, the City of Cape Town has recognised the need to diversify its water supply sources to ensure drought resilience for the City. The City's augmentation programme aims to fast-track extraction of water from the Cape Flats Aquifer, with consequent recharge of the aquifer from treated wastewater to replenish the aquifer and improve water quality in the long-term within the whole of the Cape Flats Aquifer.[4] The licence condition provides for an annual recharge requirement of 12 Mm^3, which forms part of the re-use projects. To undertake this project, a number of boreholes have been drilled.
3. The PHA is the core site of this "New Water Program" where processed water from the two southern Waste Water Treatment Plants will be utilised to recharge the aquifer in the south, and water will be extracted and treated to potable standard in the North of the PHA, and added to the potable water system. Several new extraction boreholes (see figure 3-1 second below) and their reservoirs (see figure 3-1 below with the yellow star) are situated directly adjacent to the proposed mining site, and the MAR recharge boreholes are also within hundreds of metres of the southern border of the proposed mining site.

[4] Page 3 of the City of Cape Town's Water Outlook 2018

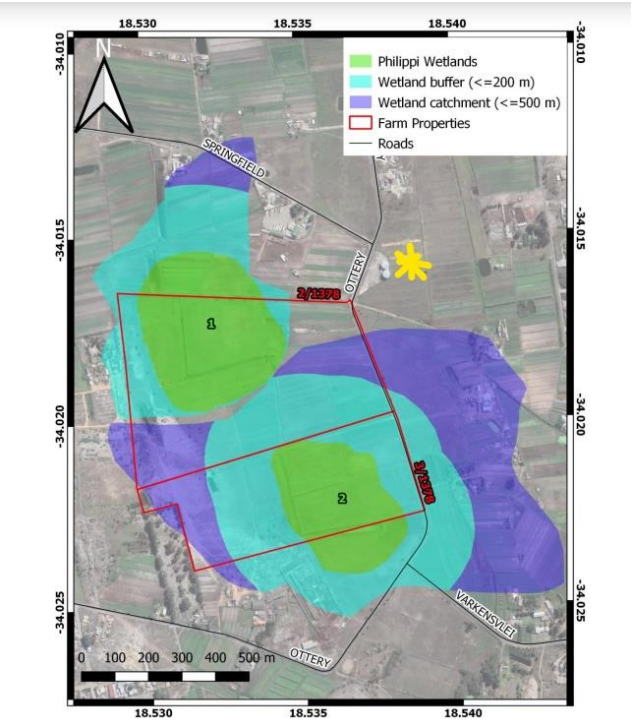

Figure 3-1 **Philippi wetlands and catchments associated with the PSM. WET-HEALTH requires an assessment of land uses of a 200 m buffer surrounding the wetland and the broader catchment surrounding the 200 m buffer but limited to a distance of 500 m from the wetland centre.**

Of concern is the close proximity of the Applicant's proposed mine to the existing monitoring boreholes. As well as the pending extraction from the Philippi quarter is scheduled for 2024, and will be the third highest volume site.

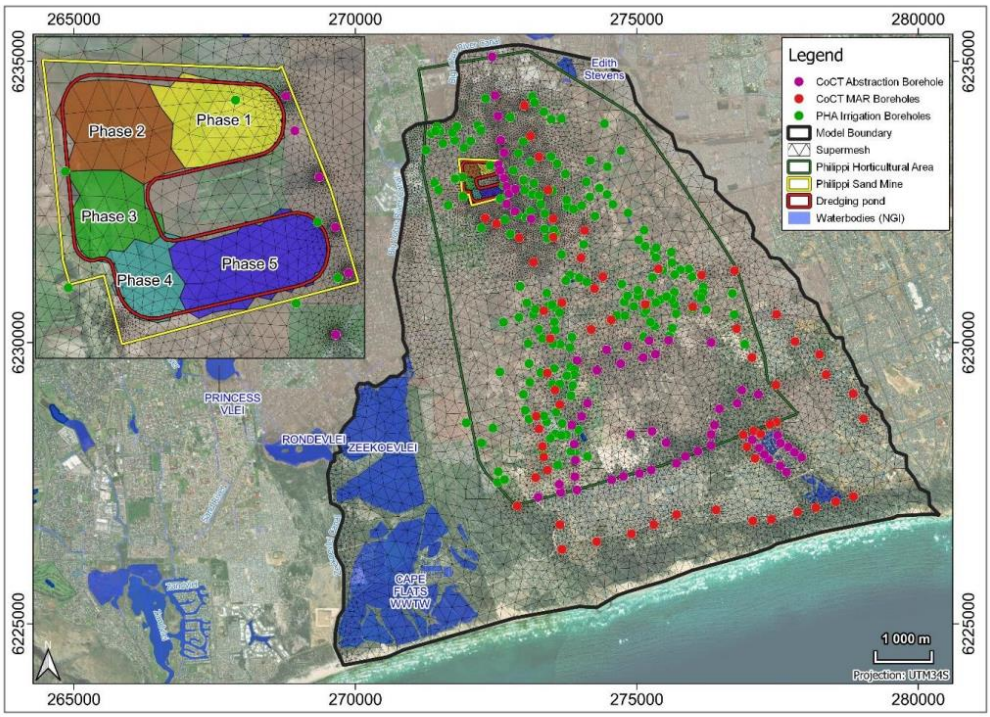

Figure 3-1 **Model supermesh and generated 2D triangular finite element mesh with mining progress selections.**

4. As well as the context of the 2018 drought, there has also been a cementation of the science of the concept of climate change, and several international treaties have been signed by the SA government, undertaking to contribute to the cutting of carbon emissions to end climate change. There has also been the introduction of Carbon Tax, and carbon emission-intensive activities, such as the proposed mining activity, needs to be quantified and offset via mitigation. This has not been calculated either in this application, or the EIA.

5. The City of Cape Town has promulgated several policies that act as the manifesto of these treaties, and the preservation of the city's natural spaces is top of the list in terms of ensuring the city's food and water resilience in a time of climate change. The PHA is a drought proof farmland, the value of which has become incrementally more clear in the face of the role it must play in offsetting the worst effects of climate change.

The impacts of the proposed mining activities on the augmentation operations, and specifically on the adjacent borehole, have not been assessed or understood.

These material developments render the application devoid of crucial information and provide a reasonable and rational basis on which to refuse the application.

D. SITE CONTEXT

The PHA farmlands is a 3,000ha farming area proclaimed for horticultural (and silica sand mining) use in 1968. The PHA has historically been the breadbasket of Cape Town since 1885, with an ideal microclimate for producing horticultural crops, and the abundance of aquifer water despite droughts, make the farmlands the most productive urban agricultural hub in the country, which is unique and irreplaceable. The area employs approximately 6000 farmworkers and hosts 12 informal settlements of over 2000 families. Approximately 1 500 ha is intensively farmed, of which emerging farmers hold 100 hectares. The perimeters of the PHA are characterised by progressive urban creep and a significant proportion of the agriculturally zoned land in the PHA does not conform to agricultural land use. The area has not been well managed, and as such, the residents have only recently managed to get the Indego Study adopted by the Provincial Cabinet and City of Cape Town wherein they undertake to Preserve and Manage the PHA.

The current threats to the PHA via development applications – land lost – is this:

Microcontext

The northern farming area has long been characterised by salinated pockets where farmers irrigating in the area of the PMS have had to cast a wider net for non-salinated water. The current land is irrigated by a borehole from a neighbouring farm. As such, the salt which contaminates the water is contained geologically, and is a known entity to the farmers.

Should mining occur, this will expose the vast pockets of salt in an open cast ponding system. The vast amount of salination – probably underestimated by this assessment on which we are commenting – will thus become "increased EC concentrations due to evaporation enrichment". This is a vast understatement. Actually, the salt from the ground beneath the farmland will thus be exposed and washed into the water-rich mining process. This fact has not been denied by the applicant, but the extent is vastly under-stated. The impact on neighbouring farmers has carefully not been estimated at all. The "perched" aquifer suddenly becomes a salinated soup which will plume onto neighbouring farms, ruin their affordable water supplies (it being close to the surface not requiring deep boreholes or expensive pumping), and delete generations of knowledge on where to source the non-salinated water sources. These will be exposed to the salination in the mining pond, and thus the north and north-west water sources will be deleted.

Permanent Desalination?

Is this a legitimate proposed "mitigation"? Desalination (referred to as reverse osmosis) is a resource intensive process, especially at the volumes proposed by the applicant. In fact, the volumes proposed by the applicant are so vast and probably so expensive as to need to have been side-stepped in the WUL. The need for eternal reverse osmosis of the pond water has not been written into the WUL.

Is eternal reverse osmosis possible? It is not. What happens once a vast open cast pond is created and Keysource Minerals closes? This WILL happen after the 30 year life of the mine, if not sooner. Climate change is changing the equation of consumables in unknown ways – who knows whether virgin glass will even be permitted in ten years' time due to its impact (of mining, and of glass volumes in rubbish dumps) on climate change?

When the life of the company (Keysource Minerals) comes to an end, be it in 5, ten or twenty years' time (and after the silica sand is finished, why would it stay in business?) – the only way to fend off a saltwater pond wherein nothing will grow or live, will be for municipal management to desalinate. Thereby externalising forever the costs of the mine onto the public: socialise costs, privatise profit.

Meanwhile – an eternity of unusable water; the complete destruction of two irreplaceable wetlands has taken place, irreplaceable farmland is gone, and the unknown impact on farmers in the PHA will have occurred. Let alone the plumes of salinated water down to the RAMSAR sites to the south-west.

E. THE CAMPAIGN'S RESPONSE

The Campaign does not support mining activities on the site, because such activities will have a significant and unacceptable impact on the PHA environment and heritage, the Cape Flats Aquifer, the surrounding community and especially the food and water security of the greater City of Cape Town. The irreversible destruction of a drought-proof farmlands in an increasingly water scarce province, where agricultural land is an ever-shrinking natural resource, is not compatible with either the progressive realisation of food security or allowing the national department of agriculture to deliver on its mandate in that regard. The area is identified in several policy documents as "unique and irreplaceable agricultural land of national significance".

The Department of Agricultural, Forestry and Fisheries ("DAFF" as it was previously named) has stated officially three times the importance of retaining the Philippi Horticultural Area as farmland. See for example an appeal submitted by DAFF in 2016 in respect of a mixed-use development in the PHA, marked **Appendix 2**, and a letter from DAFF to the City of Cape Town in 2009 refusing consent for subdivision, marked **Appendix 3**. It is also widely recognised as such,[5] recognized by the City of Cape Town in their EESP[6] report entitled "The Role of Philippi Horticultural Area in Securing the Future of the City" and comprehensively summarised in a study by Rooftops Canada Foundation Inc in 2012[7]. Accordingly, the use of water for mining is not an efficient or beneficial use of water in the public interest, and should not be permitted. See extracts from various reports on the PHA and a 2018 study on the PHA undertaken by Indego, marked **Appendix 4**, just one of at least 13 studies and rulings on the PHA **Appendix 5**.

Irreplaceable Terroir

Further, the Campaign Chairman, a farmer, can attest to the superior quality of the soil on the application land which is currently farmed, and producing vegetables. As a wetland, the mining application property is covered with water for 3 months of the year, and thousands of migratory birds occupy the space. On a morning outing by the Cape Bird Club in 2010, 90 species of birds were identified on the application land. These birds stand in the water and thus enrich the soil to a rich, dark Class I or II soil, which "is suitable for intensive crop production". As in the rest of the PHA, about one third of the land is not used during the winter rainfall months. But the richness of the soil produced means that the heavy feeding crops can

[5] https://www.newframe.com/soil-and-land-in-the-philippi-horticultural-area/

[6] https://www.scribd.com/document/318265483/The-Role-of-Philippi-Horticultural-Area-in-Securing-the-Future-of-the-City

[7] https://www.researchgate.net/publication/262685357_Summary_report_Philippi_Horticultural_Area_A_City_asset_or_potential_development_node_A_report_commissioned_by_Rooftops_Canada_Foundation_Inc_-_Foundation_Abri_International_in_partnership_with_the_Af

be farmed intensively through the next 9 months of the year. A feature that is almost entirely unique to the PHA – stated to be the most productive horticultural area in South Africa.

Constitutionally, it is fascinating (and legally notable) that Section 24 of our constitution which guarantees a healthy environment is served just as aptly on the same space of land as Section 27 which guarantees food and water. These rights will be destroyed with the destruction of two unique and irreplaceable wetlands, as well as 50ha (or more?) of unique and irreplaceable farmland – both of which interact in a priceless synergy to deliver sustainably to humankind for all eternity.

We note that this land has been fully farmed since at least 1996. Given that 1500ha of fully farmed PHA land produces 200,000 tonnes of vegetables a year, 50ha of the application land produces at least 6,000 tonnes per year. Given that a family of 5 will eat 5 x 400g vegetables per day, this means that the land currently feed approximately 8,500 families per year. This tonnage will have to be imported into Cape Town from outside the province.

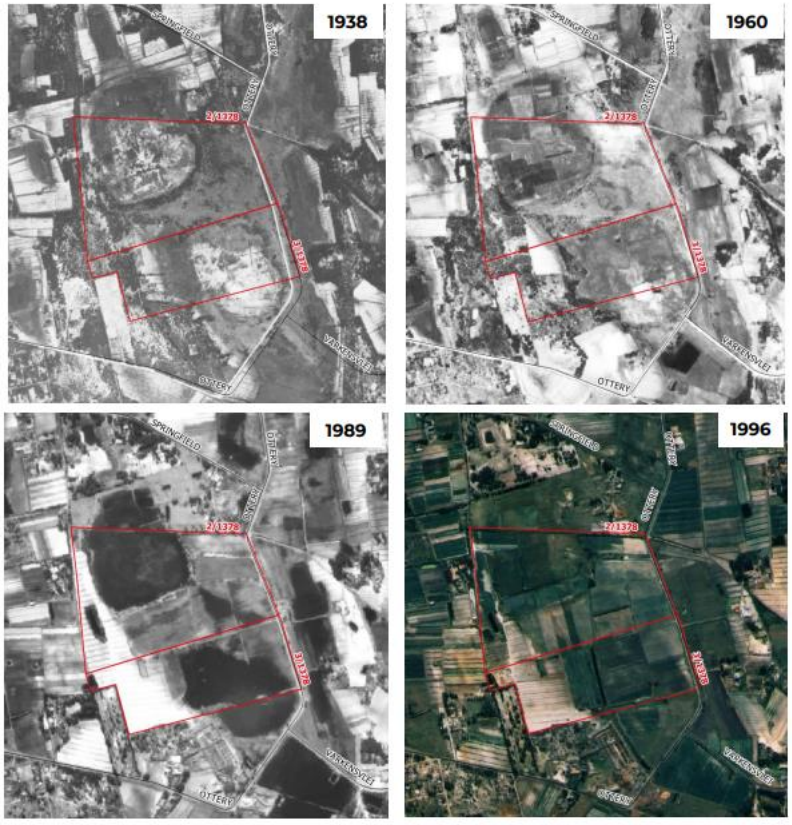

Figure 2-1 **Aerial photography highlighting the presence of wetlands on the PSM property for the years 1938, 1960, 1989 and 1996.**

A Sneak Tweek from the 2015 application as CONSOL

Desktop modelling study of the groundwater impact is inadequate, but we notice that while the modelling for when plumes will affect the neighbouring RAMSAR sites of Zeekooivlei and Rondevleis gives a timeline of 6 to 12 years, the new Umvoto modelling suddenly finds that plumes will not develop for "a minimum of 19" years! See **Appendix 6**. The best case scenario, we note, is before MAR replenishes the aquifer and makes it more active again. What happens when MAR starts is not known (nor modelled).

No comprehensive study of the potential adverse impacts on the 630 km2 aquifer has been undertaken; why? Because the only people qualified to do this are Umvoto – the same company employed by Keysource Minerals to process this WUL application as the Environmental Practitioner. More on this below.

The wetlands offset attempts to address only the surface water impacts, and does not address other impacts, such as the impacts on the ecological functioning of the aquifer in terms of, for example, migratory bird species and the buffer services; and

Given that the wetland is unique, being the last of its kind in the area, it cannot be appropriately offset.

Piecemeal Application

The application is suspected to be a piecemeal application on two accounts – both in the space the applicant intends to mine, and the depth of the mine itself.

While the new application by Keysource Minerals has adapted its application from a 30m depth to a 20m depth, we have no guarantee that this will not be extended with a simple application to DMR during the course of the mining. No such change will be run past the Water Tribunal, and the clay lens layer that protects the deeper aquifer will be breached, leading to pollution of the Cape Flats Aquifer and the Managed Aquifer Recharge program implemented by the city.

Similarly, the application has failed to assess the cumulative impacts of the full mining proposals for the PHA and impacting on the aquifer in terms of area. While approximately 50 hectares of the PHA is applied to be taken up by silica sand mining, and a further 16 neighbouring properties have prospecting rights. Just in the North and West an area of 1 400ha is delineated for prospecting. The Campaign submits that the application has failed to place before the decision-maker its true intentions, being to mine a much larger area, and has not disclosed the full impact of its proposed mining activities. The Campaign requests

that the applicant discloses to the Tribunal all of the prospecting and mining entitlements held by it, including any pending applications.

Cumulative Impacts

NEMA requires an assessment of cumulative impacts, which is defined in the 2010 EIA Regulations as "the impact of an activity that in itself may not be significant, but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area". An assessment of cumulative impacts therefore requires consideration of other extraction activities planned for the area.

Cumulative impacts are also integral to a decision on a water use licence application, to enable the responsible authority to properly consider, inter alia, the efficient and beneficial use of water in the public interest, the socio-economic impacts of the water uses, the likely effect of the water use on the water resource and other water users, as envisaged by section 27 of the NWA.

However, the WUL application fails to identify cumulative impacts of similar proposals in the PHA area and impacting on the aquifer. It is concerning that the application has itself followed a piecemeal approach to the assessment of impacts. Without a full understanding of the potential impacts on the aquifer, the contribution of the proposed mining activities (which are the subject of the current application) to broader impacts cannot be assessed.

In: ***Dealing with consequences of haphazard urban development across a coastal lowland: Hydrogeological importance of the Cape Flats Aquifer System, South Africa – Hay, Hartnady et al Sept 2017.***

> *Regeneration of CFA recharge Zones and ecosystem services is an essential element of disaster risk reduction to avert a potentially catastrophic outcome of present negative trends. Re-establishment of the natural water cycle through innovative water treatment, recycling and supply methods, the architectural landscaping of healthy pure green spaces, and the generation of business and work opportunities underpinned by ecosystem services can build community resilience, social and water security for the whole City of Cape Town. However, such goals require comprehensive exploration, monitoring, modelling and hydrogeological assessment of the CFA as part of a coherent aquifer management strategy.*

Socio-Economic Agricultural Plan for the PHA ("the Indego Study") was formally adopted by the Western Cape Government and the City of Cape Town at an inter-Governmental Committee held on 4th June 2018, and adopted by the provincial cabinet on 18 August 2018 also says:

> *The PHA Plan provides policy certainty that the PHA is recognised by all three spheres of government as an area of agricultural, environmental and socio-economic significance that must*

be protected for its intended land use. This policy certainty is reflected in the City of Cape Town's designation of the PHA as a "Critical Natural Area" within its Metro Spatial Development Framework (MSDF), 2018.

The PHA Plan recognises that the current failure of the public sector to adequately plan, regulate and manage the PHA and the fact that the PHA is at a "tipping point" whereby if the status quo continues it will no longer be economically viable nor desirable to farm in the PHA and the underground water resource will suffer increasing contamination.

While it is not the fault of the applicant that the PHA is now at a "tipping point" where more destruction of its capacity will destroy it altogether, the same tipping point is being reached universally wrt Climate Change – and they (and the decision-maker) have to respond accordingly.

Whilst it is acknowledged that as far back as the 1960s, the PHA was identified for both agriculture and the mining of silica sand, the PHA – and the citizens of Cape Town – now exist in a vastly different context and environment. In a time of climate change, there can be no justifiable reason to destroy drought proof farmland.

The use of water for mining is not an efficient or beneficial use of water in the public interest

Beneficial Use in the Public Interest

Section 27 of the NWA enjoins the responsible authority to take into account all relevant factors, including those listed in that section. This includes the following:

> (c) efficient and beneficial use of water in the public interest;
>
> (f) the likely effect of the water use to be authorised on the water resource and on other water users; and
>
> (i) the strategic importance of the water use to be authorised.

For the reasons which follow, the Campaign submits that given the likely detrimental effect of the water use on the aquifer (and ultimately farmers and the citizens of Cape Town), and the strategic importance of the water resource, the use of the water for mining is not an efficient and beneficial use of water in the interest of the environment or in the public interest.

Section 27 of the Constitution provides that everyone has the right to have access to sufficient food and water, and that the state must take reasonable legislative and other measures to achieve the progressive

realisation of these rights. The loss of agricultural land close to the City poses a serious threat to this right.

Food Security in a Time of Climate change

No Food Security Impact Assessment has been conducted.

The PHA is unique and irreplaceable. The aquifer has the potential to provide 2 million of the City's residents with potable water per year, as well as continuing to provide water for growing of 200 000 tonnes of vegetables per annum in the PHA. Numerous studies by the City of Cape Town and independent consultants identify the PHA as critical for meeting the food security needs of the city and addressing the government's land reform targets. See for example a Food System and Food Security Study for the City of Cape Town.[8] If pollution of the Cape Flats Aquifer impacts upon the ability of farmers to grow food, the vegetables will have to be grown elsewhere, with consequential water use and unknown impacts (transport, carbon emissions etc) in the Western Cape and beyond.

In this context, silica sand mining is an inappropriate and undesirable use of land in the Philippi Horticultural Area, given the importance of safeguarding the Cape Flats Aquifer, the PHA's agricultural land and its unique ecosystem. The potential impacts on the freshwater ecosystems have not been adequately assessed in the application, with a dire lack of dedicated aquifer impact assessment or water security impact assessment having been conducted. Further, the impact of the mining on the use of the water for growing food has not been assessed.

The proposed mining will impact on food security in the Greater City of Cape Town for five reasons:

- Firstly, as mentioned, the water can be more beneficially used to grow food.
- Secondly, mining activities have a high likelihood of pollution of the aquifer, which water source is relied upon by approximately 50 farmers to grow food for the citizens of Cape Town and beyond.
- Thirdly, the agricultural areas of Cape Town used amount to 30,000 ha. This area is enough to feed five million people with local food, but is constantly eroded by development and mining.

8 https://www.researchgate.net/publication/305496094_Food_System_and_Food_Security_Study_for_the_City_of_Cape_Town

- Fourthly, the need to switch to local food production without the carbon emission quotient linked to transporting food thousands of kilometres, will be an increasing imperative with climate change.
- Lastly, other than the agricultural practices of the existing farmer, the WUL application fails to consider alternative land uses, which could create more jobs (the mine will create only 50 jobs over the life of the mine), provide food, use less water and have a vastly reduced impact on the aquifer and the MAR program.

Whilst the WUL application acknowledges that "due to the nature of the production and the links between the PHA and food system of the CoCT, decisions about the area have far broader implications, implications that could undermine livelihood strategies and resilience of a far wider set of stakeholders", it then isolates the consideration of food impacts to the mining site only, and does not consider the impacts of a degraded or polluted water supply on the growing of vegetables beyond the borders of the mining site, or the use of aquifer water to augment the City's water supply.

It also confines the consideration of socio-economic impacts to the alleged existing use of the land, rather than considering the full agricultural potential of the land. See **Appendix 7** for a comprehensive look at the essential role that the PHA foodlands (hence Food Security) plays in a time of Climate Change.

Conversely, 50 ha of land farmed by 25 small scale, agro-ecological farmers, would create 25 land reform opportunities, and at 8 workers per 2 ha farm, create 200 direct jobs in perpetuity, as well as 200,000 indirect jobs in the value-add arena. Most farmworkers are either women, or youth. The possibility of gross income on each 2 ha farm per annum is R780,000.00. These are figures obtained from Vegkop agro-ecological farm in the PHA.

Conflict of Interest

The City of Cape Town has, in response to the 2017, 2018 drought, developed a New Water Programme (NWP) to diversify the city's water supply. This includes a Managed Aquifer Recharge program in the PHA ("in Strandfontein", but it is situated in the farmlands of the PHA). This MAR Program has been implemented by Umvoto Africa. It is one of the GIANT new information considerations in this application, and the effect of the mining site on the MAR is of major concern (see figures 3-1 above). This application for a WUL, is being handled by Umvoto Africa. The campaign sees this as a conflict of interest.

Extract from: https://www.capetown.gov.za/Media-and-news/Groundwater%20projects%20on%20track%20to%20help%20build%20Cape%20Town's%20future%20supply

" ... the Cape Flats Aquifer Management Scheme in Strandfontein. This is one of three City groundwater projects that are each progressing well. Groundwater is one of the diverse water sources the City is investing in to ensure Cape Town's supply remains reliable against future climate shocks.

The City is planning to invest about R4,7 billion into projects to bring approximately 105Ml/day of groundwater online to contribute to our drinking supply by 2036. This groundwater supply target is part of the City's New Water Programme (NWP) and Water Strategy. Mayoral Committee Member for Water and Sanitation Councillor Zahid Badroodien said the progress on site at the Cape Flats Aquifer was encouraging.

...'I am very pleased with the progress on site. The City will be investing approximately R2,6 billion into the Cape Flats Aquifer project. The boreholes are expected to produce 50 to 60 million litres a day, incrementally starting 2022, to help ensure that Cape Town's drinking water supply is reliable in the face of unpredictable rainfall and climate change impacts.

'This project is a key component of our New Water Programme, which is exceptionally important and designed to ensure that Cape Town's water supply is able to navigate future droughts. We are looking to produce an additional approximately 300 million litres of water a day by 2030. The Cape Flats Aquifer, as well as Table Mountain Group Aquifer and the Atlantis Water Resource Management Scheme, are key to achieving this goal so I am happy to know that work on each of the sites are on track.

'The City has been successfully and responsibly tapping into groundwater in Cape Town since about 1980, when the first managed aquifer recharge scheme was started at Atlantis. The Water and Sanitation team takes great care to manage these schemes in a very responsible way by looking after our environment and providing a more reliable water supply for residents,' said Councillor Badroodien.
Update on groundwater projects underway:

*• **Cape Flats Aquifer Management Scheme (CFAMS):***
Drilling and construction operations are well under way and the first wellfield (borehole cluster), located in Strandfontein, is almost complete. The first groundwater injected into the water supply network from this scheme is expected towards the end of the second quarter of 2022. The Managed Aquifer Recharge component is planned to be operational by 2026 and will support the City's vision to create a water sensitive city.

Managed recharge means the City will fill up the aquifers where groundwater has been used, on an ongoing basis."

Extraction boreholes for the Cape Flats Aquifer Management Scheme (CFAMS/MAR) are within metres of the Keysource Minerals mining site. The recharge boreholes within 300m of the southern border, and the extraction reservoirs are situated within 500m of the northern border. None of this existed when the previous WUL was applied for, and ALL of it, negates the chance that the mining site will not impact on water resources. It will. And it needs to be assessed, but cannot be because the service provider, is the EAP on this application.

The project managers for CFAMS is Umvoto Africa. Extract from: https://www.umvoto.com/update-on-the-city-of-cape-towns-new-water-programme/

> *"Umvoto Africa continued as the principal hydrogeological consultants for the groundwater components of the City of Cape Town's New Water Programme (CCT NWP) under engineering consultants Zutari and iX engineers, which was implemented to diversify bulk water supply and improve long-term water security and resilience of the City. The CCT NWP groundwater projects target the major fractured Nardouw and Peninsula Aquifers of the Table Mountain Group (TMG), and the primary Cape Flats and Atlantis Aquifers.*
>
> *The end of 2021 came with the great news that Zutari, with Umvoto as its groundwater specialist, were appointed for a 5 year contract by the CCT's Water and Sanitation Department to continue with the refurbishment, development and commissioning of the Atlantis Water Resource Management Scheme (AWRMS), Cape Flats Aquifer (CFA) Management Scheme and TMG Aquifer wellfields.*
>
> *... **Cape Flats Aquifer***
>
> *Umvoto continued with the development and monitoring of the Cape Flats Aquifer (CFA) as part of the CCT NWP in 2021. This saw the drilling of additional production boreholes, reaching a total of 72 production boreholes and 268 boreholes overall (including monitoring, exploration and injection boreholes). The first CFA wellfield, Strandfontein West, is planned to be commissioned in early 2022, with construction of the water treatment plant currently being completed. Strandfontein West will supply 5 Ml/d of water directly into the potable distribution network.*
>
> *Additional work included the ongoing environmental conservation officer (ECO) inspections to ensure that environmental management procedures were followed throughout borehole drilling/testing and construction processes relating to borehole chambers, water reticulation pipelines and water treatment plants. Monthly and quarterly monitoring of climate, wetlands, groundwater levels and water quality continued throughout the year, building on the baseline data collected over the last 4 years.*
>
> *Highlights from 2021 include the commissioning of 2 injection boreholes for the managed aquifer recharge (MAR) component of the scheme and the large-scale contaminants of emerging concern (CEC) sampling and analysis monitoring*

campaign. This campaign included 32 monitoring sites for the CFA, consisting of both surface and groundwater, forming one of the largest CEC studies for a municipal groundwater scheme in South Africa."

Umvoto's role as consultant to Keysource cannot be reconciled with its role as consultant to the City's DWS, which must regulate the MAR area that will be impacted by the Keysource project. In order to determine the impact of Keysource's project now or in the future, the City will need to rely on Umvoto for its technical expertise and opinion pursuant to its contract with Umvoto. The City has relied on Umvoto's proprietary knowledge and work in the PHA, including on surveying and siting the boreholes for the MAR project. Yet Umvoto is now also employed by proponents of a project at odds with the City's MAR programme and that, at the very least, must be evaluated objectively by the City using its experts—that is, Umvoto.

Umvoto simply cannot be objective while representing both of these parties, and it should have declined to work for Keysource. It did not, and as a result it has created an irreconcilable conflict of interest that makes it impossible to accept its opinion on this matter as objective. A decision by the Water Tribunal adopting Umvoto's opinion would create the appearance of "science for hire" by City contractors moonlighting for private interests, and would signal to future applicants that such conflicts are acceptable. The Water Tribunal should act to protect the integrity of the process by rejecting Umvoto's compromised advice.

Failure to adequately assess impacts on the aquifer for MAR

This WUL application does not focus on the impact of mining on the MAR, the importance of preservation of its integrity, and how best to achieve this, in the context of water scarcity and climate change in the Western Cape. Mainly desktop modelling of the groundwater impact was conducted to examine long term water flows.

A comprehensive study of the potential adverse impacts on the MAR project has not been undertaken. The impacts of the mining on MAR, the required mitigation, and the undertakings of Keysource Minerals specifically in that regard have not been detailed NOR written into the WUL. The decision-maker does not have sufficient information before them to take the risk that a R2.6bn project in the interest of delivering water to the public of Cape Town, could be ruined by mining within 300m of the extraction and recharge boreholes for this. The proposal is silent on this.

Given the potential significant risk associated with the proposed mining activities, to the central future supply of water to the city, a desktop study with a dearth of real life response, cannot justify the granting of the licence as sought by the applicant.

Failure to assess the impacts of climate change and water security

South Africa has signed and ratified the UN Framework Convention on Climate Change, acceded to the Kyoto Protocol and signed the Paris Agreement. Article 3(3) of the UN Framework Convention enacts a precautionary principle requiring all states parties to take precautionary measures to anticipate, prevent or minimise causes of climate change. Article 4(1)(f) imposes an obligation on all states parties to take climate change considerations into account in their relevant environmental policies and actions, and to employ appropriate methods to minimise adverse effects on public health and on the environment.[9] The Paris Agreement requires State parties to commit to Nationally Determined Contributions, which describe the targets that they seek to achieve and the climate mitigation measures that they will pursue.

The National Climate Change White Paper[10] sets out South Africa's international obligations in terms of the UN Framework Convention on Climate Change and the Kyoto Protocol, and acknowledges the need to adapt to the inevitable impacts of climate change while also reducing South Africa's greenhouse gas emissions. It requires that climate change is dealt with in a way that also addresses the country's national priorities, including sustainable development, poverty eradication and job creation and is arranged around a number of strategic priorities including risk reduction and management, mitigation actions with significant outcomes, policy and regulatory alignment, integrated planning, and informed decision-making and planning.[11]

Climate change resilience is a pressing issue for Cape Town in the management of its water resources, and is a relevant factor that must be assessed and considered in applications for authorisations of projects which have potential climate change implications. The PHA is central to the city's water and food resilience.

[9] See *Earthlife Africa, supra,* at par 83.
[10] G.N. 757 in *Government Gazette* No 34695, 19 October 2011.
[11] J Glazewski (ed) *Environmental Law in South Africa* (2013) at 3-29.

In our courts in *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others*[12] and in a recent Western Cape High Court review application brought by the Campaign relating to a mixed-use development in the PHA, South Africa has recognized the importance of addressing climate change.[13]

- In *Earthlife Africa*, the court stated:

> *"Climate change poses a substantial risk to sustainable development in South Africa. The effects of climate change, in the form of rising temperatures, greater water scarcity, and the increasing frequency of natural disasters pose substantial risks. Sustainable development is at the same time integrally linked with the principle of intergenerational justice requiring the state to take reasonable measures protect the environment "for the benefit of present and future generations" and hence adequate consideration of climate change. Short-term needs must be evaluated and weighed against long-term consequences."*[14]

The Campaign submits that the PHA has potential to provide a massive carbon sink for the mitigation of the carbon dioxide produced by the City of Cape Town. Furthermore, the PHA plays an important role in building resilience to climate change owing to its roles in ensuring the clean and un-obstructed recharge of the Cape Flats Aquifer, which has now via MAR/CFAM become an important source of water in a much drier future, as well as its ability to absorb future environmental shocks such as intense winter storm flooding. The paleo channel of the CFA beneath the PHA holds more water in it than the total of the five dams which supply the city with water.

In the case of the PHA, these impacts are directly linked to the aquifer, and the relevance of the PHA in respect of climate change are undeniable. The PHA plays an important role in climate change mitigation as it has the potential to absorb and store carbon. In the context of water scarcity and climate change in the Western Cape, the importance of the preservation of the Cape Flats Aquifer is high. The Applicant's failure to assess climate change impacts and risks constitutes a fundamental and material flaw in both the EIA and WUL application processes.

[12] *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others* (65662/16) [2017] ZAGPPHC 58; [2017] 2 All SA 519 (GP) (8 March 2017).
[13] *Philippi Horticultural Area Food & Farming Campaign and Another v MEC for Local Government, Environmental Affairs and Development Planning: Western Cape and Others* (16779/17) [2020] ZAWCHC 8 (17 February 2020).
[14] At para 82.

Mitigation

The “rehabilitation” paragraph (p53) is written with very technical and excessive jargon to make it sound very promising. Firstly, the water quality is not discussed, which is problematic as the water will be highly salinated post-mining. Therefore, it doesn't matter what hydroperiocity they achieve, the plants will not grow if the water is the incorrect pH etc. The proposal to eternally desalinate, as the mitigation option, is not a workable proposal.

Secondly what is of major concern is that this entire post-mining rehab into an "improved" wetland is wholly reliant on the applicant not mining through the clay layer, upon which the wetland is perched. If this perched aquifer / wetland layer is breached, not only will all the mining impacts be of an order of magnitude greater from a groundwater and hydrogeological perspective, but ecologically the entire area will lose the ability to maintain wetland soils (of any hydroperocity) and along with it any agricultural potential.

Thirdly, is the applicant claiming that the post-mining rehab will be an "improvement" through the design and construction of one larger consolidated wetland? We stress here that post-mining rehab will NEVER be an improvement of the current wetland system, despite the wetland and surrounding landscape being highly utilized. Mining is extremely destructive and the likelihood of successful wetland recreation is low as this has not been proven enough in post-mining landscapes anywhere is SA (see pic of the current Consol mine, “post rehab” below). Despite the wetland being highly utilized for farming most of the year, the ecological functionality from and faunal perspective is still highly intact as serving as a biodiversity hotspot. It's all well and good to aim to "return" this wetland to the birds at the end, but where will these wetland birds and other faunal species go in the three decades in between? Especially in the light of climate change where such wetlands available to keeping these species supported will become fewer and further between?

Finally, the SOIL on the land is, most emphatically, required to grow food to deliver on the progressive realisation of food security. The wetland soils and its catchments provide this in abundance. The loss of functioning intact arable productive soils is THE unacceptable loss with the proposal. This land and wetland is a multi-use, highly productive, social-ecological keystone area that cannot be replaced, recreated or rehabilitated.

F. FATALLY FLAWED WUL APPLICATION

The Campaign submits that the WUL application is fatally flawed for a number of reasons. No information has been advanced by the applicant in this second WUL attempt to the contrary.

The WUL application documentation is fatally flawed because, *inter alia*, it failed to assess adequately or at all the following relevant and significant issues:

1. failure to adequately assess impacts on the MAR program, propose mitigation measures, or write such measures into the WUL terms and conditions;

2. failure to assess climate change and water security impacts at all;

3. failure to adequately declare and assess cumulative impacts;

4. failure to assess impacts on food security (as a beneficial use of water in the public interest).

5. In addition, the use of the land for mining is contrary to the Western Cape government's target to allocate a third of the PHA to land reform in 2014. To date, only 50 hectares of the 3 000 hectare PHA has been given to land reform. See EESP[15] in respect of "the role of the PHA in securing the future of the city". These land reform targets are not considered in the WUL application documents.
6. Failure to declare the conflict of interest in having Umvoto – the primary service provider of the MAR program under contract to the COCT – as the EAP for this particular WUL application, where the main concern is the effect of the mining on a R2.6bn public interest MAR program.
7. Failure to propose or attempt to negotiate offsets:
    - .7.1 Wetland offset: irreversibly destroyed
    - .7.2 Carbon emissions offset for the city
    - .7.3 Farmland offset: irreversibly destroyed
    - .7.4 MAR / CFAM: added costs of desalination and water filtration will accrue to the public purse

The approach by the environmental assessment practitioner to exclude these assessments represents a fundamental misinterpretation of the purpose of the assessment process to inform the decision, to

[15] https://www.scribd.com/document/318265483/The-Role-of-Philippi-Horticultural-Area-in-Securing-the-Future-of-the-City

evaluate the impacts of the proposal on the environment as it exists at the time of the assessment, as well as potential future environmental implications for the site. As a result, the WUL application was materially limited and key relevant factors were not placed before the Department.

In the *PHA Food & Farming Campaign* judgment of the Western Cape High Court,[16] the learned judge confirmed that "where a decision-maker is directed by law to consider particular issues when considering an application, a risk-averse and careful approach especially in the face of incomplete information should be adopted; and the failure to take relevant considerations in account risks a determination that the decision reached was irrational or unreasonable". Further, the judge held that "in relation to an aquifer, an assessment of the impact of development on it, having regard to the rights set out in S24 of the Constitution and the provisions of NEMA and its regulations, required consideration of the impact of the rezoning and subdivision sought in relation to the aquifer as a large underground natural resource, its state, failure and impacts on issues related to water scarcity and climate change".[17]

What was required was a comprehensive and up-to-date assessment of the health of the aquifer and the impact that the proposed development will have on the aquifer given climate change and water scarcity in the area. This lack of information limited the ability of the responsible authority to have regard to relevant considerations, and accordingly it was correct in taking a risk averse and cautious approach in the face of incomplete information.

[16] *Philippi Horticultural Area Food & Farming Campaign and Another v MEC for Local Government, Environmental Affairs and Development Planning: Western Cape and Others* (16779/17) [2020] ZAWCHC 8 (17 February 2020)
[17] Paragraph 130.

G. CONCLUSION

As set out above, the Campaign respectfully requests the Water Tribunal to refuse the Applicant's application for a water use licence. We have set out above how the use of water for mining cannot be an appropriate use of scarce water supplies. In summary, the Campaign submits:

1. that the use of water for mining is not an efficient or beneficial use of water in the public interest;

2. that the WUL application was fatally flawed because it failed:

    2.1 to adequately assess impacts on the MAR program, propose mitigation measures, or write such measures into the WUL terms and conditions;
    2.2 to assess climate change and water security impacts at all
    2.3 to adequately declare and assess cumulative impacts
    2.4 to assess impacts on food security
    2.5 to consider land reform targets, not considered in the WUL application documents.
    2.6 To declare the conflict of interest in having the MAR/CFAMS service provider as the EAP in this application.
    2.7 To propose or attempt to negotiate offsets:
        2.7.1 Wetland offset: irreversibly destroyed, irreplaceable
        2.7.2 Carbon Emissions offset for the city
        2.7.3 Farmland offset: irreversibly destroyed
        2.7.4 MAR/CFAM: added cost of desalination and water filtration will accrue to the public purse

3. that material developments since the application was submitted – which have not been addressed as required - render the application devoid of crucial information and provide a reasonable and rational basis on which to refuse the application.

It is the SOIL on the land that is required to grow food to deliver on the progressive realisation of food security. The wetland soils and its catchments on the application land provide this in abundance. The loss of functioning intact arable productive soils is THE unacceptable loss with the proposal. This land and

wetland – unique and irreplaceable – is a multi-use, highly productive, social-ecological keystone area that cannot be replaced, recreated or rehabilitated.

Yours sincerely

NA Sonday

Chairman, PHA Food & Farming Campaign