NPI Report

for

Thunderbird Operations Pty Ltd

Thunderbird Mineral Sands Project

01/07/2024 - 30/06/2025

Greenbase

NATIONAL POLLUTANT INVENTORY – REPORTING FORM
Section A: Reporting Facility Information

REPORTING PERIOD [1]

From: 01/07/2024 To: 30/06/2025

COMPANY AND FACILITY DETAILS

Facility ID (If known)

695564 WA1734

Registered Business Name (or other legal entity) [2]

Thunderbird Operations Pty Ltd

Australian Company Number (ACN) (if applicable) [2]

611 351 743

Australian Business Number (ABN) [2]

Registered Business Address [2] [3]

264 Port Drive
Broome
WA Postcode 6725

Postal Address (If different to above address)

264 Port Drive
Broome
WA Postcode 6725

Facility Name (if different from Registered Business Name)

Thunderbird Mineral Sands Project

Environment Agency Licence Number(s) (if applicable) [3]

L9335/2022/1

Number of Employees at the Facility

300

Website Address

https://www.kmsands.com.au

Describe the main activities or processes undertaken at the facility

Mineral Sand Mining

Street address of the Facility

Great Northern Highway
Broome
WA Postcode 6725

Latitude of Facility (decimal, degrees)

-17.425 (17° 25' 28" S)

Longitude of Facility (decimal, degrees)

122.960 (122° 57' 35" E)

Australian & New Zealand Standard Industrial Classification Code [4]

0805

FOR PUBLIC ENQUIRIES

Title: Mr
First Name: Chris
Last Name: Cottier
Position: Manager Community and Public Relations
Phone: (08) 6118 9551
Fax:
Mobile:
Email: ccottier@kmsands.com.au
Postal Address:
264 Port Drive
Broome
WA Postcode 6725

FOR TECHNICAL ENQUIRIES [3]

Title: Mr
First Name: Mitchell
Last Name: Duley
Position: Environmental Superintendent
Phone: (08) 6118 9536
Fax:
Mobile:
Email: mduley@kmsands.com.au
Postal Address:
264 Port Drive
Broome
WA Postcode 6725

NATIONAL POLLUTANT INVENTORY – REPORTING FORM
Section A: Reporting Facility Information

1. The period that the data in the report pertains to.
2. As registered with the Australian Securities and Investment Commission.
3. These fields will not be made public.
4. ANZSIC 2006 codes; the complete list is available at: http://www.npi.gov.au/reporting/industry/anzsic-code-list.html

NATIONAL POLLUTANT INVENTORY – REPORTING FORM
Section B: Substance Emission Information

CATEGORY 1, 1a AND 1b THRESHOLDS

Note: For further information on Category 1, 1a & 1b substances and thresholds, see Section Two of the NPI Guide.

1. Did your facility trip a threshold for one or more Category 1, 1a or 1b substances in the reporting year?

● The relevant usage [1] thresholds are:
- 10 t/yr for Category 1
- 25 t/yr for Category 1a (Total Volatile Organic Compounds), and
- 5 kg/yr for Category 1b (mercury and compounds).

☑ **Yes** – you must estimate and report your facility's emission(s) of the Category 1, 1a, and/or 1b substance(s) in kg/yr in the:
- Substance Emission Table (pages 4 - 6) **and**;

– you must estimate and report your facility's transfer(s) of the Category 1 and/or 1b substance(s) in kg/yr to mandatory reporting transfer destinations from all onsite activities in the:
- Substance Transfer Table (pages 8 - 9).

You may also report your facility's transfers of these substances to voluntary reporting transfer destinations.

Now go to Question 2 below.

☐ **No** – go to Question 2 below.

CATEGORY 2a AND 2b THRESHOLDS [2]

Note: For further information on Category 2a & 2b substances and thresholds, see Section Two of the NPI Guide.

2. In the fuel table below, enter the quantity of fuel burnt in tonnes per year and the total of these amounts.

* Fuel Type	LPG	Bagasse	Biogas	Briquettes	Coal Black	Coal Brown	Diesel	Fuel Oil	Natural Gas	Petrol (ULP)	Solid Waste	Wood	Explosives	Other (specify)	**TOTAL**
* Amount burnt (t/yr)	0.590						9764		7927				361		**18053**

3. How much electricity in megawatt hours (MWh) did your facility consume during the reporting period, excluding that used for lighting or motive purposes? **MWh**

4. Did your facility (please tick the relevant boxes below):

☑ burn a total of 400 tonnes or more of fuel during the reporting period? **AND/OR**

☑ burn one tonne or more of fuel in any one hour during the reporting period?

Yes to either of the above – you must estimate and report your facility's emission(s) of all Category 2a substances in kg/yr in the Substance Emission Table (pages 4 - 6).

☐ **None of the above** – go to Question 5 below.

The Category 2a substances are:
Carbon monoxide, Fluoride compounds, Hydrochloric acid, Oxides of Nitrogen, Particulate Matter <2.5mm, Particulate Matter <10.0mm, Polycyclic Aromatic Hydrocarbons (PAH), Sulfur Dioxide, and Total Volatile Organic Compounds.

Now go to Question 5 below.

1. The NPI Guide defines usage as 'the handling, manufacture, import, processing, coincidental production or other use of the substance'. Refer to the NPI Guide for more information regarding substances, their thresholds and calculating your usage(s).
2. This information will not be made public.

NATIONAL POLLUTANT INVENTORY – REPORTING FORM
Section B: Substance Emission Information

5. Did your facility (please tick the relevant box(es) below):

☑ burn 2000 tonnes or more of fuel or waste in the reporting year? **AND/OR**

☐ consume 60 000 megawatt hours or more of electrical energy for other than lighting or motive purposes in the reporting year? **AND/OR**

☐ have a maximum potential power consumption of 20 megawatts or more for other than lighting or motive purposes in the reporting year?

Yes to any of the above – you must estimate and report your facility's emission(s) of Category 2b substances in kg/yr in the Substance Emission Table (pages 4 - 6).

☐ **None of the above** – go to Question 6 below.

Category 2b substances include all Category 2a substances (as listed above), plus:
Arsenic & compounds, beryllium & compounds, cadmium & compounds, chromium(III) compounds, chromium(VI) compounds, copper & compounds, lead & compounds, magnesium oxide fume, mercury & compounds, nickel & compounds, and polychlorinated dioxins & furans.

Now go to Question 6 below.

CATEGORY 3 THRESHOLDS

Note: For further information on Category 3 substances and thresholds, see Section Two of the NPI Guide.

6. Did your facility emit to water and/or transfer to a mandatory reporting transfer destination a total of 15 tonnes or more of Total Nitrogen and/or a total of 3 tonnes or more of Total Phosphorus in the reporting year? [3]

☐ **Yes** – you **must** estimate and report your facility's emission(s) to water and transfers to mandatory reporting transfer destinations in kg/yr of both Total Nitrogen and Total Phosphorus in the:

- Substance Emission Table (pages 4 - 6) and;
- Substance Transfer Table (pages 8 - 9).

You may also report your facility's transfers of these substances to voluntary reporting transfer destinations.

☑ **No** – you are not required to report emissions or transfers for Total Nitrogen and Total Phosphorus.

EMISSION ESTIMATION TECHNIQUES

For every NPI substance that trips a threshold, emissions to air, land and/or water must be reported. The method used to calculate the emissions must also be reported. There are five Emission Estimation Techniques (EETs) (listed in the table below) that may be used to calculate your facility's NPI emissions. Refer to the EET table below to determine the corresponding code for the EET used in reporting when completing the Substance Emission Table (pages 4-6).

Emission Estimation Technique (EET)	
Code	**Description**
1	Mass balance
2	Engineering calculations
3	Direct measurement
4	Emission factors
5	Approved alternative EET method

3. The threshold amounts of Total Phosphorus and Total Nitrogen refer to either the total amount emitted to water, the total amount transferred to a mandatory reporting transfer destination or a combination of the two

NATIONAL POLLUTANT INVENTORY – REPORTING FORM
Section B: Substance Emission Information

Please circle corresponding EET code(s) used to estimate emissions

Substance Emission Table

	Substance	NPI Threshold category	CAS No.	Usage (t/yr)[1] [2]	EMISSIONS [3] (kg/yr)								
					Air					Water		Land	
					Stack or point source		Fugitive or nonpoint source		Total emission	Total emission	EET Code(s)	Total emission	EET code(s)
					Amount	EET Code(s)	Amount	EET Code(s)					
11	Arsenic and compounds	1,2b	7440-38-2	16.1		1 2 3 4 5	4.99	1 2 3 ④ 5	4.99		1 2 3 4 5	28.1	1 2 ③ 4 5
14	Beryllium and compounds	2b	7440-41-7	8.21		1 2 3 4 5	6.08	1 2 3 ④ 5	6.08		1 2 3 4 5	2.55	1 2 ③ 4 5
16	Boron and compounds	1	7440-42-8	479		1 2 3 4 5	82.1	1 2 3 ④ 5	82.1		1 2 3 4 5	6.50	1 2 ③ 4 5
18	Cadmium and compounds	2b	7440-43-9	0.807		1 2 3 4 5	0.317	1 2 3 ④ 5	0.317		1 2 3 4 5	0.390	1 2 ③ 4 5
20	Carbon monoxide	1,2a,2b	630-08-0		103038	1 2 3 ④ 5	89812	1 2 3 ④ 5	192851		1 2 3 4 5		1 2 3 4 5
26	Chromium (III) and compounds	1,2b	7440-47-3	567		1 2 3 4 5	267	1 2 3 ④ 5	267		1 2 3 4 5	158	1 2 ③ 4 5
27	Chromium (VI) and compounds	2b	7440-47-3			1 2 3 4 5		1 2 3 4 5			1 2 3 4 5		1 2 3 4 5
29	Copper and compounds	1,2b	7440-50-8	483		1 2 3 4 5	160	1 2 3 ④ 5	160		1 2 3 4 5	7.35	① 2 ③ 4 5
30	Cumene	1	98-82-8	95.3		1 2 3 4 5	7.21	1 2 3 ④ 5	7.21		1 2 3 4 5		1 2 3 4 5
42	Ethylbenzene	1	100-41-4	10.7	7.35	1 2 3 ④ 5	2.01	① 2 3 ④ 5	9.36		1 2 3 4 5		1 2 3 4 5
46	Fluoride and compounds	1,2a,2b	N/A	2956		1 2 3 4 5	2216	1 2 3 ④ 5	2216		1 2 3 4 5	19.2	① 2 3 4 5
47	Formaldehyde (methyl aldehyde)	1	50-00-0		9773	1 2 3 ④ 5	2445	1 2 3 ④ 5	12218		1 2 3 4 5		1 2 3 4 5
50	Hydrochloric acid	2a,2b	7647-01-0			1 2 3 4 5		1 2 3 4 5			1 2 3 4 5		1 2 3 4 5
52	Lead and compounds	1,2b	7439-92-1	161		1 2 3 4 5	48.0	1 2 3 ④ 5	48.0		1 2 3 4 5	18.2	1 2 ③ 4 5
53	Magnesium oxide fume	2b	1309-48-4			1 2 3 4 5		1 2 3 4 5			1 2 3 4 5		1 2 3 4 5
54	Manganese and compounds	1	7439-96-5	7423		1 2 3 4 5	2801	1 2 3 ④ 5	2801		1 2 3 4 5	198	① 2 ③ 4 5
55	Mercury and compounds	1b,2b	7439-97-6	4.63		1 2 3 4 5	0.703	1 2 3 ④ 5	0.703		1 2 3 4 5	0.0650	1 2 ③ 4 5
64	Nickel and compounds	1,2b	7440-02-0	151		1 2 3 4 5	174	1 2 3 ④ 5	174		1 2 3 4 5	13.9	① 2 ③ 4 5
69	Oxides of nitrogen	2a,2b	N/A		156990	1 2 3 ④ 5	281739	1 2 3 ④ 5	438729		1 2 3 4 5		1 2 3 4 5
70	Particulate matter <10um	2a,2b	N/A		14.3	1 2 3 ④ 5	1341355	1 2 3 ④ 5	1341369		1 2 3 4 5		1 2 3 4 5
92	Particulate matter <2.5um	2a,2b	N/A		14.3	1 2 3 ④ 5	19900	1 2 3 ④ 5	19914		1 2 3 4 5		1 2 3 4 5

NATIONAL POLLUTANT INVENTORY – REPORTING FORM
Section B: Substance Emission Information

	Substance	NPI Threshold category	CAS No.	Usage (t/yr)[1] [2]	EMISSIONS [3] (kg/yr)											
					Air								Water		Land	
					Stack or point source		Fugitive or nonpoint source			Total emission	Total emission	EET Code(s)	Total emission	EET code(s)		
					Amount	EET Code(s)	Amount	EET Code(s)								
73	Polychlorinated dioxins and furans	2b	N/A			1 2 3 4 5		1 2 3 4 5				1 2 3 4 5		1 2 3 4 5		1 2 3 4 5
74	Polycyclic aromatic hydrocarbons	2a,2b	N/A	35.2	0.0320	1 2 3 ④ 5	4.18	1 2 3 ④ 5		4.21		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5
77	Sulphur dioxide	2a,2b	7446-09-5		83.9	1 ② 3 4 5	155	1 ② 3 ④ 5		239		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5
85	Total volatile organic compounds	1a,2a,2b	N/A	743	21890	1 2 3 ④ 5	24866	① 2 3 ④ 5		46756		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5
89	Xylenes	1	1330-20-7	33.7	34.1	1 2 3 ④ 5	17.0	① 2 3 ④ 5		51.1		1 2 3 4 5		1 2 3 4 5		1 2 3 4 5
90	Zinc and compounds	1	7440-66-6	3526		1 2 3 4 5	828	1 2 3 ④ 5		828		1 2 3 4 5	69.1	1 2 ③ 4 5		

1. This information will not be made public.
2. The NPI Guide defines usage as 'the handling, manufacture, import, processing, coincidental production or other use of the substance'. Refer to the NPI Guide for more information regarding substances, their thresholds and calculating your usage(s).
3. A significant difference is a substance that was reported previously that has not been reported in this report, a 50% decrease in reported emission or transfer of any substance or a100% increase in reported emission or transfer of any substance

NATIONAL POLLUTANT INVENTORY – REPORTING FORM
Section B: Substance Emission Information

7. Were there any substance emissions you could not estimate due to a lack of emission factors or other means of estimation? If so, list in the table below.

SUBSTANCE	COMMENT
Chromium (VI) and compounds	Other: No EET available for combustion processes. All chromium emissions were related to dust generation
Hydrochloric acid	Not used on site
Magnesium oxide fume	Other: No EET available
Polychlorinated dioxins and furans	Other: No emissions identified, nor any trace levels of this substance

8. Emissions and significant differences - please refer to current reporting period data and your previous year's NPI report data to answer the following questions and complete the corresponding tables below.

OMITTED SUBSTANCES [1] [3]

a) Were there any substances reported in the previous year's report that have not been reported in this report?

☑ **Yes** – You **MUST** detail the relevant substance(s) and the reason for their omission in the section below. ☐ **No** – go to b) below.

SUBSTANCE		REASON FOR OMISSION
Ethylene glycol (1,2-ethanediol)	Emission in Last Report but not Current Report	Other: Usage below threshold

EMISSION DECREASES [1] [3]

b) Are there any substances reported in this report that have had a significant decrease in emissions compared to the previous year's report?

☑ **Yes** - You **MUST** detail the relevant substance(s) and the reason for their decreased emission in the section below. ☐ **No** – go to c) below.

SUBSTANCE		REASON FOR DECREASE
Particulate matter <10um	Significant Emission Decrease From Last Report to Air Point Source	Other: One of the generators was decommissioned and not used this year
Particulate matter <2.5um	Significant Emission Decrease From Last Report to Air Point Source	Activity Decrease: One of the generators was decommissioned and not used this year

EMISSION INCREASES [1] [3]

c) Are there any substances reported in this report that have had a significant increase in emissions compared to the previous year's report?

☑ **Yes** - You **MUST** detail the relevant substance(s) and the reason for their increased emission in the section below. ☐ **No** – no action required.

SUBSTANCE		REASON FOR INCREASE
Arsenic and compounds	Significant Emission Increase From Last Report to Air Fugitive	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Arsenic and compounds	Significant Emission Increase From Last Report to Air Total	Activity Increase: Increase in dust emissions from vehicle movement and open areas

NATIONAL POLLUTANT INVENTORY – REPORTING FORM
Section B: Substance Emission Information

SUBSTANCE		REASON FOR INCREASE
Beryllium and compounds	Significant Emission Increase From Last Report to Air Fugitive	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Beryllium and compounds	Significant Emission Increase From Last Report to Air Total	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Beryllium and compounds	Significant Emission Increase From Last Report to Land	Process Change: Effluent spills identified and included this year
Boron and compounds	Significant Emission Increase From Last Report to Air Fugitive	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Boron and compounds	Significant Emission Increase From Last Report to Air Total	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Cadmium and compounds	Significant Emission Increase From Last Report to Air Fugitive	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Cadmium and compounds	Significant Emission Increase From Last Report to Air Total	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Cadmium and compounds	Significant Emission Increase From Last Report to Land	Process Change: Effluent spills identified and included this year
Chromium (III) and compounds	Significant Emission Increase From Last Report to Air Fugitive	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Chromium (III) and compounds	Significant Emission Increase From Last Report to Air Total	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Chromium (III) and compounds	Significant Emission Increase From Last Report to Land	Process Change: Effluent spills identified and included this year
Copper and compounds	Significant Emission Increase From Last Report to Air Fugitive	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Copper and compounds	Significant Emission Increase From Last Report to Air Total	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Copper and compounds	Significant Emission Increase From Last Report to Land	Process Change: Effluent spills identified and included this year
Fluoride and compounds	Significant Emission Increase From Last Report to Air Fugitive	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Fluoride and compounds	Significant Emission Increase From Last Report to Air Total	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Lead and compounds	Significant Emission Increase From Last Report to Air Fugitive	Activity Increase: Increase in dust emissions from vehicle movement and open areas

NATIONAL POLLUTANT INVENTORY – REPORTING FORM
Section B: Substance Emission Information

SUBSTANCE		REASON FOR INCREASE
Lead and compounds	Significant Emission Increase From Last Report to Air Total	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Lead and compounds	Significant Emission Increase From Last Report to Land	Process Change: Effluent spills identified and included this year
Manganese and compounds	Significant Emission Increase From Last Report to Air Fugitive	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Manganese and compounds	Significant Emission Increase From Last Report to Air Total	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Manganese and compounds	Significant Emission Increase From Last Report to Land	Process Change: Effluent spills identified and included this year
Mercury and compounds	Significant Emission Increase From Last Report to Air Fugitive	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Mercury and compounds	Significant Emission Increase From Last Report to Air Total	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Nickel and compounds	Significant Emission Increase From Last Report to Air Fugitive	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Nickel and compounds	Significant Emission Increase From Last Report to Air Total	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Nickel and compounds	Significant Emission Increase From Last Report to Land	Process Change: Effluent spills identified and included this year
Zinc and compounds	Significant Emission Increase From Last Report to Air Fugitive	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Zinc and compounds	Significant Emission Increase From Last Report to Air Total	Activity Increase: Increase in dust emissions from vehicle movement and open areas
Zinc and compounds	Significant Emission Increase From Last Report to Land	Process Change: Effluent spills identified and included this year

1. This information will not be made public.
2. The NPI Guide defines usage as 'the handling, manufacture, import, processing, coincidental production or other use of the substance'. Refer to the NPI Guide for more information regarding substances, their thresholds and calculating your usage(s).
3. A significant difference is a substance that was reported previously that has not been reported in this report, a 50% decrease in reported emission or transfer of any substance or a100% increase in reported emission or transfer of any substance

SUPPLEMENT TO NPI SECTION B REPORTING FORM
Substance Emission Information

Note: This supplement contains issues not covered by Section B/D Part 3 that will be required to be reported in the electronic transmission to the NPI database.
This supplement is not contained in the standard NPI paper form and does not form part of the standard NPI paper submission.

SUBSTANCE	ISSUE	REASON
Arsenic and compounds	Destination (or Air source) has changed since previous report	Process Change: Effluent spills identified and included this year
Boron and compounds	Destination (or Air source) has changed since previous report	Process Change: Effluent spills identified and included this year
Cumene	Destination (or Air source) has changed since previous report	Process Change: Effluent spills identified and included this year
Mercury and compounds	Destination (or Air source) has changed since previous report	Process Change: Effluent spills identified and included this year
Polycyclic aromatic hydrocarbons	Destination (or Air source) has changed since previous report	Other: Diesel spills not identified this year
Xylenes	Destination (or Air source) has changed since previous report	Other: Diesel spills not identified this year
Beryllium and compounds	EET has changed since last report	Process Change: Effluent spills identified and included this year while diesel spills not identified this year
Cadmium and compounds	EET has changed since last report	Process Change: Effluent spills identified and included this year while diesel spills not identified this year
Chromium (III) and compounds	EET has changed since last report	Process Change: Effluent spills identified and included this year while diesel spills not identified this year
Copper and compounds	EET has changed since last report	Process Change: Effluent spills identified and included this year
Lead and compounds	EET has changed since last report	Process Change: Effluent spills identified and included this year while diesel spills not identified this year
Manganese and compounds	EET has changed since last report	Process Change: Effluent spills identified and included this year
Nickel and compounds	EET has changed since last report	Process Change: Effluent spills identified and included this year while diesel spills not identified this year
Sulphur dioxide	EET has changed since last report	Other: One of the generators was decommissioned and not used this year
Total volatile organic compounds	EET has changed since last report	Other: Explosives used this year
Xylenes	EET has changed since last report	Other: One of the generators was decommissioned and not used this year
Zinc and compounds	EET has changed since last report	Process Change: Effluent spills identified and included this year while diesel spills not identified this year
Ethylbenzene	Substance not reported in last report	Activity Increase: Substance previously below threshold
Formaldehyde (methyl aldehyde)	Substance not reported in last report	Activity Increase: Substance previously below threshold

NATIONAL POLLUTANT INVENTORY – REPORTING FORM
Section C: Emission Reduction Activities

1. CLEANER PRODUCTION ACTIVITIES (Source reduction)

Please tick the corresponding box if your facility currently carries out any of the source reduction techniques listed below:

	Description	Comments
☐	Changed from solvent based to aqueous based raw materials	
☐	Changed product specifications	
☐	Changed production schedules to minimise equipment/feedstock changeovers	
☐	Community consultative committee	
☐	Dust suppression - water sprays/chemical suppression	
☐	Dust suppression - wind breaks/covered/enclosed stockpiles	
☐	Implemented inspection or monitoring program for potential spill or leak sources	
☐	Improved maintenance scheduling, record keeping, or procedures	
☐	Improved procedures for loading, unloading or transfer operations	
☐	Installed high-pressure/low-volume cleaning equipment	
☐	Installed overflow alarms or automatic shut-off valves	
☐	Installed vapour recovery systems (VRS)	
☐	Modified packaging	
☐	Modified process, equipment, layout, or piping	
☐	Other modifications/practices (please specify)	
☐	Use of cleaner raw materials	

2. INSTALLATION OF POLLUTION CONTROL EQUIPMENT ('End of pipe' reduction)

Please tick the corresponding box if your facility currently employs any of the pollution control technologies listed below:

	Description	Year Installed	Comments
☐	Activated carbon filter		
☐	Bio scrubber		
☐	Biofilter		
☐	Cyclone/Multicyclone		
☐	Dry scrubber		
☐	Dust monitor		
☐	Electrostatic precipitator		
☐	Fabric filter/baghouse		
☐	Incineration/afterburner		
☐	Low NOx burner		
☐	Mist eliminator		
☐	Opacity monitor		
☐	Other pollution control equipment (please specify)		
☐	Thermal oxidiser		
☐	Wastewater treatment		
☐	Wet scrubber		

NATIONAL POLLUTANT INVENTORY – REPORTING FORM

Section D: Substance Transfer Information

Note: For further information on transfers, see Section Four of the NPI Guide.

1 Did your facility trip and report for one or more Category 1, 1b and/or Category 3 substances?

☑ **Yes** - go to question 2 below.

☐ **No** - you are not required to report transfers.

2 Were the reported substances also contained in waste streams [1] ?

☑ **Yes** - go to question 3 below.

☐ **No** - you are not required to report transfers.

3 Were the waste streams to mandatory reporting transfer destinations?

☑ **Yes** - you **must** report transfers of the substances to mandatory reporting transfer destinations in the Substance Transfer Table below. You may also report transfers of the substances to voluntary reporting transfer destinations in the Substance Transfer Table below.

☐ **No** - you **may** report transfers of the applicable substances to voluntary reporting transfer destinations in the Substance Transfer Table below.

Transfer Estimation Technique (TET)	
Code	**Description**
1	Mass balance
2	Engineering calculations
3	Direct measurement
4	Transfer factors
5	Approved alternative TET

Substance Transfer Table Note: for substance transfers with multiple destinations, please use a separate row to list each destination

Substance [2]	Transfer amount (kg/yr)	TET code(s) (circle)	Off-site or on-site destination (select ONE reference number from 1-27 as listed in table to the right)
Arsenic and compounds	0.0000322	① 2 3 4 5	12
Boron and compounds	0.00199	① 2 3 4 5	12
Chromium (III) and compounds	0.000112	① 2 3 4 5	12
Copper and compounds	0.000886	① 2 3 4 5	12
Fluoride and compounds	0.00973	① 2 3 4 5	12
Lead and compounds	0.0000215	① 2 3 4 5	12
Manganese and compounds	0.00132	① 2 3 4 5	12
Mercury and compounds	0.00000217	① 2 3 4 5	12
Nickel and compounds	0.0000866	① 2 3 4 5	12
Zinc and compounds	0.000491	① 2 3 4 5	12
Arsenic and compounds	159	1 2 3 ④ 5	18
Chromium (III) and compounds	979	1 2 3 ④ 5	18
Copper and compounds	1753	1 2 3 ④ 5	18
Lead and compounds	1670	1 2 3 ④ 5	18
Mercury and compounds	0.730	1 2 3 ④ 5	18

Ref. No.	Off-site Destination	Ref. No.	On-site Destination
1	Off-site Destruction	16	On-site Energy recovery ^
2	Off-site Energy recovery ^	17	On-site Immobilisation ^
3	Off-site Immobilisation^	18	On-site Landfill
4	Off-site Landfill	19	On-site Long term waste storage
5	Off-site Long term waste storage	20	On-site Partial purification ^
6	Off-site Partial purification ^	21	On-site Purification ^
7	Off-site Purification ^	22	On-site Recycling ^
8	Off-site Recycling ^	23	On-site Remediation ^
9	Off-site Remediation ^	24	On-site Reprocessing ^
10	Off-site Reprocessing ^	25	On-site Reuse ^
11	Off-site Reuse ^	26	On-site Tailings storage
12	Off-site Sewerage	27	On-site Underground injection
13	Off-site Tailings storage		
14	Off-site Treatment		
15	Off-site Underground injection		

^ Indicates voluntary reporting transfer destinations

NATIONAL POLLUTANT INVENTORY – REPORTING FORM

Section D: Substance Transfer Information

Note: For further information on transfers, see Section Four of the NPI Guide.

Substance [2]	Transfer amount (kg/yr)	TET code(s) (circle)	Off-site or on-site destination (select ONE reference number from 1-27 as listed in table to the right)
Nickel and compounds	152	1 2 3 ④ 5	18
Zinc and compounds	2453	1 2 3 ④ 5	18
Arsenic and compounds	7203	① 2 3 4 5	26
Boron and compounds	216094	① 2 3 4 5	26
Chromium (III) and compounds	252110	① 2 3 4 5	26
Copper and compounds	216094	① 2 3 4 5	26
Fluoride and compounds	1296564	① 2 3 4 5	26
Lead and compounds	72031	① 2 3 4 5	26
Manganese and compounds	3313440	① 2 3 4 5	26
Mercury and compounds	2089	① 2 3 4 5	26
Nickel and compounds	64828	① 2 3 4 5	26
Zinc and compounds	1584689	① 2 3 4 5	26
Arsenic and compounds	0.140	1 2 3 ④ 5	4
Chromium (III) and compounds	0.866	1 2 3 ④ 5	4
Copper and compounds	1.55	1 2 3 ④ 5	4
Lead and compounds	1.48	1 2 3 ④ 5	4
Mercury and compounds	0.000646	1 2 3 ④ 5	4
Nickel and compounds	0.135	1 2 3 ④ 5	4
Zinc and compounds	1582	① 2 3 ④ 5	4

1. Waste stream is the flow or movement of wastes from the point of generation to final disposal.
2. Please write the names of all substances you are reporting transfers for.

NATIONAL POLLUTANT INVENTORY – REPORTING FORM
Section D: Substance Transfer Information

Note: For further information on transfers, see Section Four of the NPI Guide.

4. Transfers and significant differences - please refer to current reporting period data and your previous year's NPI report data to answer the following questions and complete the corresponding tables below.

OMITTED TRANSFERS [1]

a) Of the Category 1, 1b and/or Category 3 substances for which your facility tripped thresholds, were there any substances you did not report transfers for?

☑ **Yes** – you **MUST** detail the relevant substance transfer(s) and the reason for their omission in the section below. ☐ **No** – go to b) below.

SUBSTANCE	REASON FOR OMISSION
Cumene	Other: No transfer to a mandatory reporting destination identified
Ethylbenzene	Other: No transfer to a mandatory reporting destination identified
Formaldehyde (methyl aldehyde)	Other: No transfer to a mandatory reporting destination identified
Xylenes	Other: No transfer to a mandatory reporting destination identified

TRANSFER DECREASES [1] [2]

b) Are there any substances reported in this report that have had a significant [2] decrease in transfer(s) from the previous year's report?

☐ **Yes** - you **MUST** detail the relevant substance(s) and the reason for their decreased transfer(s) in the section below. ☑ **No** – go to c) below.

TRANSFER INCREASES [1] [2]

c) Are there any substances reported in this report that has had a significant [1] increase in transfer(s) from the previous year's report?

☑ **Yes** - you **MUST** detail the relevant substance(s) and the reason for their increased transfer(s) in the section below. ☐ **No** – no action required.

SUBSTANCE	REASON FOR INCREASE
Boron and compounds	Activity Increase: Increase in solids in tailings
Chromium (III) and compounds	Activity Increase: Increase in waste sent to onsite landfill
Chromium (III) and compounds	Activity Increase: Increase in solids in tailings
Copper and compounds	Activity Increase: Increase in waste sent to onsite landfill
Copper and compounds	Activity Increase: Increase in solids in tailings
Fluoride and compounds	Activity Increase: Increase in solids in tailings
Lead and compounds	Activity Increase: Increase in waste sent to onsite landfill
Lead and compounds	Activity Increase: Increase in solids in tailings
Manganese and compounds	Activity Increase: Increase in solids in tailings
Mercury and compounds	Activity Increase: Increase in waste sent to onsite landfill
Mercury and compounds	Activity Increase: Increase in solids in tailings
Nickel and compounds	Activity Increase: Increase in waste sent to onsite landfill
Nickel and compounds	Activity Increase: Increase in solids in tailings

NATIONAL POLLUTANT INVENTORY – REPORTING FORM

Section D: Substance Transfer Information

Note: For further information on transfers, see Section Four of the NPI Guide.

SUBSTANCE	REASON FOR INCREASE
Zinc and compounds	Process Change: Tyres sent to offsite landfill identified and included this year
Zinc and compounds	Activity Increase: Increase in waste sent to onsite landfill
Zinc and compounds	Activity Increase: Increase in solids in tailings

1. This information will not be made public
2. A significant difference is a substance that was reported previously that has not been reported in this report, a 50% decrease in reported emission or transfer of any substance or a 100% increase in reported emission or transfer of any substance.

SUPPLEMENT TO NPI SECTION D REPORTING FORM
Substance Transfer Information

Note: This supplement contains issues not covered by Section B/D Part 3 that will be required to be reported in the electronic transmission to the NPI database.
This supplement is not contained in the standard NPI paper form and does not form part of the standard NPI paper submission.

SUBSTANCE	ISSUE	REASON
Zinc and compounds	Transfer estimation technique changed from last report	Process Change: Tyres sent to offsite landfill identified and included this year
Arsenic and compounds	Transfer not reported in previous report - Transfer-Landfill (Offsite)	Activity Increase: Substance previously below threshold
Arsenic and compounds	Transfer not reported in previous report - Transfer-Landfill (Onsite)	Activity Increase: Increase in waste sent to onsite landfill
Arsenic and compounds	Transfer not reported in previous report - Transfer-Sewerage (Offsite)	Other: Waste transfer to offsite sewerage facility identified and included this year
Boron and compounds	Transfer not reported in previous report - Transfer-Sewerage (Offsite)	Other: Waste transfer to offsite sewerage facility identified and included this year
Chromium (III) and compounds	Transfer not reported in previous report - Transfer-Sewerage (Offsite)	Other: Waste transfer to offsite sewerage facility identified and included this year
Copper and compounds	Transfer not reported in previous report - Transfer-Sewerage (Offsite)	Other: Waste transfer to offsite sewerage facility identified and included this year
Fluoride and compounds	Transfer not reported in previous report - Transfer-Sewerage (Offsite)	Other: Waste transfer to offsite sewerage facility identified and included this year
Lead and compounds	Transfer not reported in previous report - Transfer-Sewerage (Offsite)	Other: Waste transfer to offsite sewerage facility identified and included this year
Manganese and compounds	Transfer not reported in previous report - Transfer-Sewerage (Offsite)	Other: Waste transfer to offsite sewerage facility identified and included this year
Mercury and compounds	Transfer not reported in previous report - Transfer-Sewerage (Offsite)	Other: Waste transfer to offsite sewerage facility identified and included this year
Nickel and compounds	Transfer not reported in previous report - Transfer-Sewerage (Offsite)	Other: Waste transfer to offsite sewerage facility identified and included this year
Zinc and compounds	Transfer not reported in previous report - Transfer-Sewerage (Offsite)	Other: Waste transfer to offsite sewerage facility identified and included this year
Arsenic and compounds	Transfer not reported in previous report - Transfer-Tailings Storage (Onsite)	Activity Increase: Substance previously below threshold

NATIONAL POLLUTANT INVENTORY – REPORTING FORM
Section E: Certification

RESOURCES INCURRED IN COMPLETING THIS FORM

Internal costs – confidential statement, not to be made public

$

External costs (consultants, analysis) - confidential statement, not to be made public.

$12880

Would you like to make a public statement? This statement may be published on the NPI website.

Would you like to make a confidential statement? This statement will not be published on the NPI website.

CHECKLIST

Please tick each box when sections are complete to assist with the completion of this reporting form.

SECTION A: REPORTING FACILITY INFORMATION

- ☑ Reporting period
- ☑ Company and facility details
- ☑ Public enquiries contact
- ☑ Technical enquiries contact

SECTION B: SUBSTANCE EMISSION INFORMATION

- ☑ Fuel table
- ☑ Substance Emission Table
- ☑ Emissions and significant differences

SECTION C: EMISSION REDUCTION ACTIVITIES

- ☑ Cleaner production activities
- ☑ Pollution control equipment

SECTION D: SUBSTANCE TRANSFER INFORMATION

- ☑ Substance Transfer Table
- ☑ Transfers and significant differences

SECTION E: CERTIFICATION

Please tick and sign below when all other Sections are complete

CERTIFICATION (to be completed by the facility occupier)

I certify that I have reviewed this form and the supporting documentation, and to the best of my knowledge and ability, all the information provided in this form:

Please tick

- ☑ has been estimated or extrapolated using all due care and diligence and in accordance with the relevant industry estimation technique(s); and/ or
- ☐ has been estimated or extrapolated using all due care and diligence and in accordance with estimation techniques agreed by my state or territory environment agency.

DETAILS OF FACILITY OCCUPIER [1]

Name

Date

Position

Signature

Facility

WA1734 Thunderbird Mineral Sands Project

Please send this form to your local jurisdiction. Contact details are available from http://www.npi.gov.au/contacts/state-territory.html

1. The facility occupier is defined in the NEPM as: "in relation to any facility means a person who is in occupation or control of the facility whether or not that person is the owner of the facility."