



1 March 2023

Department of Planning and Environment

OBJECTION: Holcim Salt Ash Sand Operation

State Significant Development Application SSD-9099356

We have no objection to this submission being published in full, without any redaction.

Page References are to the EIS¹ unless otherwise indicated.

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ABOUT US

Tomaree Ratepayers and Residents Association Incorporated (TRRA) has since 2008 actively represented the Tomaree community on issues such as planning and development, protecting the built and natural environment, economic development, tourism, culture, and other grass roots issues.

OVERVIEW

TRRA submits this project is not acceptable on multiple grounds and should be refused.

The project poses unacceptable risks to water quality, potentially impacting the quality and reliability of the water supply for Port Stephens and the Lower Hunter region. The risks of environmental harm to water and local biodiversity on site and in the adjacent National Park have not been sufficiently mitigated and are therefore unacceptably high. The potential impact to the community of the 24-hour operation, ~3x increase in heavy truck movements on an average day, and increased road traffic noise will degrade the amenity and quality of life of residents along the haulage route, particularly on Cabbage Tree Road. All road users in the area will be impacted by increased congestion on the road network, especially at the

¹ Environmental Impact Statement prepared for Holcim (Australia) Pty Ltd by Element Environment, 2 December 2022



Tomago Road intersection with the Pacific Highway and through to Hexham, as well as impacts to road conditions and road safety along the haulage routes.

The adverse community and environmental impacts of the project, especially the increased risk to groundwater, are on balance not in the public interest and, given the 30-year lifespan of the project, not consistent with key objects of the *Environmental Planning and Assessment Act 1979*.

ADVERSE IMPACT ON WATER

The EIS confirmed that the proposed dredging operation to 30m below the water table will expose pyritic sulfides to oxygen in the dredge pond, with a further potential for increased concentrations of dissolved metals (particularly Iron, Manganese, Aluminium, Copper, Nickel, and Zinc).² The site is located on the Stockton Sandbeds which are hydraulically connected to the Tomago Sandbeds of the Tomago Groundwater source.³

Hunter Water Corporation (HWC) and DPE Water have for many years repeatedly raised significant water quality risks in relation to sand dredging in our region – in preliminary discussions for this proposal (refer SEARS) as well as other sand dredging proposals in the Tomago and Stockton Sandbeds:

- The risks were described as significant “due to the existing beneficial use categories applicable to the Stockton Groundwater Source being ‘raw water for drinking water supply’ and ‘ecosystem protection’, meaning very low concentrations for metals and other soluble salts.”⁴
- Conditions to protect groundwater have been imposed on all current sand mines in the region: “Best practice for existing operations is considered to be extraction to a depth of no more than 0.7 metres of maximum predicted groundwater levels, with the final landform to be a minimum of 1 metre above the maximum groundwater level.”⁵
- These conditions are based on prior experience of groundwater contamination from historical dredging for mineral sands in the area, as well as a sand dredging operation in the Tweed LGA with a similar soil profile to Tomago Sandbeds:
 - “Sand dredging has occurred in the adjacent Tomago Water Source that included the implementation of various management practices to monitor and treat groundwater pH levels. These practices failed to prevent a change to the beneficial use of groundwater resource due to the dredging. Prior to development consent, water quality deterioration was predicted by the proponent to be low risk, with only a short-term transient rise in metals resulting from the oxidation of pyritic and organic rich material. However, observed water quality impacts remain two decades post mining with a

² EIS, Executive Summary, p xiii

³ EIS, sec. 2.5.7, Groundwater

⁴ Letter from DPE Water to DPE, 20 Aug 2020, Boral Stockton Sand Quarry, SSD-9490 (proposal for sand dredging to -15m AHD and a ~23 ha open lake as a final landform)

⁵ Hunter Water Corporation letters to DPE, 14 Apr 2020 & 29 Jan 2021, Boral Stockton Sand Quarry, SSD-9490; see also DPE Water letter to DPE, 12 Apr 2021, Bobs Farm Sand Mine Project, SSD-6395; and conditions of consent for Lot 220, Mackas Sand Project, MP 08_142, located next to Holcim Salt Ash Sand Operation

trajectory to continue for several more decades requiring ongoing monitoring and reporting without prospect of remediation. HWC has lost the use of several borelines as a consequence and these assets have not been reinstated to date.”⁶

- “The observed outcomes from deep sand dredge activities located ... in the Tweed LGA in Holocene age sands, both predicted negligible impact, but both resulted in elevated metal concentrations in groundwater.”⁷

The SEARS for this project requested a water management plan with details of the mitigation and management strategy for identified water quality risks; however only an evaluation plan has been put forward, which notes that a targeted feasibility evaluation is still required “to quantify performance relative to the water quality objectives.”⁸ The preliminary evaluation report also noted that a number of mitigation options were rejected as being cost prohibitive and one of the options still being evaluated is subject to a “financially viable design” being identified.⁹ Thus, questions remain about both scientific and cost feasibility of the mitigation options.

The risk of failing to treat impacts on water quality in the dredge pond increases the risk profile for water management in the region to an unacceptable level.

- As noted in the EIS, the Stockton Sandbeds aquifer is currently held in reserve in case of drought. All three sandbed aquifers on the peninsula (Tomago, Tomaree and Stockton) are recharged by rain and, as Hunter Water explains, “our water levels drop faster than most other major Australian urban centres during hot, dry periods because we have shallow water storages and high evaporation rates.”¹⁰
- The Tomago Sandbeds aquifer – used as a back-up water supply for the Grahamstown Dam (providing water to Newcastle, the Lower Hunter, and parts of Port Stephens) – has already been impacted by prior contamination events. In addition to the loss of several borelines from the dredge-mining contamination mentioned above, Hunter Water has isolated a further 2 bores in the aquifer as a precaution against poly-fluoroalkyl substances (PFAS) contamination from RAAF Base Williamstown.¹¹ The contamination plume continues to be monitored.
- There are also natural geological constraints on the use of water from this aquifer. As explained by Hunter Water: “One of the reasons we don’t operate the rest of the [Tomago] Sandbeds continuously is due to the high cost of treating the water. Due to its geology, the Sandbeds have naturally occurring iron and manganese in the water. This is not a health concern, but it can discolour the water. These minerals are *costly and difficult to remove at our water treatment plant*” (our emphasis).¹²

⁶ DPE Water letter to DPE, 20 Aug 2020, Boral Stockton Sand Quarry, SSD-9490

⁷ DPE Water letter to DPE, 16 Mar 2022, Boral Stockton Sand Quarry, SSD-9490

⁸ EIS, Preliminary Evaluation of Sand Dredge Pond and Groundwater Treatment Options, Appendix F, Executive Summary

⁹ Ibid., sec. 5.4 “Granular FTTZ, which would last longer than a deposited lime layer, could be installed after Stage 7 completion after a final stable DP wall has been established, if required (and a financially viable design could be identified).”

¹⁰ <https://www.hunterwater.com.au/our-water/water-supply/dams-and-catchments/tomago-sandbeds>

¹¹ Hunter Water, Tomago Sandbeds Fact Sheet, May 2019

¹² Ibid.

- The third aquifer, Tomaree Sandbeds, is the primary water source for the Tomaree peninsula community in Port Stephens; water is carefully managed by Hunter Water, in part due to the “limited ability for the Peninsula to use alternative water sources.”¹³

Australian water quality regulations are stringent due to public expectations about reliable and high-quality water and a corresponding low tolerance for risk.¹⁴ Should the water treatment options for the dredge operation fail, the groundwater source will need additional treatment by Hunter Water before it can be used. The costs of investigation and treatment by Hunter Water will most likely be borne by the community. Based on experience with prior water contamination events on the sandbeds, the impacts may be difficult to reverse and could last decades.

ADVERSE IMPACT ON LOCAL BIODIVERSITY

Groundwater drawdown: As noted above, the Stockton Groundwater Source of the Stockton Sandbeds provide beneficial use as a reserve drinking water supply and for ‘ecosystem protection’. In addition to the water quality risks mentioned above, the dredge pond is also expected to result in groundwater drawdown depending on the size, depth and evaporation rate of the pond.¹⁵ The Worimi National Park is next to the Holcim Salt Ash site on the southern boundary and the EIS Groundwater Impact Assessment Report indicates that the Stage 7 drawdown is expected to be up to 0.5m at the park boundary and up to 0.2m in the forested areas to the south.¹⁶

Being a protected area, the subsurface ecology of the national park is as important as the surface ecology. The area directly south and east of the site is also mapped as containing terrestrial groundwater dependent ecosystems.¹⁷ The EIS indicated that the drawdown was expected to be 25 – 40% of the natural 2m seasonal variation near the boundary with the park, declining to ~10% further south; however, as far as we could determine, there was no environmental assessment of the long-term impact of groundwater drawdown in the national park.¹⁸

Noise: A similar impact applies to noise. While most of the highest impact noise from the project was expected to be contained within the site¹⁹, there were no current (before) noise contour maps to show the expected change in day and night-time noise levels in the national park. The Biodiversity Development Assessment Report indicated that there could be an impact from noise, but no mitigation actions were proposed in the plan.²⁰

We note that many development applications in the region, including this one, use proximity to national parks and conservation lands to mitigate biodiversity loss from their land

¹³ Hunter Water, Catchment Management Plan, January 2011

¹⁴ Bailey, D. & Turner, D. (2013). *Managing Water Quality in the Hunter*. 7th Annual WIOA NSW Water Industry Operations Conference

¹⁵ EIS, Groundwater Impact Assessment Report, Appendix E, Executive Summary, p ix

¹⁶ Note: The EIS, Groundwater Impact Assessment Report, indicates drawdown was modelled at 0.5m at the southern boundary [Executive Summary, p x] but the gradients supplied in Figure 7.10, [p 93] indicate the drawdown is ~0.8m. Clear mapping of the modelled groundwater drawdowns would be helpful to understand water level implications on habitat and terrestrial groundwater dependent ecosystems.

¹⁷ EIS, Groundwater Impact Assessment Report, Appendix E, Figure 4.21, p 65

¹⁸ Ibid., Executive Summary, p x

¹⁹ EIS, Noise Impact Assessment Report, Appendix J [Noise contour maps in Appendix E of the report]

²⁰ EIS, Biodiversity Development Assessment Report, Appendix H, Table 16, p 55

clearing. In this case, where the site is next to the national park and the modelling indicates an impact, it's incumbent on the Proponent to ensure the development does not result in environmental harm to this protected area.

Land Clearing: The 1991 EIS from ACI Industrial Minerals (DA 5499-91) represented that "Most of the project site will be rehabilitated and revegetated on a staged basis" ... "with full rehabilitation occurring both during and after sand extraction;" and the project EIS confirms that existing operations comprise "progressive rehabilitation of extraction areas."²¹ The Proponent is now proposing to clear ~19 ha of native vegetation for a total disturbed footprint of ~35ha²² and potentially replace the vegetation with a large open pond. While the project proposes to backfill the dredge pond as a preferred final landform, this is contingent on ~10M tonnes of suitable backfill being available.²³ If suitable backfill cannot be obtained, the dredge pond will remain, and the net result could be permanent loss of native vegetation and terrestrial habitat over most of the site.²⁴

Backfilling the dredge pond was also noted as a mitigation action for the following:

- to reduce evaporation levels by reducing the size of the dredge pond;
- to reduce negative impacts from edge effects to the neighbouring forest (eg, increased temperature, decreased vegetation density); and
- presumably as a factor behind the 1.75 ha area used in the BAM offset calculation rather than the full area of disturbance for the dredge pond.²⁵

The Economics Assessment Report indicated no incremental rehabilitation costs were included in the Cost Benefit Analysis (CBA).²⁶ This raises the question as to whether the costs to acquire tonnes of quality backfill to replace excavated sand have been fully factored into the CBA and whether the fully or partially back-filled final landform options are in fact feasible. Just as Proponent is expected to explain how it will acquire sufficient water to meet the project requirements, so too should Proponent explain how it will acquire sufficient, suitable backfill to mitigate key risks.

The cumulative effect of these risks would not be a desirable or environmentally sustainable outcome in line with community values. In the latest Port Stephens Liveability Index survey (2020), residents in every Port Stephens community listed 'Elements of the Natural Environment (natural features, views, vegetation, topography, water, wildlife)' as a Top 5 value and strength that must continue to be protected. Eleven of 14 of these communities, including Salt Ash, listed 'Protection of the Environment' as an underperforming area and a top priority for improvement.²⁷

²¹ EIS, Proposed Extension to Existing Sand Extraction Area ACI Salt Ash Operations, Aug 1991 (Outline Planning Consultants), Executive Summary, sec. 0.5, pp iii; EIS, Biodiversity Development Assessment Report, Appendix H, sec. 1.2

²² Ibid., Sec. 6.2.1, p 51 and Executive Summary, p ii

²³ Derived calculation based on total sand volume to be extracted and replaced with VENM; EIS, sec 3.3, p 112

²⁴ EIS, sec 3.1.12, p107 "This option assumes that no suitable fill can be sourced and the full extent of the dredge pond will remain in place." See also Figure 3.1, p 94

²⁵ Note: it's hard to understand the validity of the offset calculation given the commitments for rehabilitation under the existing consents and the potential for permanent habitat loss on a substantial portion of the site.

²⁶ EIS, Economic Assessment Report, sec 4.5.1, p 19

²⁷ <https://www.portstephens.nsw.gov.au/development/strategies-and-planning-guides/liveability-index>

ADVERSE IMPACT ON ROADS, TRAFFIC CONGESTION, SAFETY AND NOISE

The Holcim Salt Ash sand operation proposes to increase heavy truck movements on the local road network by an additional 222 heavy trucks on an average weekday, which is almost 3x the current number using the site. The primary haulage route is via Tomago Road, Cabbage Tree Road and Nelson Bay Road which all include lengthy single carriageway sections. The significant increase in heavy truck movements will take a toll on road conditions with impacts to road safety and frequency of road repair. While the EIS factored the proposed expansion of the Boral Stockton Sand Quarry into the cumulative impact assessment, there was no mention of the Bob's Farm Sand Mine Project SSD proposal, which at peak is projected to generate an additional 400 heavy trucks on Nelson Bay Road, with 50% using Cabbage Tree Road and Tomago Road as the haulage route.²⁸ Tomaree and Tilligerry peninsula residents and workers all travel through the area frequently, along with tourist traffic, and will be impacted by the cumulative impact of increased heavy truck movements.

In addition, although the EIS found acceptable impacts to intersections and road traffic noise along the haulage route, some of the modelled results are inconsistent with the lived experience of road users and residents in several respects:

- Two existing bottleneck sections on the haulage route – at the intersection of Tomago Road and the Pacific Highway and on the Pacific Highway between Tomago Road and Hexham – were not included in the model. Road users already experience lengthy traffic backups during peak periods at these sections, made worse during holiday seasons. 90% of the increased heavy truck traffic from the project is projected to flow through these bottlenecks.
- The EIS noted that night-time road traffic noise measures were already 5dB higher than the NSW Road Noise Policy (RNP) criteria at Cabbage Tree Road and at Nelson Bay Rd east of Medowie Road; daytime measures also exceeded threshold criteria in these sections. The model assumed an 80% day / 20% night-time split for the distribution of truck traffic but made no mention about operational assumptions around clustering truck movements, for example in the early hours of the morning. Accordingly, it's fair to consider that the significant increase in heavy truck movements every hour during the day and at certain hours during the night or early morning, Monday - Friday, will likely be perceptible and have intermittent adverse impacts to residences along the carriageway (notwithstanding the 2dB assumption mentioned in the RNP). This would be an unacceptable impact on quality of life for these residences for up to 30 years. To our knowledge, no other current sand mines in our region are transporting over 24 hours.²⁹

²⁸ Refer EIS, Traffic Impact Assessment Report, Appendix K, sec. 5.4 [Assessment of Cumulative Impacts] and Bob's Farm Sand Quarry, SSD-6396 (yet to be determined), EIS Traffic Impact Assessment (Jan 2021), sec. 4.3.2 and Figure 4-1

²⁹ Note: the project description on the Holcim website, accessed 20 Feb 2023, indicates that there are no proposed changes to the hours of operation, which are currently Mon-Thu 6am – 10pm; Fri 6am – 6pm; Sat 6am – 2pm.

<https://www.holcim.com.au/salt-ash-sand-quarry> We note that this is inconsistent with the EIS.

CONCLUSION

TRRA recognises that the project is expected to generate additional local employment opportunities and that the planned operation has been adjusted in certain areas to reduce some of the impacts. However, on balance, the economic benefits and proposed mitigation plan are not sufficient to outweigh the significant risks and adverse social and environmental impacts that remain.

The risks to water quality have not been sufficiently mitigated and the consequences of failure could have a lasting impact on the whole community, including Newcastle and the Lower Hunter. Questions remain about impacts to protected habitat in the national park and several mitigation actions are dependent on obtaining suitable quality backfill, which was stated to be uncertain. Bottleneck points on the road network that are already bad will get worse with increases in heavy truck traffic, including flow-through impacts to road condition and road safety. Road noise that is already higher than thresholds in the Road Noise Policy on sections of the route will get worse, with noise disruption lasting up to 30 years.

Taken as a whole and considering these factors in combination, the project does not achieve an appropriate balance to meet objectives for sustainable development under the EP&A Act **and should be refused.**

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