



NSW GOVERNMENT
Department of Planning

ASSESSMENT REPORT

Section 96(2) Modification Norske Skog Albury Paper Mill – Wastewater Management

1. BACKGROUND

Norske Skog Pty Ltd operates a Paper Mill off the Hume Highway at Table Top in the Albury local government area (see Figure 1).

The mill produces newsprint and magazine grades of paper and was constructed between 1979 and 1981. It has undergone various upgrades and process improvements since then including the introduction of newsprint brightening in 1991, construction of a recycled fibre pulping (RCF) plant and local waste water reuse scheme in 1993, and an upgrade and increase to the capacity of the mill in 2006. The mill produces approximately 40 percent of Australia's newsprint and related paper grades.

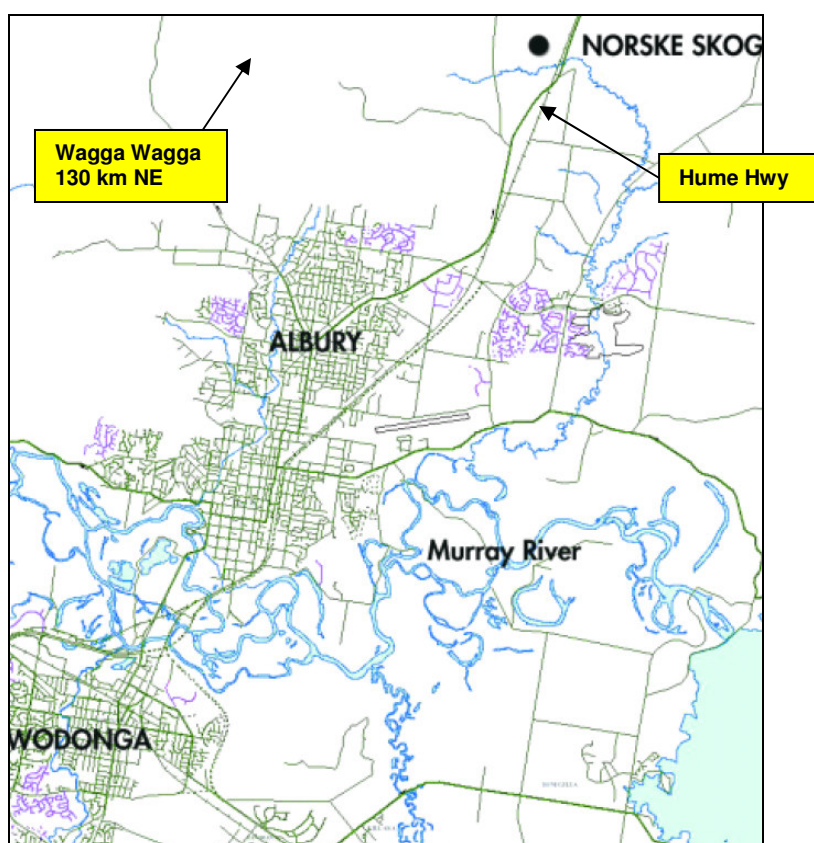


Figure 1 – Regional Location

The Albury Paper Mill currently operates under four consents issued by the Minister, for:

- newsprint brightening (DA N.687)

- processing of recycled fibre at the mill (DA 147/92);
- establishment of a Wastewater Reuse Scheme (DA 41/92); and
- upgrade to the mill to enable production of up to 265,000 tonnes of paper per year (DA 389-8-2003).

Current Wastewater Regime

The mill has a water licence to extract water from the Murray River, and currently extracts approximately 13.5 ML of water per day. Of this 13.5 ML of water:

- 3 ML of water is used in the process (as steam and absorbed in the paper);
- 3 ML of water is used for cooling and is returned to the Murray River; and
- the remaining 7.5 ML becomes wastewater, which is treated and then irrigated onto approximately 450 hectares of surrounding land under the wastewater reuse scheme.

The wastewater reuse scheme is expensive and has been less successful than originally predicted. Norske Skog's irrigation areas include pine plantations and more recently pasture. It has found irrigation of pasture crops to be more successful, being cheaper and requiring less land. Nonetheless the land required to dispose of the wastewater is much greater than originally expected and the treated wastewater is having salinity and sodicity (accumulation of sodium in the soil) impacts on the irrigation areas.

The assessment of the 2003 mill upgrade identified the potential for these impacts to occur and the conditions of consent included requirements to explore alternative wastewater management options. Prior to the commencement of the wastewater reuse scheme in the mid 1990s, wastewater was treated and returned to the Murray River. The existing consent also allows treated wastewater to be discharged into the Murray River, but only when periods of wet weather prevent irrigation and the storage dam is likely to overflow.

While the Mill has a high security water licence, water shortages and dry conditions threaten the long term security of the licence and ultimately the operations of the mill.

Wastewater Management Options

In order to secure the mill's future, Norske Skog has examined a number of options to reduce reliance on the water licence in consultation with the Department of Water and Energy (DWE) and the Department of Environment and Climate Change (DECC). These include measures to further reduce the mill's water use and options to further treat the wastewater to allow for reuse or other disposal options.

The mill is highly water efficient and efforts to improve efficiencies even further are ongoing. One hurdle to improving the efficiencies of the mill is the high salinity level of the wastewater. Norske Skog has advised the salt levels in the treated wastewater would damage the mill machinery if reused in the process and jeopardise the long term viability of the mill. Methods to remove the salt such as a desalinisation plant are cost prohibitive and desalinisation would also generate other issues with the disposal of the salt and brine.

The salinity level in the wastewater is also impacting on the irrigation areas and the long-term viability of this method of disposal is also uncertain.

Green Offset Scheme

In cases where options for the management of an environmental impact have been exhausted, the DECC has developed a green offset scheme for managing the impact. The DECC's green offset scheme allows developers to take action outside the development (but near it) to reduce the overall environmental impact within an area so that the net effect is positive.

To reduce salinity and sodicity impacts on the irrigation area and increase the security of the mill's water supply, Norske Skog now proposes to enter into a green offset scheme. Under

this proposal, saline wastewater would be discharged to the Murray River, and the impacts associated with the discharge would be offset by the removal of salt from the river at another location.

On 7 November 2008, the Norske Skog submitted an application to the Department, seeking to modify the Minister's approval under section 96(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

2. PROPOSED MODIFICATION

Norske Skog is seeking to alter the wastewater management strategy for the mill and the Ministerial development consents for the site would need to be modified to allow this to occur. The proposal involves the discharge of treated wastewater (approximately 3 ML per day or approximately 1,500 tonnes salt per year) to the Murray River at Albury. To offset the impacts of this, Norske Skog would fund the operation and maintenance of the Billabong Creek Salt Interception Scheme (BCSIS), an existing scheme which operates under a licence issued by the Department of Water and Energy (DWE). The BCSIS removes salt (the main pollutant) from the river down stream at Walla Walla (see Figure 2).

Participation in the BCSIS would ensure the removal of twice the load of salt which is discharged from the mill (an offset ratio of 2:1) and modelling indicates it would reduce salinity impacts at Morgan by approximately 0.05 EC units. (Morgan is the benchmark monitoring location for salinity levels in the Murray River).

The proposal would be undertaken in accordance with the DECC's Green Offset Policy which requires impacts to be offset in the same area, for the same pollutant, for the same period the impacts occur, and be quantifiable and enforceable. The proposal would result in a net benefit to the river as it would increase flow (by at least 3 ML a day) and reduce salt loads (by at least 5 tonnes a day) in the Murray.

The remaining wastewater (up to 4.5 ML) would continue to be irrigated, under the existing wastewater reuse scheme. Should additional or alternative schemes become feasible Norske Skog could arrange to discharge additional wastewater to the Murray River, as long as they maintained the 2:1 offset ratio.



Figure 2 – Billabong Creek Salt Interception Scheme (BCSIS) and the Norske Skog Albury Paper Mill

Norske Skog has indicated that it also intends to seek approval to provide treated wastewater to third parties such as the nearby Golf Course or to Albury City Council for the irrigation of parks and greens. This would have to be considered in applications from the third parties as the potential impacts have not yet been assessed.

3. STATUTORY CONTEXT

3.1 Consent Authority

The Minister was the consent authority for the original development application, and is consequently the consent authority for this application. However, the Executive Director, Major DA Assessments, of the Department of Planning, may determine the application under the Minister's delegation of 4 March 2009.

3.2 Section 96(2)

Under Section 96(2) of the EP&A Act, a consent authority may modify a development consent if it is satisfied that:

the development to which the consent as modified relates is substantially the same development for which consent was originally granted and before that consent as originally granted was modified (if at all).

The Department has assessed the application, and is satisfied that the proposed modification is substantially the same development. The overall size, function and production capacity of the paper mill would remain unchanged as a result of the proposal. The mill's wastewater was discharged to the Murray River for many years and the existing conditions also allow treated wastewater to be discharged to the Murray River in some situations. As such, the Department is satisfied that the proposal would be consistent with the original approval and the consent as modified is substantially the same development.

4. CONSULTATION

Under Section 118 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), the Department is required to exhibit the application and SEE.

On receiving the application and SEE, the Department subsequently:

- advertised the exhibition of the application and SEE in the Albury Border Mail on the 19 November 2008;
- notified the Department of Environment and Climate Change (DECC), Albury City Council (Council), the DWE and the Murray Darling Basin Commission (now the Murray-Darling Basin Authority); and
- exhibited the application and SEE from Thursday 20th November to Friday 19th December 2008.

This satisfies the requirements for public consultation in the EP&A Act and Regulation.

During the exhibition period, the Department received 3 submissions, 2 from public authorities: DECC and DWE, and 1 from the Lavington Anglers Club.

The DWE are generally supportive of the proposal.

The DECC recommended conditions of consent relating to water quality and the monitoring and management of impacts on the Murray River particularly in the mixing zone.

The Lavington Anglers Club objected to the project but did not provide any reasons for the objection.

5. ASSESSMENT

The Department has assessed the application on its merits, and summarised the results of this assessment below.

5.1. Water Quality and the Protection of Aquatic Ecosystems

The discharge of treated wastewater into the Murray River has the potential to impact on the water quality and aquatic ecosystems of the Murray River.

Treated wastewater from the Albury Paper Mill was discharged to the Murray River on a regular basis from the commencement of operations of the mill, in the early 1980s, up until the mid 1990s.

With the introduction of the recycled fibre plant at the mill, in the 1990s, concerns regarding the increased salt levels in the wastewater led to the establishment of the wastewater reuse/irrigation scheme, which diverted wastewater away from the Murray River.

The mill currently generates 7.5 ML of wastewater a day in the 2 main processes in the mill, namely:

- The thermo-mechanical pulp process - which heats and pulps soft wood chips, releasing organic matter into the water.
- The recycled fibre plant - which uses inorganic chemicals (consisting of sodium hydroxide, hydrogen peroxide, sodium silicate and soap) to detach the ink from the recycled fibre and the pulp is then bleached. This wastewater contains organic contaminants and inorganic salt residues from the deinking process.

Wastewater is treated at the mill to remove organic matter, particulates and nutrients. The wastewater treatment process removes approximately 99 percent of the biologically degradable organic matter.

Norske Skog currently has an Environment Protection Licence (EPL) to discharge wastewater to the Murray River during the 'winter release program' (when weather is too wet for the irrigation scheme to operate and the storage dam is full). Norske Skog is now seeking approval to change this regime, to allow wastewater to be discharged continuously.

The impact of the proposed continuous discharge of treated wastewater on the Murray River's water quality and aquatic ecosystems has been assessed, based on the effluent being discharged at a dilution ratio of 600:1 (600 parts river water to 1 part wastewater) as a worst case scenario; and at a rate of ~ 3 ML/day.

The main component of the treated wastewater is inorganic salts. Table 1 shows the key wastewater quality parameters of the water to be discharged and also includes details of the final river water quality (cumulative concentration) downstream of the wastewater discharge point.

Table 1 - Wastewater Quality

Component	Wastewater Concentration (mg/L)	Existing Concentration in River prior to discharge (mg/L)	Maximum Cumulative Concentration in River beyond mixing zone (mg/L)	ANZECC Guideline Default Trigger Value (mg/L)
Total Dissolved Solids (TDS)	1695 ± 264	~32	35	22.5 – 262.5
Total Nitrogen	7.6 ± 3.0	~0.32	0.33	0.25
Total Phosphorus	0.32 ± 0.28	~0.05	0.0505	0.02

As shown in Table 1 the River's existing concentrations of nitrogen and phosphorus are already beyond the ANZECC guidelines default trigger values for upland rivers and the proposed discharge would marginally increase these concentrations. Salt (TDS) concentrations, considered to be of most concern for the Murray River, would remain within the range recommended by the ANZECC guideline in this section of the River.

Trace concentrations of particulates, metals and chelating agents would also be present in the treated wastewater discharged.

While total nitrogen and phosphorus levels would exceed the ANZECC guidelines default trigger values for upland rivers, and these values are the level of protection applied to most waterways in NSW, the guidelines advocate an issues-based approach rather than the application of rigid numerical criteria with no appreciation of the context

The water quality assessment found impacts from the discharge of the low concentrations of nitrogen, phosphorus, particulates, metals and chelating agents proposed, would be negligible.

Norske Skog also assessed the potential toxicity of the wastewater to establish whether the discharge of treated wastewater would have an impact on aquatic ecosystems. This included ecotoxicological tests on a range of aquatic species from various trophic levels (ie algae, invertebrate and fish). The tests concluded that there were no detrimental impacts on a range of different species at any concentration of wastewater.

While the proposal would increase salinity levels in the Murray River locally by approximately 10%, to 35mg/L, this is within the ANZECC guideline default trigger value range for salt (22.5 – 262.5 mg/L). This discharge of up to 1,500 tonnes of salt to the river annually, would be offset at a ratio of 2:1 through participation in the green offsets scheme. Consequently the proposal would result in a net reduction in salt loads in the river, of 1,500 tonnes a year.

The assessment found the proposal is unlikely to have any detrimental impact on water quality or aquatic ecosystems. The benefits from the downstream reduction in salinity levels, as a result of the green offset, are considered to outweigh the potential risk of impacts on local aquatic ecosystems from the slight increase in salinity levels locally.

The Department notes the proposal would generate significant benefits to the Murray River as a whole through the increased flows (both from the wastewater discharged, and the operation of the Billabong Creek Salt Interception Scheme) and the net reduction in salinity levels.

The proposal has been carefully assessed by the DECC and DWE and neither agency, nor the Murray-Darling Basin Authority, objected to the project.

The Department concurs with the DECC that the proposed continuous discharge of treated wastewater would not result in any substantial reduction of water quality or impact on aquatic ecosystems in the Murray River. DECC has indicated that it would be able to modify the existing licence to accommodate the proposed modification and recommended conditions requiring monitoring of the wastewater.

The DWE did not raise any concerns with the proposal.

The proposal is also consistent with the concept statement in the Murray-Darling Basin Authority's Basin Plan, which highlights the need to re-establish river flows and reduce salinity in the Murray Darling Basin. The Department considers the proposal would contribute to both of these goals.

The Department and the DECC consider monitoring should be undertaken to ensure any impacts from the proposal would be identified and managed. The recommended conditions require stringent monitoring and reporting to ensure the scheme operates effectively and there are no impacts on local aquatic ecosystems.

The recommended conditions would require Norske Skog to implement the green offset scheme prior to discharging any wastewater to the river. The scheme would be required to include regular monitoring, ecotoxicological testing, chemical and sediment scanning. This would ensure the dilution rate of 600:1 is achieved, impacts on water quality and aquatic ecosystems are managed and the predicted reduction in salinity is achieved.

The recommended conditions also require validation and auditing of the green offset scheme.

The Department is satisfied that the recommended conditions would ensure wastewater is monitored and managed to minimise pollutants and that changes to the quality of the water in the Murray River and impacts on aquatic ecosystems would not be significant. The Department considers the benefits produced from the increased flows and reduced salinity levels downstream would outweigh the minor impacts on river water quality.

5.2. Other

Other issues identified during the assessment process and the Department's consideration of the issues are summarised in Table 2 below.

Table 2 - Summary of other impacts

Issue	Consideration	Recommended conditions of consent
Soil	<ul style="list-style-type: none"> The ongoing irrigation of wastewater has previously had impacts on the soil, causing salinity and sodicity. The proposal would reduce the quantity of wastewater irrigated. The resulting changes in irrigation patterns may cause further soil degradation if it is not managed appropriately. The Department considers that in order to prevent further soil degradation, soil management measures would need to be implemented to ensure further impacts are minimised. The Department is satisfied that through the recommended conditions of consent this land would be managed to prevent further degradation. 	<ul style="list-style-type: none"> The Department has recommended new conditions of consent requiring the preparation and implementation of a soil and groundwater monitoring and management plan to ensure the soil within the irrigation area is managed appropriately.
Waste	<ul style="list-style-type: none"> The wastewater treatment process would not change with the proposal, and therefore no change in waste volume would occur as a result of the proposal. Nonetheless, the Department considers that the existing waste management plan (which dates back to the early 1990's) for the mill should be modified to ensure that current best practice waste management is achieved for the site. The Department is satisfied that the recommended condition requiring an updated waste management plan would ensure appropriate waste management and monitoring of any impacts from the re-use of waste products from the site such as biosolids. 	<ul style="list-style-type: none"> The Department has recommended a condition requiring the waste management plan to be updated.
Ongoing Environmental Management, Monitoring & Reporting	<ul style="list-style-type: none"> The Mill has been operating since the early 1980s and has accumulated a number of consents from the Minister and from Council. Many aspects of the mill are managed through conditions and management plans, some of which date back to the early 1990s. 	<ul style="list-style-type: none"> The Department has recommended all existing conditions in DA N.687, DA 147/92, DA 41/92 and DA 389-8-2003 are deleted and replaced with modern conditions.

Issue	Consideration	Recommended conditions of consent
	<ul style="list-style-type: none"> • The Department considers the environmental performance of the mill could be managed and monitored more efficiently through the implementation of new conditions. • The Department has carefully examined all of Norske Skog's Ministerial Development Consents and has incorporated the relevant conditions into the recommended conditions of consent. • The Department is satisfied the recommended conditions would ensure continued management and monitoring of the mills performance in a more efficient manner. 	

6. CONCLUSION

The Department has assessed the application in accordance with the requirements in section 79C of the EP&A Act, and is satisfied that:

- The development as modified would remain consistent with the aims, objectives and requirements of the relevant environmental planning instruments;
- The proposal would have minimal environmental impacts and water saving benefits;
- The site is suitable for the development; and
- The proposal is generally in the public interest.

The Department's assessment found that the modification would facilitate the continued operation of the mill, which is a significant industry in the region.

The proposal, to discharge treated wastewater from the mill to the Murray River, is unlikely to result in any significant environmental impacts. The implementation of the proposed offset is likely to result in a net benefit to the Murray River, due to the increased flows, and downstream reduction in salt levels.

Consequently, the Department is satisfied that the proposed modification should be approved.

7. RECOMMENDATION

It is RECOMMENDED that the Executive Director:

- consider the findings and recommendations of this report;
- determine that the development consent, as modified, would relate to substantially the same development for which consent was originally granted;
- approve the proposed modification under section 96(2) of the EP&A Act; and
- sign the attached notice of modification.

 28/7/09

Chris Ritchie
Manager - Industry
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 29/7/09

David Kitto
Acting Executive Director
Major Projects Assessment

APPENDIX 1 STATUTORY CONSIDERATION - SECTION 96 (2) OF EP&A ACT

Under section 96(2) of the EP&A Act, a consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:

Provision	Comment
a) it is satisfied that the proposed modification is of minimal environment impact.	Complies (refer to Section 5 above).
b) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all).	Complies (refer to Section 3 above).
c) it has notified the application in accordance with: <ul style="list-style-type: none"> i) the regulations, if the regulations so require, or ii) a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a development consent. 	Complies (refer to Section 4 above).
d) it has considered any submissions made concerning the proposed modification within any period prescribed by the regulations or provided by the development control plan, as the case may be.	Complies (refer to Section 4 above).

In determining an application for modification of a consent under this section, the consent authority must take into consideration such of the matters referred to in section 79C(1) as are of relevance to the development which is the subject of the application:

Provision	Comment
a) the provisions of: <ul style="list-style-type: none"> i) any environmental planning instrument, and ii) any draft environmental planning instrument that is or has been placed on public exhibition and details of which have been notified to the consent authority (unless the Director-General has notified the consent authority that the making of the draft instrument has been deferred indefinitely or has not been approved), and iii) any development control plan, and iiia) any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and iv) the regulations (to the extent that they prescribe matters for the purpose of this paragraph: <ul style="list-style-type: none"> • in the case of a development application for the carrying out of development in a local government area referred to in section 92 of the EP&A Regulation and on land to which the Government Coastal Policy applies, the provisions of that Policy, • in the case of a development application for the demolition of a building, the provisions of AS 2601. 	<p>The following environmental planning instruments (EPIs) apply to the proposed modification:</p> <ul style="list-style-type: none"> • <i>State Environmental Planning Policy (Infrastructure) 2007</i>; • <i>Murray Regional Environmental Plan No 2 – Riverine Land</i> • <i>Albury Local Environmental Plan 2000</i>; and • <i>Albury Development Control Plan 2000</i>. <p>The proposed modification is not inconsistent with these EPIs.</p>
b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality.	Refer to Section 5 above.
c) the suitability of the site for the development.	The site remains suitable for the proposed development.
d) any submissions made in accordance with this Act or the regulations.	Not applicable.
e) the public interest.	The proposed modification is generally in the public interest as it would facilitate the operation of the facility with minimal changes to the environmental impacts of the approved development.