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ABN 41 687 119 230

This document was created in response to a Freedom of Information request made to CSIRO.

FOI Number: FOI2019/18

Date: 10 April 2019

Request: Any internal correspondence between CSIRO employees that refers to a briefing, or the contents of a briefing, or a summary of that briefing, by the department of environment referred to in the following letter from Jane Coram to Dean Knudson: <http://www.environment.gov.au/system/files/pages/cb8a9e41-eba5-47a4-8b72-154d0a5a6956/files/letter-csiro-doe.pdf>;
Any notes taken by attendees of that briefing;
But excluding any details that would require third-party consultation.

Document(s): 1-43

For more information, please refer to CSIRO's FOI disclosure log at www.csiro.au/FOILog

From: Beringen, Helen (CorpAffairs, Dutton Park)
Sent: Friday, 5 April 2019 11:04 AM
To: Coram, Jane (L&W, Black Mountain)
Subject: Issues Brief Carmichael March 28.docx
Attachments: Issues Brief Carmichael March 28.docx; ATT00001.txt

Hi Jane, I have just spoken with Warwick and attached is the latest brief on Adani. I will also get a copy of a one pager based on this doc that was sent to our minister Andrews' adviser yesterday forwarded to you. Are you free to discuss briefly by phone?

Thanks Helen

Next steps:

1. CSIRO has determined that it will not object to the release of the report and will provide its decision to the Department by cob April 1 2019. Identify potential timeframes for public release of the report as a result of FOI requests
2. Confer with report partner GA on approach
3. Talk with DoEE Public Affairs
4. Update plan accordingly.

Updated March 29, 2019, Helen Beringen

From: Oliver, Sandra (Executive, Black Mountain)
Sent: Friday, 5 April 2019 11:17 AM
To: Scott, Hannah (CorpAffairs, Black Mountain); Coram, Jane (L&W, Black Mountain)
Cc: Beringen, Helen (CorpAffairs, Dutton Park); Creagh, Ben (CorpAffairs, Dutton Park); MPLO
Subject: RE: Copy information sent to our Minister's office re groundwater management and monitoring planning for the Carmichael Coal Project

Hi Jane

Further to Hannah's email below: would you like any support in the meeting today? If so we will arrange for somebody to join you on the call, even if it's just to listen in. Hannah's attachment which she sent you is the key info to refer to. I'll try to catch you later to understand the outcomes. Hope it goes well.

cheers

Sandra

Jr Sandra Oliver
Executive Officer
Environment, Energy and Resources

CSIRO

s22

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s22

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From: Oliver, Sandra (Executive, Black Mountain)
Sent: Friday, 5 April 2019 1:04 PM
To: Coram, Jane (L&W, Black Mountain)
Cc: McDonald, Warwick (L&W, Black Mountain)
Subject: RE: How advice has been addressed [SEC=OFFICIAL]

Hi Jane

Thanks for clarifying the deadline. I'm in the process of seeking advice from Judi Zielke on the internal clearance that may be required and will advise as soon as possible.

In the meantime please go ahead and prepare the draft response with Warwick as you have outlined below.

Thanks
 Sandra

Dr Sandra Oliver
 Executive Officer
 Environment, Energy and Resources
 CSIRO

s22

From: Coram, Jane (L&W, Black Mountain)
Sent: Friday, 5 April 2019 12:55 PM
To: Oliver, Sandra (Executive, Black Mountain) s22
Cc: McDonald, Warwick (L&W, Black Mountain) s22
Subject: Re: How advice has been addressed [SEC=OFFICIAL]

(In haste as we're about to take off) I gather they'd like it absolutely asap - given that I had the Secretary in the room with the Dep Sec to brief me, there's clearly quite some urgency around this. I didn't ask by when because I thought we needed to consider the request first to know how long it would take us to respond.

Thanks for progressing this, Sandra - I'll be on the ground by about 2pm. Does it need Exec Director sign off - certainly visibility of this, but surely I can sign off on this if we're comfortable that our recommendations have been met?

Thank you; Jane.

On 5 Apr 2019, at 12:50 pm, Oliver, Sandra (Executive, Black Mountain) s22 wrote:

Hi Jane and Warwick

Thanks for cc-ing me. Can you please confirm when DoEE needs a response?

Since Jane is travelling I'd like to discuss the process of assessing this information with Warwick. We will likely need Executive Director clearance and so we'll need a plan for that.

Warwick I will give you a call shortly.

Thanks
Sandra

Dr Sandra Oliver
Executive Officer
Environment, Energy and Resources
CSIRO

s22



From: Coram, Jane (L&W, Black Mountain)
Sent: Friday, 5 April 2019 12:41 PM
To: McDonald, Warwick (L&W, Black Mountain) s22
Cc: Oliver, Sandra (Executive, Black Mountain) s22
Subject: Fwd: How advice has been addressed [SEC=OFFICIAL]

Hi Warwick (cc Sandra)

As discussed, DoEE would ideally like our formal assent that Adani have responded to the issues raised in the advice we and GA provided them in late Feb, as per the details provided (below).

In summary, their actions consist of:

- Updating the modelling committed to within 2 years - negligible risk to mines in that time
- Additional, more conservative early warning triggers - more conservative early warning triggers and review more than 10%
- Additional monitoring between mine and springs will be installed into deeper formations right down into Permian

Based on the briefing I've just received by phone this sounds reasonable but I'll consider the written material below while I'm flying - if you could take a look at it too that would be great, thank you.

With regards, Jane.

s22





From: Oliver, Sandra (Executive, Black Mountain)
Sent: Friday, 5 April 2019 1:18 PM
To: Zielke, Judi (Executive, Black Mountain)
Cc: Scott, Hannah (CorpAffairs, Black Mountain); Young, Lukas (CorpAffairs, Black Mountain); Creagh, Ben (CorpAffairs, Dutton Park); Mayfield, Peter (Executive, Newcastle); Dodd, Lyn (Executive, Black Mountain)
Subject: urgent request from DoEE regarding Carmichael Coal Project
Attachments: Attachment E - Summary of CSIRO and GA advice.docx

Dear Judi

I am seeking your advice in relation to an urgent request from DoEE which we have received today via Jane Coram, who attending a meeting with the DoEE Secretary and others in relation to the matter Hannah has outlined below.

DoEE is urgently seeking CSIRO's agreement that Adani has responded to the issues raised in advice provided by CSIRO and Geoscience Australia in late February.

I've discussed with Ben Creagh and we propose the following process for response:

- L&W BU to consider attached information and draft a response (Jane is doing this)
- Clearance by Judi (in Peter's absence today)
- Response to be sent by Jane today, copy provided to Judi, Peter, Ben, MPLO

I'd be grateful if you could confirm you are happy with this process or if you prefer a different approach.

Thanks very much
 Sandra

Dr Sandra Oliver
 Executive Officer
 Environment, Energy and Resources
 CSIRO

s22

From: Scott, Hannah (CorpAffairs, Black Mountain)
Sent: Friday, 5 April 2019 11:15 AM
To: Zielke, Judi (Executive, Black Mountain) s22
Cc: Oliver, Sandra (Executive, Black Mountain) s22 MPLO s22
Subject: FW: Copy information sent to our Minister's office re groundwater management and monitoring planning for the Carmichael Coal Project

Hi Judi,

Helen Beringen and Sandra Oliver have brought to my attention that Finn Pratt, DoEE Secretary and Dean Knudson, DoEE Deputy Secretary have requested to meet with Jane Coram today.

I just wanted to make you aware of this meeting, particularly since Peter Mayfield is out of the office today.

I've provided Jane with the information that was sent to our MO yesterday.

Cheers, H

Hannah Scott
Manager, Ministerial Liaison Office
CSIRO

s22

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CSIRO acknowledges the Traditional Owners of the lands that we live and work on across Australia and pays its respect to Elders past and present.

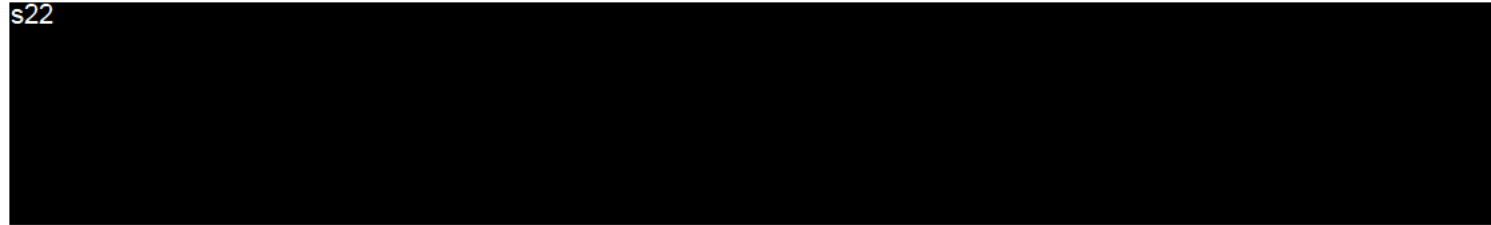
PLEASE NOTE

The information contained in this email may be confidential or privileged. Any unauthorised use or disclosure is prohibited. If you have received this email in error, please delete it immediately and notify the sender by return email. Thank you. To the extent permitted by law, CSIRO does not represent, warrant and/or guarantee that the integrity of this communication has been maintained or that the communication is free of errors, virus, interception or interference.

Please consider the environment before printing this email.

s22

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Summary of CSIRO and Geoscience Australia (GA) Advice on Groundwater Management Plans and Response

Advice on monitoring

1. CSIRO and GA recommended that Adani:

- a. Install more bores to monitor the deeper groundwater units in the central zone between the mine and the Doongmabulla springs. Installing these bores at existing points would remove any significant access issues, and would enable comparison to existing data.

Action: The Department required that Adani install additional deeper bores at existing sites (condition 3a/iii/6b) and collect suitable baseline data (condition 3b) at these sites.

Response: Adani have committed (refer section 7 of the GMMP) to install deeper bores at, or within 500m of, three existing monitoring locations in the central zone. These bores will not monitor all of the deeper units. Adani will investigate drilling bores into deepest units where coal occur for monitoring and research purposes. These commitments have also been referenced in the GDEMP (see sections 4.3.2 and 8.8).

- b. Include stream flow gauging upstream and downstream of the mine area in their ongoing monitoring program, with updated height-discharge surveys

Action: The Department required more precise gauging locations and commitments for future height-discharge surveys in the GDEMP (condition 6b).

Response: Adani have committed in the GDEMP to install an additional 3 gauging locations, in addition to the two existing locations, and further surveys to determine height-discharge relationships (see section 6.6.1).

- c. include a more sophisticated statistical analysis of hydrochemistry data to constrain the source aquifer(s) of the Doongmabulla Springs. This includes assessing a wider variety of groundwater and surface water parameters.

Action: The Department required clarity on these methods, which are a requirement of research under the *Great Artesian Basin Springs Research Plan* (GABSRP) at condition 25e and rely on installation of additional nested bores to the west of the site.

Response: Adani will address this issue in revisions to the GABSRP.

Advice on management

2. The limitations of the numerical groundwater model mean that drawdown could be under-predicted, so the adopted thresholds and triggers will be reached sooner than anticipated and are not a suitable foundation for the proposed monitoring and management approaches.

Action: The Department required that Adani adopt a more conservative approach to monitoring and management until the model is reviewed within two years of the first box cut (or first extraction of coal). For example, more conservative measures might include:

- Monitoring additional parameters, e.g. spring flow / flux, in addition to groundwater level and pressure;
- Committing to a particular mine plan or number of tonnes of coal; and/or
- Applying rate-based triggers for more bores to verify model predictions and to other GDEs to ensure they are protected.

Response: Adani has:

- included monitoring of spring flow under the GDEMP (refer section 8.7).
- not committed to a scaled-down mine plan, but has included further details about the proposed mine plan for the first five years of operations in the GMMP (refer section 2.6 and Appendix B).
- committed to investigating any drawdown rates that are faster than predicted as per standard practices at model review and update (see section 5.3.5.2 of the GMMP).

3. The proposed monitoring and management approaches do not sufficiently address the uncertainty regarding potential alternative or additional source aquifers of Doongmabulla Springs. Recommendations to address this uncertainty include: the installation of monitoring bores between the mine and the Doongmabulla springs, streamflow gauging and a more sophisticated statistical analysis of hydrochemistry data as described under item 2 above.

Action: The Department required that Adani address the actions under item 2 and commit to apply triggers and limits for the additional nested bores to the west of the site. These triggers must be based on baseline condition (condition 6f).

Response: Adani has addressed the advice under item 2 and committed to apply triggers and limits to the additional nested bores in the GMMP (see section 7). The revised early warning triggers and impact thresholds will be submitted to the Department for approval as part of review of the GMMP. The Department will ensure that these triggers and limits are set to ensure the protection and long-term viability of the Doongmabulla Springs Complex.

4. CSIRO and GA advice on the design of water level thresholds and triggers included that:

- a. All monitoring locations for which water level thresholds are defined should also have drawdown rate limits derived. Evaluation of drawdown rate limits should form part of routine monitoring data assessment and be included in the Impact Threshold Assessment approach.

Action: The Department required that rate limits are applied for both the Carmichael River and the Doongmabulla Springs in the GDEMP, based on the requirement for early-warning triggers at these GDEs (condition 6f), not all bores.

Response: Early warning triggers have been included in the GDEMP for both the Carmichael River and the Doongmabulla Springs (see Appendix B).

Action: To account for model limitations, and likely underpredictions, the Department required that Adani apply drawdown rate limits until the model is reviewed within two years of the first box cut.

Response: Adani has committed to investigating any drawdown rates that are faster than predicted as per standard practices at model review and update (see section 5.3.5.2 of the GMMP).

- b. A bore in the alluvium, 'C025P1', has been dry during the baseline monitoring period and should not be used as a threshold monitoring point.

Action: The Department required that a trigger not be set at C025P1.

Response: Adani has committed in the GMMP (see section 7) that bore C025P1 will be replaced. In the interim, if bore C025P1 is dry, or has no water level readings longer than 6 months, the trigger will be exceeded (section 5.3.3.1). This trigger is cross-referenced in the GDEMP Appendix B.

5. CSIRO and GA provided advice to improve the investigation procedures. Recommendations included that the GMMP:

- a. Explicitly state that the Commonwealth regulator will be notified whenever a groundwater exceedance occurs

Action: The Department required that Adani commit to notify the Department whenever a groundwater exceedance occurs

Response: Section 4.7.2.2 of the GMMP now states: The administering authority will be notified when an investigation is to be instigated for both groundwater quality and levels.

- b. Commit to a maximum timeframe in which the investigation will be completed (for example three months).

Action: The Department required that Adani specify a timeframe in which a groundwater exceedance investigation will be completed.

Response: Section 4.7.2.2 of the GMMP now states: If the groundwater level thresholds exceedance is because of authorised mining activities, the investigation will be prioritised and, depending on the nature of the impact, completed within three months.

- c. Provide details of the process to remove non-mining influences will occur during investigation of threshold exceedances.

Action: The Department required upfront details of these investigations so when there is an exceedance it can be assigned to the cause.

Response: Adani has provided further details of the trend analysis that will be undertaken in the GMMP (section 4.7.2.2), which will include assessing at least 12 months of groundwater data for the bore and comparing it to climate data, nearby bores, other local projects and assessing the potential for cumulative impact.

- d. Present mitigation actions in the GMMP itself

Action: The Department required that mitigation actions be summarised within the GMMP to address condition 3d, rather than just references to mitigation in other plans.

Response: The GMMP (section 4.7.2.2) uses examples of mitigation actions in response to an exceedance, including:

- review of the mine plan (including sequencing of mining);
- limiting thickness of extraction of coal seams and reviewing extraction of multiple coal seams for the underground longwall mining; and
- freezing mine development at current levels until the completion of investigations and assessments which conclude that further development will not exceed approved impacts.

6. CSIRO and GA provided advice on the design of water quality thresholds and triggers

Action: The Department notes that water quality triggers and limits are not a requirement of the EPBC conditions of approval. This advice will be provided to DES for their information.

Response: Not applicable for the groundwater management plans under EPBC conditions.

Advice on modelling

7. The review found that the numerical groundwater model used by the GMMP is the most conservative of the model scenarios available. However CSIRO and GA do not consider the model fit-for-purpose for achieving the outcomes sought by the conditions of approval, and have provided recommendations, including:
- a. fixing identified errors in the bore heights used to calibrate the model, explaining how they have changed over time and how these changes affect model prediction and performance
 - b. using locally-appropriate parameters (which dictate how water moves through the model layers) to represent the Carmichael River, Rewan Formation and Clematis Sandstone, and subsidence above longwall mining
 - c. recalibrating the model using the revised information in (a) and (b), using the baseflow in the Carmichael River as a target to ensure it produces realistic values
 - d. global sensitivity analysis and uncertainty analysis to determine the full range of likely impacts and the influence of each parameter and
 - e. validating the model based on data from new bores drilled since approval of the mine.

Action: The Department required that Adani commit in the GMMP and GDEMP to these updates as part of the model review required within two years of the first box cut under Queensland's EA.

Response: Adani have committed to address the limitations identified by the CSIRO and GA review in the groundwater model re-run - see section 7 of the GMMP and section 4.3.2 of the GDEMP.

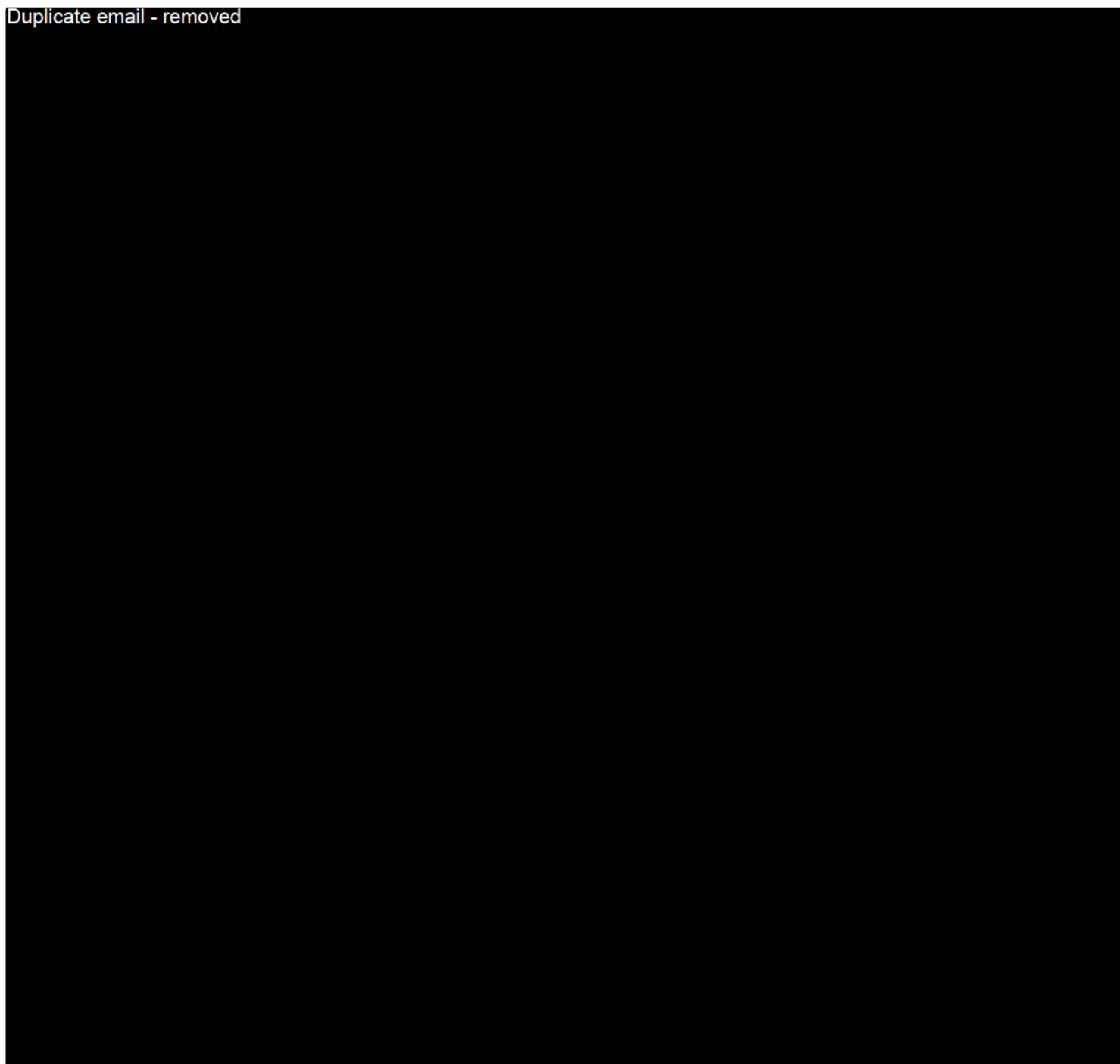
From: Zielke, Judi (Executive, Black Mountain)
Sent: Friday, 5 April 2019 1:57 PM
To: Oliver, Sandra (Executive, Black Mountain); Coram, Jane (L&W, Black Mountain)
Cc: Scott, Hannah (CorpAffairs, Black Mountain); Young, Lukas (CorpAffairs, Black Mountain); Creagh, Ben (CorpAffairs, Dutton Park); Mayfield, Peter (Executive, Newcastle); Dodd, Lyn (Executive, Black Mountain)
Subject: RE: urgent request from DoEE regarding Carmichael Coal Project

Thanks Sandra – as discussed I'm comfortable with the approach.

Jane – I spoke briefly to Dean to check approach between the ministers offices, etc, prior to following up with our MO. So understand a bit more of the details in the background. Will keep an eye out for the draft letter when you're ready.

Ta Judi

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From: Marshall, Larry (Executive, Black Mountain)
Sent: Friday, 5 April 2019 2:31 PM
To: Zielke, Judi (Executive, Black Mountain)
Cc: Coram, Jane (L&W, Black Mountain); Mayfield, Peter (Executive, Newcastle)
Subject: RE: urgent request from DoEE regarding Carmichael Coal Project

Minister filled me in – I know you can manage, but thanks for heads up s22

From: Zielke, Judi (Executive, Black Mountain)
Sent: Friday, 5 April 2019 2:01 PM
To: Marshall, Larry (Executive, Black Mountain) s22
Cc: Coram, Jane (L&W, Black Mountain) s22 Mayfield, Peter (Executive, Newcastle)
 s22
Subject: FW: urgent request from DoEE regarding Carmichael Coal Project

Hi Larry

I'm not sure if you've heard about this one as yet. Jane's on a plane at the moment.

I understand she met with Finn Pratt and Dean Knudson this morning as per the email trail below, and in response to their request is considering Adani's proposed approach to dealing with the issues raised in our and GA's report regarding Carmichael Mine.

DoEE has requested a letter from CSIRO (Jane) responding with advice regarding whether we feel Adani's approach will address all of our findings. GA has already considered the information and provided a positive respond to DoEE.

I understand the proposal is that Ministers Price and Canavan would announce their decision, once made, asap, and that the advice from CSIRO and GA will factor significantly in that announcement.

We're engaging with the MO as well.

Regards Judi

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From: Oliver, Sandra (Executive, Black Mountain)
Sent: Friday, 5 April 2019 2:03 PM
To: Coram, Jane (L&W, Black Mountain)
Cc: McDonald, Warwick (L&W, Black Mountain)
Subject: RE: How advice has been addressed [SEC=OFFICIAL]

Hi Jane

Confirming that Judi would like to review CSIRO's response before it is provided to DoEE. You may have seen her email to you about this.

I've just discussed with Warwick who's onto it.

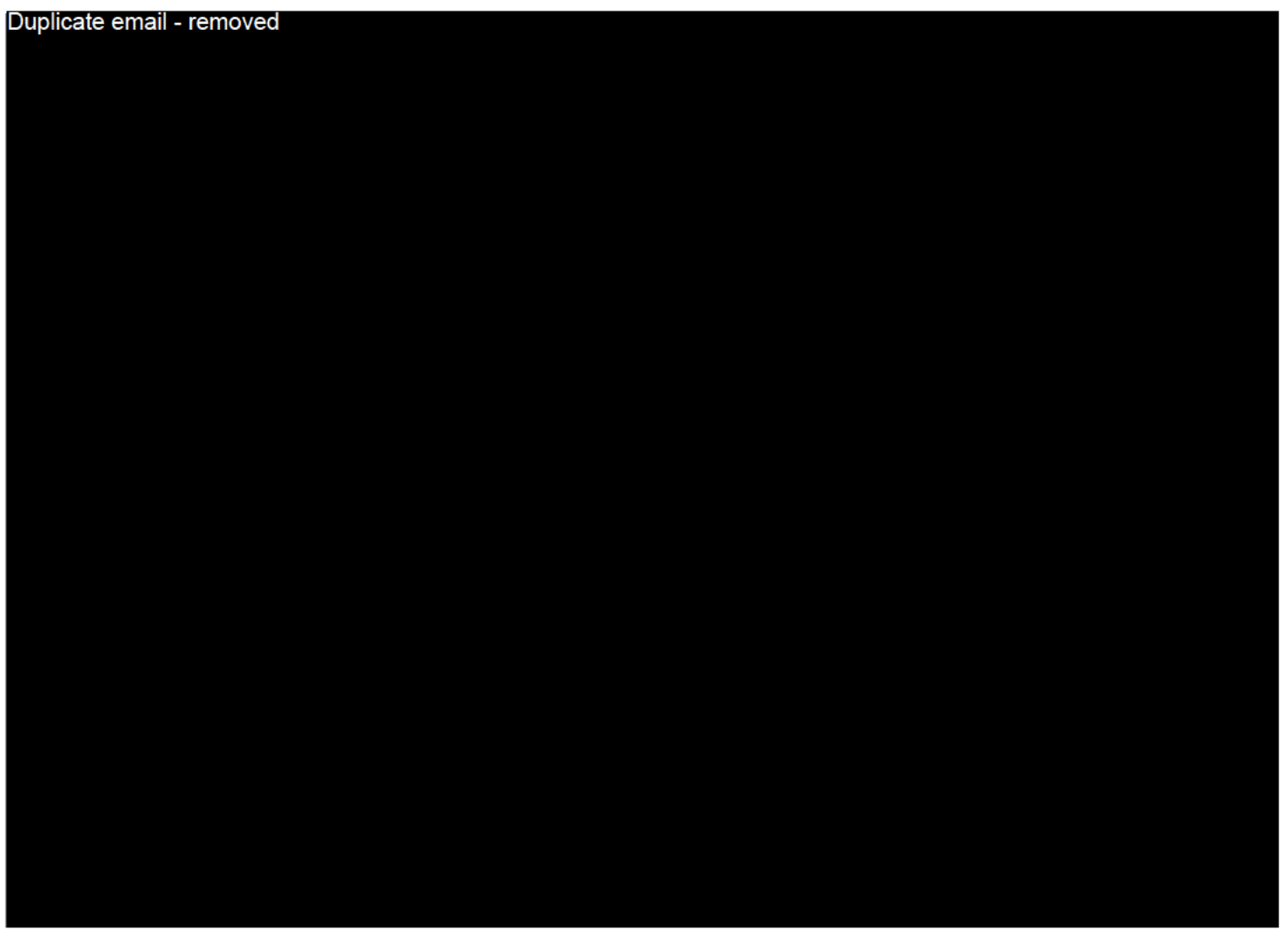
cheers
Sandra

Dr Sandra Oliver
Executive Officer
Environment, Energy and Resources
CSIRO

s22

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From: Lee, Adam (L&W, Black Mountain)
Sent: Friday, 5 April 2019 2:30 PM
To: Oliver, Sandra (Executive, Black Mountain)
Subject: RE: How advice has been addressed [SEC=OFFICIAL]

On it!

Regards

Adam Lee
Executive Officer
Land & Water
CSIRO

s22



CSIRO acknowledges the Traditional Owners of the lands that we live and work on across Australia and pays its respect to Elders past and present.

PLEASE NOTE

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From: Oliver, Sandra (Executive, Black Mountain)
Sent: Friday, 5 April 2019 2:30 PM
To: Lee, Adam (L&W, Black Mountain) s22
Subject: FW: How advice has been addressed [SEC=OFFICIAL]

Hi Adam

As discussed if you could follow this up with Jane today that would be great, i.e. please send draft response to Judi for her review once Jane is happy with it.

Thanks
Sandra

Dr Sandra Oliver
Executive Officer
Environment, Energy and Resources
CSIRO

s22



From: McDonald, Warwick (L&W, Black Mountain)
Sent: Friday, 5 April 2019 2:20 PM
To: Coram, Jane (L&W, Black Mountain) s22 Oliver, Sandra (Executive, Black Mountain) s22
Subject: Re: How advice has been addressed [SEC=OFFICIAL]

Hi Jane and Sandra

I have Russell Crosbie looking at the summary response document.

GA have already responded with a letter confirming that the responded are consistent with the recommendations.

I will draft a letter.

Regards

Warwick
Warwick McDonald
Research Director | Water Resource Management
CSIRO Land and Water

s22

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From: Coram, Jane (L&W, Black Mountain)
Sent: Friday, 5 April 2019 3:03 PM
To: McDonald, Warwick (L&W, Black Mountain)
Cc: Oliver, Sandra (Executive, Black Mountain)
Subject: Re: How advice has been addressed [SEC=OFFICIAL]

Thanks very much, Warwick.

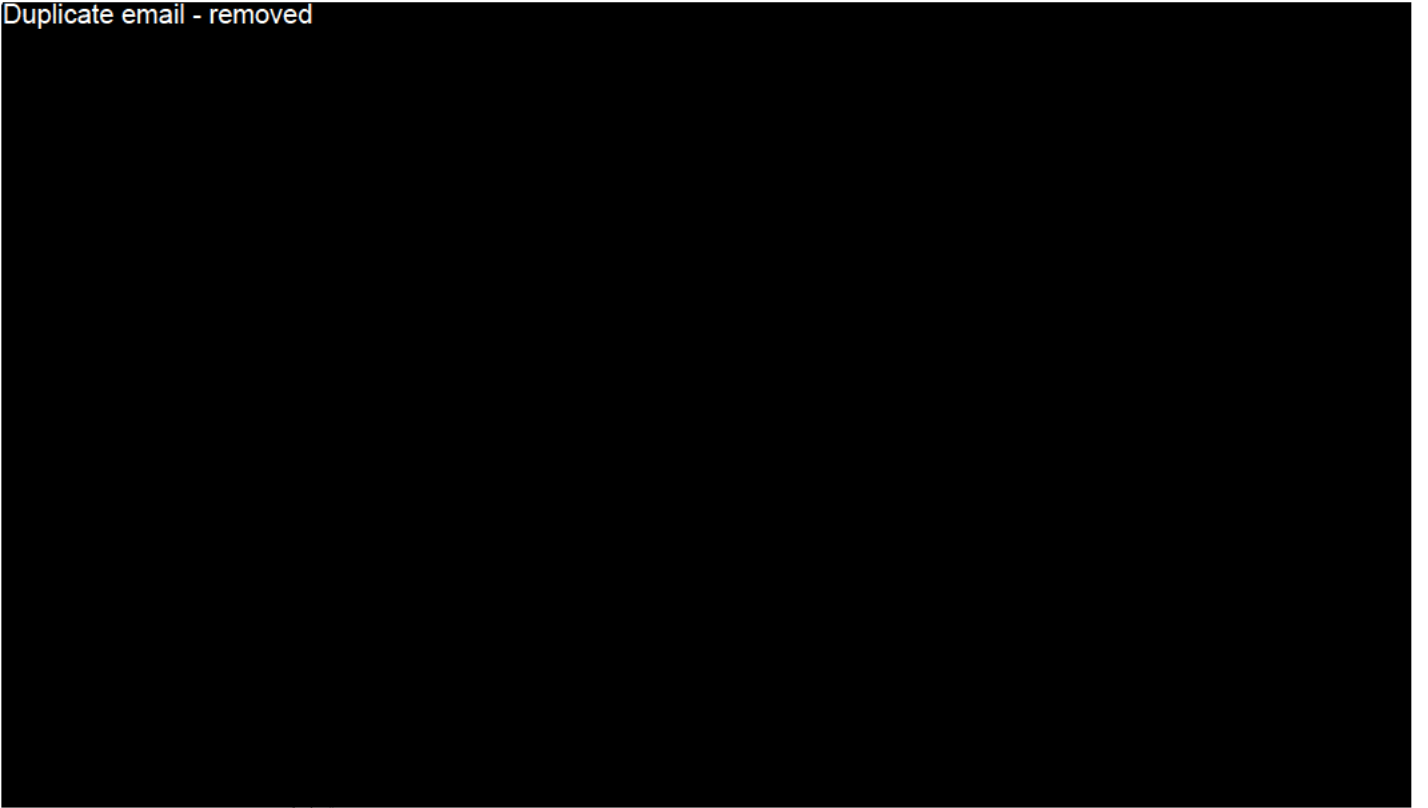
I had a look at the summary document while I was flying and while most of the Adani responses seems reasonable I had a few queries around specific details:

- 1. Will not monitor all of the deeper units - which ones and is this a problem
- 4. Have rate limits specifically been included in early warning triggers for the Carmichael River and the Doongmabulla Springs?
- 5f. "The administering authority will be notified when an investigation is to be instigated for both groundwater quality and levels." Should read and/or.
- 5g. "If the groundwater level thresholds exceedance is because of authorised mining activities, the investigation will be prioritised and, depending on the nature of the impact, completed within three months." Should there be any reason why not possible with 3 months?
- 5h. Are we comfortable about the further details provided?

Would Russell be able to check these?

Thank you, Jane.

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From: McDonald, Warwick (L&W, Black Mountain)
Sent: Friday, 5 April 2019 3:13 PM
To: Crosbie, Russell (L&W, Waite Campus)
Subject: FW: How advice has been addressed [SEC=OFFICIAL]


Jane has asked some questions... see below... not sure we should be over analysing this... for your consideration

Warwick
Warwick McDonald
Research Director | Water Resource Management
CSIRO Land and Water

s22

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From: McDonald, Warwick (L&W, Black Mountain)
Sent: Friday, 5 April 2019 3:36 PM
To: Coram, Jane (L&W, Black Mountain); Oliver, Sandra (Executive, Black Mountain); Lee, Adam (L&W, Black Mountain)
Subject: Re: How advice has been addressed [SEC=OFFICIAL]
Attachments: Jane Coram_to_DOEE_Adani_response_5April2019.docx
Importance: High

Hi Jane

I have drafted a letter for you.

I have been clear about the information provided on which we have examined the responses, and been careful about not being categorical about the degree these responses will satisfy the recommendations (the devil is in the detail that we do not have). I am still waiting for a response from Russell Crosbie.

Suggested strategy. Decide when the letter must go to Judi, and use attached. I may come back with some detail following Russell's technical-lens examination in time.

Hope this helps

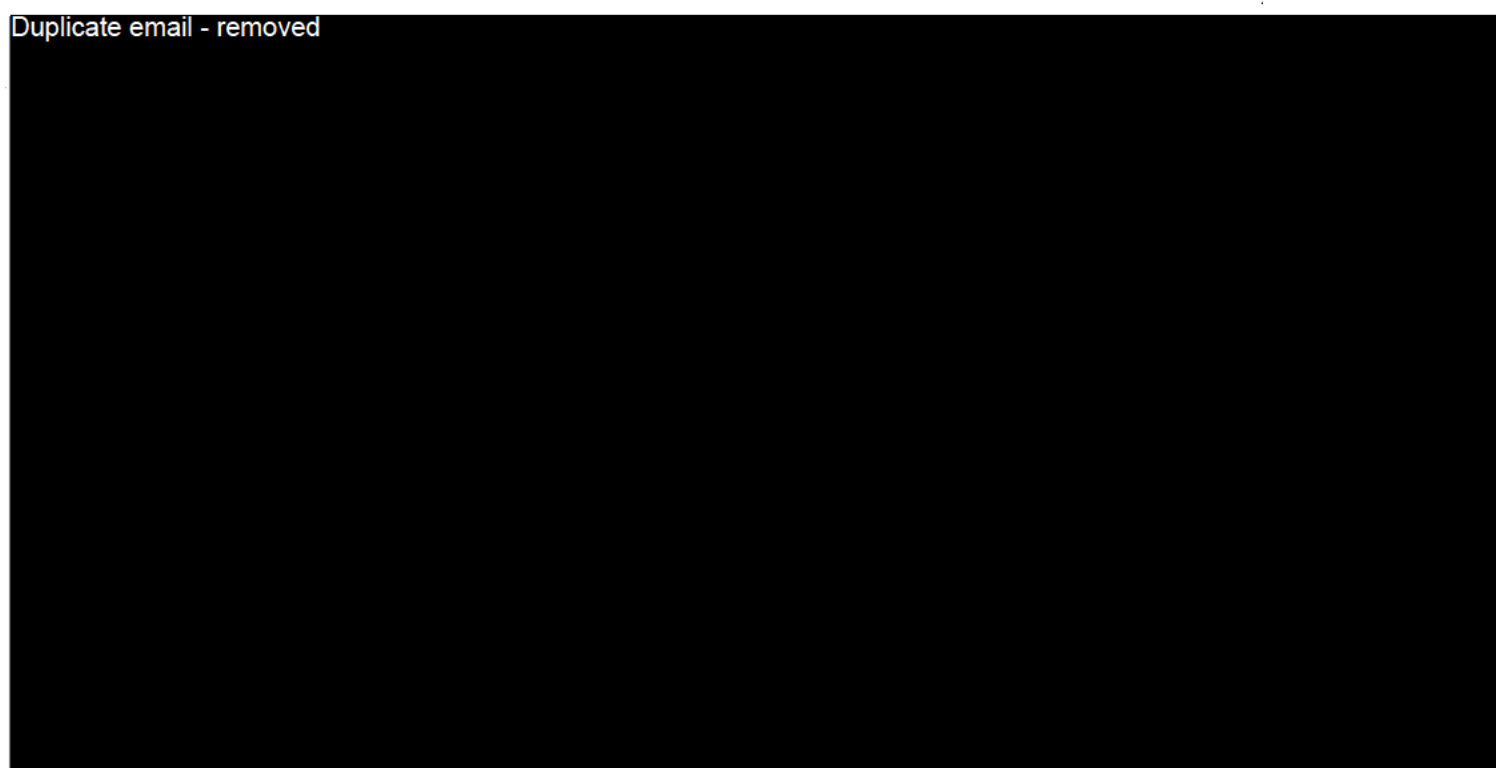
Regards

Warwick
Warwick McDonald
Research Director | Water Resource Management
CSIRO Land and Water

s22



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Black Mountain Science and Innovation Park, Clunies Ross Street, Acton ACT 2601

GPO Box 1700, Canberra, ACT 2601, Australia

s22

• ABN 41 687 119 230

5 April 2019

Mr Dean Knudson
Deputy Secretary, Environmental Protection Group
Department of the Environment and Energy
GPO Box 787
CANBERRA ACT 2600

s22

Dear Mr Knudson

RE: Advice on Groundwater Management Plans and Response

CSIRO has examined the responses by Adani to the recommendations that followed the Geoscience Australia and CSIRO review of Carmichael Mine Groundwater Management Plans.

Our examination of Adani's responses is based on the summary information ("Summary of CSIRO and Geoscience Australia (GA) Advice on Groundwater Management Plans and Response") provided to CSIRO on 5 April 2019 by the Department of the Environment and Energy.

CSIRO was responsible for the modelling component of the Groundwater Management Plans review. CSIRO is of the view that Adani's response should satisfy the requirement to update models.

Overall, CSIRO is of view that Adani's responses are directed to address the issues and concerns raised in the report recommendations.

Yours sincerely

s22

Jane Coram
Director
CSIRO Land and Water

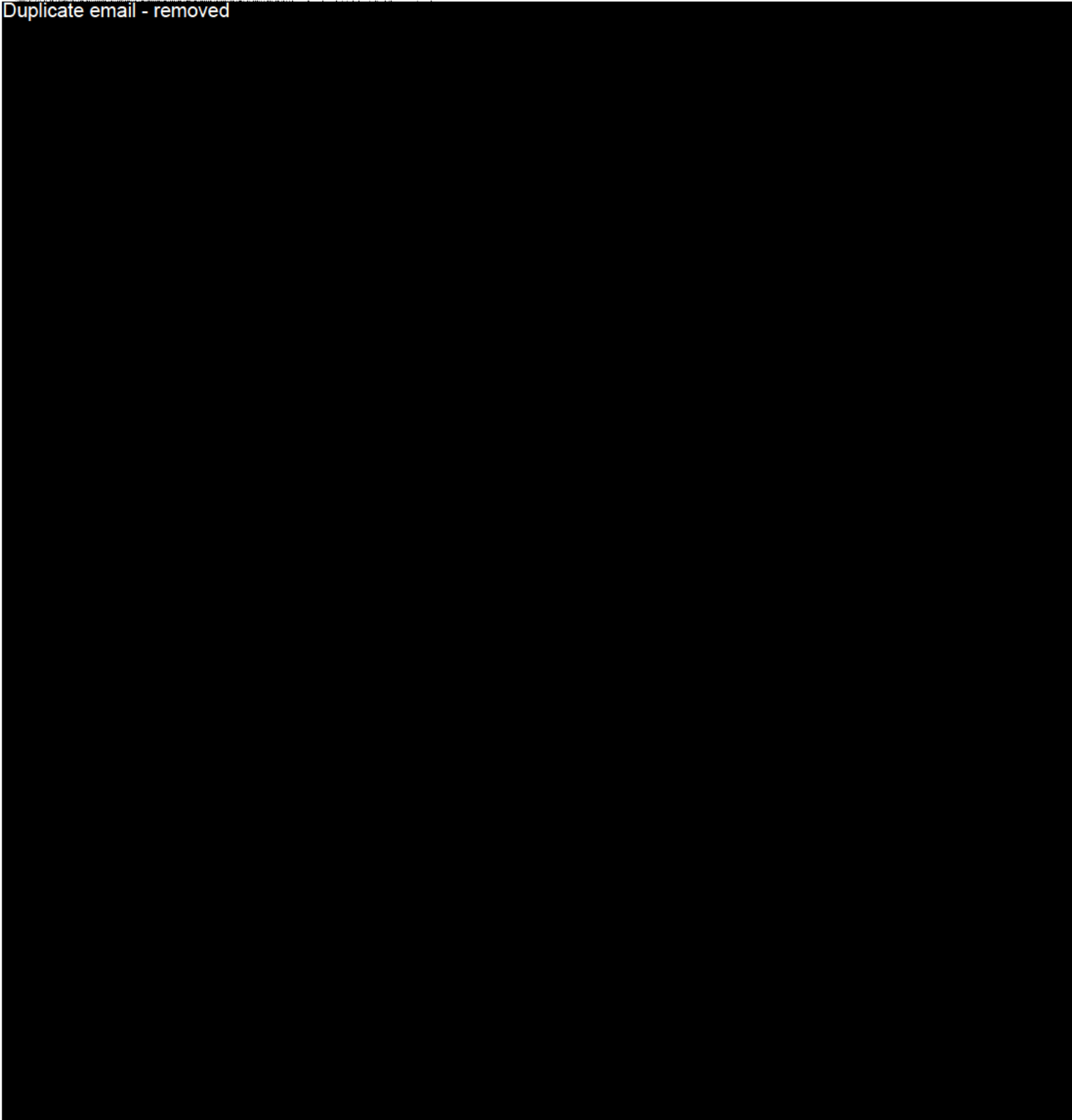
From: Wilson, Sally (L&W, Black Mountain)
Sent: Friday, 5 April 2019 3:37 PM
To: McDonald, Warwick (L&W, Black Mountain)
Cc: Coram, Jane (L&W, Black Mountain)
Subject: RE: How advice has been addressed [SEC=OFFICIAL]

Hi Warwick

Received.

S

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From: McDonald, Warwick (L&W, Black Mountain)
Sent: Friday, 5 April 2019 3:38 PM
To: Coram, Jane (L&W, Black Mountain); Oliver, Sandra (Executive, Black Mountain); Lee, Adam (L&W, Black Mountain)
Subject: FW: How advice has been addressed [SEC=OFFICIAL]
Attachments: Attachment E - Summary of CSIRO and GA advice +rsc.docx

On the move, just in from Russell

Warwick
Warwick McDonald
Research Director | Water Resource Management
CSIRO Land and Water

s22

From: Russell Crosbie s22
Date: Friday, 5 April 2019 at 12:33 pm
To: "McDonald, Warwick (CLW, Black Mountain)" s22
Subject: RE: How advice has been addressed [SEC=OFFICIAL]

Hi Warwick

It was only the last recommendation around modelling that CSIRO was involved in, GA had the lead on the rest.

s47C

A bit more in the attached

Russell.

From: McDonald, Warwick (L&W, Black Mountain)
Sent: Friday, 5 April 2019 1:32 PM
To: Crosbie, Russell (L&W, Waite Campus) s22
Subject: FW: How advice has been addressed [SEC=OFFICIAL]

Warwick
Warwick McDonald
Research Director | Water Resource Management
CSIRO Land and Water

s22

Summary of CSIRO and Geoscience Australia (GA) Advice on Groundwater Management Plans and Response

Advice on monitoring

1. CSIRO and GA recommended that Adani:

- a. Install more bores to monitor the deeper groundwater units in the central zone between the mine and the Doongmabulla springs. Installing these bores at existing points would remove any significant access issues, and would enable comparison to existing data.

Action: The Department required that Adani install additional deeper bores at existing sites (condition 3a(i)/6b) and collect suitable baseline data (condition 3b) at these sites.

Response: Adani have committed (refer section 7 of the GMMP) to install deeper bores at, or within 500m of, three existing monitoring locations in the central zone. These bores will not monitor all of the deeper units. Adani will investigate drilling bores into deepest units where coal occur for monitoring and research purposes. These commitments have also been referenced in the GDEMP (see sections 4.3.2 and 8.8).

s47C

- b. Include stream flow gauging upstream and downstream of the mine area in their ongoing monitoring program, with updated height-discharge surveys

Action: The Department required more precise gauging locations and commitments for future height-discharge surveys in the GDEMP (condition 6b).

Response: Adani have committed in the GDEMP to install an additional 3 gauging locations, in addition to the two existing locations, and further surveys to determine height-discharge relationships (see section 8.6.1).

s47C

- c. include a more sophisticated statistical analysis of hydrochemistry data to constrain the source aquifer(s) of the Doongmabulla Springs. This includes assessing a wider variety of groundwater and surface water parameters.

Action: The Department required clarity on these methods, which are a requirement of research under the *Great Artesian Basin Springs Research Plan* (GABSRP) at condition 25e and rely on installation of additional nested bores to the west of the site.

Response: Adani will address this issue in revisions to the GABSRP.

s47C

Advice on management

2. The limitations of the numerical groundwater model mean that drawdown could be under-predicted, so the adopted thresholds and triggers will be reached sooner than anticipated and are not a suitable foundation for the proposed monitoring and management approaches.

Action: The Department required that Adani adopt a more conservative approach to monitoring and management until the model is reviewed within two years of the first box cut (or first extraction of coal). For example, more conservative measures might include:

Commented [CR(WC1): GA

Commented [CR(WC2): GA

- Monitoring additional parameters, e.g. spring flow / flux, in addition to groundwater level and pressure;
- Committing to a particular mine plan or number of tonnes of coal; and/or
- Applying rate-based triggers for more bores to verify model predictions and to other GDEs to ensure they are protected.

Response: Adani has:

- included monitoring of spring flow under the GDEMP (refer section 8.7).
- not committed to a scaled-down mine plan, but has included further details about the proposed mine plan for the first five years of operations in the GMMP (refer section 2.6 and Appendix B).
- committed to investigating any drawdown rates that are faster than predicted as per standard practices at model review and update (see section 5.3.5.2 of the GMMP).

s47C

Action: The Department required that Adani address the actions under item 2 and commit to apply triggers and limits for the additional nested bores to the west of the site. These triggers must be based on baseline condition (condition 6f).

Response: Adani has addressed the advice under item 2 and committed to apply triggers and limits to the additional nested bores in the GMMP (see section 7). The revised early warning triggers and impact thresholds will be submitted to the Department for approval as part of review of the GMMP. The Department will ensure that these triggers and limits are set to ensure the protection and long-term viability of the Doongmabulla Springs Complex.

4. CSIRO and GA advice on the design of water level thresholds and triggers included that:

- a. All monitoring locations for which water level thresholds are defined should also have drawdown rate limits derived. Evaluation of drawdown rate limits should form part of routine monitoring data assessment and be included in the Impact Threshold Assessment approach.

Action: The Department required that rate limits are applied for both the Carmichael River and the Doongmabulla Springs in the GDEMP, based on the requirement for early-warning triggers at these GDEs (condition 6f), not all bores.

Response: Early warning triggers have been included in the GDEMP for both the Carmichael River and the Doongmabulla Springs (see Appendix B).

Action: To account for model limitations, and likely underpredictions, the Department required that Adani apply drawdown rate limits until the model is reviewed within two years of the first box cut.

Response: Adani has committed to investigating any drawdown rates that are faster than predicted as per standard practices at model review and update (see section 5.3.5.2 of the GMMP).

- b. A bore in the alluvium, C025P1, has been dry during the baseline monitoring period and should not be used as a threshold monitoring point.

Action: The Department required that a trigger not be set at C025P1.

Commented [CR(WC3)]: GA

Commented [CR(WC4)]: GA

Commented [CR(WC5)]: GA

Response: Adani has committed in the GMMP (see section 7) that bore C025P1 will be replaced. In the interim, if bore C025P1 is dry, or has no water level readings longer than 6 months, the trigger will be exceeded (section 5.3.3.1). This trigger is cross-referenced in the GDEMP Appendix B.

s47C

- a. Explicitly state that the Commonwealth regulator will be notified whenever a groundwater exceedance occurs

Action: The Department required that Adani commit to notify the Department whenever a groundwater exceedance occurs

Response: Section 4.7.2.2 of the GMMP now states: The administering authority will be notified when an investigation is to be instigated for both groundwater quality and levels.

- b. Commit to a maximum timeframe in which the investigation will be completed (for example three months).

Action: The Department required that Adani specify a timeframe in which a groundwater exceedance investigation will be completed.

Response: Section 4.7.2.2 of the GMMP now states: If the groundwater level thresholds exceedance is because of authorised mining activities, the investigation will be prioritised and, depending on the nature of the impact, completed within three months.

s47C

- c. Provide details of the process to remove non-mining influences will occur during investigation of threshold exceedances.

Action: The Department required upfront details of these investigations so when there is an exceedance it can be assigned to the cause.

Response: Adani has provided further details of the trend analysis that will be undertaken in the GMMP (section 4.7.2.2), which will include assessing at least 12 months of groundwater data for the bore and comparing it to climate data, nearby bores, other local projects and assessing the potential for cumulative impact.

s47C

- d. Present mitigation actions in the GMMP itself

Action: The Department required that mitigation actions be summarised within the GMMP to address condition 3d, rather than just references to mitigation in other plans.

Response: The GMMP (section 4.7.2.2) uses examples of mitigation actions in response to an exceedance, including:

- review of the mine plan (including sequencing of mining);
- limiting thickness of extraction of coal seams and reviewing extraction of multiple coal seams for the underground longwall mining; and

Commented [CR(WC6)]: GA

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- freezing mine development at current levels until the completion of investigations and assessments which conclude that further development will not exceed approved impacts.

s47C

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6. CSIRO and GA provided advice on the design of water quality thresholds and triggers

Action: The Department notes that water quality triggers and limits are not a requirement of the EPBC conditions of approval. This advice will be provided to DES for their information.

Response: Not applicable for the groundwater management plans under EPBC conditions.

Commented [CR(WC7)]: GA

Commented [CR(WC8)]: CSIRO

Advice on modelling

7. The review found that the numerical groundwater model used by the GMMP is the most conservative of the model scenarios available. However CSIRO and GA do not consider the model fit-for-purpose for achieving the outcomes sought by the conditions of approval, and have provided recommendations, including:

- fixing identified errors in the bore heights used to calibrate the model, explaining how they have changed over time and how these changes affect model prediction and performance
- using locally-appropriate parameters (which dictate how water moves through the model layers) to represent the Carmichael River, Rewan Formation and Clematis Sandstone, and subsidence above longwall mining
- recalibrating the model using the revised information in (a) and (b), using the baseflow in the Carmichael River as a target to ensure it produces realistic values
- global sensitivity analysis and uncertainty analysis to determine the full range of likely impacts and the influence of each parameter and
- validating the model based on data from new bores drilled since approval of the mine.

Action: The Department required that Adani commit in the GMMP and GDEMP to these updates as part of the model review required within two years of the first box cut under Queensland's EA.

Response: Adani have committed to address the limitations identified by the CSIRO and GA review in the groundwater model re-run - see section 7 of the GMMP and section 4.3.2 of the GDEMP.

s47C

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From: Wilson, Sally (L&W, Black Mountain)
Sent: Friday, 5 April 2019 4:11 PM
To: Coram, Jane (L&W, Black Mountain)
Subject: RE: Thank you for briefing me on the actions agreed to by Adani in their...
Attachments: Letter to Dean Knudson re Advice on Groundwater Management Plans and Response dated 5 April 2019.pdf

Dear Jane

Please find attached the pdf'd letter to go to Dean Knudson.

Cheers

Sally

-----Original Message-----

From: Coram, Jane (L&W, Black Mountain)
Sent: Friday, 5 April 2019 4:04 PM
To: Wilson, Sally (L&W, Black Mountain), [REDACTED]
Subject: Thank you for briefing me on the actions agreed to by Adani in their...

Sally could you possibly tidy this up in a letter to Dean Knudsen and send to me for one last review - thank you. Sorry for the haste.

J.

Dear Dean (or should it be Mr Knudsen?),

Thank you for briefing me on the actions agreed to by Adani in their two groundwater-related management plans, following the advice that CSIRO and Geoscience Australia and CSIRO provided to you in late February 2019. CSIRO was responsible for the modelling component of this advice, and our comments here relate to that component of Adani's responses.

Our examination of Adani's actions is based on today's briefing and the summary information ("Summary of CSIRO and Geoscience Australia (GA) Advice on Groundwater Management Plans and Response") subsequently provided to CSIRO by your Department.

CSIRO is of the view that Adani's responses should satisfy the recommendation to update the groundwater models, and are directed to address the modelling related issues and concerns raised in our advice, noting that there are still components of that advice that will need to be addressed through the approval of the research plan.

Yours sincerely

Sent from my iPad



Black Mountain Science and Innovation Park, Clunies Ross Street, Acton ACT 2601

GPO Box 1700, Canberra, ACT 2601, Australia

s22

• ABN 41 687 119 230

5 April 2019

Mr Dean Knudson
Deputy Secretary, Environmental Protection Group
Department of the Environment and Energy
GPO Box 787
CANBERRA ACT 2600

s22

Dear Mr Knudson

RE: Advice on Groundwater Management Plans and Response

Thank you for briefing me on the actions agreed to by Adani in their two groundwater-related management plans, following the advice that CSIRO and Geoscience Australia and CSIRO provided to you in late February 2019. CSIRO was responsible for the modelling component of this advice, and our comments here relate to that component of Adani's responses.

Our examination of Adani's actions is based on today's briefing and the summary information ("Summary of CSIRO and Geoscience Australia (GA) Advice on Groundwater Management Plans and Response") subsequently provided to CSIRO by your Department.

CSIRO is of the view that Adani's responses should satisfy the recommendation to update the groundwater models, and are directed to address the modelling related issues and concerns raised in our advice, noting that there are still components of that advice that will need to be addressed through the approval of the research plan.

Yours sincerely

s22

Jane Coram
Director
CSIRO Land and Water

From: Coram, Jane (L&W, Black Mountain)
Sent: Friday, 5 April 2019 4:16 PM
To: Zielke, Judi (Executive, Black Mountain)
Cc: Wilson, Sally (L&W, Black Mountain)
Subject: Re: Letter re Advice on Groundwater Management Plans and Response dated 5 April 2019.pdf

Hi Judi and Sally,

DOEE has also just asked that we cc the letter to Finn Pratt and Greg Manning.

Sally could you please amend the addressees while Judi signs off on the content?

Thank you all; Jane.

On 5 Apr 2019, at 4:13 pm, Coram, Jane (L&W, Black Mountain) ^{s22} wrote:

Hi Judi,

Please find attached the letter we discussed, for your sign off. I'm happy to discuss further as needed ^{s22}

With regards, Jane.

<Letter to Dean Knudson re Advice on Groundwater Management Plans and Response dated 5 April 2019.pdf>

Sent from my iPad

From: Wilson, Sally (L&W, Black Mountain)
Sent: Friday, 5 April 2019 4:37 PM
To: Oliver, Sandra (Executive, Black Mountain)
Cc: Lee, Adam (L&W, Black Mountain)
Subject: FW: Advice on Groundwater Management Plans and Response
Attachments: Letter to Dean Knudson re Advice on Groundwater Management Plans and Response dated 5 April 2019.pdf

Hi Sandra

FYI.

Cheers

Sally

From: Wilson, Sally (L&W, Black Mountain) **On Behalf Of** Coram, Jane (L&W, Black Mountain)

Sent: Friday, 5 April 2019 4:34 PM

To: 'dean.knudson@s22

Cc: 'Finn.Pratt@s22'; 'gregory.mannings@s22

Subject: Advice on Groundwater Management Plans and Response

Dear Mr Knudson

Please find attached a letter from Jane Coram regarding advice on groundwater management plans and response.

Regards

Sally

Sally Wilson

Executive Assistant

CSIRO Land and Water

Research in land, water, ecosystems, cities, social and economic sciences, pollution, earth observation, and climate adaptation

s22

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Black Mountain Science and Innovation Park, Clunies Ross Street, Acton ACT 2601

GPO Box 1700, Canberra, ACT 2601, Australia

s22 • ABN 41 687 119 230

5 April 2019

Mr Dean Knudson
Deputy Secretary, Environmental Protection Group
Department of the Environment and Energy
GPO Box 787
CANBERRA ACT 2600

s22

Dear Mr Knudson

RE: Advice on Groundwater Management Plans and Response

Thank you for briefing me on the actions agreed to by Adani in their two groundwater-related management plans, following the advice that CSIRO and Geoscience Australia and CSIRO provided to you in late February 2019. CSIRO was responsible for the modelling component of this advice, and our comments here relate to that component of Adani's responses.

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CSIRO is of the view that Adani's responses should satisfy the recommendation to update the groundwater models, and are directed to address the modelling related issues and concerns raised in our advice, noting that there are still components of that advice that will need to be addressed through the approval of the research plan.

Yours sincerely

s22

Jane Coram
Director
CSIRO Land and Water

cc Finn Pratt, Secretary, Department of the Environment and Energy
Greg Manning, Assistant Secretary, Assessment & Post Approvals Branch,
Department of the Environment and Energy

From: Oliver, Sandra (Executive, Black Mountain)
Sent: Friday, 5 April 2019 4:44 PM
To: Creagh, Ben (CorpAffairs, Dutton Park); Young, Lukas (CorpAffairs, Black Mountain); Scott, Hannah (CorpAffairs, Black Mountain); Mayfield, Peter (Executive, Newcastle); Beringen, Helen (CorpAffairs, Dutton Park)
Subject: RE: Advice on Groundwater Management Plans and Response
Attachments: Duplicate - removed

Hi all

A copy of the letter that was issued by Jane Coram to DoEE today is attached for your records.

s22

Thanks all for your assistance with this matter today.

cheers
Sandra

Dr Sandra Oliver
Executive Officer
Environment, Energy and Resources
CSIRO

s22

s22

From: Oliver, Sandra (Executive, Black Mountain)
Sent: Friday, 5 April 2019 4:53 PM
To: Coram, Jane (L&W, Black Mountain); McDonald, Warwick (L&W, Black Mountain)
Subject: thanks

Dear Jane and Warwick

Many thanks for keeping me in the loop on the urgent DoEE matter today. Sally sent me a copy of the final response – all good.

s22



Thanks again and have a great weekend.

heers
sandra

Dr Sandra Oliver
Executive Officer
Environment, Energy and Resources
CSIRO

s22



From: Coram, Jane (L&W, Black Mountain)
Sent: Friday, 5 April 2019 5:05 PM
To: McDonald, Warwick (L&W, Black Mountain); Crosbie, Russell (L&W, Waite Campus)
Subject: Re: How advice has been addressed [SEC=OFFICIAL]

Dear Warwick and Russell,

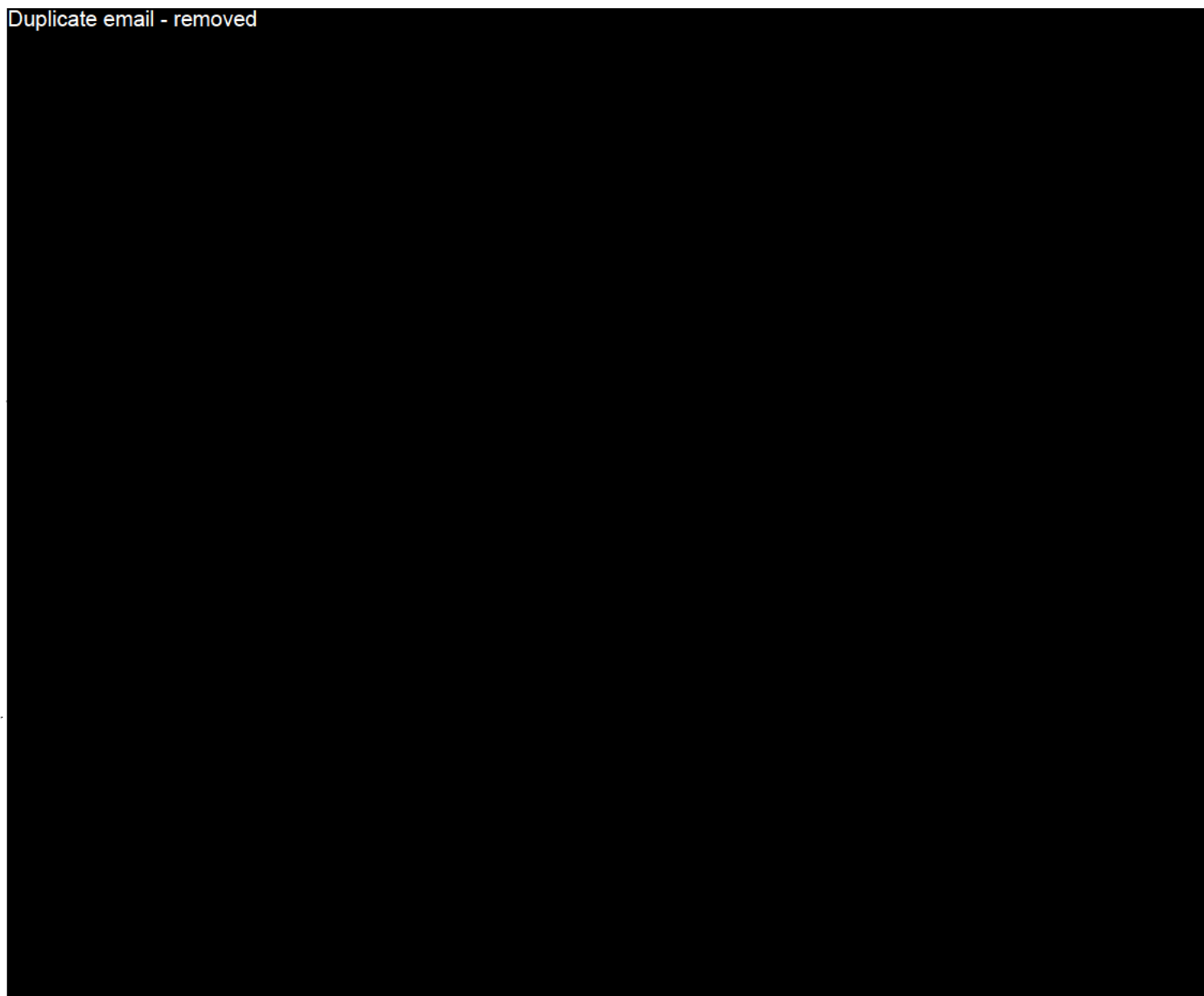
Thank you both for your efforts in responding to this in such short timeframes.

I've queried the deep drilling issue you raised, Russell with **s22** at DOEE and she has indicated that Adani have committed to drilling deep monitoring bores in the Dunda, Rewan and underlying Permian Formations.

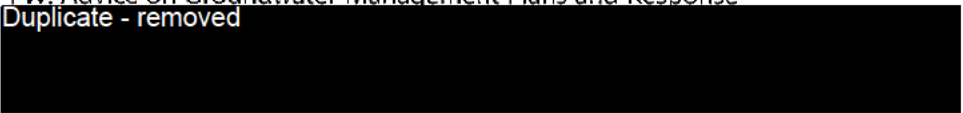
I also noted that lack of commitment to interrogating the hydrochem data to characterise the source aquifer for the springs but **████** advised that that's still to be clarified in the forthcoming research plan. So I put a general comment in the advice to that effect, and I presume we may be asked to comment on that too (hopefully with a bit more turn round time).

Thank you again and have a great weekend when you get to it; Jane.

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From: Zielke, Judi (Executive, Black Mountain)
Sent: Friday, 5 April 2019 6:05 PM
To: Coram, Jane (L&W, Black Mountain)
Cc: Mayfield, Peter (Executive, Newcastle); Marshall, Larry (Executive, Black Mountain); Young, Lukas (CorpAffairs, Black Mountain); Scott, Hannah (CorpAffairs, Black Mountain)
Subject: FW: Advice on Groundwater Management Plans and Response
Attachments: Duplicate - removed



Hi Jane

We received follow up from Minister Canavan's (as senior portfolio Minister) Chief of Staff seeking a copy of your letter to DoEE. Following discussions with the MO, I spoke with Dean and he was also comfortable.

As such I forwarded it through.

Regards Judi

From: Zielke, Judi (Executive, Black Mountain)
Sent: Friday, 5 April 2019 6:00 PM
To: 'james.martin@s22'
Cc: 'dean.knudson@s22'
Subject: Advice on Groundwater Management Plans and Response

Hi James

As discussed, attached is CSIRO's correspondence to DoEE regarding Adani.

Regards Judi

Judi Zielke
Chief Operating Officer
CSIRO

s22



I would like to acknowledge the traditional owners of country throughout Australia and their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.

From: Beringen, Helen (CorpAffairs, Dutton Park)
Sent: Monday, 8 April 2019 1:32 PM
To: Oliver, Sandra (Executive, Black Mountain); Creagh, Ben (CorpAffairs, Dutton Park); McDonald, Warwick (L&W, Black Mountain); Coram, Jane (L&W, Black Mountain)
Subject: Issues Brief Carmichael April 8 v3.docx
Attachments: Issues Brief Carmichael April 8 v3.docx

s22



Additional advice supplied to DoEE April 5, 2019

Further to a briefing to CSIRO by DoEE on Adani's responses to the Tranche 2 report on April 5, CSIRO told the DoEE that "Adani's responses should satisfy the recommendations to update the groundwater models, and are directed to address the modelling related issues and concerns raised in our advice, noting that there are still components of that advice that will need to be addressed through the approval of the research plan".

Commented IBH (DPH): This level of detail may be more for Peter's s22

From: Beringen, Helen (CorpAffairs, Dutton Park)
Sent: Monday, 8 April 2019 2:51 PM
To: Oliver, Sandra (Executive, Black Mountain); Creagh, Ben (CorpAffairs, Dutton Park); McDonald, Warwick (L&W, Black Mountain); Coram, Jane (L&W, Black Mountain)
Subject: RE: Issues Brief Carmichael April 8 v3.docx
Attachments: Issues Brief Carmichael April 8 v4.docx

Thanks Sandra, Updated version now attached.

Cheers Helen

s22



Additional advice supplied to DoEE April 5, 2019

Further to a briefing to CSIRO by DoEE on Adani's responses to the Tranche 2 report on April 5, CSIRO told the DoEE that "Adani's responses should satisfy the recommendations to update the groundwater models, and are directed to address the modelling related issues and concerns raised in our advice, noting that there are still components of that advice that will need to be addressed through the approval of the research plan"

- Helen Beringen, April 8, 2.42pm

Commented TBH(DP11): This level of detail may be required for Peter? s22

From: Oliver, Sandra (Executive, Black Mountain)
Sent: Monday, 8 April 2019 4:44 PM
To: Mayfield, Peter (Executive, Newcastle)
Cc: Creagh, Ben (CorpAffairs, Dutton Park); Beringen, Helen (CorpAffairs, Dutton Park); Scott, Hannah (CorpAffairs, Black Mountain)
Subject: Issues Brief - Carmichael
Attachments: Confidential - Issues Brief Carmichael April 8 v4.docx

Importance: High

s22



Dr Sandra Oliver
Executive Officer
Environment, Energy and Resources
CSIRO

s22



Additional advice supplied to DoEE April 5, 2019

Further to a briefing to CSIRO by DoEE on Adani's responses to the Tranche 2 report on April 5, CSIRO told the DoEE that "Adani's responses should satisfy the recommendations to update the groundwater models, and are directed to address the modelling related issues and concerns raised in our advice, noting that there are still components of that advice that will need to be addressed through the approval of the research plan".

- *Helen Beringen, April 8, 2.42pm*

9/4/19
 in EA's Briefing
 Dept rec'd Adam respond to all of our ^{re modelling} reqs w/in 2 yrs
 - no risk to Mather C th needs to protect in that time
 ⇒ Adam committed to take all this on

Additional bore, bfr mine + spring - Dept rec'd
 ⇒ Adam C'tled to deeper bores into Dunda + Rensselaer Fm + Terminal
 ⇒ part of early warning system
 as part of research plan - all springs will address
 by Adam
 - not reviewed yet, but next
 step - ^{approved} req'd for first
 bore cut + fed into
 future updates of

Changing locations more precise
 ⇒ Adam C'tled to 3 additional

Further analysis of source aquifer thru hydrochem
 ⇒ additional bores installed will assist

M'ment triggers based on glw model - concerns that glw drawdown
 cd be overpredicted
 - Dept req'd more conservative drawdown limits, if exceedance
 will be reported as Trigger

Adequacy of m'ment given around source of springs uncertainty
 ⇒ req for installation of additional bore
 - trigger set at 0.2 m drawdown

Dry bore - new one?
 Any exceedances to be reported to Dept
 Remove non-mining influences up front
 is lots of advice around WD triggers - will form part of
 Old process

Dept seeking reassurance our concerns addressed

Why were confident that advice had been taken into account
 - 2 sets of conversations at senior levels w Dept
 - extensive briefing - verbal + email
 - copy of summary } + extensive history
 - m'ment plans } + BA

- Monitoring
 - progress
 - Path forward

S22

9/4/19

Adams EAs Briefing

1. Dept rec'd Adams respond to all of our recs ^{re modelling} within 2 yrs
 - no risk to matter Cth needs to protect in that time
 ⇒ Adams committed to take all this on
2. Additional bores b/n mine + spring - Dept rec'd
 ⇒ Adams cited to deeper bores under Dunda = Keweenaw Fm - Permian
 → part of early warning system
 as part of research plan - ADG Springs will address
 by Adams
 - not reviewed yet, but next
 stop - ^{approval} Reg'd for first
 bore cut + Rd into
 future updates of
3. Changing locations more precise
 ⇒ Adams cited to 3 additional
4. Further analysis of source aquifer thru hydrochem
 ⇒ additional bores installed will assist
5. M'ment triggers based on flow model - concerns that flow slowdown
 cd be overpredicted
 - Dept req'd more conservative slowdown limits, if exceedance
 will be reported as trigger
6. Adequacy of m'ment given around source of springs uncertainty
 ⇒ req for installation of additional bores
 - trigger set at 0.2 m slowdown
7. Dry bore - new one?
8. Any exceedances to be reported to Dept
9. Remove non-mining influences up front
 Also lots of advice around WD triggers - will form part of
 Old process

Dept seeking reassurance our concerns add ed

Why were confident that advice had been taken into account
 - 2 sets of conversations at senior levels w/ Dept
 - extensive briefings - verbal + email
 - copy of summary
 - m'ment plans } + extensive h
 + 84

- Monitoring
 - triggers
 - Path forward

S22

From: Coram, Jane (L&W, Black Mountain)
Sent: Tuesday, 9 April 2019 11:37 AM
To: Creagh, Ben (CorpAffairs, Dutton Park); Morgan, Huw (CorpAffairs, Adelaide K. Ave); Zielke, Judi (Executive, Black Mountain)
Cc: Oliver, Sandra (Executive, Black Mountain); Beringen, Helen (CorpAffairs, Dutton Park); McDonald, Warwick (L&W, Black Mountain)
Subject: FW: Issues Brief Carmichael April 8 v3.docx
Importance: High

Hi everyone,

I just had a call from James Tregurtha from DOEE – apparently the Minister has just approved the groundwater plans and asked the Dept to publish on their website the joint advice and both GA and our letters of last Friday, which they are about to do.

s22



With regards, Jane.

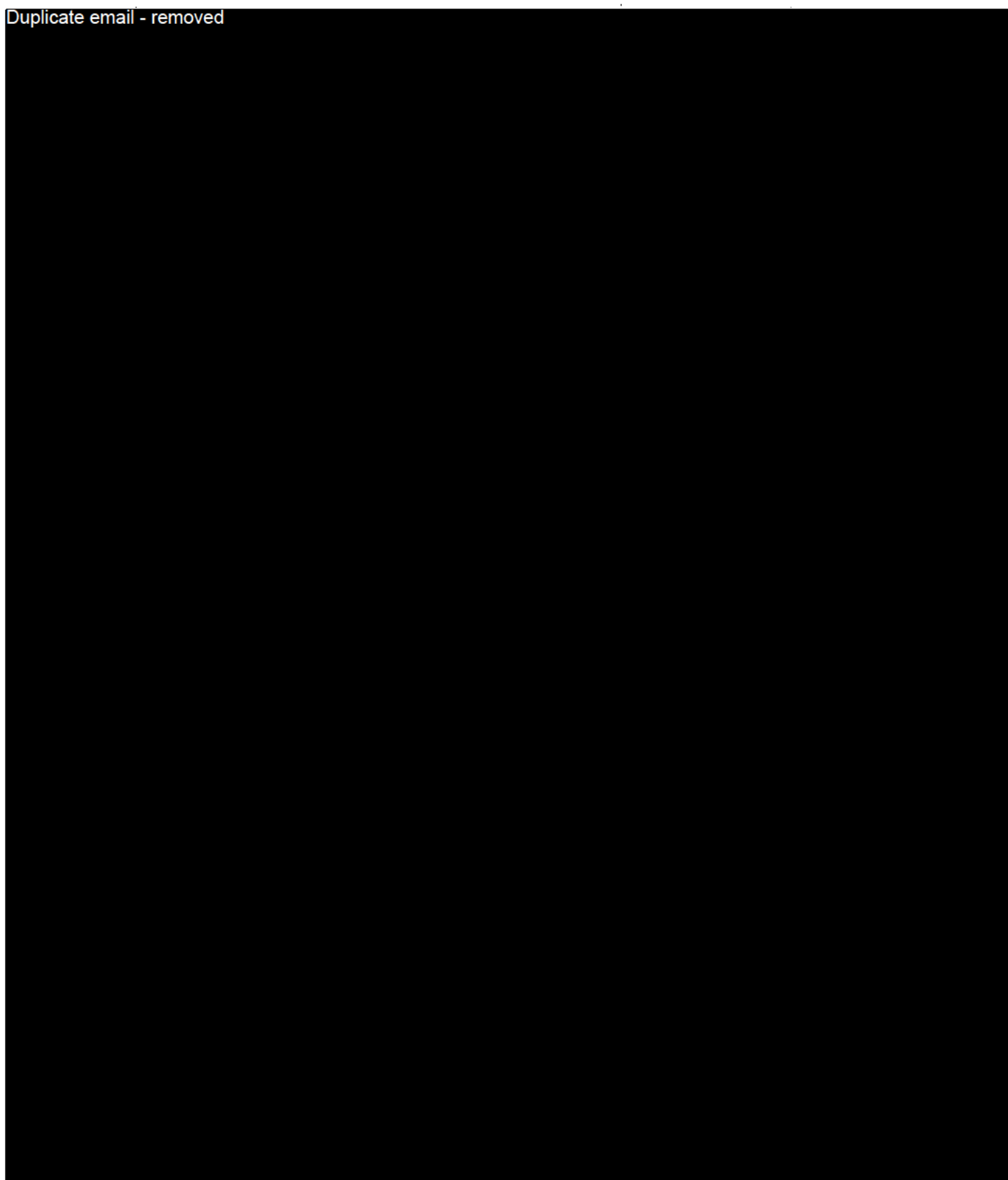
s22



From: Coram, Jane (L&W, Black Mountain)
Sent: Tuesday, 9 April 2019 12:07 PM
To: Beringen, Helen (CorpAffairs, Dutton Park)
Subject: FW: How advice has been addressed [SEC=OFFICIAL]
Attachments: Duplicate - removed

Sorry – try this version! J.

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From: Creagh, Ben (CorpAffairs, Dutton Park)
Sent: Tuesday, 9 April 2019 12:51 PM
To: Oliver, Sandra (Executive, Black Mountain)
Subject: <http://www.environment.gov.au/protection/assessments/key-assessments>

■

From: Beringen, Helen (CorpAffairs, Dutton Park)
Sent: Tuesday, 9 April 2019 1:01 PM
To: Coram, Jane (L&W, Black Mountain)
Cc: Creagh, Ben (CorpAffairs, Dutton Park); Morgan, Huw (CorpAffairs, Adelaide K. Ave); Zielke, Judi (Executive, Black Mountain); Oliver, Sandra (Executive, Black Mountain); McDonald, Warwick (L&W, Black Mountain); Crosbie, Russell (L&W, Waite Campus); Lehmann, Emily (CorpAffairs, Clayton)
Subject: RE: APPROVAL sought on draft response to media inquiries on Carmichael advice

Yes thanks Jane – confirming is a better choice of words, as identification work has occurred. I will amend that sentence.

Cheers Helen

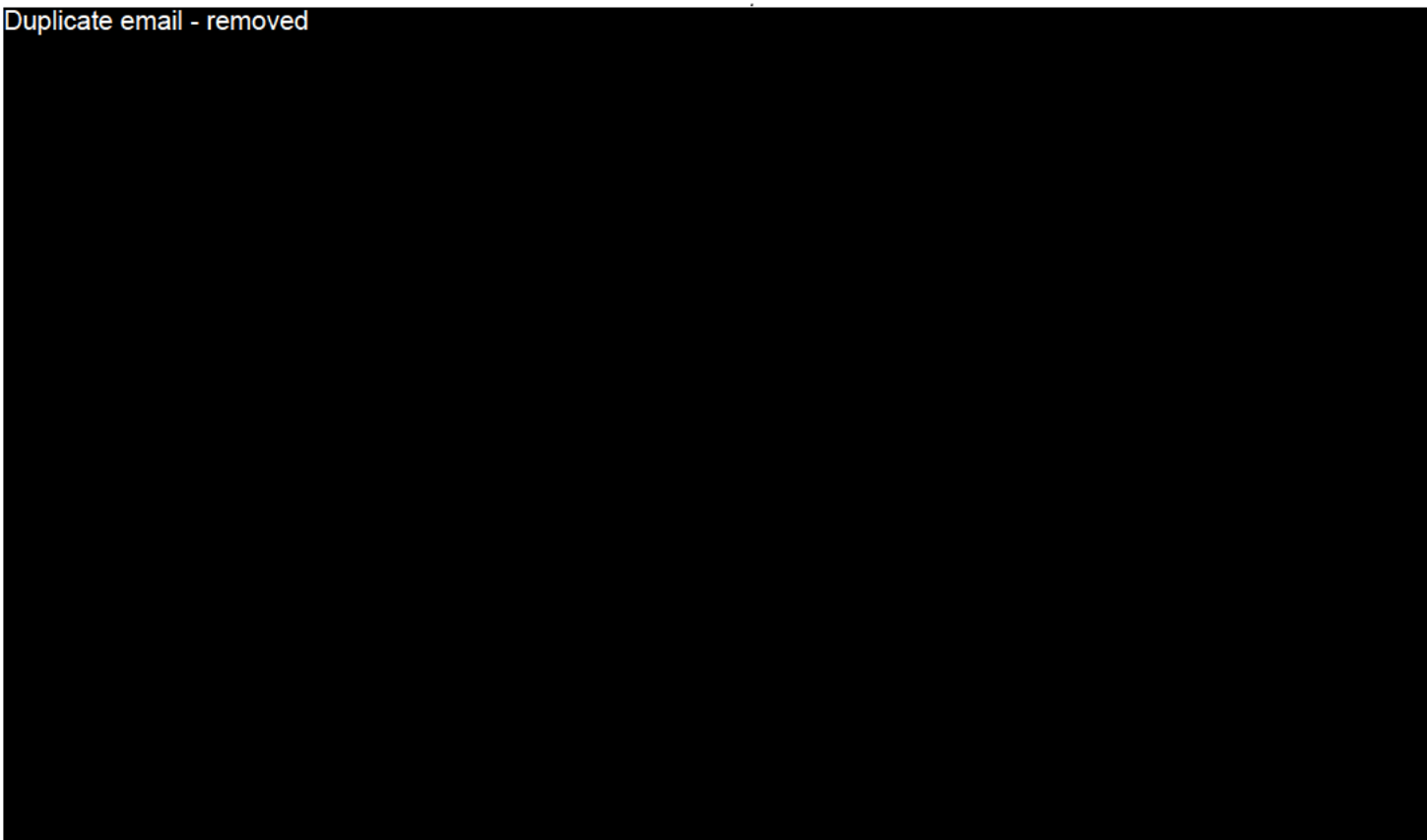
From: Coram, Jane (L&W, Black Mountain)
Sent: Tuesday, 9 April 2019 12:59 PM
To: Beringen, Helen (CorpAffairs, Dutton Park) §22
Cc: Creagh, Ben (CorpAffairs, Dutton Park) §22 Morgan, Huw (CorpAffairs, Adelaide K. Ave) §22 Zielke, Judi (Executive, Black Mountain) §22 Oliver, Sandra (Executive, Black Mountain) §22 McDonald, Warwick (L&W, Black Mountain) §22 Crosbie, Russell (L&W, Waite Campus) §22
Subject: Re: APPROVAL sought on draft response to media inquiries on Carmichael advice

Looks good, thank you Helen. My only question would be around the language of the springs source – should we say “confirming” rather than identifying? The latter might imply no work has been done on this yet.

Appreciate your advice on this, thank you.

Jane.

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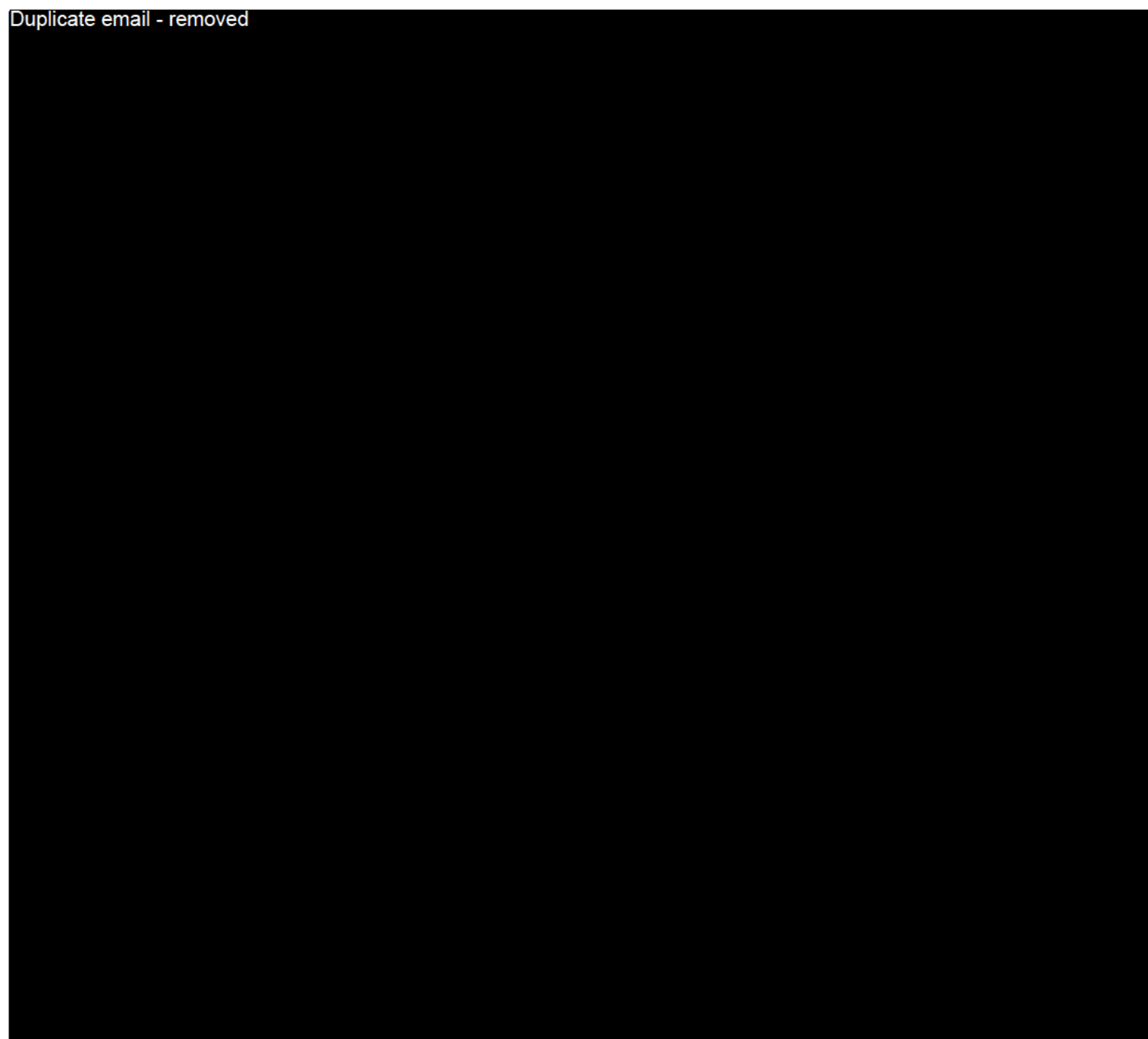
From: Crosbie, Russell (L&W, Waite Campus)
Sent: Tuesday, 9 April 2019 1:27 PM
To: Beringen, Helen (CorpAffairs, Dutton Park); Coram, Jane (L&W, Black Mountain); Creagh, Ben (CorpAffairs, Dutton Park); Morgan, Huw (CorpAffairs, Adelaide K. Ave); Zielke, Judi (Executive, Black Mountain)
Cc: Oliver, Sandra (Executive, Black Mountain); McDonald, Warwick (L&W, Black Mountain)
Subject: RE: APPROVAL sought on draft response to media inquiries on Carmichael advice

Hi Helen,

CSIRO also looked at the Groundwater Dependent Ecosystems Management Plan as well as the modelling questions. Might want to adjust the sentence that says we only looked at the modelling. The GDEMP was in pretty good shape so didn't get many comments, its biggest limitation was that it relied upon the GMMP and modelling which had problems.

..ussell.

Duplicate email - removed



From: Mayfield, Peter (Executive, Newcastle)
Sent: Tuesday, 9 April 2019 1:42 PM
To: Oliver, Sandra (Executive, Black Mountain)
Cc: Creagh, Ben (CorpAffairs, Dutton Park)
Subject: RE: URGENT - seeking your approval on draft response to media inquiries on Carmichael advice

All good

Cheers,

Peter

From: Oliver, Sandra (Executive, Black Mountain)
Sent: Tuesday, 9 April 2019 12:56 PM
To: Mayfield, Peter (Executive, Newcastle) s22
Cc: Creagh, Ben (CorpAffairs, Dutton Park) s22
Subject: URGENT - seeking your approval on draft response to media inquiries on Carmichael advice
Importance: High

Hi Peter

For your information please see below a summary of the process regarding responses to media enquiries being received in relation to the Carmichael mine including a draft media statement for your approval.

There is a range of information publicly available on the DoEE website here:
<http://www.environment.gov.au/protection/assessments/key-assessments>

Ben has been liaising with GA.

Please let us know if you approve the media statement below noting Judi's approval has also been sought.

Thanks
 Sandra

Dr Sandra Oliver
 Executive Officer
 Environment, Energy and Resources
 CSIRO

s22

From: Beringen, Helen (CorpAffairs, Dutton Park)
Sent: Tuesday, 9 April 2019 12:46 PM
To: Coram, Jane (L&W, Black Mountain) s22 Creagh, Ben (CorpAffairs, Dutton Park) s22
 Morgan, Huw (CorpAffairs, Adelaide K. Ave) s22 Zielke, Judi (Executive, Black Mountain) s22
Cc: Oliver, Sandra (Executive, Black Mountain) s22 McDonald, Warwick (L&W, Black

Subject: APPROVAL sought on draft response to media inquiries on Carmichael advice

Hi all, Below is a suggested approach as a response to the web posting of the CSIRO letter of advice to DoEE regarding Adani. It follows a discussion on this issue with Jane, Ben and Sandra.

1. CSIRO is receiving media inquiries following today's DoEE public posting of CSIRO advice provided April 5, re. Carmichael coal project.
2. The CSIRO-GA report of February is now available
<http://www.environment.gov.au/system/files/pages/cb8a9e41-eba5-47a4-8b72-154d0a5a6956/files/csiro-geoscience-australia-final-advice.pdf>, along with the CSIRO advice letter of April 5
<http://www.environment.gov.au/protection/assessments/key-assessments>
3. We propose a written response, based on the contents of the CSIRO letter, to be posted on the CSIRO web as a statement, and provided to Huw Morgan to have on hand for inquiries from the media.
4. Here is a draft statement for your review and sign-off:

Statement from CSIRO Land and Water Director Jane Coram:

The federal Department of the Environment and Energy sought CSIRO's scientific advice regarding undertakings made by Carmichael project proponent, Adani, in relation to its two groundwater-related management plans for the project.

This followed scientific advice provided by CSIRO and Geoscience Australia on the issue to the department in late February.

CSIRO was responsible for the modelling component of the CSIRO-GA advice, and its advice relate to that component of Adani's responses.

CSIRO is of the view that Adani's responses should satisfy the recommendations to update the groundwater models, and to address the modelling-related issues and concerns raised in the CSIRO-GA advice.

CSIRO has noted that there are still components of the advice provided to the DoEE that will need to be addressed through the approval of the research plan, which includes identifying the source aquifer of the Doongmabulla Springs.

Please send all comments to me to coordinate a final version for sign off from Peter Mayfield, as soon as convenient.

Many thanks,
Regards Helen

Helen Beringen
Communication Manager
CSIRO Land & Water

s22

CSIRO acknowledges the Traditional Owners of the lands that we live and work on across Australia and pays its respect to Elders past and present.

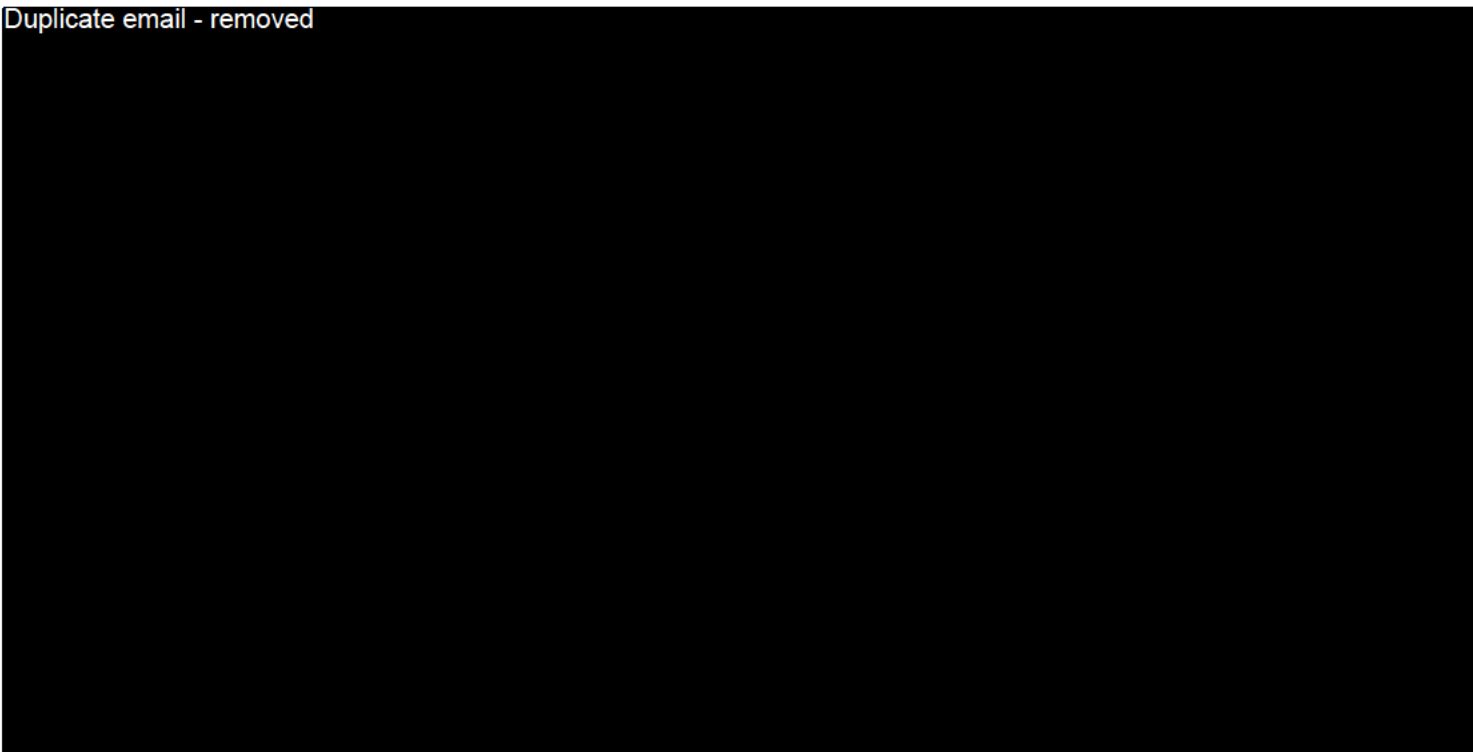
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s22



Duplicate email - removed

A large rectangular area of the page is completely blacked out, indicating redacted content. It occupies the middle section of the page, starting below the text 'Duplicate email - removed' and extending nearly to the bottom of the page.

From: Beringen, Helen (CorpAffairs, Dutton Park)
Sent: Tuesday, 9 April 2019 1:43 PM
To: Oliver, Sandra (Executive, Black Mountain)
Cc: Creagh, Ben (CorpAffairs, Dutton Park); Morgan, Huw (CorpAffairs, Adelaide K. Ave); Kachel, Nick (CorpAffairs, Newcastle); Coram, Jane (L&W, Black Mountain); Zielke, Judi (Executive, Black Mountain); McDonald, Warwick (L&W, Black Mountain)
Subject: FW: APPROVAL sought on draft response to media inquiries on Carmichael advice

Hi Sandra, Below is a statement for Peter's sign-off (Changes from draft 1 are in red):

~~Statement from CSIRO Land and Water Director Jane Coram:~~

The federal Department of the Environment and Energy sought CSIRO and Geoscience Australia's scientific advice regarding undertakings made by Carmichael project proponent, Adani, in relation to its two groundwater-related management plans for the project.

This followed scientific advice provided by CSIRO and Geoscience Australia on the issue to the department in late February.

~~CSIRO was responsible for the modelling component of the CSIRO-GA advice, and its advice relate to that component of Adani's responses.~~

CSIRO is of the view that Adani's responses should satisfy the recommendations to update the groundwater models, and to address the modelling-related issues and concerns raised in the CSIRO-GA advice.

CSIRO has noted that there are still components of the advice provided to the DoEE that will need to be addressed through the approval of the research plan, which includes confirming the source aquifer of the Doongmabulla Springs.

Many thanks,
Regards Helen

Helen Beringen
Communication Manager
CSIRO Land & Water

s22



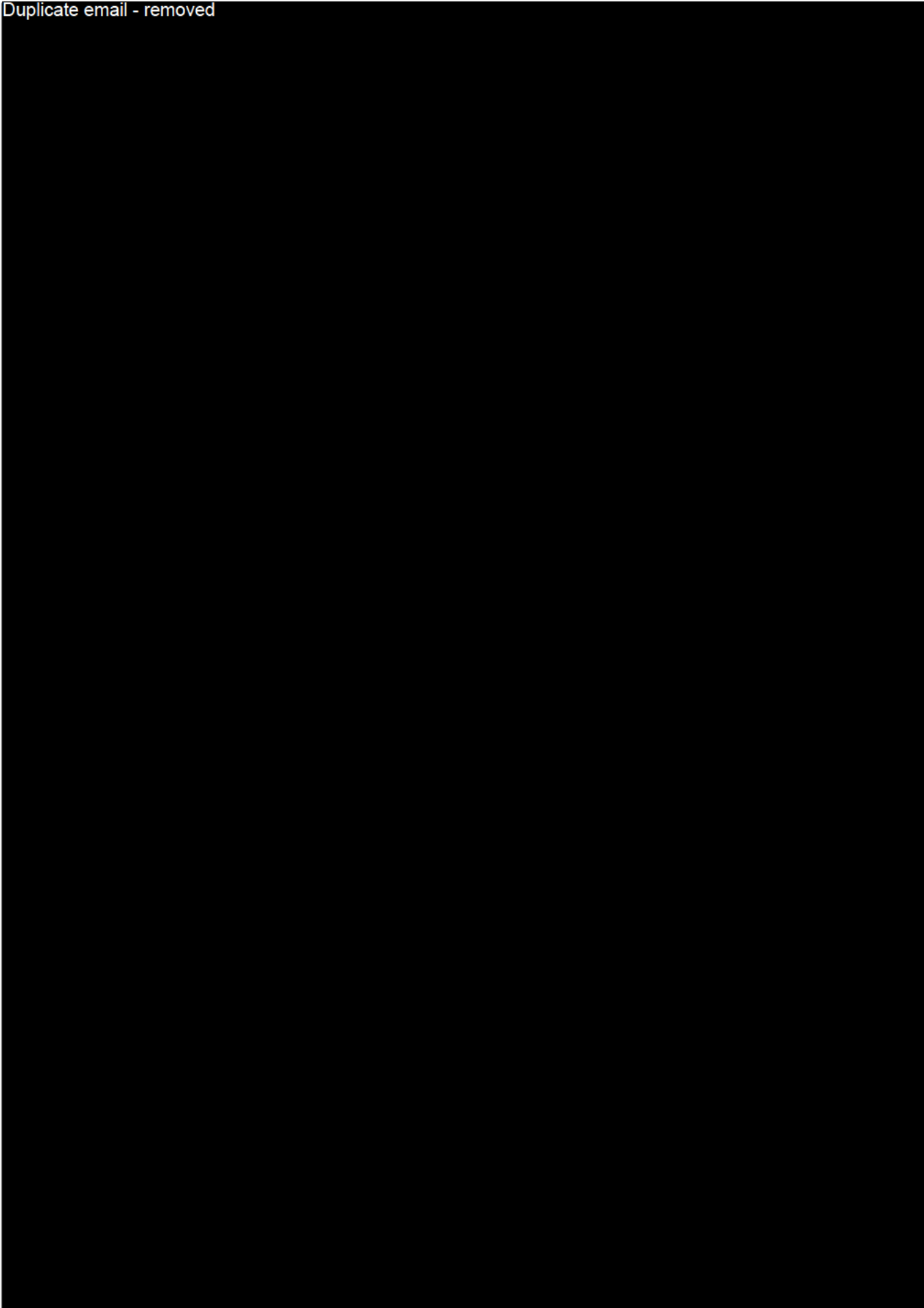
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From: Beringen, Helen (CorpAffairs, Dutton Park)
Sent: Tuesday, 9 April 2019 1:49 PM
To: Oliver, Sandra (Executive, Black Mountain)
Subject: RE: APPROVAL sought on draft response to media inquiries on Carmichael advice

CSIRO Statement for approval:

The federal Department of the Environment and Energy sought CSIRO and Geoscience Australia's scientific advice regarding undertakings made by Carmichael project proponent, Adani, in relation to its two groundwater-related management plans for the project.

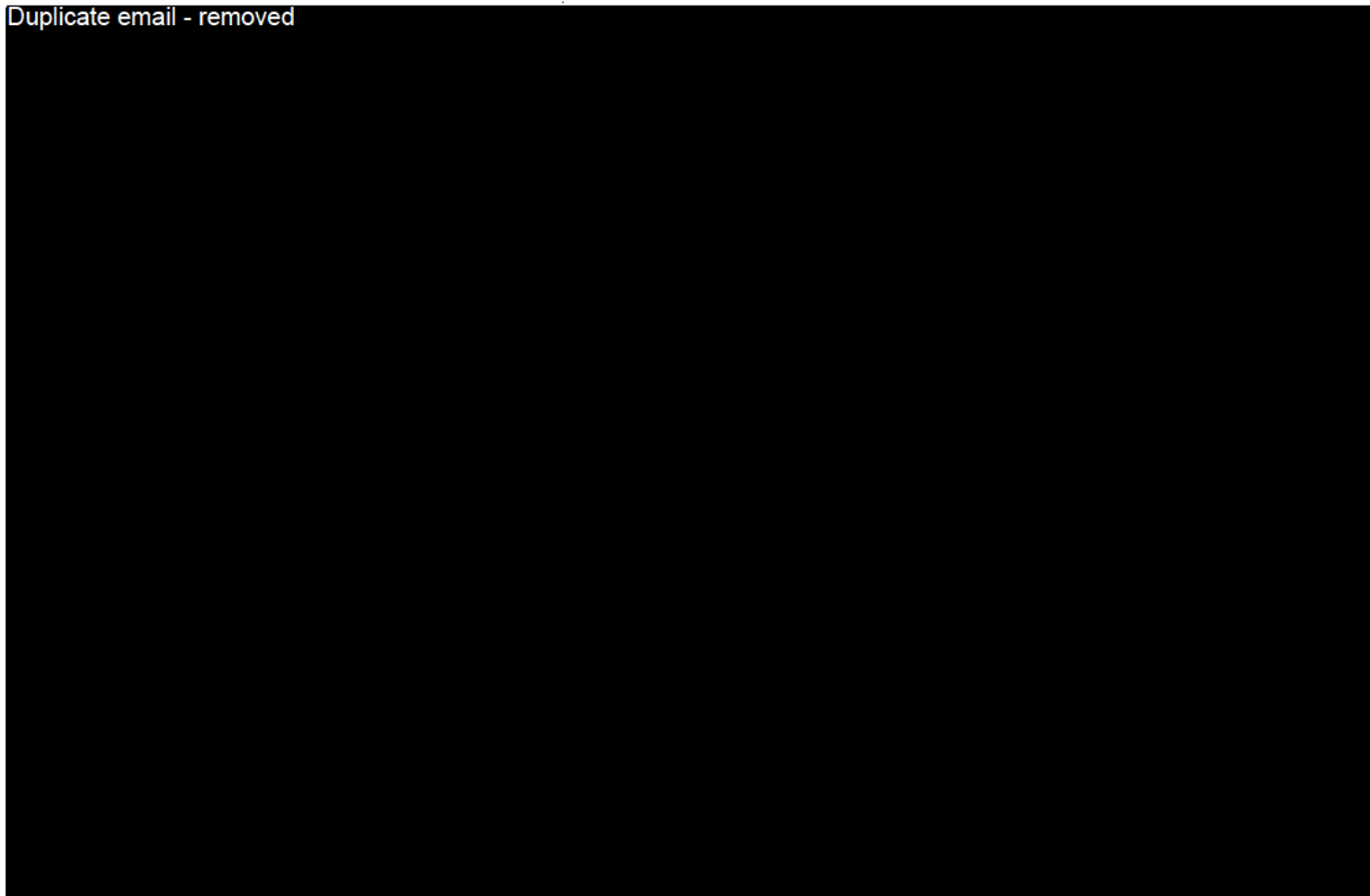
This followed scientific advice provided by CSIRO and Geoscience Australia on the issue to the department in late February.

CSIRO is of the view that Adani's responses should satisfy the recommendations to update the groundwater models, and to address the modelling-related issues and concerns raised in the CSIRO-GA advice.

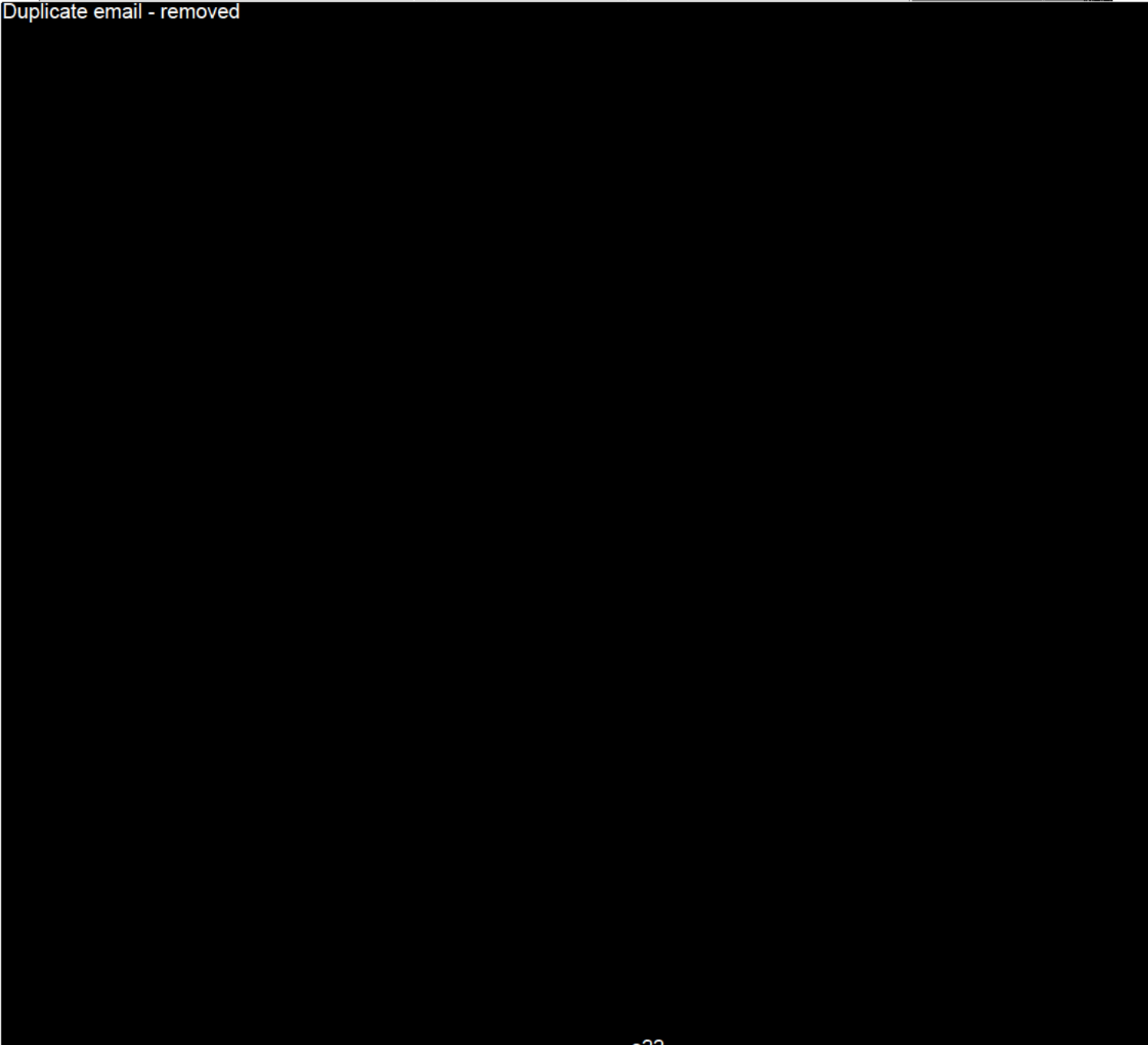
CSIRO has noted that there are still components of the advice provided to the DoEE that will need to be addressed through the approval of the research plan, which includes confirming the source aquifer of the Doongmabulla Springs.

Regards Helen

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Duplicate email - removed



From: "Creagh, Ben (CorpAffairs, Dutton Park)" s22

Date: 9 April 2019 at 2:10:20 pm AEST

To: MPLO s22 "Young, Lukas (CorpAffairs, Black Mountain)"

s22 "Scott, Hannah (CorpAffairs, Black Mountain)"

s22 "Bazzacco, Mark (Executive, Black Mountain)"

Cc: "Beringen, Helen (CorpAffairs, Dutton Park)" s22

"Oliver, Sandra (Executive, Black Mountain)" s22 "Morgan,

Huw (CorpAffairs, Adelaide K. Ave)" s22 Kachel, Nick

(CorpAffairs, Newcastle)" s22

Subject: Adani statement

All - FYI - below is the Adani statement going onto the website:

The federal Department of the Environment and Energy sought CSIRO and Geoscience Australia's scientific advice regarding undertakings made by Carmichael project proponent, Adani, in relation to its two groundwater-related management plans for the project.

This followed scientific advice provided by CSIRO and Geoscience Australia on the issue to the department in late February.

CSIRO is of the view that Adani's responses should satisfy the recommendations to update the groundwater models, and to address the modelling-related issues and concerns raised in the CSIRO-GA advice.

CSIRO has noted that there are still components of the advice provided to the DoEE that will need to be addressed through the approval of the research plan, which includes confirming the source aquifer of the Doongmabulla Springs.

From: Creagh, Ben (CorpAffairs, Dutton Park)
Sent: Tuesday, 9 April 2019 2:29 PM
To: Mayfield, Peter (Executive, Newcastle); Coram, Jane (L&W, Black Mountain); Steele, Jack (SI&P, North Ryde)
Cc: Oliver, Sandra (Executive, Black Mountain); Beringen, Helen (CorpAffairs, Dutton Park)
Subject: <http://www.environment.gov.au/minister/price/media-releases/mr20190409.html>

The Hon. Melissa Price MP

Minister for the Environment

Independent assessment by CSIRO and Geoscience Australia for groundwater management plans

Media release
9 April 2019

CSIRO and Geoscience Australia have independently assessed the groundwater management plans for the Carmichael Coal Mine and Rail Infrastructure project.

Both CSIRO and Geoscience Australia have confirmed the revised plans meet strict scientific requirements.

Following this independent assessment and the Department of the Environment and Energy's recommendation for approval, I have accepted the scientific advice and therefore approved the groundwater management plans for the Carmichael Coal Mine and Rail Infrastructure project under the *Environment Protection and Biodiversity Conservation Act 1999*.

This decision does not comprise the final approval for this project.

The Project now requires further approvals from the Queensland Government prior to construction commencing. To date, only 16 of 25 environmental plans have been finalised or approved by the Commonwealth and Queensland Governments with a further 9 to be finalised.

It must meet further stringent conditions of approval from the Commonwealth before it can begin producing coal.

This project has been subject to the most rigorous approval process of any mining project in Australia.

Approvals for the project by the Commonwealth in 2015 and the Queensland State Government in 2016 resulted in the setting of 180 strict conditions to protect the environment.

The Project's water management plans have been thoroughly assessed by the Department of the Environment and Energy, which commissioned independent technical advice from Geoscience Australia and the CSIRO.

That advice identified areas of groundwater modelling, monitoring and management that required further work.

That advice recommended a number of actions, which the Company has accepted in full, including:

- A substantial increase of early warning monitoring between the mine and the Doongmabulla Springs using additional deeper bores and an additional bore site to monitor flows
- Tightened corrective action triggers requiring an immediate response to any unexpected groundwater impact
- Commitments to re-run the model addressing all Geoscience Australia and CSIRO concerns within two years of the commencement of coal extraction (noting there are no predicted impacts to nationally protected matters within 15 years).

Geoscience Australia and the CSIRO have provided written assurances that these steps address their recommendations.

The advice from Geoscience Australia and CSIRO has been provided to the Queensland Government.

This process reflects our commitment to ensuring robust environmental protection while balancing the needs of Australia's economy.

This is a commercial project. The Australian Government is not providing any financial support to the mine or to its rail project.

The advice from Geoscience Australia and CSIRO is available here:

<http://www.environment.gov.au/protection/assessments/key-assessments>

From: Oliver, Sandra (Executive, Black Mountain)
Sent: Tuesday, 9 April 2019 3:13 PM
To: Mayfield, Peter (Executive, Newcastle)
Subject: links to press releases

s22



From: Creagh, Ben (CorpAffairs, Dutton Park)
Sent: Tuesday, 9 April 2019 3:00 PM
To: Beringen, Helen (CorpAffairs, Dutton Park)
Cc: Oliver, Sandra (Executive, Black Mountain)
Subject: issues plan

s22



Helen

Could I trouble you to update the issues plan with today's developments, namely:

- Report and letter going live <http://www.environment.gov.au/protection/assessments/key-assessments>
- Media releases (Price & Adani)
- <https://www.adaniaustralia.com/-/media/190409%20MS%20GDEMP%20ApprovalFINALdocx>
- <http://www.environment.gov.au/minister/price/media-releases/mr20190409.html>
- Our own statement

Can ship this off to Larry, Peter & Co (including board)

Thanks
Ben

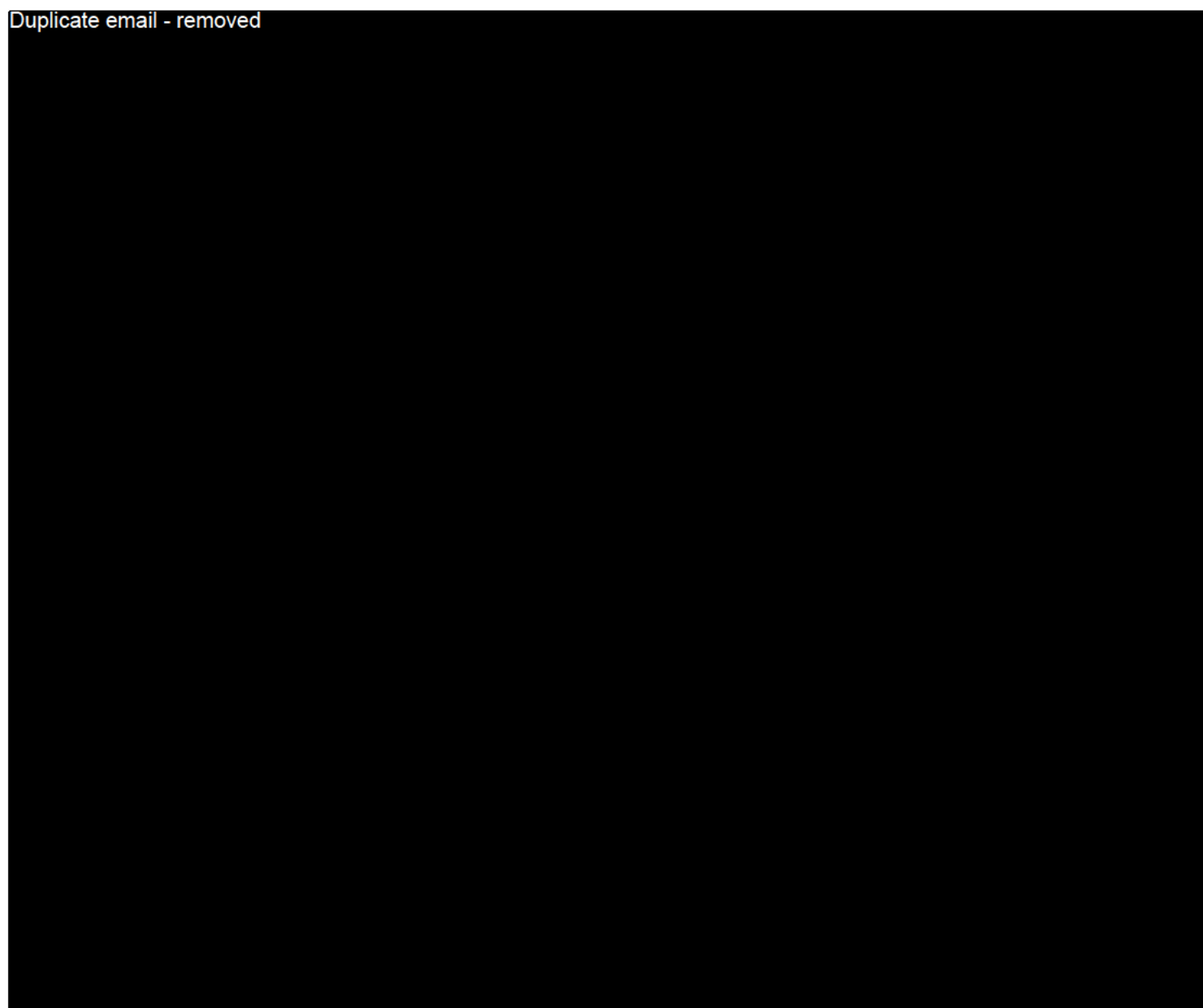
From: Gartner, Steve (IM&T, Clayton)
Sent: Tuesday, 9 April 2019 3:32 PM
To: Zielke, Judi (Executive, Black Mountain); Beringen, Helen (CorpAffairs, Dutton Park); Taylor, Scott (IM&T, Black Mountain); CSIRO Enquiries; Kachel, Nick (CorpAffairs, Newcastle); Deschepper, Zofia (CorpAffairs, Clayton); Pinkpank, Tony (IM&T, Clayton); Slater, Suellen (IM&T, Black Mountain); Galovic, Nikki (CorpAffairs, Clayton); Social Media
Cc: Ginn, Claire (CorpAffairs, Clayton); Oliver, Sandra (Executive, Black Mountain); Creagh, Ben (CorpAffairs, Dutton Park); Coram, Jane (L&W, Black Mountain); Crosbie, Russell (L&W, Waite Campus); McDonald, Warwick (L&W, Black Mountain); Morgan, Huw (CorpAffairs, Adelaide K. Ave); MPLO; Young, Lukas (CorpAffairs, Black Mountain)
Subject: RE: Statement for immediate posting on CSIRO.au in response to

Hi All,

The statement has been published: <https://www.csiro.au/en/News/News-releases/2019/Carmichael-mine-project>

Thanks, Steve

Duplicate email - removed





09 Apr 2019

Carmichael mine project

The federal Department of the Environment and Energy sought CSIRO and Geoscience Australia's scientific advice regarding undertakings made by Carmichael project proponent, Adani, in relation to its two groundwater-related management plans for the project.

This followed scientific advice provided by CSIRO and Geoscience Australia on the issue to the department in late February.

CSIRO is of the view that Adani's responses should satisfy the recommendations to update the groundwater models, and to address the modelling-related issues and concerns raised in the CSIRO-GA advice.

CSIRO has noted that there are still components of the advice provided to the department that will need to be addressed through the approval of the research plan, which includes confirming the source aquifer of the Doongmabulla Springs.

News release contact

Huw Morgan

Manager Media Liaison

☎ [+61 8 8303 8857](tel:+61883038857)

☎ [+61 417 834 547](tel:+61417834547)

✉ Huw.Morgan@csiro.au

< [News releases and statements](#)

30 Apr 2019

Newcastle company delivers for new \$188 million telescope >

23 Apr 2019

WWII shipwreck discovered - SS Iron Crown sunk by submarine in 1942 >

15 Apr 2019

Aussie homes getting larger and more efficient >

11 Apr 2019

Statement on Adani Carmichael proposal >

From: Lee, Adam (L&W, Black Mountain)
Sent: Tuesday, 9 April 2019 5:00 PM
To: Coram, Jane (L&W, Black Mountain)
Subject: Carmichael message
Attachments: CSIRO Land and Water advice on Carmichael coal mine

Message is attached.

Regards

Adam Lee
Executive Officer
Land & Water
CSIRO

s22

A large black rectangular redaction box covers the majority of the email body content below the signature.

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From: Coram, Jane (L&W, Black Mountain)
Subject: CSIRO Land and Water advice on Carmichael coal mine

Dear colleagues,

I just wanted to update you on the advice CSIRO Land & Water is providing around Carmichael coal mine in Queensland.

There has been a lot of media today around the Federal Government's decision to approve the groundwater management plans for the mine. CSIRO has been named in a statement from the federal Environment Minister, as CSIRO and Geoscience Australia were asked to provide scientific advice on the plans.

Our report to the Department of the Environment and Energy has been released on the department website.

CSIRO has also released a statement on the CSIRO website about the scientific advice.

In part it says:

- CSIRO is of the view that Adani's responses should satisfy the recommendations to update the groundwater models, and to address the modelling-related issues and concerns raised in the CSIRO-GA advice.
- CSIRO has noted that there are still components of the advice provided to the department that will need to be addressed through the approval of the research plan, which includes confirming the source aquifer of the Doongmabulla Springs.

I am proud that our researchers continue to provide robust scientific advice to policymakers on issues of national importance.

I will continue to keep you posted in my regular updates.

With regards, Jane

Regards

Adam Lee
Executive Officer
Land & Water
CSIRO

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From: Creagh, Ben (CorpAffairs, Dutton Park)
Sent: Tuesday, 9 April 2019 5:11 PM
To: Bazzacco, Mark (Executive, Black Mountain); Marshall, Larry (Executive, Black Mountain); Mayfield, Peter (Executive, Newcastle); Zielke, Judi (Executive, Black Mountain); Coram, Jane (L&W, Black Mountain); Steele, Jack (SI&P, North Ryde)
Cc: Beringen, Helen (CorpAffairs, Dutton Park); Morgan, Huw (CorpAffairs, Adelaide K. Ave); Ladiges, Crystal (CorpAffairs, Clayton); MPLO; Bowes, Tanya (CorpAffairs, North Ryde); Kachel, Nick (CorpAffairs, Newcastle); Maloney, Beth (Governance, Black Mountain); Oliver, Sandra (Executive, Black Mountain)
Subject: Adani Issues plan
Attachments: Issues Brief Carmichael April 9 v5.docx

All

Please find attached the updated Adani issues plan including links to recent media releases, DoEE material etc. CSIRO media statement is online, and the issue continues to receive considerable media and social media attention.

You will see from the documentation that CSIRO's advice was restricted to specific elements of the groundwater plans, and acknowledged there were still components that needed to be addressed through the research plan approval process. This is lost in the current media coverage and it something for consideration wrt estimates messaging.

Thanks

Ben

s22

10. On Tuesday April 9, the CSIRO-GA report (detailed further in the **Appendix:** below) and CSIRO and GA letters were released online by DoEE. Federal Environment Minister Melissa Price released a statement approving the groundwater management plans. Adani also released a statement welcoming the Minister's approval of the plans.
11. CSIRO released an online statement on April 9 regarding the scientific advice it had provided the government.

Holding statement:

- The federal Department of the Environment and Energy sought CSIRO and Geoscience Australia's scientific advice regarding undertakings made by Carmichael project proponent, Adani, in relation to its two groundwater-related management plans for the project.
- This followed scientific advice provided by CSIRO and Geoscience Australia on the issue to the department in late February.
- CSIRO is of the view that Adani's responses should satisfy the recommendations to update the groundwater models, and to address the modelling-related issues and concerns raised in the CSIRO-GA advice.
- CSIRO has noted that there are still components of the advice provided to the department that will need to be addressed through the approval of the research plan, which includes confirming the source aquifer of the Doongmabulla Springs.

Additional advice supplied to DoEE April 5, 2019

Further to a briefing to CSIRO by DoEE on Adani's responses to the Tranche 2 report on April 5, CSIRO told the DoEE that "Adani's responses should satisfy the recommendations to update the groundwater models, and are directed to address the modelling related issues and concerns raised in our advice, noting that there are still components of that advice that will need to be addressed through the approval of the research plan".

- *Helen Beringen, 9 April 5.09pm*

From: Beringen, Helen (CorpAffairs, Dutton Park)
Sent: Tuesday, 9 April 2019 6:03 PM
To: Land and Water Leadership Team-DG
Cc: Creagh, Ben (CorpAffairs, Dutton Park); Oliver, Sandra (Executive, Black Mountain)
Subject: FW: CSIRO Land and Water advice on Carmichael coal mine

Hi team, further to Jane's email to the L&W team today about CSIRO advice provided regarding the Carmichael project, please let me know if you require any further support.

CSIRO's current holding statement in full follows, and mirrors our online message:

- The federal Department of the Environment and Energy sought CSIRO and Geoscience Australia's scientific advice regarding undertakings made by Carmichael project proponent, Adani, in relation to its two groundwater-related management plans for the project.
- This followed scientific advice provided by CSIRO and Geoscience Australia on the issue to the department in late February.
- CSIRO is of the view that Adani's responses should satisfy the recommendations to update the groundwater models, and to address the modelling-related issues and concerns raised in the CSIRO-GA advice.
- CSIRO has noted that there are still components of the advice provided to the department that will need to be addressed through the approval of the research plan, which includes confirming the source aquifer of the Doongmabulla Springs.

You will see from the statement above and the documentation linked below that CSIRO's advice was restricted to specific elements of the groundwater plans, and we have acknowledged there were still components that needed to be addressed through the research plan approval process. This is lost in the current media coverage.

An issues brief has been prepared to manage the issue, and Jane is the designated spokesperson for this issue. CSIRO's position currently is to point people seeking comment to our online statement.

Please let me know if you have any issues arising, or any concerns raised with which I can assist.

Regards, Helen

Helen Beringen
Communication Manager
CSIRO Land & Water

s22



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From: Coram, Jane (L&W, Black Mountain)
Sent: Tuesday, 9 April 2019 5:03 PM
Subject: CSIRO Land and Water advice on Carmichael coal mine

Dear colleagues,

I just wanted to update you on the advice CSIRO Land & Water is providing around Carmichael coal mine in Queensland.

There has been a lot of media today around the Federal Government's decision to approve the groundwater management plans for the mine. CSIRO has been named in a statement from the federal Environment Minister, as CSIRO and Geoscience Australia were asked to provide scientific advice on the plans.

Our report to the Department of the Environment and Energy has been released on the department website.

CSIRO has also released a statement on the CSIRO website about the scientific advice.

In part it says:

- CSIRO is of the view that Adani's responses should satisfy the recommendations to update the groundwater models, and to address the modelling-related issues and concerns raised in the CSIRO-GA advice.
- CSIRO has noted that there are still components of the advice provided to the department that will need to be addressed through the approval of the research plan, which includes confirming the source aquifer of the Doongmabulla Springs.

I am proud that our researchers continue to provide robust scientific advice to policymakers on issues of national importance.

I will continue to keep you posted in my regular updates.

With regards, Jane

Regards

Adam Lee
Executive Officer
Land & Water
CSIRO

s22

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From: Beringen, Helen (CorpAffairs, Dutton Park)
Sent: Tuesday, 9 April 2019 6:16 PM
To: Gery, Andrea (CorpAffairs, Clayton); Deschepper, Zofia (CorpAffairs, Clayton)
Cc: Social Media; Kachel, Nick (CorpAffairs, Newcastle); Creagh, Ben (CorpAffairs, Dutton Park); Oliver, Sandra (Executive, Black Mountain)
Subject: RE: responses to Public inquiries on Adani

Hello Andrea, further to our discussions today, please find below some background for inquirers, following the announcement on Tuesday April 9 that Federal Environment Minister Melissa Price had approved the groundwater management plans for the Carmichael project proposed by Adani.

When you receive correspondence on this issue please refer them to the CSIRO statement, published on [csiro.au](https://www.csiro.au/en/News/News-releases/2019/Carmichael-mine-project) (<https://www.csiro.au/en/News/News-releases/2019/Carmichael-mine-project>)

This statement includes the following points:

- The federal Department of the Environment and Energy sought CSIRO and Geoscience Australia's scientific advice regarding undertakings made by Carmichael project proponent, Adani, in relation to its two groundwater-related management plans for the project.
- This followed scientific advice provided by CSIRO and Geoscience Australia on the issue to the department in late February.
- CSIRO is of the view that Adani's responses should satisfy the recommendations to update the groundwater models, and to address the modelling-related issues and concerns raised in the CSIRO-GA advice.
- CSIRO has noted that there are still components of the advice provided to the department that will need to be addressed through the approval of the research plan, which includes confirming the source aquifer of the Doongmabulla Springs.

The department website provides access to the CSIRO-Geoscience Australia report:
<http://www.environment.gov.au/protection/assessments/key-assessments>

Please let me know if you would like further assistance.

Zofia, would it be possible to receive a report on the inquiries received to date on this matter at the end of Wednesday (if possible) to review prior to CSIRO's Estimates appearance.

Many thanks, Helen

Helen Beringen
 Communication Manager
 CSIRO Land & Water

s22

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-----Original Message-----

From: Enquiries s22
Sent: Tuesday, 9 April 2019 4:02 PM
To: Beringen, Helen (CorpAffairs, Dutton Park) s22
Subject: media statement

Hi Helen,

How would you like us to proceed regarding the web enquiries received?

There are a few in our Inbox already and have received one phone call which I put through to Huw.

Thank you,
Andrea
Information Officer
CSIRO Enquiries
Phone: 1300 363 400

Original request:

Name: Name: Helen

Email: s22

Phone:

Date: 9/04/2019

Subject: Statement for immediate posting on CSIRO.au in response to

Message: Hello web, social and Inquiries teams, The following statement is for release on csiro.au as soon as possible on the Public Statement portal, and also to support responses to public inquiries for the Inquiries and social media teams:

The federal Department of the Environment and Energy sought CSIRO and Geoscience Australia's scientific advice regarding undertakings made by Carmichael project proponent, Adani, in relation to its two groundwater-related management plans for the project.

This followed scientific advice provided by CSIRO and Geoscience Australia on the issue to the department in late February.

CSIRO is of the view that Adani's responses should satisfy the recommendations to update the groundwater models, and to address the modelling-related issues and concerns raised in the CSIRO-GA advice.

CSIRO has noted that there are still components of the advice provided to the department that will need to be addressed through the approval of the research plan, which includes confirming the source aquifer of the Doongmabulla Springs.

Please let me know if you have any questions.

Regards Helen

Helen Beringen
Communication Manager
CSIRO Land & Water

s22



www.csiro.au | Facebook<<https://www.facebook.com/pages/CSIRO/142468583842>> |

Twitter<<https://twitter.com/CSIROnews>>

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Andrea

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From: Lee, Adam (L&W, Black Mountain)
Sent: Tuesday, 9 April 2019 6:23 PM
To: Land and Water Leadership Team-DG; Beringen, Helen (CorpAffairs, Dutton Park)
Cc: Creagh, Ben (CorpAffairs, Dutton Park); Oliver, Sandra (Executive, Black Mountain)
Subject: Re: CSIRO Land and Water advice on Carmichael coal mine

Thanks Helen,

It's good to have these points. I predict there will be questions about it at the all staff briefing next week.

Adam

Regards

Adam Lee
Executive Officer
Land & Water
CSIRO

s22

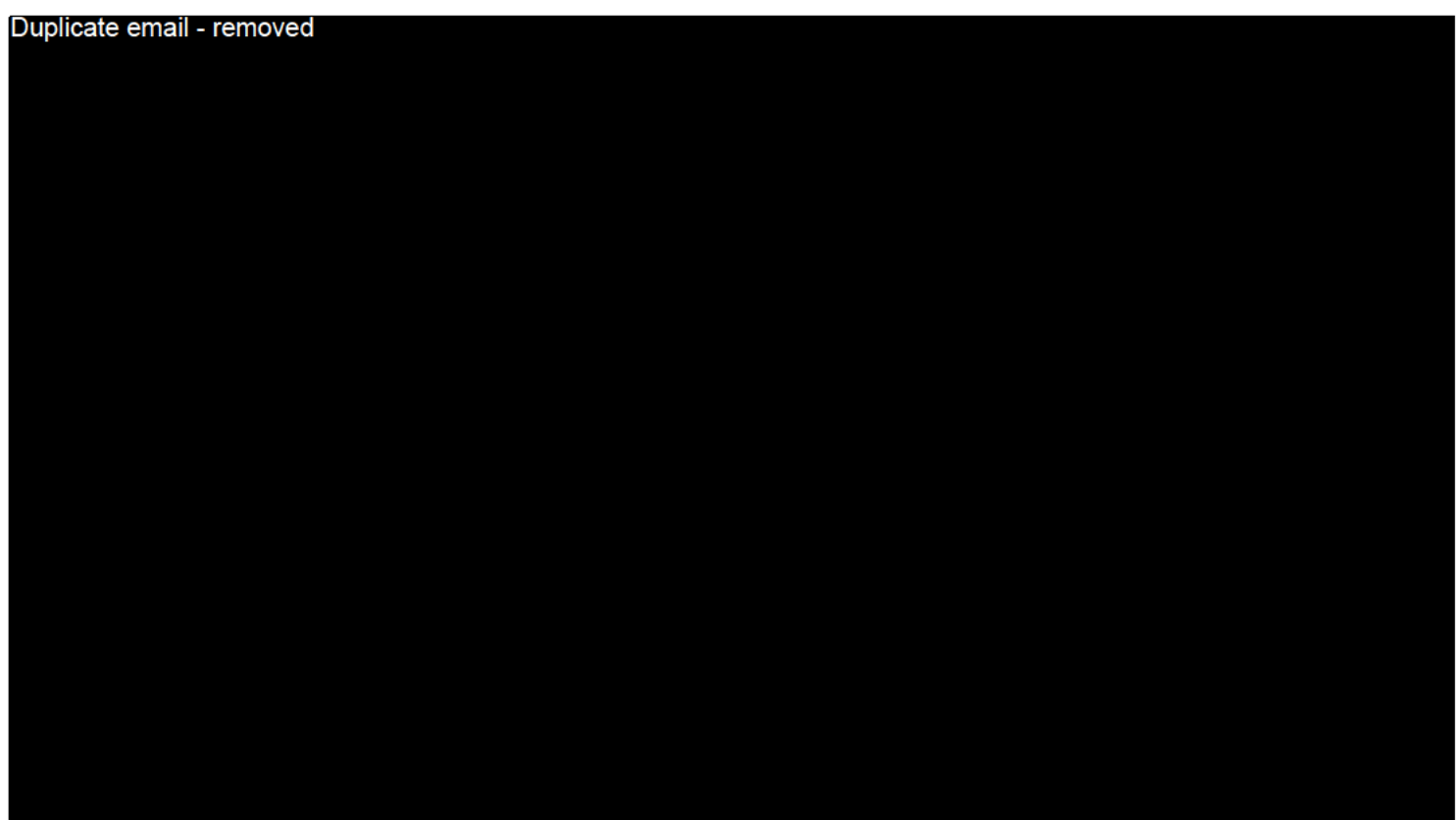


CSIRO acknowledges the Traditional Owners of the lands that we live and work on across Australia and pays its respect to Elders past and present.

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From: Steele, Jack (SI&P, North Ryde)
Sent: Wednesday, 10 April 2019 7:05 AM
To: Mayfield, Peter (Executive, Newcastle); Maloney, Beth (Governance, Black Mountain);
Scott, Hannah (CorpAffairs, Black Mountain)
Subject: Thoughts

s47C



From: Coram, Jane (L&W, Black Mountain)
Sent: Wednesday, 10 April 2019 7:58 AM
To: Beringen, Helen (CorpAffairs, Dutton Park)
Cc: Creagh, Ben (CorpAffairs, Dutton Park); Oliver, Sandra (Executive, Black Mountain)
Subject: Re: Potential estimates question

Thanks Helen (and Sandra and Ben),

Details of the briefings in relation to the modelling that we advised on, were in summary that:

1. In the advice CSIRO and GA provided a number of recommendations, including corrections and refinements to the current model, sensitivity and uncertainty analysis to determine the full range of likely impacts, and validating the model based on data from new bores drilled since approval of the mine.

The Department required that Adani commit in the GMMP and GDEMP to these updates as part of the model review required within two years of the first box cut under Queensland's EA.

Adani committed to address the limitations identified by the CSIRO and GA review in the groundwater model re-run (section 7 of the GMMP and section 4.3.2 of the GDEMP).

On the basis that our recommendations had been agreed to be addressed in full by Adani we considered that our concerns about the modelling would have been addressed.

Happy to discuss further - Sally is on standby to reshuffle my calendar today as needed.

With regards, Jane.

> On 10 Apr 2019, at 7:09 am, Beringen, Helen (CorpAffairs, Dutton Park) ^{s22} wrote:

>

> Excerpt from today's Australian:

> "In letters to Ms Price's officials, CSIRO and Geoscience Australia officials said they now believed their concerns had been addressed, having been briefed by her department about late changes Adani had made to its groundwater plan.

> Wilderness Society federal policy director Tim Beshara said the "unprecedented" letters raised questions about what the scientists were told in their briefings with Ms Price's officials."

> To discuss.

> Cheers Helen

>

> Sent from my iPhone