

Tilley Siding Ore Transport Facility

Midwest Corporation Limited

**Report and recommendations
of the Environmental Protection Authority**

**Environmental Protection Authority
Perth, Western Australia
Bulletin 1267
October 2007**

Environmental Impact Assessment Process Timelines

Date	Progress stages	Time (weeks)
2/2/07	Referral received	
22/10/07	ARI Level of Assessment set and EPA report to the Minister for the Environment	36

Report Released: 22/10/07

Appeals Close: 05/11/07

Contents

	Page
1. Introduction and background	1
2. The proposal.....	1
3. Consultation	2
4. Key environmental factors.....	4
4.1 Dust.....	4
4.2 Noise	6
5. Recommended Conditions	9
6. Other Advice	9
7. Conclusions.....	9
8. Recommendations.....	9

Tables

1. Summary of key proposal characteristics	2
2. Summary of issues raised during stakeholder consultation	4
3. Predicted ground level PM ₁₀ concentrations after dust suppression.....	5
4. Proponent's predicted noise levels at nearest residences (after noise management) compared to criteria.....	7

Figures

1. Regional location

Appendices

1. References
2. Recommended Environmental Conditions

1. Introduction and background

This report provides the Environmental Protection Authority's (EPA's) advice and recommendations to the Minister for the Environment on the proposal by Midwest Corporation Limited to construct a rail siding (Tilley Siding) 2 kilometres north of Morawa to stockpile and load iron ore for rail transport to Geraldton Port.

Section 44 of the *Environmental Protection Act 1986* (EP Act) requires the EPA to report to the Minister for the Environment on the outcome of its assessment of a proposal. The report must set out:

- The key environmental factors identified in the course of the assessment; and
- The EPA's recommendations as to whether or not the proposal may be implemented, and, if the EPA recommends that implementation be allowed, the conditions and procedures to which implementation should be subject. The EPA may include in the report any other advice and recommendations as it sees fit.

The proponent has submitted a referral document setting out the details of the proposal, potential environmental impacts and proposed commitments to manage those impacts.

The EPA considers that the proposal, as described, can be managed to meet the EPA's environmental objectives, subject to the EPA's recommended conditions being made legally binding.

The EPA has therefore determined under Section 40 of the EP Act that the level of assessment for the proposal is Assessment on Referral Information (ARI), and this report provides the EPA advice and recommendations in accordance with Section 44 of the EP Act.

2. The proposal

Midwest Corporation Limited proposes to construct and operate a rail siding (Tilley Siding) 2 kilometres north of Morawa on the Morawa Wubin Road adjacent to the existing railway (Figure 1).

Tilley Siding would be used to stockpile iron ore which has been transported by truck via the Munkton Road from Koolanooka. Iron ore stockpiled at Tilley Siding would be loaded by two front end loaders onto rail cars for transport to Geraldton Port.

The rail siding from turn in to turn out would be 1,610 metres long. Road trains would arrive at Tilley Siding at approximately 30 minute intervals (2 trucks/hour 24 hours a day). Ore would be side tipped onto prepared pads and pushed up by front end loaders to a height of 3 metres. The stockpiles would be the length of the trains to minimise the requirement for shunting during the loading operations.

Trains would consist of up to 64 wagons with two 2000HP Westrail Class R or similar operational locomotives.

The main characteristics of the proposal are summarised in the table below.

Table 1: Summary of key proposal characteristics

Element	Description
Major project components	Rail siding, stockpiling and loading of iron ore.
Total estimated area of project	A total area of 28 hectares (ha) of which <ul style="list-style-type: none"> • 27.74 ha is previously cleared agricultural land; and • 0.26 ha bushland.
Length of turnout	1,610 metres
Road train arrivals	2 trucks per hour 24 hours per day
Train makeup	64 wagons with two 2000HP (Westrail Class R) or similar
Loading	Two front end loaders
Stockpiles	Two stockpiles running parallel to the siding. 3 metre high dead stockpile maintained as noise barrier on western side of siding.
Power source	Portable power generator
Associated infrastructure	1 chemical toilet
Waste materials	Negligible, will be removed from site.
Water requirement (anticipated)	180 kilolitres/day
Water source for dust management	80 megalitres of pit water from Koolanooka mine pit and 120 megalitres of bore entitlement per annum.
Water salinity	TDS level between 3000 and 5000 parts per million (ppm)

The potential impacts of the proposal are discussed by the proponent in the referral document (*Ecologia, August 2007*).

3. Consultation

During the preparation of the ARI, the proponent has undertaken consultation with government agencies and key stakeholders. The agencies, groups and organisations consulted, the comments received and the proponent's response are detailed in the Proponent's referral document (*Ecologia, 2007*).

A number of environmental issues were raised by the stakeholders during the consultation. Table 2 summarises the main issues raised and details the actions taken by the proponent to address the issues.

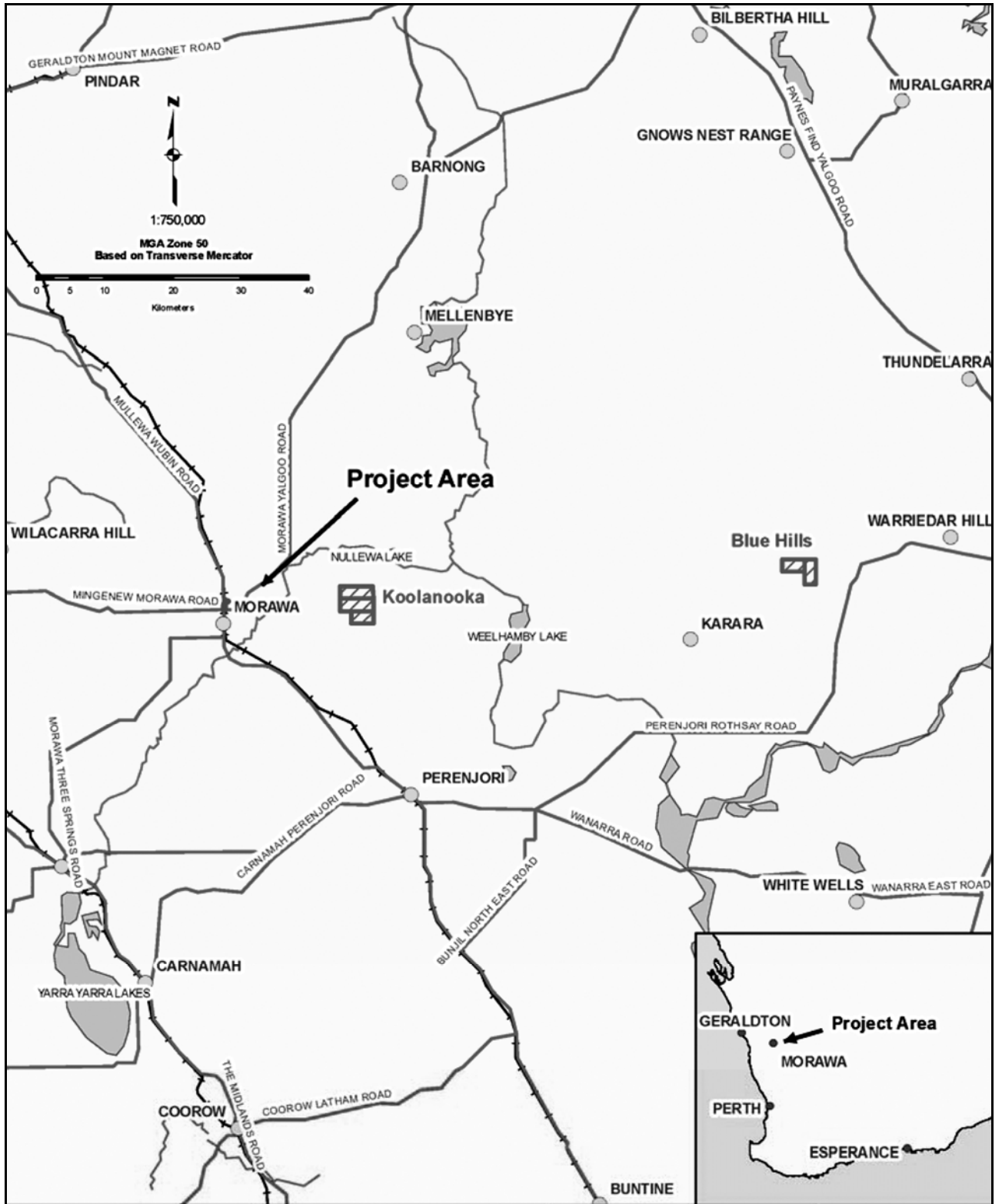


Figure 1: Regional location

Table 2: Summary of issues raised during stakeholder consultation

Issue raised	Stakeholder	Response
Noise, dust and safety concerns.	Nearest residents	Midwest offered to purchase property.
Noise and dust.	Morawa public meeting (24 attendees)	Midwest developed Dust and Noise Management Plans.
Noise/dust modelling and management.	<ul style="list-style-type: none">• Department of Environment and Conservation (DEC)• Department of Industry and Resources (DoIR)	Dust and Noise modelling and management plans improved as required.

The EPA considers that the consultation process has been appropriate and that reasonable steps have been taken to inform the community and stakeholders on the proposed development.

4. Key environmental factors

It is the EPA's opinion that the following key environmental factors relevant to the proposal require evaluation in this report:

- (a) Dust
- (b) Noise

The key environmental factors are discussed in Sections 4.1 – 4.2. The description of each factor shows why it is relevant to the proposal and how it will be affected by the proposal. The assessment of each factor is where the EPA decides whether or not a proposal meets the environmental objective set for that factor.

4.1 Dust

Description

Dust may be generated at Tilley Siding from the stockpiles and movement of vehicles and loading operations. The main access road, lay down and loading areas would be unsealed and subject to dust lift off when dry.

The nearest neighbour is 500 metres to the west and the Morawa racetrack and northern extent of the town site is approximately 1.5 kilometres to the south.

An assessment of the predicted dispersion of dust (SKM 2007) using the AUSPLUME model was carried out to assess the base case assuming dry weather conditions and no dust control measures being undertaken at Tilly Siding.

Under these unmanaged conditions it was predicted that the maximum ground level PM₁₀ concentration would exceed the National Environmental Protection Measure (NEPM) 24 hour average concentration standard of 50 micrograms per cubic metre

($\mu\text{g}/\text{m}^3$) at the nearest residence. The model predicted that the standard would be exceeded on two days a year. Cumulative frequency analysis indicated that the largest hourly concentration impacting the nearest residence was derived from the unloading of trucks while the most consistent source was the unpaved roads.

It is proposed that dust suppression techniques be used and the proponent has prepared a Dust Management Plan (*Ecologia, 2007*). Using default factors for dust control taken from Department of Environment and Heritage (2001), the dispersion modelling was repeated using the following PM_{10} emission reductions:

- 30% reduction to truck unloading, rail loading and stockpile and open area wind erosion sources due to the use of windbreaks; and
- 50% reduction to unpaved road emissions due to water spraying.

Table 3 shows the predicted ground level PM_{10} concentrations at the nearest neighbour and race track (northern boundary of Morawa) allowing for these dust reductions.

Table 3: Predicted ground level PM_{10} concentrations after dust suppression

	Nearest Residence	Race Track
Criteria (NEPM 24 hr average $\mu\text{g}/\text{m}^3$)	50	50
Maximum	43.7	11.7
Average	3.5	1.2

These modelling results do not include dust from other sources. However the NEPM standard allows for five exceedances a year, to take into account dust from natural sources.

Assessment

The EPA's environmental objective for this factor is to ensure that the dust levels generated by the proposal do not adversely impact upon welfare and amenity or cause health problems by meeting statutory requirements and acceptable standards.

The Department of Environment and Conservation (DEC) has advised that modelling of fugitive dust emissions is inherently imprecise due to the large number of variables that can affect emissions. As such, there is considerable uncertainty in the absolute values that are generated by these models and they are therefore best used in a relative sense to compare the effectiveness of alternative dust management scenarios.

DEC recommended that an adaptive dust management plan be prepared that includes routine water application, details of monitoring at sensitive receptors, dust management trigger levels, actions and operator responsibilities to ensure that dust levels are maintained at acceptable levels.

The proponent's dust modelling (after allowance for dust management procedures) indicated that that the NEPM 24 hour average particulates concentration standard could be met at all receptors.

In considering this finding the EPA took into account:

- the uncertainties associated with the modelling;

- that compliance with the NEPM particulates standard is marginal at the nearest neighbour's residence, but well below the standard at the town of Morawa; and
- that the NEPM standard is more applicable to urban air quality than fugitive dust.

The EPA considers that, whilst dust related health impacts are not likely even at the nearest residence, without careful fugitive dust management potential loss of amenity due to short term dust events could be significant. Use of the proponent's modelled 24 hour average particulates concentrations is not appropriate for the assessment of loss of amenity. Experience elsewhere has shown that public complaint can occur due to much shorter term dust incidents, even when dust levels are consistently within the NEPM 24 hour particulates standard.

The proponent has provided the EPA with a letter stating that it has successfully completed negotiations to purchase the nearby farm and has agreed that the nearest residence on the farm will be kept vacant for the life of the project. This means that the nearest receptor will now be about 2 kilometres away at the town of Morawa. The EPA considers that purchase of the neighbouring farm removes the major difficulty for the dust issue, but considers that effective dust management will still be required to avoid loss of amenity at Morawa.

In this regard, the proponent has provided a Dust Management Plan which includes both routine dust control procedures and adaptive response procedures to be applied in the case of unusual dust events. The EPA considers that implementation of the proponent's Dust Management Plan would be effective in preventing loss of amenity at Morawa and therefore the EPA's objective for the environmental factor of dust could be met.

Summary

Having particular regard to the:

- advice of DEC in regard to the proponent's dust modelling;
- proponent's agreement with the nearest neighbour to purchase their property and keep the nearest residence vacant for the life of the project; and
- proponent's Dust Management Plan;

it is the EPA's opinion that the proposal can be managed to meet the EPA's objective for the environmental factor of dust provided that condition 6, which requires the implementation of the proponent's Dust Management Plan, is applied to the proposal.

4.2 Noise

Description

Noise at Tilley Siding would be generated by the road trains arriving and dumping iron ore (1 every 30 minutes 24 hours a day), front end loaders handling the ore, and the arrival, idling and loading of trains.

There are farm residences 500 metres to the West (House 1) and 2.2 kilometres to the north west (House 2) from the Tilley Siding and the town of Morawa is approximately 2 kilometres to the south.

Noise modelling by Vipac Engineers & Scientists Ltd (2006) indicated, that without noise reductions and management, noise levels at House 1 and House 2 could exceed levels assigned in the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations).

Vipac (2006) made the following observations:

- The front end loaders generate the most noise with reference to the nearby residences and noise emissions could be significantly reduced by fitting silencers.
- More severe noise criteria apply at night (10:00 pm – 7 am Monday to Saturday and 10 pm – 9 am Sundays and public holidays) and arrival, idling and loading of trains could be scheduled to occur only in the day time.

Further noise modelling was carried out which incorporated the proponent’s noise management measures. These include, use of exhaust mufflers on the front end loaders to reduce noise emissions by approximately 10 dB, construction of a 3 metre high noise bund and a time restriction on loading activities to avoid noise issues during the period of lower night-time noise criteria. The noise bund would be the western ore stockpile which would be maintained at 3 m height for the life of the project.

The resulting noise predictions are shown in Table 2 and compared with relevant criteria from the Noise Regulations.

Table 4: Proponent’s predicted noise levels at nearest residences (after noise management) compared to criteria.

	House 1			House 2		
	7am to 7pm	7pm to 10pm (9am to 7pm Sundays and public holidays)	Night time	7am to 7pm	7pm to 10pm (9am to 7pm Sundays and public holidays)	Night time
Criteria	45	40	35	45	40	35
predicted dB	39.8	39.8	<30	30.9	30.9	<30

Note: 7am -7pm – Included noise from front end loaders, trains and road trains
 7pm-10pm or 9am – 7pm Sun and public holidays – Included noise from front end loaders, trains and road trains
 Night time – noise from road trains only

The proponent is required to use reversing beepers on the front end loaders for safety reasons, but will use broadband beepers. Broadband reversing beepers reduce tonality and have been shown to reduce noise at 500 metres by around 5 dB(A).

Assessment

The EPA's environmental objective for this factor is to protect the amenity of nearby residents from noise impacts resulting from activities associated with the proposal by ensuring that noise levels meet statutory requirements and acceptable standards.

DEC has advised that the noise modelling did not include an allowance for tonality and the proponent has responded that it can not guarantee that tonality will not be present. Also, the noise modelling did not consider that road trains entering and leaving the site would not be behind the noise bund for the whole time. The time period of full exposure would be sufficient to result in a breach of the L_{A10} criterion of the *Environmental Protection (Noise) Regulations 1997* at the nearest residence (500 metres).

Consequently, the proponent has come to an agreement with the landowner to purchase the farm and has provided the EPA with a letter stating that the agreement has been finalised and that the nearest residence on the property will be kept vacant for the life of the project. There is a second residence on this property (located about 2 kilometres from the proposal site) that the proponent would like to use as a caretaker's residence. This would only occur if the noise regulations can be satisfied at that location.

Although the predicted noise levels in Morawa were not discussed in the proponent's report, DEC advised the EPA that, with good noise management, the noise levels could be expected to meet the noise regulations. This advice only applied to normal day time operation and operation at night that excluded loading operations. The night-time loading restriction precaution took into account the stricter night-time (7 pm to 7 am) noise criteria under the noise regulations.

The proponent's Noise Management Plan specifies that night-time loading operations will not include loading operations until such time as noise monitoring has confirmed that night-time loading could be carried out without breaching the noise regulations.

The EPA expects the proponent to ensure that the proposal complies with the noise regulations and considers that, provided the proponent's Noise Management Plan is implemented, the proposal can be managed to meet the EPA's objectives for environmental factor of noise.

Summary

Having particular regard to the:

- advice of the Department of Environment and Conservation that the noise modelling predicts that with proper noise management the proposal could meet the *Environmental Protection (Noise) Regulations 1997*, except at the nearest residence;
- the proponent's letter confirming that agreement has been reached to purchase the neighbouring property and vacate the nearest residence for the life of the project; and
- the proponent's Noise Management Plan,

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for the factor of noise, provided that condition 5, which requires the implementation of the proponent's Noise Management Plan, is implemented.

5. Recommended Conditions

Having considered the information provided in this report, the EPA has developed a set of conditions that the EPA recommends be imposed if the proposal by Midwest Corporation Limited to construct and operate a rail siding (Tilley Siding) 2 kilometres north of Morawa, on the Morawa Wubin Road adjacent to the existing railway, is approved for implementation. These conditions are presented in Appendix 2.

6. Other Advice

The EPA notes that Gindalbie Metals Ltd also has a proposal to construct an iron ore rail loading facility near Morawa. The EPA considers it preferable that Midwest Corporation Limited and Gindalbie Metals Ltd combine their operations at the Tilley Siding if the expanded operation can be demonstrated to meet the EPA's environmental objectives.

7. Conclusions

The EPA has considered the proposal by Midwest Corporation Limited to construct and operate a rail siding (Tilley Siding) 2 kilometres north of Morawa, on the Morawa Wubin Road adjacent to the existing railway.

The EPA notes that there is a farm residence 500 metres to the west of the proposed Tilley Siding that would experience increased noise and dust levels due to the proposal. The noise levels at this residence would exceed the levels specified under the *Environmental Protection (Noise) Regulations 1997* and there would be amenity issues associated with fugitive dust. However, the proponent has provided the EPA with a letter stating that it has finalised an agreement with the landowner to purchase the farm and that the residence nearest to the proposal site will be kept vacant for the life of the project.

The EPA considers that noise and dust issues at the town of Morawa can be managed to meet the EPA's objectives for these environmental factors, provided the proponent's Noise and Dust Environmental Management Plans, which are included in the proponent's ARI report, are implemented. Conditions 5 and 6 would require implementation of these plans.

The EPA has therefore concluded that the proposal can be managed to meet the EPA's environmental objectives, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 2.

8. Recommendations

The EPA submits the following recommendations to the Minister for the Environment:

1. That the Minister notes that the proposal being assessed is for Midwest Corporation Limited to construct and operate a rail siding (Tilley Siding) 2 kilometres north of Morawa, on the Morawa Wubin Road adjacent to the existing railway;

2. That the Minister considers the report on the key environmental factors as set out in Section 3;
3. That the Minister notes that the EPA has concluded that the proposal can be managed to meet the EPA's environmental objectives, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 2; and
4. That the Minister imposes the conditions and procedures recommended in Appendix 2 of this report.

Appendix 1

References

Ecologia (2007). Midwest Corporation Limited Documentation for Assessment on Referral Information. August 2007.

Sinclair Knight Merz (2007). *Midwest Corporation Tilley Siding – Tilley Siding Dust Modelling and Impact Assessment*. June 2007.

Vipac Engineers & Scientists Ltd (2006). *Acoustic Assessment Tilley Siding Loading Facility*. 11 October 2006.

Midwest Corporation Limited (2007) Letter dated 12 October 2007 from the Chief Executive Officer.

Appendix 2

Recommended Environmental Conditions

RECOMMENDED ENVIRONMENTAL CONDITIONS

**STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED
(PURSUANT TO THE PROVISIONS OF THE
ENVIRONMENTAL PROTECTION ACT 1986**

TILLEY SIDING IRON ORE LOADING FACILITY
SHIRE OF MORAWA

- Proposal:** The construction and operation of a rail siding (Tilley Siding) 2 kilometres north of Morawa on the Morawa Wubin Road adjacent to the existing railway. The facility will be used to stockpile iron ore which has been transported by truck from Koolanooka. Iron ore stockpiled at Tilley Siding will be loaded by two front end loaders onto rail cars for transport to Geraldton Port.
- Proponent:** Midwest Corporation Limited
- Proponent Address:** Suite 2, 32 Kings Park Road, West Perth.
- Assessment number:** 1704
- Report of the EPA:** Bulletin 1267

The proposal referred to in the above report of the Environmental Protection Authority may be implemented. The implementation of that proposal is subject to the following conditions and procedures:

1 Proposal Implementation

- 1-1 The proponent shall implement the proposal as documented and described in schedule 1 of this statement subject to the conditions and procedures of this statement.

2 Proponent Nomination and Contact Details

- 2-1 The proponent for the time being nominated by the Minister for the Environment under sections 38(6) or 38(7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal.
- 2-2 The proponent shall notify the Chief Executive Officer of the Department of Environment and Conservation (CEO) of any change of the name and address of the proponent for the serving of a notice or other correspondence within 30 days of such change.

3 Time Limit of Authorisation

- 3-1 The authorisation to implement the proposal provided for in this statement shall lapse and be void within five years after the date of this statement if the proposal to which this statement relates is not substantially commenced.
- 3-2 The proponent shall provide the CEO with written evidence which demonstrates that the proposal has substantially commenced on or before the expiration of five years from the date of this statement.

4 Compliance Reporting

- 4-1 The proponent shall submit to the CEO environmental compliance reports annually reporting on the previous twelve-month period, unless required by the CEO to report more frequently.
- 4-2 The environmental compliance reports shall address each element of an audit program approved by the CEO and shall be prepared and submitted in a format acceptable to the CEO.
- 4-3 The environmental compliance reports shall:
1. be endorsed by signature of the proponent's chief executive officer or a person, approved in writing by the CEO, delegated to sign on behalf of the proponent's chief executive officer;
 2. state whether the proponent has complied with each condition and procedure contained in this statement;
 3. provide verifiable evidence of compliance with each condition and procedure contained in this statement;
 4. state whether the proponent has complied with each key action contained in any environmental management plan or program required by this statement;
 5. provide verifiable evidence of conformance with each key action contained in any environmental management plan or program required by this statement;
 6. identify all non-compliances and non-conformances and describe the corrective and preventative actions taken in relation to each non-compliance or non-conformance;
 7. review the effectiveness of all corrective and preventative actions taken; and
 8. describe the state of implementation of the proposal.
- 4-4 The proponent shall make the environmental compliance reports required by condition 4-1 publicly available in a manner approved by the CEO.

5 Noise

- 5-1 The proponent shall implement the Noise Management Plan contained in documentation submitted for the Assessment on Referral Information August 2007, to the requirements of the Department of Environment and Conservation.

6 Dust

- 6-1 The proponent shall implement the Dust Management Plan contained in documentation submitted for the Assessment on Referral Information August 2007, to the requirements of the Department of Environment and Conservation.

Schedule 1

Tilley Siding Iron Ore Loading Facility (Assessment No. 1704)

General Description

The proposal is to construct and operate a rail siding 2 kilometres north of Morawa, on the Morawa-Wubin Road adjacent to the existing railway, to load iron ore for rail transport.

The proposal is described in the following document – Supporting Documentation for Assessment on Referral Information: Tilley Siding Stockpile Loading and Transport Facility, August 2007.

Summary Description

A summary of the key proposal characteristics is presented in Table 1

Table 1 – Summary of Key Proposal Characteristics

Element	Description
Major project components	Rail siding, stockpiling and loading of iron ore.
Total estimated area of project	A total area of 28 hectares (ha) of which <ul style="list-style-type: none">• 27.74 ha is previously cleared agricultural land; and• 0.26 ha bushland.
Length of turnout	1,610 metres
Road train arrivals	2 trucks per hour 24 hours per day
Train makeup	64 wagons with two 2000HP (Westrail Class R) or similar
Loading	Two front end loaders
Stockpiles	Two stockpiles running parallel to the siding. 3 metre high dead stockpile maintained as noise barrier on western side of siding.
Waste materials	Negligible, will be removed from site.
Water requirement (anticipated)	180 kilolitres/day
Water source for dust management	80 megalitres of pit water from Koolanooka mine pit and 120 megalitres of bore entitlement per annum.
Water salinity	TDS level between 3000 and 5000 parts per million (ppm)

Figure (attached)

Figure 1 – Location Plan (see figure 1 above)