

Environmental Protection Act 1994

**Environmental
Evaluation**

Notice to conduct or commission an environmental evaluation

This notice to conduct or commission an environmental evaluation is issued by the administering authority pursuant to 326B of the Environmental Protection Act 1994.

Southern Cross Fertilisers Pty Ltd
c/- Incitec Pivot Limited
Level 8, 28 Freshwater Place
SOUTHBANK VICTORIA 3006

Your reference: STAT901

Our reference: EPML00885513

3 March 2015

Take notice: that under the *Environmental Protection Act 1994* (the Act) a notice to conduct or commission an environmental investigation is issued to Southern Cross Fertilisers Pty Ltd trading as Incitec Pivot Limited (you) by the administering authority. The administering authority is the Chief Executive of the Department of Environment and Heritage Protection (the department).

The notice to conduct or commission an environmental investigation is issued in respect of the activities of Phosphate Hill Mine, on land described as mining leases ML5542, ML5543, ML5551, ML5556 (the premises).

A. Grounds

The notice to conduct or commission an environmental investigation is issued on the following grounds:

- The department is satisfied on reasonable grounds that an activity or proposed activity is causing, or is likely to cause environmental harm.

The facts and circumstances forming the basis for these grounds are:

1. Southern Cross Fertilisers Pty Ltd is the holder of mining leases ML5542, ML5543, ML5551 and ML5556 known as the Phosphate Hill mine site.
2. Southern Cross Fertilisers Pty Ltd is the holder of Environmental Authority EPML00885513, which authorises mining activities to be undertaken on mining leases ML5542, ML5543, ML5551 and ML5556 (the EA).
3. Southern Cross Fertilisers Pty Ltd is trading as Incitec Pivot Limited (IPL).
4. The activities authorised to be carried out under the EA include:
 - ERA 7(4)(b) Chemical manufacturing
 - ERA 14(1) Generating electricity by using gas at a rated capacity of 10MW electrical or more

- ERA 56 Regulated waste storage
 - ERA 58 Regulated waste treatment
 - ERA 60(1)(d) Operating a facility for disposing of, in a year, more than 200,000t of regulated waste
 - ERA 60(2)(a) Operating a facility for disposing of, in a year, between 50t to 2000t of general waste
 - ERA 60(2)(b) Incinerating or thermally treating, in a year, more than 5000t of general waste
 - ERA 61(3)(b) Incinerating or thermally treating, in a year, other regulated waste
 - ERA 63(1)(a)(i) Operating a sewage works, other than no-release works with a total daily design capacity of more than 21 equivalent persons but less than 100 equivalent persons
 - ERA 63(1)(b)(ii) Operating a sewage works, other than no-release works with a total daily design capacity of more than 100 equivalent persons but less than 1500 equivalent persons
 - Resource Activity 21 Mining activities that are ineligible Environmentally Relevant Activities other than mining activities mentioned in item 9 to 19
5. The Plan of Operations (PoO) for the period May 2013-October 2014, prepared by IPL and dated 14 May 2013 indicates the Phosphate Hill mine site consists of:
- Six open cut pits
 - Beneficiation plant
 - Three slimes dams
 - Phosphate acid plant
 - Gypsum Storage Facility
 - Ammonia plant
 - Granulation plant
 - Sulphuric acid storage
 - Power station
 - Landfill
 - Sewage treatment plant
6. The PoO describes the Gypsum Storage Facility as containing the following:
- Cells 1 and 2 are inactive gypsum deposition cells which are utilised as a water storage facility and to enhance evaporation.
 - Cell 3A is an evaporation pond which receives water from cell 1 and cell 2 on its south-west corner and from cell 4A at two locations on the northern wall. Cell 3B also has a spillway adjoining cell 3A which allows excess water to spill into cell 3A.
 - Cell 3B is an evaporation pond.
 - Cell 4A is an inactive gypsum deposition cell.
 - Cell 4B is an active gypsum deposition cell.
 - Cell 5 is a newly commissioned gypsum deposition cell.
 - A surge ditch
7. The PoO states that the Gypsum Storage Facility cells have been constructed as follows:
- All cells have been constructed of compacted earth with a 1.5mm High Density Polyethylene (HDPE) liner.
 - A cushion layer of sand has been placed under the liner in cells 1, 2, 3A and 3B
 - A cushion layer of gypsum has been placed under cell 4A and 4B

- The gypsum stack has an underdrainage system to ensure that minimal phreatic head (water table) develops in the liner. The underdrains, which consist of a graded filter ranging from coarse stone to sand, protecting HDPE slotted pipe, lie on a layer of geomembrane on top of the liner.

8. IPL has previously provided information to the department outlining that gypsum slurry from the Gypsum Storage Facility, contains several different contaminants including low pH waters, high levels of phosphorus, fluoride, sulphur, silicon and a range of elevated metals notably aluminium, cadmium and uranium.

9. On 28 January 2015, IPL advised the department that soil samples taken on 31 December 2014 from the upper soil profile beneath the liner of cell 3A contained high levels of total aluminium, manganese, arsenic, chromium, copper, lead, nickel, zinc, fluoride, kjeldahl nitrogen, phosphorus, electrical conductivity and soluble sulfate. These contaminants are likely to compromise the environmental values of the groundwater aquifers and surface waters downstream. The results show that contaminants have been released from the Gypsum Storage Facility and are present in the upper soil profile.

10. IPL has presented information that identifies that the Gypsum Storage Facility has been compromised and in the event of an unauthorised release, contaminants within the Gypsum Storage Facility are at concentrations which are likely to adversely impact on the environmental values of surface waters (including Kolar Creek and or Railway Creek) and groundwater. Some of the known uses of surface waters include stock watering and aquatic ecosystem. The full list of environmental values relevant to surface and ground waters is described in the *Environmental Protection (Water) Policy 2009*.

11. On 30 May 2014, IPL advised the department that a D6 dozer had entered evaporation cell 3A on 29 May 2014.

12. On 4 June 2014, IPL advised the department that water was detected below the surge ditch HDPE liner near cell 4B. The report indicated that the source, quality and extent of the release was unknown however in-situ monitoring indicated the water had a pH of 2 and high electrical conductivity readings.

13. On 5 June 2014, IPL submitted a supplementary report regarding the dozer incident on 30 May 2014 advising that the depth of cell 3A prevented a visual inspection of the liner integrity. The report further stated that the contents of cell 3A contained water with low pH and high electrical conductivity readings.

14. On 24 June 2014, IPL submitted a report regarding the surge ditch HDPE liner near cell 4B stating that the source and quantity of the water was unknown however the water quality had a similar composition to the water collected directly from the surge ditch being low pH and high electrical conductivity, total dissolved solids, nitrogen, phosphorus, fluoride and some metals.

15. On 29 August 2014, a Registered Professional Engineer of Queensland certified that cell 5A had been constructed in accordance with the design plan. The form of certification also outlined that the HDPE liner had been damaged during the construction of drains and outlets. The certification stated that a third party undertook a leak detection survey which identified 16 tears in the HDPE liner generally concentrated in the outlet trenches which were subsequently repaired. The details of the leak detection survey and locations of the damaged HDPE liner have not been provided to the department.

16. On 17 September 2014, IPL advised that water was detected under the surgeditch HDPE liner near cell 3A during de-watering activities. The notification stated that this section of the ditch was banded and the contents pumped into cell 3A.

17. On 30 September 2014, IPL advised the department that further to the notification on 17 September 2014, in-situ monitoring of the seepage water indicated the water had a pH of 1.82 and an electrical conductivity reading of 13.27mS which IPL advised are consistent with the water contained within the Gypsum Storage Facility. IPL further advised that the HDPE liner within this section was removed and the seepage water was observed to be percolating up from the base rather than through the side wall adjoining cell 3A.

18. On 17 October 2014, IPL advised that:

- IPL is currently transferring water from cell 3A to cell 5A
- The water found beneath gypsum cell 4B has been attributed to a tear in the surge ditch liner caused from earthworks which allowed water to be released to the receiving environment
- Investigations continue into the source of water found beneath the surge ditch near cell 3A

19. On 6 January 2015, IPL advised that:

- 95% of the contents of cell 3A had been transferred to cell 5A
- Visual inspection of the liner of cell 3A on the southern and eastern sides indicated there was pulling and tearing of the HDPE liner below the average water level

20. The Water Management Plan prepared by IPL and dated 1 November 2013 states:

- The water entering the Gypsum Storage Facility is acidic and contains levels of fluoride and phosphates which make it unsuitable for discharge to the environment. The report concludes that the storage facility is considered a zero discharge facility.
- Waste water from the sulphuric acid storage bund sump, stormwater retention ponds, oily water from the ammonia plant and treated water from the sewage treatment plant is pumped to an evaporation pond at the Gypsum Storage Facility.

21. The 'Phosphate Hill Groundwater Monitoring, Quarterly Groundwater Results, September 2013 Evaluation' dated 2 December 2013 and prepared by C&R Consulting includes an evaluation of seven years of groundwater monitoring and concludes that the groundwater trigger limits set by the environmental authority are not reflective of natural background levels.

22. The department considers that incorrect trigger limits would inhibit the identification of potential impacts resulting from activities at the premises. The department considers that the integrity of cell 3A has been compromised resulting in the release of contaminants that are likely to cause environmental harm.

23. The department also considers that the integrity of the surge ditch liner has been compromised resulting in the release of contaminants that are likely to cause environmental harm.

24. The department understands that all cells within the Gypsum Storage Facility are of similar design and as such, an investigation is warranted to determine if the integrity of cells additional to cell 3A has been compromised. EHP considers that the Gypsum Storage Facility is one of the highest risks in relation to potential release and environmental harm and the two recent incidents have indicated the ability of this facility to contain contaminants has been compromised.

EHP is satisfied that an environmental investigation should be undertaken based on reasonable grounds that the activity is causing, or is likely to cause environmental harm. The outcome of the investigation will identify the nature and extent of mine contamination, the groundwater monitoring requirements for the site, and support identifying aquifer specific trigger and contaminant limits.

B. Requirements

The report on the environmental investigation must address the following relevant matters:

1. Establish the source, cause and extent of the release of contaminants from the Gypsum Storage Facility.
2. Based on the established source, cause and extent of the release of contaminants, report on the actual and potential impact of the release of contaminants on the groundwater of the receiving environment. At a minimum, the report must consider:
 - a. The relevant environmental values in accordance with ANZECC methodology
 - b. The impacts on the environmental values
3. Based on the established source, cause and extent of the release of contaminants, describe all relevant remediation options including the works, costs and timeframes before recommending a preferred option. Remediation options must ensure the ongoing protection of the environmental values of the receiving environment.
4. Determine the adequacy of the current leak detection monitoring for the Gypsum Storage Facility and identify current best practice and areas of improvement.
5. Conduct an investigation of the regional groundwater system which, at a minimum:
 - a. Identifies the type, location and hydrology of groundwater aquifers in the area
 - b. Establishes background reference water quality of each aquifer and determines appropriate trigger values and limits
 - c. Establishes appropriate reference bore locations for each aquifer
 - d. Compares the results from the reference bores to current and historical monitoring results and considers the impact of mining activities at the premises.
6. Where access to property outside of the boundaries of the premises is required in order to complete the investigation requirements outlined above, access must occur only with the relevant owners consent. Where consent is not given, the department must be notified within 48 hours.

Note: The Gypsum Storage Facility includes, at a minimum, cells 1, 2, 3A, 3B, 4A, 4B, 5A and any associated drains and containment structures.

The environmental report must be submitted to the department on or before:

- **31 March 2016.**

As the recipient of this notice, you are also required to provide a statutory declaration in the form attached, to accompany the environmental report submitted to the department.

You can view an electronic version of the statutory declaration for a recipient using the following search term (EM494).¹

Take notice:

1. the requirements of the notice to conduct or commission an environmental investigation take effect immediately upon service of this notice;
2. this notice remains in force until further notice from the department; and
3. you are responsible for meeting the costs of conducting or commissioning the environmental evaluation, preparing the environmental report and providing any further information as requested by the department.

C. Reviews and appeals

The provisions regarding reviews of decisions and appeals are found in sections 519 to 539 of the Act.

A person, who is dissatisfied with certain decisions of the department, may be able to apply to have the department review that original decision.

Generally, a request to have a decision reviewed must be made:

- within 10 business days of the decision being notified to the person;
- be supported by enough information to enable the department to decide the application for review; and
- be made using the application for review of an original decision form (EM709).

Where an application has been made for a decision to be reviewed, the applicant may also apply to the relevant court for a stay of the decision to secure the effectiveness of the review.

Once the original decision has been reviewed, a person who is dissatisfied with the review decision may be able to appeal against that decision to the relevant court within 22 business days after receiving notice of the review decision.

A person whose interests are or would be adversely affected by a decision of the department may also be able to request a statement of reasons for a decision or a statutory order review under the *Judicial Review Act 1991*.

For further information about reviews and appeals see the:

1. Information sheet - internal review and appeal to the Planning and Environment Court (EM1866).
2. Information sheet - internal review and appeal to the Land Court (EM1157).

You may have other legal rights or obligations and should seek your own legal advice.

¹ This is the publication number. The publication number can be used as a search term to find the latest version of a publication at <www.ehp.qld.gov.au>.

D. Penalty

Failure to comply with a notice to conduct or commission an environmental evaluation is an offence.

1. The maximum penalty for an individual is 300 penalty units, totalling \$34,155.00.
2. The maximum penalty for a corporation is 1500 penalty units, totalling \$170,775.00.

Should you have any queries in relation to this notice, please contact Nina Henney of the department on telephone number 4722 5303 or at nina.henney@ehp.qld.gov.au.



Signature



Date

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Environmental Services and Regulation
Department of Environment and Heritage Protection
Delegate of the Chief Executive
Environmental Protection Act 1994

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Attachments:

- Statutory Declaration (EM494)
- Internal review and appeal to Planning and Environment Court (EM1866)
- Internal review and appeal to Land Court (EM1157)
- Application for review of original decision (EM709)