



TRANSCRIPT OF MEETING

WESTERN COAL SERVICES MOD 6 - RESIDUALS TRANSFER
INCREASE (SSD-5579-MOD-6)

SPRINGVALE WATER TREATMENT PLANT MOD 9 - EXTEND
INTERIM WATER MANAGEMENT STRATEGY TIMEFRAME
(SSD-7592-MOD-9)

SPRINGVALE WATER TREATMENT PLANT MOD 10 -
RESIDUALS TRANSFER INCREASE (SSD-7592-MOD-10)

GARDENS OF STONE ALLIANCE MEETING

PANEL: PROFESSOR NEAL MENZIES AM
(CHAIR)
PROFESSOR ALICE CLARK
PROFESSOR SNOW BARLOW

OFFICE OF THE IPC: STEVE BARRY
CALLUM FIRTH

GARDENS OF STONE
ALLIANCE
REPRESENTATIVES: KEITH MUIR
JULIE FAVELL

LOCATION: ZOOM VIDEO CONFERENCE

DATE: 12:15PM – 1:15PM
FRIDAY, 2ND FEBRUARY 2024

<THE MEETING COMMENCED

MR KEITH MUIR: Okay. So, do you have the PowerPoint, available?

5 **PROFESSOR NEAL MENZIES:** We do Keith. But before we kick off, I have to
read a formal statement. Let me just plough through that. This is just to make sure
that the rules of engagement are set and that they're part of the transcript of what
we're doing, okay. Let me just read through this and then we'll hand back over to
10 you. Callum, just as a heads up, do you have Keith's presentation? Yes. So, Callum
will be able to load it and share it. Okay, so before we begin, I'd like to acknowledge
that I'm speaking from the lands of the Turrbal and Jagera people here in the
Brisbane River catchment. And I acknowledge the traditional owners of all the
countries from which we're virtually meeting today. And I'd like to pay our respects
15 to their elders, past and present. Welcome to the meeting today. We're here to discuss
the Western Coal Services MOD 6 residuals transfer increase. Springvale Water
Treatment Plant MOD 9 to extend the interim water management strategy time frame
and Springvale Water Treatment Plant MOD 10 residual transfer increase. Which are
all currently before the Commission for determination.

20 My name is Neil Menzies. I'm chair of this commission panel. And I'm joined today
with my fellow Commissioners, Professors Alice Clark and Snow Barlow. We're
also joined by Steve Barry and Callum Firth from the office of the Independent
Planning Commission. In the interest of openness and transparency and to ensure the
full capture of information, today's meeting is being recorded and a complete
25 transcript will be produced and made available on the Commission's website. This
meeting is one part of the Commission's consideration of this matter and will form
one of several sources of information upon which the Commission will base its
determination. It's important for the commissioners to ask questions of attendees and
to clarify issues whenever it's considered appropriate. If you're asked a question and
30 are not in a position to provide an answer, please feel free to take the question on
notice and provide any additional information in writing, which will then put up on
the website. I request that all members here today introduce themselves before
speaking for the first time, and for all members to ensure that they do not speak over
the top of each other to ensure accuracy of the transcript. Okay, so now we're set to
35 begin.

MR MUIR: Okay. I to acknowledge the traditional owners of the Wiradjuri people,
past, present and emerging. And I would just like to make a presentation to you now.
40 My name is Keith Muir from Wilderness Australia. I'm an honorary project officer
there. I'm retired, and I used to be the executive officer there and also, a member of
the Gardens of Stone Alliance, which consists of a number of conservation groups,
including Lithgow Environment Group, Wilderness Australia, Blue Mountains
Conservation Society, Nature Conservation Council and the National Parks
Association of New South Wales.

45 I'd just like to start and set the context by saying that the water treatment plant, the
RO plant that we saw on the site inspection, the purpose of that was to remove the

salt from the environment that was being emitted to the environment by the coal mines. Angus Place in Springvale. I will explain why that \$200 million plant has not achieved that objective very well, if at all. That's the first slide.

5 The next slide please. But I point out that the water treatment plant and the Mount Piper Power Plant are theoretically no release plants in relation to the salt contaminant. Therefore, these plants can deliver a neutral outcome or to the water catchment. I would like to assert that with better regulation, this wonderful system can be made to work.

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The next slide please. It's very important to grasp the significance of this picture, this figure. This figure shows, five open cut mines, former open cut mines adjoining the power plant, which is in the top left hand corner. And between the open cuts are, areas of bord and pillar mining, which is very shallow, obviously, because it's adjoining the open cuts, and these areas have workings in them which are full of brine. Now in the Western Coal Services site. The water balance estimate is that about 50% goes to groundwater. I would suggest that that's probably conservative. It's essentially a waste management site on a sponge. And this is a very challenging environment to undertake waste management and of any sort. But that's the situation it is. And that's where the Western Coal Services site is with all its emplacement areas. There's an area in pink which is, Lamberts North and Lamberts south. The Lamberts North is the northern pink area, and the south one is the southern pink area. The north - Lamberts North is the current and developing ash emplacement area for the power plant. And the existing one is just to the north of that and overlies the bord and pillar area and the western main open cut area. And that is just to the north of that northern pink area.

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Okay, the next slide please. This is a cross section showing - one's showing the REA and Wangcol Creek, and that's the top one. And you'll see the arrangement of the ash emplacements and these pits. I know it's a very blurry picture. It's the best I have. From screenshot of a report. And you'll note that the relationship of the groundwater in Wangcol Creek. Because of this Western Coal Service site being bord and pillar, it has fairly dire implications for the management of salt and non-point salinity pollution in Wangcol Creek. The bottom half of the figure, the bottom cross section, shows an emplacement area, and the emplacement area has a wet emplacement, which is a lighter grey area and then a more hatched and darker grey area above that, which is the brine conditioned salt. That's where the salt goes. And you'll see how that then reports to groundwater. And then you'll see if you follow the groundwater across. It goes to a thing called DML Dam which is the first dam. And then the second dam is Cooks Dam. And then the last thing is the thing called LDP006 in this one, but it's actually LDP001 because they renamed it. That is an important slide. And it's probably the most important, piece of information to grasp about the site and how challenging it is to manage and what prescriptions are required to address this situation. And the salt you see, if it just goes on top of the ash emplacement, just ends up in the groundwater and reports to the creek, and the LDP001 and then the creek.

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5 The next slide, please. This is from eight years ago. And this is salt. This is not something that's faked or anything. This is two images of the salt beside the highway. And essentially what it's saying is that the salt has already reached Wangcol Creek and is reporting to the creek in a very, very high level. Not, you know, 5000, but that's salt crystalline.

10 **PROFESSOR MENZIES:** Can I ask a question here, sorry to interrupt. But not knowing the exact circumstances well enough and wanting clarity in what you're saying. This salt that's here, where do you think that's come from to get to this point?

MR MUIR: Well, my belief is that it's the Western Coal Services. You see, behind that slight rise is the Western Coal Services site. And just to the north of that is the ash emplacement, the ash...

15 **PROFESSOR MENZIES:** And so, it's coming out with seepage that's emerging there at the roadside.

20 **MR MUIR:** That's the case eight years ago. On the 9th of April 2016 that was observed.

PROFESSOR MENZIES: Thanks for the clarification.

25 **MR MUIR:** I'm not saying that it's there all the time, but what it is, is it's indicating to me that a very high level of salt is in the groundwater. A very high level of salt is merging into Wangcol Creek. It is a challenging environment to manage the existing problem and to try and not create a problem which is making it worse. The need to regulate the operation, to contain it and hopefully contain it on the site. That's the overall objective of waste management, is to try contain it on the site.

30 **PROFESSOR SNOW BARLOW:** Sorry to interrupt. Snow Barlow. On the right hand image, you have there, up the slope a bit. Are those white areas seepages of salt?

35 **MR MUIR:** Yes. That's correct.

PROFESSOR BARLOW: Okay. Sorry to interrupt.

40 **MR MUIR:** And there are other pictures I have of salt on vegetation, like it's evaporated off and dried onto the vegetation. It's a classic super saturated evaporation happening at the surface and crystallisation.

45 The next slide please. This is somewhat of a different and probably more relevant to what you're dealing with. The RO plant is sending water with just filtration and not removal of salt in a shandy to the Thompsons Creek Reservoir and then being discharged at 500 EC. That is actually above the limit, which is acceptable to the macroinvertebrates in the river for the Anzac guidelines, which is 350 for an upper catchment area. And so, it's not - it's going to prevent, recovery of the ecosystem.

And it should be at the 350 level. Now, I know, you know, that's what I say. As an advocate, I advocate what is the minimal acceptable to the environment from my viewpoint.

5 Then the next slide, please. I'm sorry this has gone on. I should have kept this very short, but this is just an overall summary of the conditions and an attempt to do that. It's somewhat compressed if you like. Because of the great difficulty of the Western Coal Services site, then you need to line repositories. I argue now I have alternate suggestions if that is unacceptable. And I argue that only water that's been treated to
10 its standard of 350. Should be emitted into the environment. And that modifications have -can basically, I understand why they've occurred, but what we need is a more adaptive consent to really, deal with this. And one of the suggestions I have is to consider making it a significant contaminated land declaration over the site. That has, in fact happened to a former waste emplacement for the previous power plant, which
15 is Wallerawang, which is now decommissioned. And they've declared that a significant contaminated site. Okay. That is a very broad outline of the conditions. I'd like to go to the conditions now. And I have a word document. Callum, can you bring up the word document, please? Is that possible?

20 **MR CALLUM FIRTH:** Yes. Just give me a minute.

MR MUIR: All right. I've attempted to follow the - thank you Callum. I've attempted to follow the Commission's amended consent and the numbering in that and made suggestions in relation to this. Now, I know that - I don't know what's
25 within your gift as the IPC. My job is to advocate what should be done. And commissioners I've attempted to do that, for this is a World Heritage Area and a drinking water supply. Thank you, Callum. And The Coxs River flows through the World Heritage Area and into our drinking water. My first suggestion is 8D which is an insertion under schedule two residual waste management. I understand that the
30 applicant is already suggesting that the residuals that are going in REA are de-watered, but there's nothing in the consent that says that. So, I've included that. And then of course, suggested that it go into a lined emplacement, which, you know, I mean, it's going into a very large unlined emplacement.

35 **PROFESSOR MENZIES:** And can I just once again ask for a clarification here. So, these are actions that you would take in order to limit salt movement? It's the salt concerned about here.

40 **MR MUIR:** Neil, I'm trying to contain the major issue which is salt. And contain the waste on the site and get the benefit - the maximum benefit that we can out of this fantastic water treatment plant, which costs at least \$200 million. And to do that we need to contain the salt on site. Otherwise, it's - well, we'll get to that. I don't - otherwise it doesn't bear countenance. It's something that's got away from us. And it's not just, it's the EPA. It just has to be fixed. It's not something to accuse anybody of
45 doing anything wrong. It's about fixing the problem. The applicant in in 8E, I suggest that there should be some residual salt management. If you recall, the figure that I said was very important, I outlined that Lamberts North was in the Western Coal

Services site and Lamberts North is the new (indistinct) placement. I'm suggesting that the brine or salt that comes from the plant get placed in a line cell there. Okay. So, it doesn't go on the ash.

5 **PROFESSOR BARLOW:** Excuse me Neil. Snow Barlow here again. What is the sort of regulatory significance of declaring the Western Coal Services site a contaminated area?

10 **MR MUIR:** Well, it's something that will come to in the conditions as we go through the conditions.

PROFESSOR BARLOW: Okay.

15 **MR MUIR:** And it's something that centennial invites that to be applied to their site. And it then triggers a higher level of scrutiny by the EPA. And beyond that, I would have to take it on notice. But it perhaps is a question that you could ask the EPA, because they're certainly doing it now with the ash repository on - at Kerosene Vale on Sawyers Swamp Creek, which is nearby.

20 The next point is scheduled two, condition 8F, suggested an insertion there, and that's simply to say that the discharges from the Western Coal Services site needs to be treated by reverse osmosis so that we achieve the standard that does not exceed 350. Okay. And I do justify each of these conditions in a narrative afterwards, if you like. But really, it's important to go through these conditions and for you to ask me
25 questions.

And now we move on through the consent, to schedule three. And here in condition 24 of schedule three, I suggest that the applicant - applicant and the regulatory agencies take a review annually of this water treatment water management plan.
30 Because what I think happens with these plans is that they are told they have to make them, and then they just go on a shelf. The management plans are no good at all unless they're reviewed on a regular basis to ensure compliance and to just say, well, look, you know, we have problems. And so, everybody consults and prepares it. And then they're not reviewed. And so, you have a review process and it sort of checks on it and sees how you're going.
35

26A is the next suggestion on schedule three again. And here we're suggesting some further rehabilitation at objectives to attempt to reduce the area of disturbed land in the region, you know, in the Western Coal Services site, because it's so big and it's
40 all disturbed and it's all sitting on this highly, you know, these open cuts and bord and pillar area. And so, it's draining there. I've suggested that there be a program to reduce the infiltration. That's the main objective. But to rehabilitate the area with that purpose, to reduce the infiltration. Because that's one of the ways you contain the salt.
45

And then 26B. It's specifically targeted at North Lamberts new emplacement area to have a groundwater containment program. It's sort of very much moving off the

MODs, but then I just bring to your attention the rehabilitation objectives, which is going further down in schedule three to condition 43. And here I want to draw the commissioner's attention, the fact that there's no water resource objective. You've got to feature water resources. We don't have an objective for it. We don't have a
5 feature called water resources, nor do we have an objective for it. But yet that's the biggest headache in the site. The salt moving out through brine in the groundwater. I think it needs an objective there. It's just a bunch of suggestions.

10 And then pollution reduction works if the conditions 8F and so on, that the conditions I started with. The treatment of discharges and what have you. If they are not accepted, then there needs to be another condition to amend 46. Which is in the pollution reduction works. And that's to undertake works required by the EPA to prevent salt migration from the REA. Okay. From that big thing that we went to see, so somehow figure out how to present the migration of salt and to work with the
15 EPA to develop a plan that works to do that and undertake.

And then I've got the E to H in this condition 46. Which essentially are about brine mitigation and monitoring. You see, we need to be monitoring all this salt in a much more vigorous way to understand its migration and to see how it's reporting in real
20 time, not to create models that say, oh, well, in 40 years time, we'll have the data to tell us what to do, but to actually work at the problem in real time with real data. That then leads us to the significant contaminated land matter. And then I just suggest that the applicant needs to work with the EPA pretty closely and heavily to fix this mess, because that's essentially - what is - my understanding of the
25 designation is to flag it and therefore to put resources, regulatory resources, and also, applicants resources into fixing the problem because just plonking the salt on the ground and rain on it, fall on it is not a great idea. I do then justify the amendments - I don't know if we have - we're probably going to run out of time if I attempt to go through those. I'm in your hands commissioner.

30
PROFESSOR MENZIES: Keith, I agree. I think it would be - you provided the material for us, and you know, we can read it and discuss it. I think it'd be more value in us, asking you some questions and just, you know, teasing out some of the things that we're concerned about and that you might be able to help us to
35 understand. Thank you very much for your presentation.

MR MUIR: That's one lot of conditions. And then there's the other lot for the other DA, other consent.

40 **PROFESSOR MENZIES:** Yes.

MR MUIR: So, you appreciate that -

45 **PROFESSOR MENZIES:** Yes. Absolutely. Look, the two figures that you showed us were tremendous. You know, the illustration of just how extensively the underground mining underlies that site. And, then the illustration of the connectedness of the groundwater to the stream and the flow pathway. I think we're

already aware of it, but just having it illustrated to us so perfectly really brings a bit of focus to the discussion we'd like to have with you.

5 **MR MUIR:** Commissioners, you understand this has been to the Supreme Court. It's been a huge amount of resources by conservationists to do that. It went to the Supreme Court. It led to the introduction of that treatment plan, but yet, for some reason, the conditioning failed. I remember asking for the lining then, but it just shocks me to think that the salt is still going into the river after all that investment of money. And I'll leave it there. I think it's a scandal, right. Because it's such a waste of
10 money. But I'm not really - you're across it. I want to help make better. I don't want to have a war. I want to sort of fix it because this is something we don't want. This is where the intergenerational issues come in and precautionary principle. It's simply, we've got to make sure that the future has a good water supply and it's clean. And they have one, but it could be quite degraded if this isn't addressed.

15 The next lot of conditions. If Callum, can you bring that word document up again please. Is that okay? Is to do with MOD 9 and 10. Now I just like to make a point with MOD 9. Is that this matter of tweaking the plant to get it operational and so on, has been going on for over four years, and that's way past time for the commission
20 for the - it's way past time that the plant was 100% operational. We think that MOD 9 should be refused. Because it's basically allowing unfiltered but untreated mine waste to be emitted to the environment, which was the whole point of the water treatment plant. The whole point was to treat the water to get the salt out. We've gone through this and it's more or less a permanent arrangement now, but it's being
25 commissioned as - it's being presented as an interim arrangement. And it started as an emergency situation and now we, you know, the word emergency has been used, but it was an emergency situation that they needed to transfer the water to Thompsons Creek Dam untreated. And then now, four years later, we're still in this interim arrangement. Well, it's no longer an interim arrangement. It's a permanent
30 arrangement.

That then leads to something in the consent conditions. I think, we'll get to that. But there's an inconsistency in the consent conditions between condition 6 and 6A so if
35 you go to conditions 6 and 6A in schedule two, I think you'll see what I mean. The two things are essentially mutually exclusive. So, 6 says that you transfer all the treated water – with emphasis on the water treated. And then in 6A you're transferring the filtered but untreated water. The two things are mutually exclusive. And they're in the consent, both of them. I just bring that to your attention, commissioners, that there are two consent conditions that are somewhat odd.

40 Now my first amended condition. Thank you, Callum, for bringing it up and encouraging me to actually talk about it is 6B. It's about water monitoring. Now I note that there is a water monitoring condition, but it's very general assessing water quality in the reservoir. I think that we need to be clear that it's a 30 Gigalitre dam
45 commissioners. It's very big and really needs depth and surface, near surface because it's going to have - that salt's heavier than the fresh water. So, it may just slide down to the bottom of the dam. I don't know what it does. I have no idea. And I actually, to

be honest, don't have much of a good grip on how you would design a monitoring. But I think it I have attempted to make it clear that it should be the - you need a picture of the whole thing, otherwise you could end up with a nice slug of quite saline water that's been filtered from the mines, the two mines, Angus and
5 Springvale, at 11 or 1200, just sitting in the bottom of the dam until it fills up and reaches the discharge point, because that's - if it's not treated, that is the current - I know how they make it into a shandy. That's that. That would give you a better picture of what Thompsons Creek Dam was doing. That's why I've amended 6B apologies for my rather circumlocution of this.

10 So, 6C then if we could move on and I suggest an amendment there. And this one goes to what Anzac says is a good level rather than what, Centennial wants. That's simply it. And the subsequent one being the trigger level is below that 350 at 300. I appreciate that that's sort of half of what they have, and that they are pushing it up
15 from 500 to 650.

PROFESSOR MENZIES: Keith, let me ask you a couple of questions there.

MR MUIR: Yes.
20

PROFESSOR MENZIES: If the value - if the quality of water in the dam's 350. Do you have any concerns about the volume of release?

MR MUIR: Well, 350, the volume would be less of a concern if it's at 350. That's
25 certainly the issue. We need to explain to the commission that the background level above all these mines in the Coxs River is 30 an EC of 30, not an EC of 350. So, you're already talking, you know, nine or more times background in salinity in the river. And that's just what Doctor Ian Wright is saying to us is the maximum. And he's making reference to the Anzac guideline. I don't know where these limits are
30 coming from in the condition, they don't seem to be referenced to a science base. It's just what they seem to need to achieve the -

PROFESSOR MENZIES: Once again, let me assure you this - that was a really
35 interesting piece of information. I've seen water quality data for streams, and I've seen some very high values. I had assumed those sorts of high values would be in very low flow conditions when the streams, you know, the little bit of salt that was there has been concentrated up and that the normal condition would be a higher flow volume and a lower salt content. That's essentially what you're telling me?

MR MUIR: No. The condition you're talking about run off from sandstone
40 catchments and the natural situation is 30 EC.

PROFESSOR MENZIES: Okay.

MR MUIR: Low flow and high flow. It's not the - if it's got a high EC, it's disturbed
45 (crosstalk) -

PROFESSOR MENZIES: It's once again seepage out of the disturbed mine sites, etc. that's bringing that salt into the stream.

5 **MR MUIR:** There of course are open cuts all around where this has happened. But this is the main, I mean, you're concentrating the salt on this site. That's not such a bad thing. If you can contain it on the site, it becomes a bad thing if you're not. And that's what I think is the situation. The salt is concentrated and being emitted from the site, and that's a bad thing. The other - well, the rest of it, I think is essentially saying there'll be no other discharges other than Thompsons Creek, which of course,
10 sort of pre-empts what the applicant wants to do in its foreshadowed future modifications. But essentially, that would then require this arrangement to ensure a good outcome, and to require that to be the way it's done and not have it done in another way through another MOD, which would then discharge more salt to the environment as well.

15 The other thing I do in the justifications for these consent conditions is I cross reference to the Mine Extension Project, which was the consent for the expansion of Springvale, where it references an Upper Cocks River management plan in schedule four, condition 13. In another consent, you don't have that consent in front of you,
20 but I've provided that condition or an extract of that condition here in my narrative. And you can read it and essentially it has a - well, they're aiming for 350. Okay, that's the whole idea. Now, the point is, you can't get there if you're discharging something that's not 350. And it outlines that there are impacts on macroinvertebrates and so on with higher levels than 350 is. And it's in their consent. It's sort of like on
25 one level we're doing one thing and on another level in another consent they're doing something else. I mean perhaps that whole upper, you know, that could be or the intent of that can be transcribed into this consent. But there's no use telling Centennial in one consent to do one thing and then achieving something else in another one.

30 **PROFESSOR BARLOW:** Keith, Snow Barlow here, sorry to interrupt. But a couple of questions in this. Are you aware of a maximum daily discharge unit limit on Thompsons Creek Dam? Into Thompson's Creek?

35 **MR MUIR:** I'd have to take that on notice. Energy Australia manages the dam.

PROFESSOR BARLOW: Okay. All right.

40 **MR MUIR:** They report, monthly figures of discharge from the dam. And I think the way it operates is that it operates between a minimum and a maximum level in the dam, and they just discharge whatever to come to those levels in the dam because it's an offsite - offline storage, essentially with a fairly small catchment. They operate it within two levels, and they discharge whatever's required. What they discharge, I
45 can't answer you, sorry. Maximum discharge TCO. It would be a physical - there would have to be a physical over maximum limit from the pipes that go out to the thing.

PROFESSOR BARLOW: The Energy Australia reports of those discharges, what would that be on their website?

MR MUIR: It'll be on Energy Australia's website.

5

PROFESSOR BARLOW: Yes.

PROFESSOR BARLOW: And the other question is, those on the Western Coal Services site. All those open cut mines, you know, now disused, when were they operable? Have they - we know, of course, that Centennial has only bought into that. But did Centennial ever operate any of those open cut mines?

10

MR MUIR: I don't think so.

MS JULIE FAVELL: They did.

15

MR MUIR: They did?

MS FAVELL: Yes.

20

MR MUIR: All right. Julie.

MS FAVELL: It was Professor. It was under the name of Lamberts Gully Open Cut. And they did open cut for a number of years. And there was when they closed - and I can't give you the date sorry when they closed or went into caretaker at that time, there were still coal beneath that was retrievable. But the other thing, Professor, is that I was on the Lamberts Gully CCC, and we were invited by the company to go to the pit face. And there's another issue there with the salt and what's emerging with what Keith has said is there's actually the geological layer when you're looking at it, the pit face. There's actual salt, a thick salt layer - I can't tell you the size but it was quite large. But yes, it was operational for some time. And then they changed the site name to what it is now which is Western Coal Services.

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PROFESSOR BARLOW: Okay. Thank you very much for that.

35

PROFESSOR MENZIES: Alice, do you have any things you'd like to pursue?

PROFESSOR ALICE CLARK: Just - no, thank you very much for, both the document, which I did read through in detail ahead of your presentation today. One question that came up and I know that the photos were just setting context at the start of your presentation. Where you had the gullies next to the highway and it - and you made the point that this was some years ago, that those photos were taken, Keith, I appreciate that. Yes. And I was just wondering if there - if you see this sort of thing coming after significant weather events or is it there all the time? Was this just once that you happen to notice it? Just some context around how often this is, you know, these fugitive salt plumes.

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5 **MS FAVELL:** Thanks. Commissioner Alice. I think it was around and I shouldn't say I think, what Keith's saying here was when it was acknowledged eight years ago. That was then presenting as likely issue to both Western Coal Services and Mount Piper. I'm not sure I know you have visited there, but the two sides border each other and Wangcol Creek which is on the northern side, yes. I think it was from then that the investigation had started with the leaching. That was (indistinct) with Mount Piper.

10 **PROFESSOR CLARK:** Thank you.

MS FAVELL: Yes. They actually had in monitoring upstream and downstream to see where it was actually leaching into the Wangcol Creek. And from there we are where we are today, we're still trying to solve that issue.

15 **PROFESSOR CLARK:** Thank you, Julie. Thanks. Okay. I had nothing else Neil.

PROFESSOR MENZIES: Okay. Look, Keith if you'll allow me, I'd like to ask a question that more or less demands that you speculate. But given your knowledge, I don't think I'm asking you to speculate too far. The Gardens of Stone Area, the water that's been flowing through there for some time is too saline and damaging the area. We're really, looking at improving conditions through time. And I'm wondering, you know, the damage that's been done if we improve the quality of water that flows through, what would happen, you know, will the areas rehabilitate. How rapidly might we hope that that would happen, etc. Just so we've got a sense of what good can be done if we, you know, exploit the opportunity that exists because of the investment in that plant.

MR MUIR: This probably is a - that's zooming out to this has all been local. Regionally, the Gardens of Stone State Conservation Area adjoins the World Heritage Area. It's 30,000 hectares. It's a very diverse area, but it's not impacted by this. It's the World Heritage Area and the Coxs River and the drinking water supply for Sydney, which is. The Coxs River is one of the key streams that feeds the largest storage for Sydney. And the storage is becoming a little bit more saline due to the salt that's going into it. But the main impact is on the ecology of the river and the macroinvertebrates. And Doctor Ian Wright advises me that if you improve the water quality and this is something he has seen where you can - where he's through his sampling, has seen the macroinvertebrates come back quite quickly because they just come back from the tributary streams and then the ecosystem can repopulate once the base trophic levels are re-established. It's not something that is in my expertise, but that is essentially what Doctor Ian Wright told me that they come back quite quickly, but you've got to have, you know, you've got to have the parameters there for the survival of the life that supports the ecosystem. And if it's not there, then, then the rivers are impacted.

45 **MR MUIR:** Now this then reports also to the water trigger under the EPBC Act and the federal responsibilities there. Certainly it is something that I think the federal government should show an interest in and my experience on addressing problems is

that you just have to keep working at it and improving and together we - because what's clear from this is that the applicant will do what's required, but no more. Even when it's not even going to cost very much, they won't do it unless they're told to do it. And this is probably because they're overwhelmed. I don't know why. I have no
5 idea of what the motives are, but what I do know is that what seems to be startlingly self-evident doesn't necessarily happen. And that, you know, you can invest hundreds of millions of dollars, but then not get the goal. Win the outcome.

10 **PROFESSOR MENZIES:** Yes.

MR MUIR: And this is where it needs to go. And it may not be - and I'm used to long journeys on these things and in fact, Gardens of Stone proposal for a reserve was proposed in 1934 by Myles Dunphy. It took a while. And it's a challenging
15 landscape. And I'm not holding anyone to blame them or say they're criminals or anything. I just need - we just need to work together to get this done. And my job is to advocate and to explain how it might be done. And then the regulators, the EPA and the engineers they are, Keith doesn't know what he's talking about, but I do, and this will fix it. That's where the designation of the significant contaminated land comes, because it is a big issue.

20 **PROFESSOR MENZIES:** Yes

MR MUIR: It is a big lot of salt. And it's all come out - and we want to hold it on site. We want to get that goal. We want to make the effort that's being put in
25 worthwhile for everyone's sake.

PROFESSOR MENZIES: Thanks Keith.

MR MUIR: So that area and drinking water supply and everybody can achieve a
30 better outcome. And I'm sure we can. It's just a matter of working at it. So, thank you.

PROFESSOR MENZIES: We're at time. I wanted to thank you for not just today. Today was excellent, but also, joining us in the field, we learned a great deal on our
35 tour around in the field. And today's been an opportunity just to consolidate some of those thoughts and really strengthen our view. Snow, any final questions from you?

PROFESSOR BARLOW: Very brief question, Frank. You mentioned that the
40 major sort of reservoir for Sydney's water supply - presumably that's Burragorang. And is the Coxs River the major source of salinity for that reservoir?

MR MUIR: Yes, it is. It's not the major stream. The Wollondilly is the major
45 stream. But the Coxs River is the major source of salt, without question. And there is data on that. And, you know, I can try and dig it up.

MS FAVELL: Sydney catchment -

PROFESSOR BARLOW: We could ask that. Just leave that as a question on notice. But thank you. Thank you, Frank. Thank you, Keith. Sorry.

5 **MR MUIR:** That's all right. It, you know, the problem we have is we've got a snowstorm of, regulation and conditions and whatever, but we mustn't ever lose sight of what we're trying to achieve here, which is containment of disturbance, containment of contaminants on the site. That's the overall goal. We just need to regroup and work towards that. And that's what we're doing here. We're not we're not saying MODs 6, 9 and 10 are going to be the absolute solution and what you can do
10 with it, but we're regrouping to work on that goal for this area, which is a very important problem that needs solving. I flag it, I want - I wish that the commission can flag it maybe in your report as well as in your conditions so that it can be addressed.

15 **PROFESSOR MENZIES:** We certainly will. Alice, anything last final from you? Keith, I thank you also for the work that you've put into your suggestions on the conditions that we might use. You quite rightly identified earlier in saying that we may or may not be able to do some of these things.

20 **MR MUIR:** I've been around a while, I understand.

PROFESSOR MENZIES: The thinking that you put in and capturing the big problem that we have to address. There will be one increment of it in, in what we could do here. I sincerely thank you for your help and for the time you've put in with
25 us today.

MR MUIR: Thank you. We'll certainly be talking to the EPA and politicians and doing our part to achieve a better outcome. And that's where we're going. We will do our bit to do that. So, thank you.
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PROFESSOR MENZIES: Thanks. Thanks for joining us.

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