

APPENDIX 6. GROUNDWATER, SURFACE WATER AND PFAS

Preliminary Documentation

Cabbage Tree Road Sand Quarry - (EPBC 2016-7852)

The following background documents are included in this Appendix:

1. Umwelt, November 2015. Groundwater Impact Assessment.
2. Umwelt, October 2016. Potential for Sand Extraction to Increase Flooding Impacts in Surrounding Area.
3. RCA, June 2016. Groundwater Assessment.
4. Umwelt, November 2016. Response to Hydro Simulation Peer Review 1.
5. Umwelt, January 2017. Response to Hydro Simulation Peer Review 2.
6. Kleinfelder, February 2017. Soil Sampling Assessment.
7. Kleinfelder, June 2017. Water Sampling Assessment.
8. Kleinfelder, June 2017. Contingency Management Plan for Potential PFAS Disturbance during Construction Activities.
9. Contamination Water Working Group Comments on the EIS; and Correspondence with Hunter Water Corporation: consultation to develop specific controls and management practices for the site operations.
10. Williamstown Contamination Expert Panel Letter.

OUT16/11221

3 March 2016

Mr Howard Reed
Director - Resource Assessments
Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

Dear Mr Reed

Williamtown Contamination Water Working Group Comments on the EIS for the Cabbage Tree Road Sand Quarry Project

On 4 February 2016, Mr Colin Phillips, NSW Department of Planning, presented to the Williamtown Contamination Expert Panel regarding the Cabbage Tree Road Sand Quarry Project proposal. Following this the Expert Panel asked its technical sub-group, the Water Working Group (WWG), to review the project's Environmental Impact Statement (EIS) with a focus on the perfluoroalkyl sulfonate (PFAS) contamination resulting from the historical usage of the chemicals in firefighting foams at the Williamtown RAFF Base. The WWG comments are attached.

The WWG concluded that as long as the operations remain above the water table the sand mine presents a low risk with regards to PFAS exposure or contribution to the spread of PFAS.

Further the WWG suggests it would be worth clarifying whether any aspect of the site establishment or operation would involve interfering with the water table (i.e. pipework connections to water mains, etc.). If this is a possibility, then there should be a mechanism to communicate the potential contamination risks and specify requirements for control measures (e.g. through appropriate measures documented in a Construction Environmental Management Plan).

If you seek clarification please contact Dr Chris Armstrong, Director, Office of NSW Chief Scientist & Engineer, 02 9338 6745, or chris.armstrong@chiefscientist.nsw.gov.au.

Yours sincerely



Mary O'Kane
NSW Chief Scientist and Engineer
Chair, Williamtown Contamination Expert Panel

Attachment 1 – Water Working Group – Comments on EIS
Attachment 2 - Figures

Williamtown Water Working Group Comments on the EIS for the Cabbage Tree Road Sand Quarry Project

The Williamtown Water Working Group (WWG) has reviewed the EIS for the Cabbage Tree Road Sand Quarry Project. This memo summarises the comments arising from the WWG's review and are focused on the perfluoroalkyl sulfonate (PFAS)-based chemicals contamination resulting from historical usage of PFAS containing firefighting foams at the Williamtown RAAF Base.

Comments

Development proposal

- The development proposal is to extract sand to within 1m of the historic high water level (i.e. the intention is not to intersect the water table)
- No groundwater extraction is proposed to supply any of the water requirements for the sand mining operation. They intend to rely on mains water for their needs (which, according to their process description, are small as they will not be washing sand on-site). Water use will be for amenities blocks on site and dust suppression.
- The site is to the south, and slightly west, of the Facility 479 and 374 PFAS source areas on the Williamtown RAAF Base (see attached Figure)

Surface Water

- The EIS indicates that there are no water courses on the site.
- The Sampling, analytical and Quality Plan (SAQP) for the Stage 2B environmental assessment of the Williamtown site (Fig 4, see attached) indicates a tributary of the Dawson Drain extending across a portion of the site, however this may be an ephemeral surface drain.
- PFOS was reported at 0.02 µg/L in Dawson Drain where it intersects Cabbage Tree Rd, which appears to be ~200 metres east of the sand mining site boundary.
- The SAQP included a proposed sampling location (DD8) right at the sand mine site boundary (see attached Figure), but no results have been noted by the WWG to date.

Groundwater

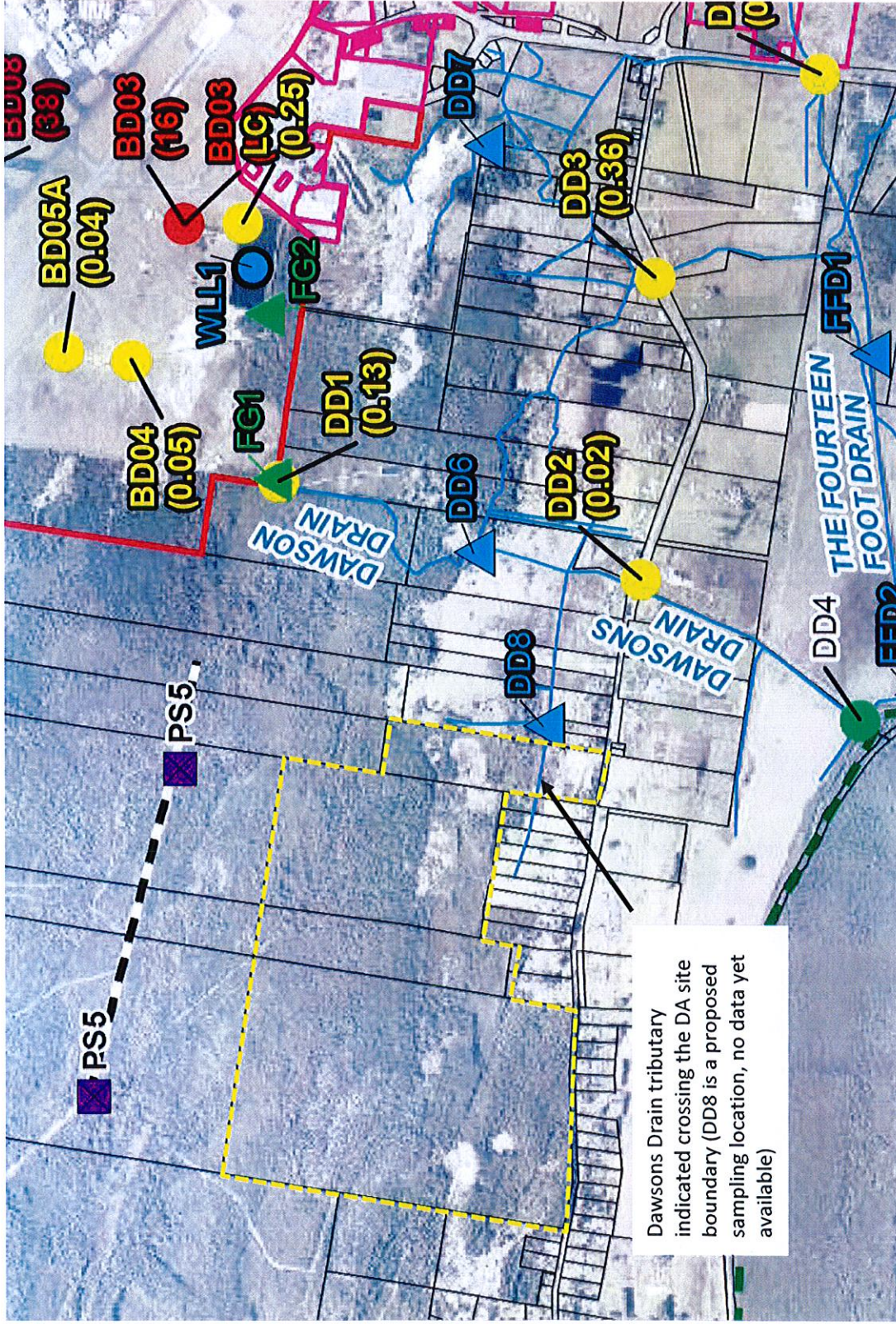
- Based on an inferred southward groundwater flow direction in this area, a plume issuing from the Facility 479 and 374 would likely pass close to, but to the east of, the sand mining boundary
- Nested monitoring wells MW107S/I/D are located approx. midway between the sand mining site and the Facility 479 and 374 source areas – presumably these wells were intended to attempt to define the western boundary of PFAS impacted groundwater. Results from URS (2015) indicate:
 - PFOS was not detected in all three wells
 - PFOA was detected at 0.01 µg/L in the intermediate well (11m depth), and not detected in the others
- Monitoring well MW124 (7.5 m depth) is located on to Cabbage Tree Rd, adjacent to the southern boundary of the sand mining site. Results from URS (2015) indicate:
 - PFOS was detected at 0.01 ug/L
 - No detection for PFOA

PFAS risks for the proposed development

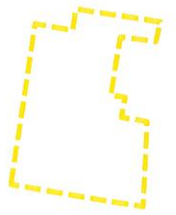
- The conservative assumption should be that there are low concentration PFAS impacts to groundwater beneath the sand mining site, and possibly in surface water close to the site, but so far outside the site boundary (especially since no permanent surface water course was indicated on the site).
- Because the operation of the mine does not propose to intercept groundwater or extract groundwater, the risk of site workers being exposed to PFAS impacted groundwater are likely to be low.
- For the same reason, the proposed development also appears unlikely to exacerbate the spread of, or the risk profile with respect to PFAS impacted surface water or groundwater.
- The potential PFAS exposure mechanisms could include:
 - a significant water table rise in response to rainfall, causing the water table to daylight once the base mining levels are reached. However, the probability of this is low if the mining operation is diligent about maintaining a vertical buffer between the water table and the base mining level. This should be confirmed through water level monitoring.
 - Construction or maintenance work, if any, extending below the water table. It was unclear whether this would be required as part of the proposed development. If so, the risk of exposure to PFAS impacted groundwater should be managed through the Construction Environmental Management Plan process.
- The approval should be conditioned to exclude interception of the water table (or at least, if proposed in the future, the risks will need to be evaluated in light of the most recently available data)
- The approval should also exclude use of bore water for water supply. They don't propose to need this, but there are old bores on the property so it should be made crystal clear that extracted groundwater should not be used for potable or non-potable (i.e. dust suppression) purposes.
- While the proposal indicates there are no surface water features on the site, it is unclear whether in a large storm event there could be flooding and back flushing from Dawson Drain up an ephemeral drainage that crosses the site. This is most likely a low risk – it is suspected that the drainage direction would be from the site towards Dawson Drain, not the other way around.

Conclusion and further clarification

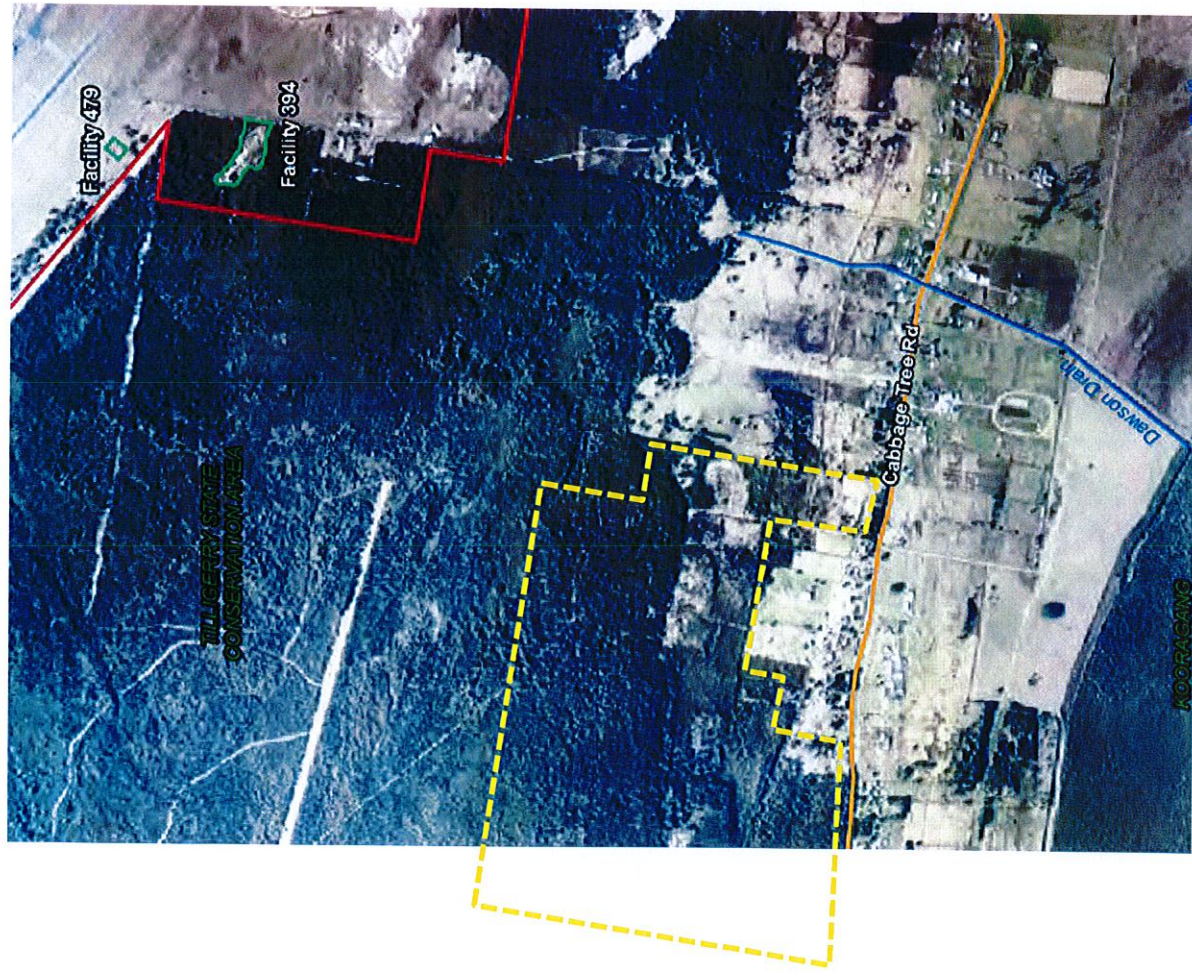
- The sand mine presents a low risk with respect to PFAS exposure, or contribution to the spread of PFAS, as long as operations remain above the water table.
- The WWG believe it would be worth clarifying whether any aspect of the site establishment or operation would involve intersecting the water table (i.e. pipework connections to water mains, etc.) as if this is a possibility then there should be a mechanism to communicate the contamination risks and specify requirements for control measures (e.g. through appropriate measures documented in a Construction Environmental Management Plan).



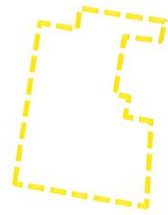
Source: AECOM Australia Pty Ltd (2015) Sampling Analysis and Quality Plan, RAAF Williamtown Stage 2B Environmental Assessment (Draft), Figure 4



Sand mine development proposal site boundary



Source: URS Australia Pty Ltd (2015) Stage 2 Environmental Investigation, AFFF PFAS, RAAF Base Williamtown, Williamtown, NSW



Sand mine development proposal site boundary



Hunter Water Corporation
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(02) 4979 9468 (F)
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hunterwater.com.au

29 October 2014

Our Ref: 2014-1057/2.003

Castle Quarry Products
PO Box 826
Newcastle NSW 2300

Dear Sir/Madam,

PRELIMINARY SERVICING ADVICE FOR PROPOSED DEVELOPMENT - WILLIAMTOWN

Thank you for your request for Hunter Water's preliminary advice for the provision of water and sewer services to the proposed development of a sand quarry at Lot 1 DP 224587, Lot 121 DP 556403, Lot 11 DP 629503 & Lot 1012 DP 814078, 398 & 282 Cabbage Tree Rd, Williamtown.

Preliminary servicing advice is not a commitment by Hunter Water. This advice may change substantially due to a range of factors. In particular, you should note that water and sewer systems are dynamic by nature and, as such, capacity availability and system performance varies over time. As a consequence, the advice provided in this correspondence, while based on Hunter Water's current system knowledge and performance, is to be considered as indicative only. A detailed analysis of available capacity will be undertaken upon lodgement of a Notice of Formal Requirements.

If you proceed with a development application you will need to lodge a further application with Hunter Water to then determine the formal requirements that shall apply. Hunter Water will then issue a **Notice of Formal Requirements**. You will need to comply with each of the requirements in this Notice for the issue of a Section 50 Compliance Certificate for the specific development.

Hunter Water anticipates that the development will place an additional demand of approximately 30 to 40 kL/day on the water supply system and has reviewed system capacity and performance on this basis. As a result, Hunter Water's preliminary advice is as follows:

Water Supply

The property has frontage to a DN250 CICL watermain along Cabbage Tree Road. The height of the connection point is at approximately RL 2.9m AHD. The location of the watermain is shown in **Figure 1** attached.

There is currently sufficient capacity in the water supply system. However, you should note that water systems are dynamic by nature and, as such, capacity availability and system performance varies over time. As a consequence, the advice provided herein regarding servicing availability is indicative only. A detailed analysis of available capacity will be undertaken upon lodgment of a Notice of Formal Requirements.

Wastewater Transportation

The site of the proposed development is remote from the existing wastewater transportation system. The site is approximately equidistance (approximately 4km) from both Williamstown 1 WWPS and Tomago 1 WWPS and the site could potentially access either pump station. Both stations currently have spare capacity, however, as noted above, a detailed analysis of available capacity will only be undertaken upon lodgment of a Notice of Formal Requirements. At this stage it is unclear whether a connection to the wastewater network will be required. If a connection is proposed, a developer funded servicing strategy will be required to determine the most suitable connection option. The wastewater servicing strategy would as minimum include:

- Lot layout
- Accurate loading information
- Pump station detail (existing or proposed)
- Connection options to existing or proposed WWPS catchment
- Upgrades or augmentations required to existing system
- Timing of connection
- Emergency storage
- Surrounding potential future developments

Wastewater Treatment

There is currently sufficient capacity in the Raymond Terrace WWTW if a connection to the wastewater network is proposed.

Water Resources

The development falls within the Tomago Sandbeds Special Area which protects the Tomago Sandbeds drinking water source. These sandbeds supply approximately 20-25% of drinking water to the Lower Hunter. In accordance with the Hunter Water Regulation 2010, the ongoing ecological health of this catchment is of a paramount importance to the ability of Hunter Water to provide safe drinking water to its customers.

It should be noted that the Hunter Water Regulation precludes extractive activities (including sand quarrying) within the gazetted Tomago Sandbeds catchment area unless the activity is licenced by the Director General of Trade and Investment.

Hunter Water is concerned about the potential impact of development in this area on both the quality of water (due to potential contamination) and the quantity of water (due to any onsite drainage and extraction) available to Hunter Water for extraction. In order to adequately assess the potential impact of this development Hunter Water requests that the proponent:

1. Provides an assessment of the direct and indirect impacts on groundwater and surface water, including an assessment of the impacts on the existing sand aquifer, groundwater and surface water resources, existing user entitlements, and on groundwater dependent and riparian ecology. This assessment must provide consideration of the potential impacts to surrounding water extraction operations. Mitigation, contingency and monitoring requirements must be specified to management impacts.
2. The applicant must produce a representative model of the maximum predicated groundwater level to be both calibrated and verified against observation, to be peer reviewed, and submitted to Hunter Water for endorsement.

As requested in your application, Hunter Water's log data for the requested bores is attached to this email. This information is provided under the following conditions of use:

HWC Groundwater Level and Sandbeds Borelog Data – conditions of use

The data contained on this disc was collected and compiled by Hunter Water Corporation for its monitoring and planning purposes. The data is made available to external users with the following conditions:

- The data shall be used at the risk of the user.
- Hunter Water Corporation does not warrant the accuracy of the data.
- Users of the data must acknowledge the source of the data when it is used.
- Users of the data shall report errors that they find in the data to Manager Water Resources, Hunter Water Corporation.
- The data shall not be passed on to a third party without the express permission of the Manager Water Resources, Hunter Water Corporation.
- If permission is sought and granted to pass on the data, these conditions of use for the data shall be passed on with it.
- This dataset may unintentionally contain data owned by third parties for which permission to redistribute has not been obtained.

Financial Contribution

Dependent on the connection points and utilisation of infrastructure, it may be necessary to pay a reimbursement towards capacity uptake in infrastructure assets constructed by other developers. Hunter Water administers reimbursements for a maximum period of 15 years following hand over to Hunter Water.

It is not possible to calculate reimbursement values at this time due to the tentative nature of information, connection points etc, and accordingly such calculations are usually deferred until definitive information is available.

Environmental Assessment

Please note that a Review of Environmental Factors (REF) will be required for any works external to a particular development site, or where the service design includes infrastructure or activities that may have environmental impacts that would not have been specifically addressed in the consent authorities assessment and determination of the proposed development. Examples may be the construction of new or augmented water and sewer pump stations, sewer vents, trunk mains, reservoirs, development in a Wastewater Treatment Plant buffer zone, or development in a water reserve. Furthermore, a Controlled Activity Approval will be required from the NSW Office of Water for any excavation within 40m of a water body or should groundwater be present.

Hunter Water requires that all REFs submitted under Part 5 of the *Environmental Planning and Assessment Act 1979* be prepared in accordance with the Hunter Water REF Guidance Notes, a copy of which can be found in the Building & Development section of the Hunter Water website. The notes provide minimum requirements and an example table of contents for the preparation of a REF. All REFs submitted to Hunter Water in support of an application for approval of an activity must comply with the REF content requirements set out in the guidelines. Submissions that do not comply with the guidelines may be rejected or may require revision.

The REF must clearly demonstrate that the proponent has identified all environmental impacts of a proposal and mitigation measures to minimise impacts. The REF must also be appropriate to the nature and scale of the proposal and must be specific to the proposed water or wastewater works and not the related development. For example, related studies for the adjacent development may be used to support an assessment but specialist studies must cover the entire location of the proposed works.

Prior to commencement of environmental assessment please contact the Hunter Water Developer Services Group to confirm the scope and consultation requirements, including if specialist assessments are needed. Early consultation with Hunter Water may avoid unnecessary time and costs in the preparation of the REF.

Should you require further clarification or assistance please do not hesitate to contact me on 4979 9545.

Yours Sincerely

A handwritten signature in blue ink, appearing to read 'M. Withers', is positioned above the printed name.

Malcolm Withers
Senior Developer Services Engineer

Figure 1 – Connection point to the water supply system



Williamtown Sand Syndicate Pty Ltd
ACN 606 820 875
PO Box 898
Newcastle NSW 2300

June 21, 2016
The General Manager
Hunter Water Corporation
PO Box 5171
HRMC, NSW, 2310

**Re: Cabbage Tree Road, Williamtown, Proposed Sand Quarry
SSD 6125
Attention: Mr Malcom Withers**

Dear Malcom

We refer to your correspondence provided to NSW Department of Planning dated 12th February 2016 ref HW2015-1413 regarding the recommended Conditions of Approval to safeguard the Tomago Sandbeds Special Area.

Our Syndicate acknowledges the importance and need to protect and minimise the potential of any pollution incident to this valuable resource. We have reviewed our proposal and operating methodology significantly during the recent months to offer a more efficient and risk adverse extraction, processing and sales process.

We have implemented two significant changes being;

- The conversion of processing plant from diesel power to mains electricity;
- Utilisation of mains feed electrical conveyors to convey won material from the extraction face to the processing plant, removing the need for dump trucks and or extensive use of a dozer.

These changes have significantly reduced the consumption of diesel fuel within the Special Area over the life of the project, eliminating the potential of any spillage from these sources.

We have also reviewed the draft HWC Conditions of Approval of which we generally have no issues with however we do seek an exemption or modification to the conditions in terms of Hunter Water's stance in relation to refueling of certain plant within the Special Area and also the removal of all machinery from the Special Area at the completion of each day's activities. This request is based on the negligible risk associated with modern day plant and equipment, operational procedures to safeguard and precedents within the Special Area

This request is explained in detail in Table 1 which we trust Hunter Water will consider following our concerted efforts to eliminating the potential impacts on water quality, in accordance with your mandate of Neutral or Beneficial Effect.

Regards

Murray Towndrow

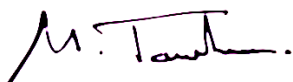


Table 1 – Proponents Responses to items raised by Hunter Water

Hunter Water Comments, 16 February 2016 Ref HWC2015-1413	Proponents Response
<p>Hunter Water requires all development in drinking water catchments to demonstrate a Neutral or Beneficial Effect (NorBE) on water quality. A development is considered to demonstrate NorBE if the development:</p> <ul style="list-style-type: none"> (a) has no identifiable potential impact on water quality, or (b) will contain any water quality impact on the development site and prevent it from reaching any watercourse, waterbody or drainage depression on the site, or (c) will transfer any water quality impact outside the site where it is treated and disposed of to standards approved by the consent authority. 	<p>The proposed development has been designed to operate in a manner which will provide a neutral effect on the drinking water catchment.</p> <p>This will be achieved through the implementation of stringent Operational Management Plans and ongoing monitoring and reporting to appropriate authorities including DoP, EPA and Hunter Water.</p> <p>Following completion of sand extraction and rehabilitation of the site a beneficial outcome to the drinking water catchment will be achieved by;</p> <ul style="list-style-type: none"> ▪ Significant portions of the site being established as Biodiversity Offset lands in perpetuity. ▪ The extraction area being progressively rehabilitated throughout the extraction period to best practice standards.. <p>It is therefore considered the proposed development will meet the objectives Neutral or Beneficial Effect.</p>
<ul style="list-style-type: none"> – The Proponent shall not extract sand or other extractive materials or carry out any work in the extraction area below a level of 1 metre above the predicted maximum groundwater elevation, with the exception of topsoil salvage and replacement activities. That is, topsoil salvaged prior to extraction activities by way of site preparation may be removed to a limit of 0.7 metres above the predicted maximum groundwater elevation and stockpiled for subsequent replacement in the same location on completion of the extraction activities for rehabilitation purposes. 	<p>The proposed extraction depths are compliant with this restriction.</p>
<ul style="list-style-type: none"> – The Proponent shall ensure that the final landform of the extraction area is at least 1 metre above the predicted maximum groundwater elevation. 	<p>The proposed extraction depths are compliant with this restriction.</p>
<ul style="list-style-type: none"> – No details are provided on the proposed on-site pump-out system. We expect that this system will be located and constructed in accordance with Port Stephens Council's Development Assessment Framework (DAF) for onsite sewerage. 	<p>The proposed pump out system will be in accordance with Port Stephens Council's Development Assessment Framework for onsite sewerage.</p>

<ul style="list-style-type: none"> – During extractive operations, the elevation of land from which sand is being extracted must be monitored using survey methods by taking regular measurements (using a laser level or other appropriate method) in accordance with an industry standard procedure by a person appropriately qualified in surveying techniques. This includes a survey of the extraction floor levels, which shall be presented in the form of plans to demonstrate compliance with the extraction limits. The plans are to be submitted to Hunter Water as part of the annual operational review. Hunter Water must be notified if the extraction levels fall below the allowable level for any reason. 	<p>Regular work as executed survey plans, prepared by a suitably qualified professional will be submitted to DoP and Hunter Water as part of the proposed operations Operational Management Plan.</p>
<ul style="list-style-type: none"> – The post extraction landform must be surveyed on completion of the primary site rehabilitation works and the results presented in the form of plans to demonstrate compliance with the extraction limits. The plans are to be submitted to Hunter Water as part of the annual operational review. 	<p>Regular work as executed survey plans, prepared by a suitably qualified professional will be submitted to DoP and Hunter Water as part of the proposed operations Operational Management Plan.</p>
<ul style="list-style-type: none"> – The Proponent must not store fuel, oil, grease, wastewater, chemicals or any similar potential groundwater contaminants within the Tomago Sandbeds Special Area. 	<p>Please refer to detailed site plan which provides a suitable fully bunded and undercover area outside of the Tomago Sandbeds Special Area where fuel, oil, grease, chemicals or any other potential groundwater contaminants will be stored.</p>
<ul style="list-style-type: none"> – Section 4.10.5 notes that refuelling will “be undertaken, where possible, within a bunded concrete pad area...”. Any refuelling of plant or equipment undertaken on site must be performed on a hardstand area located outside the Tomago Sandbeds Special Area, which is either appropriately bunded or adequately contained and managed such that spills will be readily captured and not able to infiltrate to groundwater. 	<p>All mobile plant used in the extraction process will be refueled outside of the Special Area, including;</p> <ul style="list-style-type: none"> ▪ Pneumatic tyred Loaders x 2 (full time). ▪ Dump trucks (campaign usage as required for extraction area 7C). ▪ Sales trucks (daily) ▪ Trailer mounted diesel generator to power processing plant interim or back up in the event electricity is not available. <p>Please refer to detailed site plan which provides a suitable fully bunded and undercover refueling area outside of the Tomago Sandbeds Special Area.</p> <p>It is requested that a minimal amount of tracked mobile equipment required for short durations of campaign works such as clearing be allowed to be refueled within the Special Area due to the practicality of tracking large distances to refueled.</p> <p>The tracked plant will be refueled on a fully bunded and</p>

	<p>lined hardstand for both the mobile plant and fuel truck. This exemption is sort for the following plant to be allowed to be refueled within the Special area include;</p> <ul style="list-style-type: none"> ▪ 1 x Dozer (Maximum of 3 campaigns of 2 weeks each, 42 days per year). ▪ 1 x Excavator (Maximum of 3 campaigns of 2 weeks each, 42 days per year).
<p>– The Proponent must remove all machinery used in the extractive operations from the Tomago Sandbeds Special Area at the end of each day's operation.</p>	<p>All diesel powered pneumatic tyred mobile plant will be removed from the Tomago Sandbeds Special Area at the end of each day's operation including;</p> <ul style="list-style-type: none"> ▪ Loaders x 2 (daily). ▪ Dump trucks (campaign usage as required for extraction area 7C). ▪ Sales trucks (daily) ▪ Trailer mounted diesel generator (where used) <p>This plant will be stored within fenced area with CCTV and back to base security at the Office and Workshop area located outside the Special Area.</p> <p>Electrical powered plant are requested to remain within the Special Area at all times during the extraction process due to meeting the requirements of NorBE. such items include;</p> <ul style="list-style-type: none"> ▪ Electric screen ▪ Electric air classifier ▪ Electric conveyors <p>The total amount of hydrocarbons contained within the electrical plant is 650L. When not operated, pressure is removed from the lines and the fluid returns to a central tank. The tank is bunded to 110% of its capacity</p> <p>These plant will be powered by mains power from the Ausgrid network.</p> <p>It is requested a minimal amount of tracked mobile equipment that is required for short durations of campaign works such as clearing be allowed to be stored within the area overnight due to the practicality of tracking large distances each night creating unnecessary disturbance to</p>

	<p>the land and environment. This plant will be parked on the fully bunded and lined hardstand (used for refueling) to safeguard against any unforeseen fluid leaks. Plant requested to be allowed to stay within the Special area include;</p> <ul style="list-style-type: none"> ▪ 1 x Dozer (Maximum of 3 campaigns of 2 weeks each, 42 nights per year). ▪ 1 x Excavator (Maximum of 3 campaigns of 2 weeks each, 42 nights per year).
<p>– Prior to the commencement of operations, the Proponent must develop a Spill Management Procedure designed to prevent, clean-up and minimise adverse impacts on the quality or quantity of groundwater able to be extracted from the Tomago Sandbeds Special Area from all potential contaminants that may be used on site, such as hydrocarbons. The Procedure shall include remediation plans to be implemented in the event of incidents or events occurring that may adversely affect the Tomago Sandbeds Special Area.</p>	<p>A Spill Management Procedure will be developed and incorporated into the Operational Management Plan.</p>
<p>– Prior to the commencement of operations, a Groundwater Monitoring Plan must be prepared and submitted to Hunter Water for approval. The Plan shall include the parameters to be measured, sampling locations, sampling frequency and details of action to be undertaken in the event of unexpected results, such as detected contamination. The Plan should acknowledge and accommodate the PFOS/PFOA groundwater contamination in the area.</p>	<p>A Groundwater Monitoring Plan will be provided to HWC prior to commencement and implemented during the extraction period.</p>
<p>– At the completion of mining activities, the site shall be revegetated with native species to protect the underlying drinking water aquifer in accordance with a Site Rehabilitation Plan that is approved by Hunter Water prior to the commencement of operations. The Site Rehabilitation Plan shall include details such as completion criteria, species and density to be established for respective strata, methods of establishment, weed control, monitoring and management timeframes.</p>	<p>A Site Rehabilitation Plan will be provided to HWC prior to commencement for concurrence.</p>

Figure 1 – Special Area Boundary



Murray Towndrow

From: Malcolm Withers <malcolm.withers@hunterwater.com.au>
Sent: Wednesday, 29 June 2016 10:03 AM
To: 'Murray Towndrow'
Cc: Holly Marlin; John Simpson
Subject: Hunter Water to Williamtown Sand Syndicate - Proposed operational changes - Sand Quarry Cabbage Tree Road, Williamtown (Ref. HW2015-1413)

Good morning Murray,

Thank you for submission of the letter detailing proposed operational changes for the proposed sand quarry project located at Cabbage Tree Rd Williamtown. Hunter Water's main concerns were around the risks associated with refuelling and vandalism of mobile plant (loaders, etc.) and Hunter Water is generally satisfied that these matters have been adequately addressed provided that they are incorporated into the Statement of Commitments referred to under the Development Approval. Given the critical location of the quarry, Hunter Water would appreciate the opportunity to undertake an annual inspection as part of the Annual Operational Review (as required by the management plan for the quarry).

If you have any questions, please do not hesitate to contact me.

Regards

Malcolm Withers

Senior Developer Services Engineer | Hunter Water Corporation
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In the Hunter this year, Cancer Council NSW will help more than 3,300 patients and carers with transport to treatment, home help and financial assistance. Visit www.cancercouncil.com.au to find out more.



UPCOMING EVENT: Daffodil Day, Friday 26 August 2016



WATER WISE RULES

Enforced all year across the Lower Hunter

Water before 10am or after 4pm

No hosing hard surfaces, use a broom instead

All hoses must have a trigger nozzle

From: Murray Towndrow [<mailto:murray@arbus.com.au>]
Sent: Tuesday, 21 June 2016 9:59 AM
To: Malcolm Withers <malcolm.withers@hunterwater.com.au>
Subject: Cabbage Tree Road, Williamtown, Proposed Sand Quarry

Malcom

Please find attached letter response requesting Hunter Water's concurrence with proposed operational changes for the proposed sand quarry project located at Cabbage Tree Rd Williamstown.

We would welcome the opportunity to meet with HWC representative to discuss these proposed changes should you consider it beneficial to both parties.

Regards

Murray Towndrow

Development Manager
MPropdev, BE (Civil)

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Newcastle 2300

M: 0429 875 355

E: murray@arbus.com.au

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