Cockle Creek Stage 1 Environmental Assessment

Submissions report

Prepared for Incitec Fertilizers Limited

FEBRUARY 2009

Contents

Glossary

Term	Definition
AHIMS	Australian Heritage Information Management System.
ANZECC	Australian and New Zealand Environment Conservation Council.
CLM Act	Contaminated Land Management Act 1997 (NSW).
Containment cell	Area where contaminated materials are stockpiled and contained, generally by an integrated and encapsulating liner/capping system.
DECC	Department of Environment and Climate Change.
DGRs	Director-General's requirements.
DoP	Department of Planning.
DWE	Department of Water and Energy.
EA	Environmental assessment.
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW).
EPA	Environment Protection Authority.
Gantry	Supporting structure for railways, cranes etc.
Groundwater	Water that is held underground, usually in an aquifer.
Hotspot	Area of high contamination.
IFL	Incitec Fertilizers Limited.
IPL	Incitec Pivot Limited.
LEP	Local Environmental Plan.
Mine subsidence	The caving or sinking of an area as a result of past mining activities.
NSW	New South Wales.
PCCS	Pasminco Cockle Creek Smelter.
Remediation	Removal of pollutants or contaminants from the localised environment.
Site	The Site at 13 Main Road, Boolaroo, NSW which is Lot 1 on Deposited Plan (DP) 225720 located within the Lake Macquarie local government area about 12km to the southwest of Newcastle. It should be distinguished from, and does not include, the Pasminco site which surrounds it.
SoC	Statement of Commitments.
Surface water	Water that falls and/or collects on the surface of the ground.

Term	Definition
VRA	Voluntary Remediation Agreement.
VRP	Voluntary Remediation Proposal.

1 Introduction

This submissions report provides a response to submissions received from stakeholders during the public exhibition of Incitec Fertilizers Limited's (IFL) Cockle Creek Stage 1 Environmental Assessment (EA). A summary of additional communications and consultation activities undertaken by IFL during the public exhibition period is also provided in this report.

No significant changes have been required to the proposed groundwater remediation works as a result of the issues raised in submissions. As shown in Chapter 3 of this report, the draft Statement of Commitments (SoC) provided in the EA dated November 2008 has been revised to address some of the issues raised.

1.1 Background

In 2005, the IFL Cockle Creek Site (the Site) located in the township of Boolaroo, New South Wales (NSW), was declared a remediation site under Part 3, Division 3 of the *Contaminated Land Management Act 1997* by the NSW Environment Protection Authority (EPA) (referred to as Declaration of Remediation Site). Contamination of soil and groundwater at the Site is a result of the current Site use and surrounding historical operations.

In response to the Site's remediation status, Incitec Pivot Limited (IPL), the parent company of IFL, made a commitment to remediate the Site, which was presented to the EPA in July 2008. The Voluntary Remediation Proposal (VRP) has committed IPL to remediating the land to a residential standard and was endorsed by the EPA as a Voluntary Remediation Agreement (VRA) on 7 August 2008.

In order to facilitate the urgent groundwater remediation works indicated in the VRA, approval was received from the NSW Department of Planning (DoP) to undertake staged remediation works in accordance with Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

In September 2008, the Minister for Planning issued Director-General's requirements (DGRs) for the Stage 1 remediation works, which involve the urgent treatment of a hotspot of groundwater contamination and the demolition of a disused timber gantry. IFL lodged the Stage 1 EA with the DoP in November 2008 and the EA was subsequently placed on public exhibition from Monday 17 November to Monday 22 December 2008 inclusive. A total of five submissions were received. Details of the issues raised in submissions and IFL's response is provided in Chapter 2 of this report.

1.2 Communications and consultation program

A stakeholder communications and consultation strategy was prepared for this project to ensure that stakeholders are consulted and appropriately informed. Chapter 5 of the EA details the communications and consultation activities undertaken by IFL prior to the public exhibition period.

Communications and consultation during public exhibition

A number of communications and consultation activities were completed by IFL during the public exhibition period to encourage stakeholder involvement and feedback. Communication materials were aimed at informing stakeholders with balanced and objective information about the project and the planning and approvals process. Communication and consultation activities undertaken include:

Newspaper advertisements

The DoP placed advertisements in local and regional newspapers to inform stakeholders of the public exhibition period and how to make a submission. Complimentary to these advertisements, IFL placed advertisements in the *Lakes Mail* and *Newcastle Herald* to further promote the public exhibition period and the date, time and location for IFL's community information display (refer to Appendix A).

Media statements

A media statement was prepared and issued by IFL to local and regional media to publicise the project and the public exhibition period (refer to Appendix B). As a result, the project was reported in the *Newcastle Herald* (21 November 2008) and with *ABC News* (21 November 2008).

Website information

A dedicated page was developed on the IPL website for information regarding the Cockle Creek remediation project (refer to www.incitecpivot.com.au in the 'About Us/HSEC' section). This was updated throughout the project as new information and communication materials were produced. Copies of community newsletters were made available from the website and a link to the EA on the DoP website was also provided.

Community newsletters

Community newsletters were produced to inform local residents about the project, advise of the public exhibition period and invite feedback. The newsletters were also used to advertise IFL's community information display for the project. Over 3,000 residents in Boolaroo, Macquarie Hills, Speers Point and Argenton were provided with the newsletter via letterbox drop. Copies of the newsletter were displayed at Lake Macquarie Council and the local library and copies were also mailed to stakeholders, including local council, local Aboriginal land councils, government agencies and community and environment groups. Refer to Appendix C for a copy of the December 2008 newsletter.

Community information display

A community information display was held at Club Macquarie on Thursday 11 December 2008. The purpose of the information display was to provide the community with the opportunity to meet members of the project team, ask questions and provide feedback on the remediation project. An information display was prepared highlighting the key aspects of the project. Approximately ten people attended the information display including local residents and neighbouring landowners. Attendees asked questions about the remediation process and the future use of the Site.

Correspondence to stakeholders and meetings

Written correspondence was sent to stakeholders to inform them of the project and the public exhibition period. Follow up meetings were held with stakeholders as needed.

Future consultation

IFL will continue to communicate and consult with stakeholders throughout each stage of the remediation project. Newsletters will continue to be distributed to the local community and stakeholders to provide information on the progress of the project and groundwater remediation outcomes. Regular updates will also be provided on the IPL website.

2 Submissions

Five submissions were received during the public exhibition period. Four were from state government agencies and one was from Lake Macquarie City Council. There were no submissions made by the general public.

Table 1 details the issues raised in each submission and provides a response to each issue, including where (if appropriate) the EA and/or SoCs has been amended or referenced.

2.1 Response to issues raised in submissions

Table 1 Response to submissions

Issue	Response
Department of Water and Energy (DWE)	
There is a moderate risk that the groundwater cannot be remediated to achieve ANZECC guidelines, therefore posing a health risk to users when the land is redeveloped. The EA acknowledges this limitation. In respect of this, there is a need for communication between DECC and DWE over the effectiveness of remediated sites.	The proposed project (Stage 1) involves targeted remediation of contamination hotspots at the northern area of the Site. The aim is to reduce the groundwater contamination levels, prior to the installation of the containment cell in the subsequent stages (Stages 2 to 4) of the remediation strategy. It is expected that the groundwater extraction and treatment system will continue until such a time as it can be demonstrated to the satisfaction of the NSW EPA accredited site auditor that the residual contamination does not pose an unacceptable risk to the relevant environmental values of the groundwater system. IFL recognises that communication between DECC and DWE is important for ensuring an effective remediation outcome. As a result, IFL proposes to facilitate meetings between DECC and DWE to share information regarding the project.
Mine Subsidence Board	
Require submission of relevant engineer certification of the final design stating that the required mine subsidence parameters have been designed for.	This issue was noted and further consultation with the Mine Subsidence Board was undertaken. IFL acknowledges that the entire region is a proclaimed Mines Subsidence District under the *Mine Subsidence Compensation Act 1961* and that mine subsidence parameters exist. However, the issue of mine subsidence and obtaining engineering certification of compliance with the subsidence parameters was something that IFL was planning to focus on as part of the Part 3A EA for Stage 2 remediation works given that it involves the major construction and earthworks that go with the clean up and construction of the containment cell. Unlike the Stage 2 works, these Stage 1 works are very minimal and it was not proposed to obtain engineering certification for them due to the fact that: • No mining has occurred within the immediate vicinity of the Site or on the Site itself. The mine subsidence map provided in Figure 10 of the application demonstrates that there are no areas of subsidence risk relating to the proposed project, or the Site as a whole.

Issue	Response
	• The environmental risk assessment, carried out as part of the EA, determined that the risk of a mine subsidence event occurring is very unlikely due to the large distance between the Site and the nearest mines. • They are not works of a scale likely to result in, or be significantly impacted by, any mine subsidence issues. They do not involve any significant construction or intrusive works, and are essentially associated with the removal of an old gantry and associated equipment and the installation of a temporary groundwater treatment system. • It is also not considered likely that mining beneath the Site will occur during the project. • IFL is willing to accept responsibility for impacts that may occur to the Stage 1 project plant and equipment through mine subsidence as part of these Stage 1 works. As noted above, mine subsidence issues and ensuring engineering certification to the design parameters will be addressed as part of the Stage 2 works, which will follow this Stage 1 application and further consultation will be had with the Board at that stage.
Department of Environment and Climate Change (DECC)	
Require that the cessation of groundwater extraction must be approved by DECC and must be based on assessment against remediation objectives and agreement by auditor.	IFL agrees to keep both DECC and DWE informed during the groundwater remediation project. As noted previously, it is expected that the groundwater extraction and treatment system will continue until such a time as it can be demonstrated to the satisfaction of the NSW EPA accredited site auditor that the residual contamination does not pose an unacceptable risk to the relevant environmental values of the groundwater system.
Extraction and re-injection of groundwater on the Site should be approved by DWE.	The DWE issued IFL with a Bore Water Licence under Section 115 of the *Water Act 1912* on 23 October 2008. A copy of this licence is provided in Appendix D. The NSW EPA accredited site auditor has also approved IFL's approach for the re-injection of groundwater on the Site. Appendix E includes a copy of correspondence from the site auditor, supporting the remediation approach.
Operation of the groundwater extraction, treatment and re-injection system should be notified to the DECC office in Newcastle prior to commencement.	IFL is in regular contact with DECC and in May 2008 IFL met with DECC to discuss and agree upon the remediation approach. IFL will continue to keep DECC informed regarding works on the Site (including both DECC offices in Sydney and Newcastle). As stated above, IFL proposes to facilitate meetings between DECC and DWE to share information regarding the project.

Issue	Response
Hunter New England NSW Health	
Commitment to control the liberation of historical dust deposition during remediation and the removal of all contaminated soils and placement within a containment cell. Appropriate land use controls should be maintained in place in the future.	Chapter 7 of the EA details the measures proposed for managing and mitigating air quality impacts including dust generation and the management of contaminated soil waste. Appropriate controls have also been included in the SoC. Refer to items S1, A1 and W2 in the revised SoC. Mitigation measures proposed for the construction of the containment cell will be discussed in the Stage 2 EA – a separate approval.
Lake Macquarie City Council	
Heritage Assessment The Heritage Assessment has inadequate analysis/detail of the subdivision and ownership arrangements of the IFL plant. It is unclear at what time the sulphide plant and IFL plant became subdivided.	These details have not been included in the Heritage Assessment because the report focuses on aspects that are deemed 'heritage' and which are assessable under the NSW heritage criteria. While an ownership division occurred in 1969 (with IFL's predecessor), this is not deemed to have heritage significance at a state or local level and as a result is not considered relevant to the Heritage Assessment.
Heritage Assessment The Heritage Assessment lacks detail within the Site chronology post 1969, ie: • Closure and demolition of Pasminco. • Ongoing sourcing of materials post Pasminco closure. • Use and discontinuance of the rail spur, and alternate means of transportation. • Announcement of the closure of the IFL plant and future intentions/actions for the site/land.	As stated above, these details have not been included in the Heritage Assessment because the report focuses on aspects that are deemed 'heritage' and which are assessable under the NSW heritage criteria. As these events occurred post 1969, they are deemed not to have heritage significance at either a state or local level and as a result are not considered relevant to the Heritage Assessment. IFL believes that the announcement of the closure of the IFL plant and future intentions/actions for the site have been adequately addressed in the Heritage Assessment and EA. Further details regarding the future intentions/actions for the site are not considered relevant to an historical assessment.
Retention of materials and relics Request that IFL reassess through consultation with a qualified industrial engineer, the variety of materials, elements and relics that could be salvaged from the demolition process and potentially be reused in future interpretation works. Catalogue a list of items that will be salvaged and provide an ongoing management plan pending their use in future interpretation works.	The only heritage item relevant to Stage 1 works is a disused gantry. This gantry has undergone preliminary testing, which has shown a contamination level that prohibits its retention or reuse. The principal contaminants are lead, mercury and zinc with some copper and cadmium contamination. A copy of the Contamination Assessment Report is provided in Appendix F. Other heritage items located on Site will be considered in the Stage 2 EA and opportunities for the reuse of heritage items in future interpretation works will be considered.

Issue	Response
Interpretation strategy Request that an interpretation strategy be provided that: • Details how the IFL plant will be managed at a holistic level, redeveloped in stages under the Master Plan prepared in conjunction with the former Pasminco Sulphide Plant site. • Recognises future redevelopment options (Master Plan and Draft LEP Amendment). • Details funding of the strategy, ie development, management and implementation. • Salvaging items and elements for use in interpretation works, preparing a list of the items and details of the storage/management of the items for later use.	These comments have been noted but are not considered relevant to Stage 1 works. The details of the Master Plan and future redevelopment options are still being determined. Any future redevelopment plans would be part of a separate approval process. As stated in the EA, the objective of the overall remediation strategy is to remediate the Site to a standard suitable for residential development. The proposed containment cell and immediate surrounding area would be remediated to a standard suitable for public open space. The possibility of salvaging items from the Stage 1 works is not considered viable. As detailed above, other heritage items located on Site will be considered in the Stage 2 EA. Opportunities for the reuse of heritage items in future interpretation works will be considered at this stage.
Aboriginal relics Should any Aboriginal relics be unexpectedly discovered then all excavations or disturbance to the area are to stop immediately and DECC shall be informed in accordance with Section 91 of the *National Parks and Wildlife Act, 1974*.	Agreed. Chapter 7 of the EA and item H3 in the draft SoC includes measures for mitigating impacts to heritage items that are unexpectedly discovered during works. Annex B4 of the *Heritage Assessment* also addresses this issue. The SoC has been revised to specifically address Aboriginal relics. Refer to Item H3 in the SoC.
Historical relics Should any historical relics be unexpectedly discovered then all excavations or disturbance to the area are to stop immediately and the Heritage Council of NSW shall be informed in accordance with Section 146 of the *Heritage Act, 1977*.	Agreed. Chapter 7 of the EA and item H3 in the draft SoC includes measures for mitigating impacts to heritage items that are unexpectedly discovered during works. The SoC has been revised to specifically address historical relics. Refer to Item H4 in the SoC.

Issue	Response
Heritage Photographic Archival Record A Heritage Photographic Archival Record is to be undertaken by a Heritage Consultant in accordance with the NSW Heritage Office Guidelines *'Photographic Recording of Heritage Items using Film Or Digital Capture.'* This is to be submitted to Lake Macquarie City Council's Heritage Officer for approval prior to the commencement of works, inclusive of demolition. The documentation shall consist of one loose-leaf hard copy for Council Officer's use, two bound copies for Council's Information Services Library and one electronic copy for Council's file system.	Chapter 7 of the EA details the measures proposed for managing and mitigating impacts to heritage items. As stated in Table 15 of the EA, an archival photographic recording will be undertaken in accordance with the DoP (Heritage Office) Guidelines 2001 (revised 2005) *Photographic recording of heritage items using film or digital capture.* IFL is willing to provide copies of the Heritage Photographic Archival Record to Council. Refer to item H1 in the SoC.
Heritage recording/documenting Heritage consultants must undertake the recording and documentation of the existing buildings and associated landscaping, ancillary structures and infrastructure of the site, and prepare a report consistent with the Department of Planning – Heritage Branch guidelines.	Chapter 7 of the EA details the measures proposed for managing and mitigating impacts to heritage items. As stated in Table 15 of the EA, an archival photographic recording will be undertaken in accordance with the Department of Planning (Heritage Office) Guidelines 2001 (revised 2005) *Photographic recording of heritage items using film or digital capture.* Refer to item H1 in the SoC.
Groundwater treatment trial results The EA does not outline that IFL will utilise the results of the groundwater treatment trial to assist in the works subject to the Part 3A application. This should be incorporated into the EA.	The results of the groundwater treatment trial are not yet available and as a result have not been included in the EA. The groundwater treatment trial is intended to run over a six month period and is currently anticipated for completion in around July 2009. The results of the trial will be assessed by IFL upon completion and will be used to assist with future remediation works. The trial results will be communicated to stakeholders and the public via IFL's community newsletter.
Consultation Section 5.2 does not include the issues raised by Lake Macquarie City Council in third letter dated 3 September 2008. Most issues have been addressed in the report except for climate change issues.	IFL regrets that these issues were not included in section 5.2 of the EA. IFL has since reviewed and addressed the issues raised in Council's letter dated 3 September 2008. Climate change issues have also been addressed in this report.

Issue	Response
Aboriginal heritage Suggested that consultation should occur with Koompathoo Local Aboriginal Land Council. The Aboriginal Heritage Assessment is not very detailed. The assessment does not identify the location of items around the study area, the type of items and identify the importance of Munibung Hill to the local Aboriginal people.	An Aboriginal Heritage Assessment was completed as part of the overall heritage assessment for the project. Annex B of the Heritage Assessment report provides the results of a search of the Australian Heritage Information Management System (AHIMS) at DECC covering a 5km by 5km area centred around the IFL study area. The search identified 17 recorded sites, which comprised of artefact scatters and a mixture of isolated finds, scarred trees and stone arrangements. Annex B includes a map showing the location and type of items identified. IFL has kept the Koompathoo Local Aboriginal Land Council informed of the project through written correspondence and copies of the community newsletters.
Bushfire risk The report does not address bushfire risk to any degree.	The risk of a potential bushfire is considered to be low. If a bushfire does impact the Site, the Site is fully equipped with a fire extinguishing system. An assessment of bushfire risk will also be included in the Stage 2 EA.
Groundwater Limited assessment on the potential downstream impacts on groundwater systems, and how potential changes in groundwater flow regimes may impact downstream ecology. The downstream environment is mapped as containing potential acid sulphate soils. Yet no analysis is provided to quantify potential impacts on these soils. The statement of commitments does not address the issue of groundwater quantity and downstream flow regimes.	The trial is targeted to specific Site issues and is limited in extent. It is not expected to have any significant influence on groundwater levels within a short distance of the Site boundary and this has been supported by numerical groundwater modelling assessments undertaken to locate the trial infrastructure. The trial approach involves the removal of groundwater, treatment and then return to the aquifer resulting in no net impact on the Site groundwater balance, essentially providing a closed system. The potential for any influence on groundwater levels further beyond the Site is negligible due to the relatively small volumes involved in the trial, the limited duration of the trial and the low permeability of the target aquifer. Acid sulphate soils have been mapped in close proximity to Cockle Creek but not in the vicinity of the Site. The creek is located some 600m or more from the Site. As there will be no impact on groundwater levels at the creek in response to the trial, there will be no influence of the trial on acid sulphate soils. This issue was raised and then dismissed by DWE following consideration of both the extent of acid sulphate soils and the proposed trial. Similarly there will be no influence on surface water ecology as a result of the trial.
Greenhouse gases Table 6 of the EA indicated that greenhouse emissions resulting from the proposal are addressed in section 7.3 of the EA. Review of the draft document was unable to locate any analysis of greenhouse gases.	Greenhouse gas emissions as a result of Stage 1 works are considered to be low and negligible. The primary source of greenhouse gas emissions during construction would be from vehicles working on the Site, which are expected to amount to no more than five vehicles per hour entering and exiting the Site (refer to section 7.2 of the EA). Further the construction period is short term, ie less than one month. Greenhouse gas emissions from the operation of the groundwater treatment system are again considered to be low and negligible, given the equipment to be used. It should be noted that the purpose of the project is to reduce groundwater contamination, which is beneficial to the environment. Further, the recent closure of the Cockle Creek fertiliser manufacturing plant has reduced overall emissions from the Site, including greenhouse gases.

3 Revised Statement of Commitments

After consideration of the issues raised in submissions, the draft SoCs for Stage 1 of the Cockle Creek remediation project (refer to Chapter 9 of the EA) have been revised.

The revised SoCs are designed to avoid, manage, mitigate, offset and/or monitor the environmental impacts of the proposed project and complement the management measures included in the EA.

The revised SoCs includes the following:

- The desired environmental outcomes.
- The actions that IFL is committed to undertaking to achieve the environmental outcomes.
- The timing of implementation of each commitment.

The commitments are based on the need to:

- Meet future planning approvals and associated environmental and planning investigations.
- Develop environmental management and mitigation measures during planning and design.
- Develop a strong systems culture during community consultation and engagement.
- Implement, monitor and review the management measures during construction and operation.

The revised SoCs is provided in Table 2. Additional and/or modified commitments to those presented have been italicised for easy reference.

Table 2 Statement of Commitments (revised commitments shown in italics)

Objective	Ref #	Commitment	Timing	Reference
Soil and water				
Minimise exposure of environment to excavated contaminated material.	S1	Excess soil will be managed on Site within managed stockpiles or located within an existing site shed. Any contaminated material will be stockpiled within the existing site shed. Any stockpiles will be managed to prevent erosion and dust.	Construction	Landcom (2006) *Managing Urban Stormwater: Soils and Construction*.
Minimise detrimental impacts from contamination or sediment in surface waters.	S2	Surface water will be managed during the construction stage to limit or prevent contact with contaminated materials. Sediment entrained in stormwater will be managed using sediment control measures adjacent to potential source areas. Additional measures will be implemented as required to provide adequate management.	Construction	Landcom (2006) *Managing Urban Stormwater: Soils and Construction*.
Manage treatment plant operation to minimise risks of environmental impacts.	S3	Provide adequate controls and failsafe mechanisms in the treatment plant and associated extraction and infiltration infrastructure to ensure plant operates within control parameters or shuts down with no adverse environmental impact.	Operation	To be included in CEMP to be prepared prior to work commencing.
Undertake monitoring to assess performance of the remediation system.	S4	Undertake routine monitoring of treatment plant to assess effectiveness of treatment plant and acceptability of discharge concentrations. Complete routine groundwater monitoring to assess changes in aquifer concentrations.	Operation	Monitoring plan to be written and agreed to by a DECC accredited Site auditor.
Heritage				
Retain record of heritage items and structures on the Site.	*H1*	*An archival photographic recording will be undertaken in accordance with the Department of Planning (Heritage Office) Guidelines 2001 (revised 2005) Photographic recording of heritage items using film or digital capture. IFL will provide copies of the Heritage Photographic Archival Record to Council in both electronic and hard copy format.*	*Pre-construction*	*NSW Department of Planning (Heritage Office) Guidelines 2001 (revised 2005) Photographic Recording of Heritage Items Using Film or Digital Capture.*
	H2	Liaise with Council regarding site heritage.	Pre-construction and construction	Not applicable.

Objective	Ref #	Commitment	Timing	Reference
	H3	*Should any Aboriginal object (as defined by the NSW National Parks and Wildlife Act 1974) be unexpectedly discovered then all excavations or disturbance to the area are to stop immediately and the Department of Environment and Climate Change shall be informed in accordance with Section 91 of the National Parks and Wildlife Act, 1974.*	*Construction*	*To be included in CEMP to be prepared prior to work commencing.*
	H4	*Should any historical relics be unexpectedly discovered then all excavations or disturbance to the area are to stop immediately and the Heritage Council of NSW shall be informed in accordance with Section 146 of the Heritage Act, 1977.*	*Construction*	*To be included in CEMP to be prepared prior to work commencing.*
Air quality				
Minimise dust generation during construction and operation of proposed project.	A1	Appropriate dust control measures including covering or wetting of fill, will be undertaken to ensure dust generation is minimised.	Construction and operation	To be included in CEMP to be prepared prior to work commencing.
Minimise emissions from vehicles and plant equipment during construction and operation.	A2	Vehicles and equipment will be maintained and kept in good working order and switched off when not in use.	Construction and operation	To be included in CEMP to be prepared prior to work commencing.
Noise and vibration				
Minimise noise from excavation and drilling during construction of proposed project.	N1	Noise levels produced during construction of proposed project will not exceed existing noise levels within the site or those of the Pasminco lands.	Construction	To be included in CEMP to be prepared prior to work commencing.
	N2	Works will be undertaken during standard working hours only in order to minimise disruptions to local residences. Working hours will be 7am to 6pm Monday to Friday and 8am to 1pm Saturdays. There will be no works on Sundays and public holidays.	Construction	*Draft Construction Noise Guidelines 2008 (DECC 2008).* To be included in CEMP to be prepared prior to work commencing.

Objective	Ref #	Commitment	Timing	Reference
Mitigate noise produced by operation of the groundwater treatment plant.	N3	The treatment plant will be housed in an existing IFL shed, providing an acoustic barrier that will prevent noise reaching local residential receivers. The noise levels of the treatment plant will not exceed those already existing within the Site.	Operation	Included as part of the treatment system design.
Visual amenity				
Reduce visual impact of construction elements of the proposed project.	V1	Measures including neutral coloured fencing, appropriate storage of plant and materials, and strategic lighting placement will be undertaken to minimise visual impacts of construction of the proposed project.	Construction	To be included in CEMP to be prepared prior to work commencing.
Mine subsidence				
Avoid a mine subsidence event during construction of the proposed project.	*M1*	*Given the risk assessment and discussions with the Mine Subsidence Board, mine subsidence issues will not be assessed by way of an engineer's certification during the Stage 1 works. However, the issue will be taken up and works will commence in due course to ensure that the subsidence parameters are included as part of the Stage 2 works for the containment cell and appropriate engineering certifications will be obtained at that time. IFL will continue to have dialogue with the Mine Subsidence Board on this issue.*	*Pre-construction and construction*	*To be included in CEMP to be prepared prior to work commencing.*
Traffic and access				
Minimise impact of increased construction traffic on local community.	T1	Appropriate signage will be installed along Main Road to warn local drivers of trucks turning and any other changed conditions.	Pre-construction	To be included in CEMP to be prepared prior to work commencing.
Waste management				
To minimise waste produced during construction of the propose project, and maximise re-use of materials.	W1	To minimise waste, the 'waste hierarchy' (avoid/resource recovery/disposal) will be maximised during construction. The way in which the waste hierarchy will be maximised will be documented and, where relevant to work activities, will be incorporated into work programs and Site inductions.	Construction	*Waste Avoidance and Resource Recovery Strategy 2007* (DECC 2007).

Objective	Ref #	Commitment	Timing	Reference
Safely dispose of waste produced by operation of the treatment plant	W2	Waste produced during operation of the treatment plant will be disposed of inside the containment cell.	Construction and post-construction	In accordance with DECC requirements.
Consultation				
To ensure that stakeholders have access to clear and up to date information regarding the project.	*C1*	*Ongoing meetings between DECC, DWE and IFL will be facilitated by IFL to share information regarding each stage of the project and groundwater treatment results. The frequency, timing and location of meetings will be determined by IFL in consultation with DECC and DWE.*	*Pre-construction, construction and operation*	
	C2	*IFL's communications and consultation program will be maintained and information regarding the progress of the project and remediation outcomes will be made available to the public throughout each stage of the project.*	*Pre-construction, construction and operation*	

4 Conclusion

IFL believes that the proposed project will satisfy the objectives of establishing a targeted hot-spot groundwater recovery system and water treatment facility to remediate localised areas of high metal impacted groundwater along the north-western site boundary.

The potential adverse impacts associated with the project have been fully assessed and strategies to avoid, minimise and mitigate those impacts have been put in place. The issues raised in submissions have been addressed and modifications to the proposed project as a result of the issues raised in submissions, have been made where appropriate.

It is considered that the overall beneficial improvement of the groundwater quality will outweigh any potentially negative impacts on other environmental parameters, which are only of a temporary nature. A number of commitments have also been made to ensure the best possible environmental outcomes are achieved during the construction and operation of the project.

5 References

DECC (2008) *Draft Construction Noise Guidelines 2008.*

DECC (2007) *Waste Avoidance and Resource Recovery Strategy*.

DoP (Heritage Office) (2005) *Photographic recording of heritage items using film or digital capture*.

Landcom (2006) *Managing Urban Stormwater: Soils and Construction.*

Appendix A

Newspaper advertisement

PUBLIC EXHIBITION

Cockle Creek remediation project Stage one works

Incitec Fertilizers Limited (IFL), a wholly owned subsidiary of Incitec Pivot Limited (IPL), has announced plans to remediate its site at Cockle Creek to improve the environment and provide for a range of future land-use options.

It is proposed that the remediation project be completed in two stages. The first stage involves the treatment of groundwater in a localised area, which also requires the removal of some contaminated heritage items. The second stage involves the demolition of existing buildings, the remediation of soil and the construction of a purpose-built cell to contain contaminated matter.

IFL has prepared an environmental assessment for stage one works, including details of the works involved, the potential environmental impacts and proposed mitigation strategies.

The environmental assessment for stage one of the remediation project is on public exhibition until Monday 22 December at Lake Macquarie City Council Customer Service Centre, 126-138 Main Road, Speers Point NSW 2284.

A copy of the environmental assessment is also available from www.planning.nsw.gov.au (go to Major Project Assessments/on Exhibition/Major Projects Part 3A).

Written submissions about the project will be accepted by the Department of Planning until close of business on Monday 22 December 2008 and should be:

- faxed to 9228 6466; or
- posted to Major Development Assessment, Department of Planning, GPO Box 39, Sydney NSW 2001; or
- emailed to plan_comment@planning.nsw.gov.au

The manufacture of fertiliser at the Cockle Creek site is expected to stop by September 2009 to allow the proposed demolition and remediation project to be completed. When the plant closes, IFL will maintain fertiliser supplies to NSW farmers through the temporary use of the site for distribution while the remediation works are underway. Fertiliser will also continue to be despatched from IPL's distribution centres at Kooragang Island and Port Kembla.

Community information display

For members of the community who are interested in learning more about the remediation project, a public information display will be held at Club Macquarie, 458 Lake Road, Argenton, on Thursday 11 December, from 4pm to 7pm. Project representatives will be at the information display to answer your enquiries.

If you would like any further details regarding the project, please contact the project representative, Jane Deane on 9248 9800.

Incitec Pivot

Appendix B Media statement

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MEDIA STATEMENT **20 November 2008**

Plans for clean-up of Cockle Creek industrial site

Plans are underway for remediation of the Cockle Creek fertiliser-manufacturing site at Boolaroo, near Newcastle.

The site's owner, Incitec Fertilizers Limited (IFL), a wholly owned subsidiary of Incitec Pivot Limited (IPL), is proposing the remediation works to address historical contamination arising from the site's long industrial history.

The remediation works would return the site to a condition suitable for a range of future uses including residential and open space development.

Members of the public are invited to have their say on the first stage of the remediation proposal, which is on exhibition for comment until close of business, 22 December 2008.

The first stage of remediation works involves the treatment of groundwater in a localised area, which also requires the removal of a contaminated heritage railway gantry.

The proposal documentation is available on the NSW Department of Planning's website (www.planning.nsw.gov.au) and a printed copy can also be viewed at Lake Macquarie City Council, the Nature Conservation Council, and the Department of Planning. An assessment of the potential impacts of the proposal, and recommended strategies for their management, is included in the proposal documentation.

Fertiliser manufacturing at the Cockle Creek site is expected to cease by September 2009 to allow the remediation works to be completed.

When the plant closes, IFL will maintain fertiliser supplies to NSW farmers through the temporary use of the site for distribution. Fertiliser will also continue to be despatched from IPL's distribution centres at Kooragang Island and Port Kembla.

Media contact:
Neville Heydon
Tel 0408 123 160

Appendix C Community newsletter

Community consultation

IFL is committed to keeping the local community informed about the remediation project. The stage one environmental assessment report is now on public display. Stakeholders and the local community are encouraged to read the report, learn more about the project, and put forward their views by making a submission. IFL will carefully review the issues raised in submissions before the final report is submitted to the Department of Planning for assessment.

Community information display

For members of the community who are interested in learning more about the remediation project, there will be a public information display at Club Macquarie, 458 Lake Road, Argenton, on Thursday 11 December, from 4pm to 7pm.

The purpose of this information display is to give the local community the opportunity to learn more about the project and to raise issues and questions that they may have about the stage one works. Project representatives will be at the information display to answer your enquiries.

IFL is interested in hearing your feedback and you are encouraged to contact the remediation project representative, Jane Deane, on (02) 9248 9800 or email to jdeane@manidisroberts.com.au with any enquiries about the project.

View across the Cockle Creek site to the neighbouring Pasminco site, where a lead smelter operated for over a century before the plant was closed in 2003.

Further information:

For further information about this project please contact IFL's project representative, Jane Deane, on (02) 9248 9800 or email jdeane@manidisroberts.com.au.

Postal address: Incitec Pivot Limited (ABN 42 004 080 264)
PO Box 148, Mayfield NSW 2304

COCKLE CREEK UPDATE

Community newsletter December 2008

Cockle Creek remediation project – stage one proposal now on public exhibition

PLANS are under way for remediation of the Cockle Creek fertiliser-manufacturing site owned by Incitec Fertilizers Limited (IFL), a wholly owned subsidiary of Incitec Pivot Limited (IPL). Members of the public are invited to have their say on the first stage of the remediation proposal, which is on exhibition for comment until Monday 22 December 2008.

Have your say

IFL has prepared an environmental assessment report for stage one of the Cockle Creek remediation project. The first stage of remediation works involves the treatment of contaminated groundwater in a localised area and also requires the removal of a contaminated timber heritage railway gantry. The environmental assessment report details the works involved in stage one of the project, the potential impacts and recommended strategies for their management.

The environmental assessment report is now on exhibition for comment until close of business on Monday 22 December 2008 and members of the public are invited to submit their comments to the NSW Department of Planning. IFL will carefully review the issues raised in submissions before the final report is submitted to the Department of Planning for assessment.

Where to find a copy of the stage one environmental assessment report

A copy of the environmental assessment report is available from the Department of Planning's website at www.planning.nsw.gov.au (go to Major Project Assessments/On Exhibition/Major Projects Part 3A) or in About Us/HSEC at www.incitecpivot.com.au. Alternatively, you can contact the Department of Planning on 1300 305 695 to request a CD-ROM copy to be sent to you free of charge. A printed copy of the environmental assessment report is also available for review at Lake Macquarie City Council Customer Service Centre, 126-138 Main Road, Speers Point, NSW 2284.

How to submit your comments

Written submissions regarding the stage one environmental assessment report will be accepted by the Department of Planning until close of business Monday 22 December 2008. Written submissions should be forwarded via mail, fax or email as follows:

Mail:
Major Development Assessment
Department of Planning
GPO Box 39
Sydney NSW 2001

Fax: (02) 9228 6466

Email:
plan_comment@planning.nsw.gov.au

More about stage one of the Cockle Creek remediation project

STAGE one of the Cockle Creek remediation project involves the treatment of localised groundwater contamination on the IFL Cockle Creek site. The location of these areas is shown in the aerial photograph on the right.

The groundwater contamination includes heavy metals arising from the site's long industrial history and its previous use as a superphosphate plant. Treatment of the groundwater is necessary to minimise health and environmental impacts currently affecting the site and surrounding areas.

Due to the location of the proposed groundwater treatment system on the Cockle Creek site, a disused timber railway gantry will need to be demolished. While the gantry is not listed on any heritage register, it has been assessed as having local heritage significance.

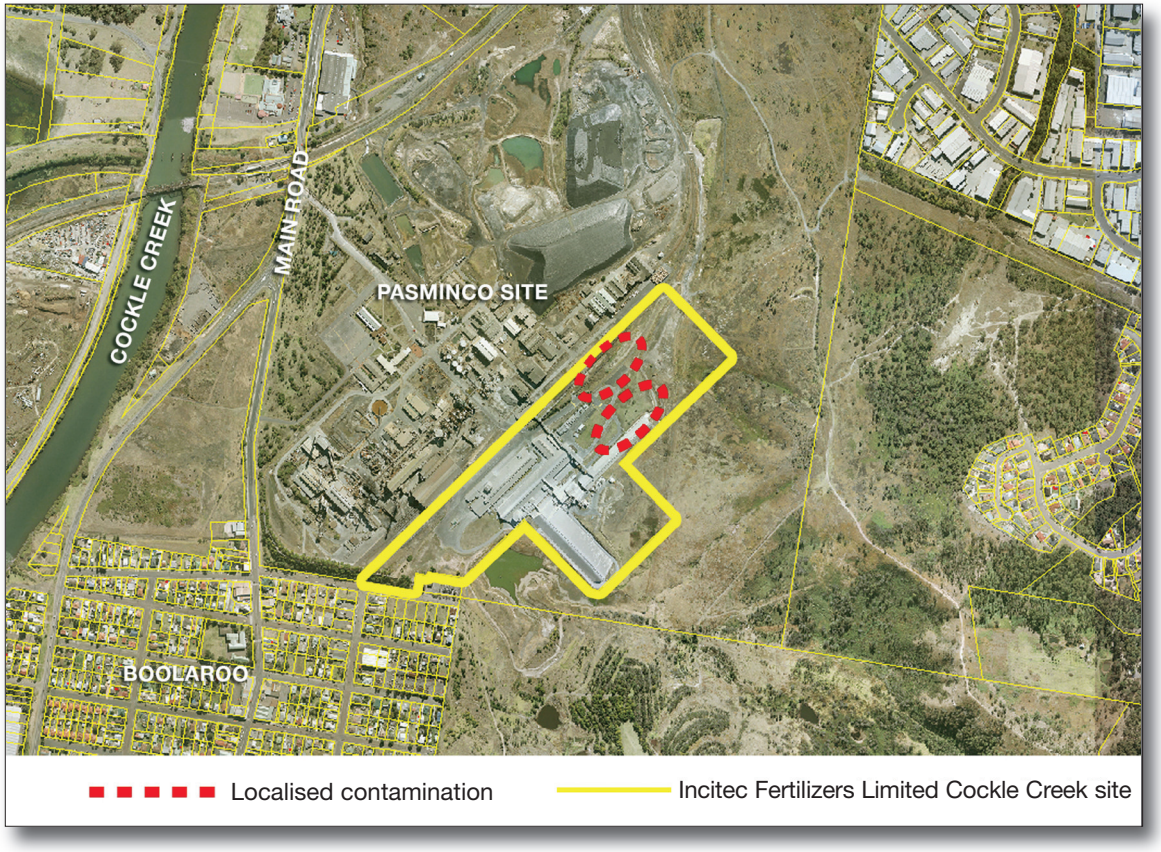
Unfortunately, because the timber of the gantry is contaminated, adaptive reuse or relocation of the gantry is not possible. The details and characteristics of the gantry will be recorded and photographed before demolition to capture its heritage significance to the local area.

Further and more detailed information about stage one of the remediation project can be found within the environmental assessment report, which is currently on public exhibition.

Fertiliser manufacturing at the Cockle Creek site

IFL has owned and operated the Cockle Creek superphosphate plant since 1969. The site is currently used for the manufacture and distribution of agricultural fertilisers. The manufacture of fertiliser at the site is expected to stop by September 2009 to allow the proposed demolition and remediation project to be completed.

When the plant closes, fertiliser supplies to NSW farmers will be maintained through the temporary use of the Cockle Creek site for distribution while the remediation works get under way. Fertiliser will also continue to be despatched from IPL's distribution centres at Kooragang Island and Port Kembla.



Aerial photograph showing the location of localised groundwater contamination on the IFL Cockle Creek site.

Quick facts about stage one of the Cockle Creek remediation project

- **IFL has prepared an environmental assessment report for stage one works of the Cockle Creek remediation project. The report is now on public exhibition and open for comment until 22 December 2008.**
- **The main aim of stage one remediation works is to treat areas of localised groundwater contamination on the Cockle Creek site.**
- **Following stage one, a second stage of works is proposed that will involve the demolition of existing buildings, the remediation of soil and the construction of a purpose-built cell to contain the contaminated soil. IFL will prepare an environmental assessment report for stage two works and the public will have the opportunity to review the report and make comment.**
- **If approved, the Cockle Creek remediation project would improve the environment and would return the site to a condition suitable for a range of future uses, including residential and open space development.**

Appendix D

DWE groundwater remediation licence

Department of Water and Energy

Hunter Region
P O Box 2213

Dangar NSW 2309
Phone: (02) 49042500

BORE LICENSE CERTIFICATE
UNDER SECTION 115 OF THE WATER ACT, 1912

20BL172012

NSW Government
Department of Water & Energy

Incitec Fertilizers Limited
10 Robertsons Road
Bacchus Marsh VIC 3340

LICENSE NUMBER
20BL172012
DATE LICENSE VALID FROM
23-Oct-2008
DATE LICENSE VALID TO
22-Oct-2009
FEE
$151.00 PAID

ABN 27380445450 GST NIL

LOCATION OF WORKS

Portion(s) or Lot/Section/DP	PARISH	COUNTY
1//225720	Kahibah	Northumberland

TYPE OF WORKS	PURPOSE(S) FOR WHICH WATER MAY BE USED
Excavation - Groundwater	Groundwater Remediation

CONDITIONS APPLYING TO THIS LICENSE ARE

As shown on the attached Condition Statement

COPY

Department of Water and Energy

CONDITIONS STATEMENT REFERRED TO ON 20BL172012 ISSUED UNDER PART V OF THE WATER ACT, 1912 ON 23-Oct-2008

(1) THE LICENCE SHALL LAPSE IF THE WORK IS NOT COMMENCED AND COMPLETED WITHIN ONE YEAR OF THE DATE OF THE ISSUE OF THE LICENCE.

(2) THE LICENSEE SHALL WITHIN TWO MONTHS OF COMPLETION OR AFTER THE ISSUE OF THE LICENSE IF THE WORK IS EXISTING, FURNISH TO THE DEPARTMENT OF WATER AND ENERGY:-

(A) DETAILS OF THE WORK SET OUT IN THE ATTACHED FORM "A" (MUST BE COMPLETED BY A DRILLER).

(B) A PLAN SHOWING ACCURATELY THE LOCATION OF THE WORK, IN RELATION TO PORTION AND PROPERTY BOUNDARIES.

(C) DETAILS OF ANY WATER ANALYSIS AND/OR PUMPING TESTS.

(3) THE LICENSEE SHALL ALLOW THE DEPARTMENT OF WATER AND ENERGY OR ANY PERSON AUTHORISED BY IT, FULL AND FREE ACCESS TO THE WORKS, EITHER DURING OR AFTER CONSTRUCTION, FOR THE PURPOSE OF CARRYING OUT INSPECTION OR TEST OF THE WORKS AND ITS FITTINGS AND SHALL CARRY OUT ANY WORK OR ALTERATIONS DEEMED NECESSARY BY THE DEPARTMENT FOR THE PROTECTION AND PROPER MAINTENANCE OF THE WORKS, OR THE CONTROL OF THE WATER EXTRACTED AND FOR THE PROTECTION OF THE QUALITY AND THE PREVENTION FROM POLLUTION OR CONTAMINATION OF SUB-SURFACE WATER.

(4) (A) THE LICENSEE SHALL NOTIFY THE DEPARTMENT OF WATER AND ENERGY IF A FLOWING SUPPLY OF WATER IS OBTAINED. THE BORE SHALL THEN BE LINED WITH CASING AND CEMENTED AND A SUITABLE CLOSING GEAR SHALL BE ATTACHED TO THE BOREHEAD AS SPECIFIED BY THE DEPARTMENT OF WATER AND ENERGY.

(B) IF A FLOWING SUPPLY OF WATER IS OBTAINED FROM THE WORK, THE LICENSEE SHALL ONLY DISTRIBUTE WATER FROM THE BORE HEAD BY A SYSTEM OF PIPE LINES AND SHALL NOT DISTRIBUTE IT IN DRAINS, NATURAL OR ARTIFICIAL CHANNELS OR DEPRESSIONS.

(5) 6) IF A WORK IS ABANDONED AT ANY TIME THE LICENSEE SHALL NOTIFY THE DEPARTMENT OF WATER AND ENERGY THAT THE WORK HAS BEEN ABANDONED AND SEAL OFF THE AQUIFER BY:-

(A) BACKFILLING THE WORK TO GROUND LEVEL WITH CEMENT OR

(B) SUCH METHODS AS AGREED TO OR DIRECTED BY THE DEPARTMENT OF WATER AND ENERGY

(6) THE LICENSEE SHALL NOT ALLOW ANY TAILWATER/DRAINAGE TO DISCHARGE INTO OR ONTO:-

- ANY ADJOINING PUBLIC OR CROWN ROAD;
- ANY OTHER PERSONS LAND;
- ANY CROWN LAND;
- ANY RIVER, CREEK OR WATERCOURSE;
- ANY NATIVE VEGETATION AS DESCRIBED UNDER THE NATIVE VEGETATION CONSERVATION ACT 1997;
- ANY WETLANDS OF ENVIRONMENTAL SIGNIFICANCE.

(7) WORKS USED FOR THE PURPOSE OF CONVEYING, DISTRIBUTING OR STORING WATER TAKEN BY MEANS OF THE LICENSED WORK SHALL NOT BE CONSTRUCTED OR INSTALLED SO AS TO OBSTRUCT

- THE REASONABLE PASSAGE OF FLOOD WATERS FLOWING INTO OR FROM A RIVER.

(8) DURING THE FIRST YEAR OF ISSUE OF THIS LICENSE THE VOLUMETRIC ALLOCATION IS DIRECTLY PROPORTIONAL FROM THE DATE OF ISSUE OF THE LICENSE TO THE END OF THE IRRIGATION YEAR.

(9) THE DEPARTMENT OF WATER AND ENERGY SHALL HAVE THE RIGHT DURING THE CURRENCY OF THIS LICENSE TO VARY AT ANY TIME THE VOLUMETRIC ALLOCATION, OR THE RATE AT WHICH THIS ALLOCATION IS TAKEN.

(10) THE LICENSEE SHALL INSTALL TO THE SATISFACTION OF THE DEPARTMENT OF WATER AND ENERGY IN RESPECT OF LOCATION, TYPE AND CONSTRUCTION AN APPLIANCE(S) TO MEASURE THE QUANTITY OF WATER EXTRACTED FROM THE WORKS. THE APPLIANCE(S) TO CONSIST OF EITHER A MEASURING WEIR OR WEIRS WITH AUTOMATIC RECORDER, OR METER OR METERS OF THE DETHRIDGE TYPE, OR SUCH OTHER CLASS OF METER OR MEANS OF MEASUREMENT AS MAY BE APPROVED BY THE DEPARTMENT OF WATER AND ENERGY. THE APPLIANCE(S) SHALL BE MAINTAINED IN GOOD WORKING ORDER AND CONDITION. A RECORD OF ALL WATER EXTRACTED FROM THE WORKS SHALL BE KEPT AND SUPPLIED TO THE DEPARTMENT UPON REQUEST. THE LICENSEE WHEN REQUESTED MUST SUPPLY A TEST CERTIFICATE AS TO THE ACCURACY OF THE APPLIANCE(S) FURNISHED EITHER BY THE MANUFACTURER OR BY SOME PERSON DULY QUALIFIED.

(11) THE VOLUME OF GROUNDWATER EXTRACTED FROM THE WORKS AUTHORISED BY THIS LICENCE SHALL NOT EXCEED 25 MEGALITRES IN ANY 12 MONTH PERIOD COMMENCING 1ST JULY.

(12) DURING THE MONTH OF JULY EACH YEAR THE LICENSEE SHALL FURNISH TO THE DEPARTMENT OF WATER AND ENERGY ON A FORM WHICH WILL BE PROVIDED, A RETURN SHOWING THE METER READING OF THE HOURS PUMPED, THE EXTRACTION RATE FOR EACH MONTH DURING THE PREVIOUS TWELVE MONTHS

(13) THE LICENCE HOLDER MUST PREPARE AND IMPLEMENT A GROUNDWATER MONITORING PROGRAM IN CONJECTION WITH AND ENVRIONMENTAL MANAGEMENT PLAN TO MONITOR THE EFFECTS OF THE OPERATIONAL AND POST OPERATIONAL IMPACTS ON GROUNDWATER, CONNECTED SURFACE WATER SOURCES AND GROUNDWATER DEPENDANT ECO-SYSTEMS. THE PROGRAM SHALL INCLUDE AND IS NOT NECISSARILY LIMITED TO

-PARAMETERS/ANALYTES TO BE MONITORED, INCLUDING PROCEEDURES AND PROTOCOLS FOR SAMPLING AND TESTING

-THE MONITORING PROGRAM SHALL ALSO INCLUDE ;
A)MONITORING OF THE GROUNDWATER QUALITY, LEVELS AND GROUNDWATER PH, AT A MINIMUM TWICE DAILY BEFORE AND AFTER DEWATERING.
MONITORING OF ALL EXISTING MONITORING BORES THAT WILL NOT BE PART OF THE EXCAVATION . B)GROUNDWATER MONITORING DURING THE PROPOSED ACTIVITY AND OVER AN EXTENDED PERIOD OF TIME AFTER DEWATERING

-DETAILS OF GROUNDWATER QUALITY LIMITS THAT WOULD INDICATE IMPACTS FROM THE OPERATIONS; AND A CONTINGENCY PLAN IN THE EVENT THAT GROUNDWATER DISCHARGE TO THE SURFACE OCCURS.THIS MAY INCLUDE A 'STOP WORK' AND THE NECESSARY MEASURES TO AMELIORATE THE GROUNDWATER BEFORE IT REACHES THE CREEK.SHOULD A BREACH OCCUR THE DEPARTMENT OF ENVIRONMENT AND CLIMATE CHANGE, CONTAMINATED SITES SECTION AND THE DEPARTMENT OF WATER AND ENERGY, COMPLIANCE AND LICENSING DIVISION TO BE NOTIFIED IMMEDIATELY.

(14) THE LICENSEE SHALL INSTALL TO THE SATISFACTION OF THE DEPARTMENT OF WATER AND ENERGY A SYSTEM OR APPLICANCE TO MONITOR AND MAINTAIN THE PH OF TREATED GROUNNDWATER EXRACTED FROM THE WORKS TO BE REINJECTED INTO THE GROUNDWATER SYSTEM. THE LICENCEE SHALL ENSURE THAT THE PH QUALITY OF TREATED WATER SHALL BE MAINTAINED WITHIN THE RANGE OF PH 7.5. TREATED WATER WITH PH LEVELS OUTSIDE OF THIS RANGE IS NOT LICENCED TO BE IEINJECTED INTO THE GROUNDWATER SYSTEM.A RECORD OF ALL WATER EXTRACTED FROM THE WORKS SHALL BE KEPT AND SUPPLIED TO THE DEPARTMENT UPON REQUEST. THE LICENSEE WHEN REQUESTED MUST SUPPLY A TEST CERTIFICATE AS TO THE ACCURACY OF THE APPLIANCE(S) FURNISHED EITHER BY THE MANUFACTURER OR BY SOME PERSON DULY QUALIFIED.

End Of Conditions

Appendix E Correspondence from site auditor

ENVIRON

Tuesday, 19 August 2008 Our Ref: AS130083

Graham Funch
Land Remediation Projects Manager
Incitec Pivot Ltd
Main Road, Boolaroo NSW Email: graham.funch@incitecpivot.com.au

Dear Graham,

I have been engaged under the Contaminated Land and Management Act 1997 by Incitec Fertilisers Ltd to conduct a series of contaminated site audits for the remediation of the Incitec Cockle Creek Site. This involves a sign off at the end of each remedial stage and also a final site suitability sign off at the end of the remedial works.

As part of the audit process, I have been requested to provide comment regarding the suitability of the re-injection of treated groundwater at the IFL Cockle Creek site. Groundwater remediation is required to address the Significant Risk of Harm identified by DEC.

I understand that the reinjection involves the following:

- A groundwater remediation trial is being conducted in the north-western area of the site.
- The purpose of the trial is to assess the suitability of the extraction, treatment and reinjection systems proposed for groundwater remediation at the site.
- The groundwater in the area of the trial is heavily impacted by metal contamination and the trial is expected to improve the condition of the groundwater locally.
- The proposed precipitation treatment plant is anticipated to treat the metal contaminants in groundwater to concentrations complying with the Australian Drinking Water Guidelines (NHMRC, 2004). This will be substantially better (many orders of magnitude) than the current groundwater quality,
- The treated groundwater will be returned to the aquifer via an infiltration trench which will occur within the capture zone of the extraction system ie will not migrate off site during treatment.
- There is a no potential for significant negative impacts arising from the re-injection of the treated water as it is expected to have a lower contaminant load than the existing groundwater.
- The re-injection of the treated water should facilitate the recovery of impacted groundwater and accelerate the remediation timeframe.

Based on the above, I support the concept of re-injection of the treated groundwater as part of the groundwater remediation trial at this site. I consider that the proposed actions will not have a negative impact on the environment.

If you require further comment or wish to discuss this matter further, please call me on 02 49 344354.

Kind regards,

Phillip Hitchcock

Appendix F

Contamination assessment report

SG061313

11 February 2009

Incitec Pivot Limited
PO Box 148
MAYFIELD NSW 2304

Attention: Mr Graham Funch

PRELIMINARY CONTAMINATION ASSESSMENT
FORMER RAILWAY GANTRY TIMBERS – COCKLE CREEK

Dear Graham,

1. INTRODUCTION

At your request, Soil and Groundwater Consulting (S&G) undertook a preliminary level assessment of the contamination status of timbers associated with the derelict gantry in the north western potion of the Cockle Creek site. There is some potential for these timbers to have accumulated metal contamination arising from aerial deposition during the operation of the adjacent smelter over many years.

2. WORK PROGRAM

The field program was conducted on 24 September 2008 by an experienced field scientist from S&G. Sampling involved the collection of surface scrapes from selected timbers (surface samples designated with a TS prefix), coring of the timbers to obtain a deeper sample from below the immediate surface (core samples designated with a TC prefix) and a sample collected from the surface of dark timber occurring near ground level which may have been indicative of preservation chemicals (given a TD prefix).

Nine surface samples, three core samples and one dark wood sample were analysed by MGT for metals and the dark sample was analysed for metals and petroleum hydrocarbon fractions (TPH). One surface sample was also analysed for TPH.

3. RESULTS

The results of the analyses are summarised in the attached table with the results compared to the Health based Investigation Levels (HILs) included in the *National Environment Protection (Assessment of Site Contamination) Measure* 1999 for various site uses, although it is noted that these criteria have been derived for the assessment of soils. These criteria have been used for a screening level assessment to provide an indication of the contamination status of the timbers. The NATA certified laboratory results are also attached to this letter.

The results show the wood is contaminated with metals: principally lead, mercury and zinc with some copper and cadmium detected. Concentrations of lead exceed the HIL for commercial / industrial use in five of the nine surface samples. The surface is generally more impacted than the deeper core sections and this is considered to be consistent with the mechanism of contamination.

A comparison of metal results was also undertaken against the criteria included in the NSW Waste Classification Guidelines for solids wastes. Some lead results exceed the "*Restricted Solid Waste criterion without TCLP testing (CT2)*" criterion and some mercury results exceed the "*General Solid Waste criterion without TCLP (CT1)*". Some lead results also exceed the *General Solid Waste (SCC1)* criterion and would be classified as Restricted Solid Waste independent of the TCLP (leaching) results. A 95% upper confidence level of the mean (UCL) of the lead results still exceeded the SCC1 criterion and so management of the materials by this statistical approach would appear to be limited.

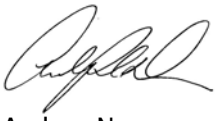
The TPH results associated with the timber treated section were also elevated. No analysis for polycyclic aromatic hydrocarbon (PAH) has been conducted at this time but this may be required for landfill disposal as some PAH compounds occur in the >C15 fractions and these may have been used for timber preservation. The TPH result for the other surface sample did not identify concentrations above the reporting limits.

An appropriate disposal / management option will need to be agreed with the Site Auditor and DECC, as required.

4. CLOSURE

If you require any further clarification of the works, please do not hesitate to call either David Nunn (03 5367 1255) or myself (0428 154 976).

Kind Regards,



Andrew Nunn
Director – Environmental Services

Attachments: Summary of Analytical Results
NATA Certified Laboratory Reports

Cockle Creek Gantry Timber Preliminary Assessment

SG061313
Sep-08

Sample ID	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Mercury	Nickel	Zinc	TPH C6-C9 fraction	TPH C10-C14 fraction	TPH C15-C28 fraction	TPH C29-C36 fraction
INVESTIGATION LEVELS												
NEPM 'A' Residential	100	20	12000*	1000	300	15	600	7000				
NEPM 'D' Residential Minimal Soil Access	400	80	48000*	4000	1200	60	2400	28000				
NEPM 'E' Parks / Recreational Open Space	200	40	24000*	2000	600	30	600	14000				
NEPM 'F' Commercial / Industrial	500	100	60000*	5000	1500	75	3000	35000				
EIL (Interim Urban)	20	3	400*	100	600	1	60	200				
NSW EPA sensitive use									65		1000	
RESULTS												
TC04	2.2	5	< 5	19	180	0.3	< 5	520				
TC05	< 2	4.1	< 5	28	300	< 0.1	< 5	440				
TC07	3.8	9.9	8.2	71	400	1.1	< 5	810				
TS01	5.6	11	< 5	130	1100	4	< 5	1200				
TS03	10	15	< 5	130	2100	3	< 5	1500				
TS05	2.6	5.7	< 5	68	870	3.3	< 5	670				
TS07	19	17	11	190	2900	5.1	< 5	1700				
TS10	18	25	9	290	5200	8.9	< 5	3200				
TS12	6.4	34	5.1	130	1400	4.2	< 5	2500				
TS13	8.8	37	7.1	250	2600	0.5	< 5	2100				
TS14	4.3	5.6	< 5	36	440	1.1	< 5	800	< 20	< 50	< 100	< 100
TS20	15	13	< 5	83	2600	14	< 5	920				
DUP1	2.9	6.2	< 5	67	940	2.7	< 5	700				
DUP2	< 2	3.2	< 5	16	150	0.4	< 5	430				
TD14	6.7	13	< 5	83	910	1.2	5.1	1800	< 20	< 50	2200	1400

* - Value for Cr (III)

mgt Environmental Consulting Pty. Ltd.

3 Kingston Town Close, Oakleigh, Victoria 3166, Australia
Postal address: P. O. Box 276, Oakleigh, Victoria 3166, Australia
Telephone: (03) 9564 7055
Fax: (03) 9564 7190
Email: mgt@mgtenv.com.au

CERTIFICATE OF ANALYSIS

Soil and Groundwater Consulting
First Floor The Parade
Norwood
South Australia 5065
Site: COCKLE CREEK SG061313

Report Number: 234416 Page 1 of 9
Order Number:
Date Received: Sep 26, 2008
Date Sampled: Sep 24, 2008
Date Reported: Oct 6, 2008
Contact: Dale McKenzie

Methods

- USEPA 6010B Heavy Metals & USEPA 7470/71 Mercury
- MGT100A-GC (based on USEPA8015)Total Recoverable Hydrocarbons
- NEPM 404 (Fusion followed by ISE)

Comments

Notes

1. The results in this report supersede any previously corresponded results.
2. All Soil Results are reported on a dry basis.
3. Samples are analysed on an as received basis.
4. LOR's are matrix dependent. Stated LOR's may be raised where sample extracts are diluted due to interferences.

ABBREVIATIONS
mg/kg : milligrams per kilograms, mg/L : milligrams per litre, ppm : parts per million,
LOR : Limit of Reporting
RPD : Relative Percent Difference
CRM : Certified Reference Material
LCS : Laboratory Control Sample

Authorised

Report Number: 234416

Michael Wright	Rhonda Chouman	Orlando Scalzo	Tammy Lakeland
Laboratory Manager	**Client Manager**	**Chief Organic Chemist**	**Chief Inorganic Chemist**
NATA Signatory	**NATA Signatory**	**NATA Signatory**	

NATA WORLD RECOGNISED ACCREDITATION

NATA Accredited
Laboratory Number 1261
The tests, calibrations or measurements covered by this document have been performed in accordance with NATA requirements which include the requirements of ISO/IEC 17025 and are traceable to national standards of measurement. This document shall not be reproduced, except in full.

Environmental Laboratory Industry Group Member

Environmental Consulting Pty. Ltd.

3 Kingston Town Close, Oakleigh, Victoria 3166, Australia
Postal address: P. O. Box 276, Oakleigh, Victoria 3166, Australia
Telephone: (03) 9564 7055
Fax: (03) 9564 7190
Email: mgt@mgtenv.com.au

Soil and Groundwater Consulting **First Floor The Parade** **Norwood** **South Australia 5065**	**Client Sample ID**		**TC04**	**TC05**	**TC07**	**TS01**
	Lab Number		**08-Se10392**	**08-Se10393**	**08-Se10394**	**08-Se10395**
	Matrix		**Woodchips**	**Woodchips**	**Woodchips**	**Woodchips**
	Sample Date		**Sep 24, 2008**	**Sep 24, 2008**	**Sep 24, 2008**	**Sep 24, 2008**
Analysis Type	**LOR**	**Units**				
Fluoride	100	mg/kg	230	< 100	220	180
Heavy Metals						
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2.0	mg/kg	2.2	< 2	3.8	5.6
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.5	mg/kg	5.0	4.1	9.9	11
Chromium	5	mg/kg	< 5	< 5	8.2	< 5
Cobalt	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	19	28	71	130
Lead	5	mg/kg	180	300	400	1100
Mercury	0.1	mg/kg	0.3	< 0.1	1.1	4.0
Molybdenum	10	mg/kg	< 10	< 10	< 10	< 10
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	520	440	810	1200

COMMENTS:

3 Kingston Town Close, Oakleigh, Victoria 3166, Australia
Postal address: P. O. Box 276, Oakleigh, Victoria 3166, Australia
Telephone: (03) 9564 7055
Fax: (03) 9564 7190
Email: mgt@mgtenv.com.au

Soil and Groundwater Consulting

First Floor The Parade
Norwood
South Australia 5065

	Client Sample ID		TS03	TS05	TS07	TS10
	Lab Number		08-Se10396	08-Se10397	08-Se10398	08-Se10399
	Matrix		Woodchips	Woodchips	Woodchips	Woodchips
	Sample Date		Sep 24, 2008	Sep 24, 2008	Sep 24, 2008	Sep 24, 2008
Analysis Type	**LOR**	**Units**				
Fluoride	100	mg/kg	170	< 100	200	680
Heavy Metals						
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2.0	mg/kg	10	2.6	19	18
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.5	mg/kg	15	5.7	17	25
Chromium	5	mg/kg	< 5	< 5	11	9.0
Cobalt	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	130	68	190	290
Lead	5	mg/kg	2100	870	2900	5200
Mercury	0.1	mg/kg	3.0	3.3	5.1	8.9
Molybdenum	10	mg/kg	< 10	< 10	< 10	< 10
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	1500	670	1700	3200

COMMENTS:

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Soil and Groundwater Consulting	Client Sample ID		TS12	TS13	TS14	TS20
First Floor The Parade	Lab Number		08-Se10400	08-Se10401	08-Se10402	08-Se10403
Norwood	Matrix		Woodchips	Woodchips	Woodchips	Woodchips
South Australia 5065	Sample Date		Sep 24, 2008	Sep 24, 2008	Sep 24, 2008	Sep 24, 2008
Analysis Type	**LOR**	**Units**				
Total Recoverable Hydrocarbons						
TRH C6-C9 Fraction by GC	20	mg/kg	-	-	< 20	-
TRH C10-C14 Fraction by GC	50	mg/kg	-	-	< 50	-
TRH C15-C28 Fraction by GC	100	mg/kg	-	-	< 100	-
TRH C29-C36 Fraction by GC	100	mg/kg	-	-	< 100	-
Fluoride	100	mg/kg	270	620	590	< 100
Heavy Metals						
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2.0	mg/kg	6.4	8.8	4.3	15
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.5	mg/kg	34	37	5.6	13
Chromium	5	mg/kg	5.1	7.1	< 5	< 5
Cobalt	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	130	250	36	83
Lead	5	mg/kg	1400	2600	440	2600
Mercury	0.1	mg/kg	4.2	0.5	1.1	14
Molybdenum	10	mg/kg	< 10	< 10	< 10	< 10
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	2500	2100	800	920

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Soil and Groundwater Consulting	Client Sample ID		DUP1	DUP2	TD14
First Floor The Parade	Lab Number		08-Se10404	08-Se10405	08-Se10406
Norwood	Matrix		Woodchips	Woodchips	Woodchips
South Australia 5065	Sample Date		Sep 24, 2008	Sep 24, 2008	Sep 24, 2008
Analysis Type	**LOR**	**Units**			
Total Recoverable Hydrocarbons					
TRH C6-C9 Fraction by GC	20	mg/kg	-	-	< 20
TRH C10-C14 Fraction by GC	50	mg/kg	-	-	< 50
TRH C15-C28 Fraction by GC	100	mg/kg	-	-	2200
TRH C29-C36 Fraction by GC	100	mg/kg	-	-	1400
Fluoride	100	mg/kg	< 100	< 100	160
Heavy Metals					
Antimony	10	mg/kg	< 10	< 10	< 10
Arsenic	2.0	mg/kg	2.9	< 2	6.7
Beryllium	2	mg/kg	< 2	< 2	< 2
Cadmium	0.5	mg/kg	6.2	3.2	13
Chromium	5	mg/kg	< 5	< 5	< 5
Cobalt	5	mg/kg	< 5	< 5	< 5
Copper	5	mg/kg	67	16	83
Lead	5	mg/kg	940	150	910
Mercury	0.1	mg/kg	2.7	0.4	1.2
Molybdenum	10	mg/kg	< 10	< 10	< 10
Nickel	5	mg/kg	< 5	< 5	5.1
Selenium	2	mg/kg	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10
Zinc	5	mg/kg	700	430	1800

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Soil and Groundwater Consulting First Floor The Parade Norwood South Australia 5065	Client Sample ID	TS13	TS13	RPD	SPIKE
	Lab Number	08-Se10401	08-Se10401	08-Se10401	08-Se10401
	QA Description		Duplicate	Duplicate % RPD	Spike % Recovery
	Matrix	Woodchips	Woodchips	Woodchips	Woodchips
	Sample Date	Sep 24, 2008	Sep 24, 2008	Sep 24, 2008	Sep 24, 2008
Analysis Type	Units			% RPD	% Recovery
Fluoride		620	650	4.7	76

COMMENTS:

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Soil and Groundwater Consulting First Floor The Parade Norwood South Australia 5065	Client Sample ID	RPD	SPIKE	LCS	Method blank
	Lab Number	Batch	Batch	Batch	Batch
	QA Description		Spike % Recovery	% Recovery	
	Matrix	Woodchips	Woodchips	Woodchips	Woodchips
	Sample Date	Sep 24, 2008	Sep 24, 2008	Sep 24, 2008	Sep 24, 2008
Analysis Type	Units		% Recovery	% Recovery	mg/L
Total Recoverable Hydrocarbons					
TRH C6-C9 Fraction by GC		< 1	88	88	< 0.02
TRH C10-C14 Fraction by GC		< 1	92	89	< 0.05
TRH C15-C28 Fraction by GC		< 1	-	-	< 0.1
TRH C29-C36 Fraction by GC		< 1	-	-	< 0.1

COMMENTS:

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Soil and Groundwater Consulting First Floor The Parade Norwood South Australia 5065	Client Sample ID	RPD	SPIKE	LCS	Method blank
	Lab Number	Batch	Batch	Batch	Batch
	QA Description		Spike % Recovery	% Recovery	
	Matrix	Woodchips	Woodchips	Woodchips	Woodchips
	Sample Date	Sep 24, 2008	Sep 24, 2008	Sep 24, 2008	Sep 24, 2008
Analysis Type	Units		% Recovery	% Recovery	mg/L
Heavy Metals					
Mercury		< 1	79	107	< 0.005

COMMENTS:

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Soil and Groundwater Consulting First Floor The Parade Norwood South Australia 5065	Client Sample ID	DUP2	DUP2	RPD	SPIKE	LCS	Method blank
	Lab Number	08-Se10405	08-Se10405	08-Se10405	08-Se10405	Batch	Batch
	QA Description		Duplicate	Duplicate % RPD	Spike % Recovery	% Recovery	
	Matrix	Woodchips	Woodchips	Woodchips	Woodchips	Woodchips	Woodchips
	Sample Date	Sep 24, 2008	Sep 24, 2008	Sep 24, 2008	Sep 24, 2008	Sep 24, 2008	Sep 24, 2008
Analysis Type	Units			% RPD	% Recovery	% Recovery	mg/L
Fluoride		< 100	< 100	< 1	-	-	< 10
Heavy Metals							
Antimony		-	-	12	83	91	< 0.25
Arsenic		-	-	8.6	87	88	< 0.05
Beryllium		-	-	17	88	81	< 0.2
Cadmium		-	-	< 1	90	83	< 0.02
Chromium		-	-	12	95	83	< 0.2
Cobalt		-	-	< 1	82	95	< 0.2
Copper		-	-	1.1	97	86	< 0.2
Lead		-	-	9.7	81	83	< 0.05
Molybdenum		-	-	< 1	86	94	< 0.25
Nickel		-	-	15	84	81	< 0.2
Selenium		-	-	< 1	82	92	< 0.05
Tin		-	-	< 1	83	84	< 0.25
Zinc		-	-	5.8	83	93	< 0.2

COMMENTS:

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ACN 100 220 479 · ABN 62 100 220 479

S&G

CHAIN OF CUSTODY DOCUMENTATION

CLIENT: **Incitec Pivot**	LABORATORY: **MGT**	LABORATORY BATCH NO.:	
PROJECT: **Cockle Creek**	COC Reference #: 1300	SAMPLERS:	
SEND REPORT TO: S&G	SEND INVOICE TO: S&G	PHONE: 08 8431 7113 FAX: 08 8431 7115	
DATA NEEDED BY: 5 day t/a	REPORT NEEDED BY: 5 day t/a	REPORT FORMAT: HARD:YES FAX: NO E-MAIL: YES	
PROJECT ID: **SG061313**	QUOTE #:	RECEIVED BY	METHOD OF SHIPMENT:
RELINQUISHED BY:		NAME: Gray Wong DATE: 26/9/08	CONSIGNMENT NOTE NO.
NAME: Dale McKenzie DATE: 24/9/08		OF: MGT TIME: 10:35am	
OF: S&G TIME:PM		NAME: DATE:	TRANSPORT CO. NAME.
NAME: DATE:		OF: TIME:	
OF: TIME:			

P.O. NO.:	COMMENTS/SPECIAL HANDLING/STORAGE OR DIPOSAL:
FOR LAB USE ONLY	Please forward results and invoice to: dnunn@soilandgroundwater.com.au, dmckenzie@soilandgroundwater.com.au; labresults@soilandgroundwater.com.au
COOLER SEAL	
Yes ..... No	
Broken ..... Intact	
COOLER TEMP: deg.C	

Rep # 234416.

*Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinced Jar; S = Solvent Washed Acid Rinced Glass Bottle; VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; O = Other.

SAMPLE DATA				CONTAINER DATA			ANALYSIS REQUIRED					NOTES
SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	NO.	pH field	Metals	Fluoride	TRH	HCLD		
TC01	Wood	24/9/08		J	1					✓		Sample solid core/wood chips Not saw dust. (TC series)
TC02										✓		
TC03										✓		
TC04							✓	✓				
TC05							✓	✓				
TC06										✓		
TC07							✓	✓				
TC08										✓		
TC09										✓		
TS01							✓	✓				
TS02										✓		
TS03							✓	✓				
TS04										✓		
TS05							✓	✓				
TS06										✓		
TS07							✓	✓				
TS08										✓		
TS09										✓		
TS10							✓	✓				
TS11										✓		
TS12							✓	✓				
TS13							✓	✓				
TS14							✓	✓	✓			
TS15										✓		
TS16										✓		
TS17										✓		
TS18						TOTAL				✓		

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CHAIN OF CUSTODY DOCUMENTATION

CLIENT: Incitec Pivot	LABORATORY: MGT *** SPLIT 1 & Copy of	LABORATORY BATCH NO.:
PROJECT: Cockle Creek	COC Reference #: 1300 COC to ALS.	SAMPLERS:
SEND REPORT TO: S&G	SEND INVOICE TO: S&G	PHONE: 08 8431 7113 FAX: 08 8431 7115
DATA NEEDED BY: 5 day t/a	REPORT NEEDED BY: 5 day t/a	REPORT FORMAT: HARD:YES FAX: NO E-MAIL: YES
PROJECT ID: SG061313	QUOTE #:	

RELINQUISHED BY:		RECEIVED BY		METHOD OF SHIPMENT:
NAME: Dale McKenzie	DATE: 24/9/08	NAME: Mary Downy	DATE: 26/9	CONSIGNMENT NOTE NO.
OF: S&G	TIME:PM	OF: MGT	TIME:	
NAME:	DATE:	NAME:	DATE:	TRANSPORT CO. NAME:
OF:	TIME:	OF:	TIME:	

P.O. NO.:	COMMENTS/SPECIAL HANDLING/STORAGE OR DIPOSAL:	Rep # 234416
FOR LAB USE ONLY COOLER SEAL Yes ..... No ..... Broken ..... Intact ..... COOLER TEMP: deg.C	Please forward results and invoice to: dnunn@soilandgroundwater.com.au; dmckenzie@soilandgroundwater.com.au; labresults@soilandgroundwater.com.au	*Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved, C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinced Jar; S = Solvent Washed Acid Rinced Glass Bottle; VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; O = Other.

SAMPLE DATA				CONTAINER DATA			ANALYSIS REQUIRED					NOTES
SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	NO.	pH field	Metals	Fluoride	TRH	Hg-D		
TS 19	Water	24/9/08		N	1		✓	✓		✓		
TS 20	↓			↓	↓		✓	✓				
DUP 1							✓	✓				
DUP 2							✓	✓				
SPLIT 1							✓	✓	✓			*** Please send SPLIT 1 and
TD 19					↓		✓	✓		✓		copy of COC to ALS.
						TOTAL	16	16	2	17		