

FILE COPY

25 February 2011

Phil Lindsay
Solid Energy New Zealand Ltd
P O Box 1303
Christchurch 8140

Our Reference: S094-027
Refer Accession No:

13471

Dear Phil

Review of Air Discharge, Briquetting Plant, Maitara

Thank you for lodging an application to take water, discharge stormwater and wastewater, and for emissions to air, from a briquetting plant at Craig Road, Maitara. Unfortunately I require further information before the application can be notified or a determination can be made on your application.

I wish to commission a report on the air quality aspects of your application, in accordance with Section 92(2) of the Resource Management Act.

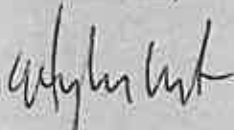
I believe that the proposed activity may have a significant adverse environmental effect, and I require technical advice to ensure that the assessment of effects is accurate and that the proposed mitigation and monitoring is appropriate.

Notification or determination of your application is postponed until receipt of the report.

Please advise, by 21 March 2011, whether or not you agree to commissioning of the report¹.

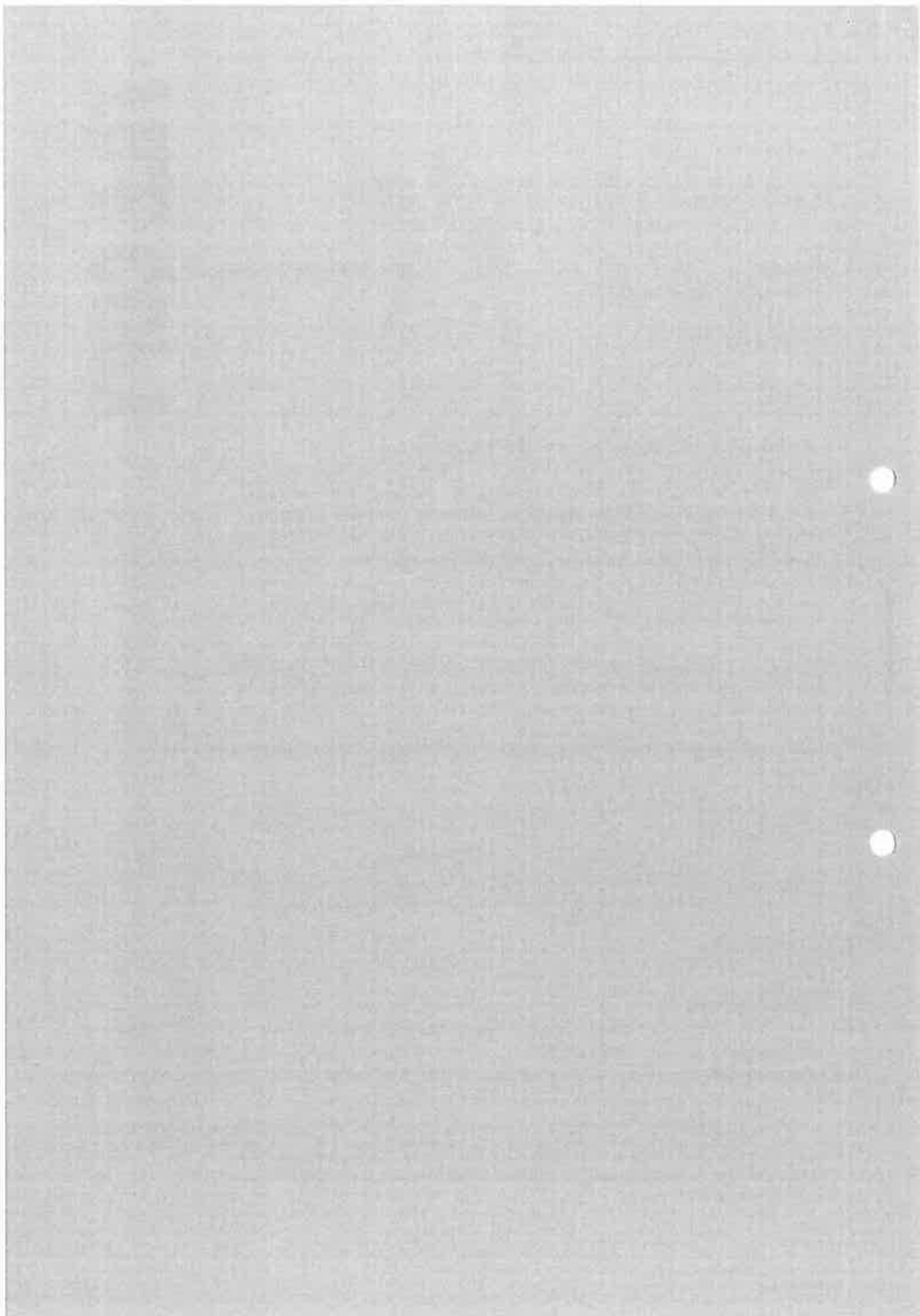
If you do agree to the review, please forward a copy of the application directly to John Iseli of Specialist Environmental Services Ltd at john@sesconsulting.co.nz.

Yours sincerely



Stephen West
Consents Officer

¹ You have the right to refuse this request. However, under Section 95C, if you do not respond or choose to refuse the request, the Council must publicly notify the application. Under Section 104, the Council is required to have regard to whether or not a request for a report resulted in further information, and the application can be declined if the Council has inadequate information to determine the application.



Rose Dobbie

16204

From: Stephen West
Sent: Wednesday, 9 March 2011 10:34 a.m.
To: Emails For Filing
Subject: FW: S094-027 - RE: Solid Energy briquetting plant File: S094-027

From: Phil Lindsay [mailto:Phil.Lindsay@solidenergy.co.nz]
Sent: Wednesday, 9 March 2011 10:28 AM
To: Stephen West
Cc: John Engel; john@sesconsulting.co.nz; Glenn Rutter
Subject: FW: S094-027 - RE: Solid Energy briquetting plant

Hi Stephen,

Thank you for your letter dated 25th February 2011 requesting a review of air discharge, Briquetting Plant, Mataura.

Solid Energy agree to the review and have emailed and provided a hard copy of the application to John Iseli as requested (see email below)

Please let me know if John or you require any further information in relation to our application,

Thanks,

Phil

Phil Lindsay
Environmental Operations Manager
Solid Energy New Zealand Ltd
2 Show Place
PO Box 1303
Christchurch
Tel: 03 345 6086
Cell: 027 291 1075

From: Phil Lindsay
Sent: Wednesday, 2 March 2011 4:09 p.m.
To: John Iseli
Cc: Emails For Filing; keith@hovell.co.nz; 'John Engel'
Subject: RE: S094-027 - RE: Solid Energy briquetting plant

Hi John,

Hope you, your family and friends are all okay.

I heard on the grapevine you are in Castle Hill so Paul Weber will drop hard copies of the briquetting AEE off to you tonight.



S p e c i a l i s t E n v i r o n m e n t a l S e r v i c e s L t d

100 Main Road, Governors Bay, R.D.1 Lyttelton, Canterbury 8971, New Zealand
Ph 03 3299 800 Fx 03 3299 803 Mobile 0274 379 044

7 April 2011

Environment Southland
Private Bag 90116
Invercargill
Attn: Mr Stephen West

Dear Stephen

**Re: Review of Solid Energy's Application to Discharge Contaminants to Air from a
 Briquetting Plant at Maitara**

Thank you for your letter dated 25 February 2011 requesting a review of the assessment of effects on air quality of the Solid Energy application to operate a briquetting plant at Maitara. I have reviewed the assessment of environmental effects (AEE) prepared by Mr Ron Pilgrim of SKM and provide the following technical advice in relation to the application.

Background

Solid Energy proposes to install a lignite briquetting plant at the existing mine site on Craig Road, over 2 kilometres south of Maitara township and approximately 700m northwest of the Dongwha MDF plant. Lignite would be mined from the New Vale site and transported to the briquetting plant in trucks. The processes on-site that result in contaminant discharges to air are as follows:

- Receiving – approximately 150,000 tonnes annually of lignite will be unloaded from trucks into stockpiles up to 7m high.
- Crushing – lignite will be crushed and transported by conveyor to the processing area.
- Preparation – water will be removed from lignite by a proprietary process prior to drying.
- Drying – low-temperature drying of lignite, with heat supplied by a coal-fired boiler.
- Briquetting – dried lignite is pressed into briquettes that are stored in stockpiles up to 7m high.
- Despatch – approximately 90,000 tonnes annually of briquettes will be loaded onto trucks.

Solid Energy has indicated that the briquetting plant is “demonstration scale” and that expansion could occur in future, if trials are successful. However any such expanded plant would be subject to further consent applications.

Contaminant Emissions and Discharge Parameters

In terms of potential adverse effects, primary contaminants discharged from the proposed briquetting operation are PM₁₀ (fine particles having a diameter of less than 10 microns), SO₂ (sulphur dioxide) and dust (larger suspended particles than can deposit at neighbouring properties). I agree with Mr Pilgrim that any adverse effects of other combustion products (including nitrogen oxides) will be minor.

The major emission sources at the plant and relevant assessment parameters are summarised as follows.

Coal-Fired Boiler Plant

- Maximum theoretical gross output 9.4MW, maximum operating gross output 7.2MW
- Multicyclone and bag filtration to less than 25mg/Nm³ PM₁₀
- Maximum coal burning rate 1775kg/hr for New Vale lignite, approximately 14.65MJ/kg gross calorific value
- 30m stack height
- Efflux velocity at maximum output approximately 11m/s
- Maximum SO₂ emission rate 13.1kg/hr
- Maximum PM emission rate 0.26kg/hr
- Assume all PM discharged is PM₁₀
- Coal sulphur content 0.41% maximum

Process Plant Baghouse 1

- Processing building bag filtration to less than 15mg/Nm³ PM₁₀
- 10m stack height
- Efflux velocity approximately 16m/s
- Maximum PM emission rate 0.24kg/hr
- Assume all PM discharged is PM₁₀

Process Plant Baghouse 2

- Drying building bag filtration to less than 25mg/Nm³ PM₁₀
- 10m stack height
- Efflux velocity approximately 15m/s
- Maximum PM emission rate 0.38kg/hr
- Assume all PM discharged is PM₁₀
- Visible steam emissions will occur, particularly during cool conditions

Dust Emission Sources

Dust will be discharged from the following sources:

- Coal and briquette stockpiles up to 7m high

- Conveyors and conveyor transfer points
- Unsealed surfaces
- Vehicle movements.

Solid Energy proposes to install a 4m-high earth bund around the site topped with a 2m-high wooden fence that will reduce wind entrainment of dust. Water sprinkler systems are also proposed to dampen lignite and briquette stockpiles.

I have carried out combustion calculations and consider that the emission parameters selected by Mr Pilgrim are appropriate for modelling purposes.

The Receiving Environment

The proposed site for the briquetting plant is on an existing mine site (industrial zoning) owned by Solid Energy at Craig Road, near the state highway. The Dongwha MDF plant is approximately 700m southeast of the site. Mataura township and the Alliance meat processing plant (including coal-fired boiler) are over 2km north of the site.

The site is surrounded by rural land with isolated dwellings. The nearest dwellings are approximately 400m (North residence) and 530m (McGorlicks/O'Shea residence) from the proposed briquetting plant. In total there are 11 dwellings within approximately 2km of the site.

The briquetting plant site is located in a wide river valley. Elevated terrain lies over 1km to the east of the site, with dwellings (including Whitehead and Beattie residences) located on the hillside above the Mataura River.

The valley terrain influences local meteorology. SKM has used the TAPM model and surface meteorological data from the Dongwha site to generate a wind rose for the site. Northerly winds predominate, consistent with the alignment of the valley. Winds from the west and southwest are frequent and are strong at times.

Limited ambient PM₁₀ monitoring has been undertaken adjacent to the Dongwha plant, indicating relatively good air quality when compared to the National Environmental Standard (NES) of 50µg/m³ (24-hour average). Dust deposition monitoring has been carried out by Solid Energy around the Craig Road mine site. The results indicate generally good compliance with the guideline of 4g/m²/30 days deposited dust, with SKM reporting one exceedance (6.9g/m²/30 days) since January 2009.

Overall I agree with Mr Pilgrim that the existing ambient air quality in the local area is relatively good. The primary source of PM₁₀ and SO₂ (in the event that coal is burned in the energy centre) is the Dongwha MDF plant. The coal-fired boiler serving the Alliance meat works also discharges primary contaminants, but is over 2km from the briquetting plant site. Emissions from both the Dongwha and Alliance plants have been modelled by Mr Pilgrim to assess potential cumulative effects of SO₂ and PM₁₀.

Dispersion Modelling

Mr Pilgrim has used both the AUSPLUME and CALPUFF dispersion models to assess the effects of primary contaminants discharged from the briquetting plant. The relatively simple AUSPLUME Gaussian plume model (incorporating the PRIME building downwash algorithm) is

suitable for predicting concentrations on flat terrain relatively close to the plant. The complex CALPUFF model is an appropriate choice for prediction of concentrations at elevated terrain (including the hillside east of the site) and at locations distant from the source. The TAPM and CALMET models have been used to generate local meteorological data sets for use by the dispersion models.

I have analysed the model output files and the inputs selected. Overall I consider that the modelling methodology adopted by Mr Pilgrim is robust and provides a comprehensive assessment of the effects of briquetting plant emissions. The assumptions adopted are generally conservative, particularly with regard to the selected contaminant emission rates for the three major industrial emission sources modelled.

Cumulative impacts of the Solid Energy, Dongwha and Alliance industrial sources have been modelled assuming constant discharge at maximum theoretical output. It was assumed that coal is burned in the Dongwha energy centre at the maximum consented rate (this does not currently occur). Due to the standard of mitigation proposed and the scale of operation, the total maximum PM₁₀ and SO₂ emission rates (0.88kg/hr PM and 13.1kg/hr SO₂) from the proposed briquetting plant are substantially smaller than the rates modelled for the Dongwha (9.28kg/hr PM and 20kg/hr SO₂) and Alliance (20.6kg/hr PM and 33.8kg/hr SO₂) plants.

Modelling Results

The dispersion modelling described above predicts the contaminant concentrations listed in pages 33-61 of the SKM report. Maximum concentrations are predicted to occur within Solid Energy premises, due to building downwash effects. However it is the predicted ground level concentrations (GLCs) at neighbouring dwellings and other sensitive receptors that are of particular relevance. The predicted PM₁₀ and SO₂ GLCs at sensitive receptors are tabled at pages 39 and 47-61 respectively of the SKM report.

Effects of SO₂

Humans inhale sulphur dioxide that is absorbed in the nose and upper respiratory tract, from where it enters the bloodstream. High concentrations of sulphur dioxide have significant effects on respiration, particularly among asthma sufferers. Increases in airway resistance appear to directly correlate with sulphur dioxide concentration (Ministry for the Environment, 2002)¹.

The New Zealand ambient air quality guideline concentrations for sulphur dioxide are 350µg/m³ (1-hr average) and 120µg/m³ (24-hr average). The National Environmental Standard for air quality has the same one-hour average value, with a permissible excess of 9 hours per 12-month period and an upper value of 570µg/m³ (1-hr average) not to be exceeded at any time.

The combined local industrial discharges are predicted to cause short-term (1-hr average) peak SO₂ GLCs of approximately 115µg/m³ (on Solid Energy land in the vicinity of the briquetting plant), with peak cumulative GLCs at dwellings of approximately 60µg/m³.

The proposed briquetting plant discharge is not predicted to contribute to cumulate SO₂ concentrations that approach the NES of 350µg/m³ (1-hour average). Any short-term adverse effects of SO₂ emissions are expected to be less than minor.

¹ Ministry for the Environment. 2002. Ambient Air Quality Guidelines: 2002 Update. Air Quality Report No. 32, Wellington.

With regard to 24-hr average SO₂ concentrations, the World Health Organisation (WHO) has recently set a stringent revised guideline of 20µg/m³ with an interim target of 50µg/m³. This guideline is 1/6th of the current NZ guideline of 120µg/m³ (24-hr average). The WHO guideline has no formal status in NZ at this time, but the guideline is worthy of consideration and it is probable that a review of the current NZ guideline will be undertaken in the near future. There are concerns among air quality professionals regarding the scientific basis for the revised WHO guideline and its applicability to industrial sources in New Zealand.

Emissions from the briquetting plant boiler alone are predicted to cause exceedance of the WHO guideline (the peak 24-hr average GLC is approximately 44µg/m³) within Solid Energy premises. Cumulative 24-hour SO₂ concentrations are predicted to be up to 20-25µg/m³ at neighbouring dwellings. The maximum daily GLC at dwellings is predicted to be 20µg/m³ when Dongwha does not burn coal in the energy centre (currently it is fired by wood only).

Cumulative daily SO₂ GLCs are predicted to be well within the NZ guideline of 120µg/m³ and to slightly exceed the WHO guideline of 20µg/m³ at one dwelling (25µg/m³ at the Beattie residence) when it is assumed that Dongwha burns coal. The predicted concentrations are well within the interim WHO guideline of 50µg/m³ (24-hour average). Taking into account the conservative nature of the model predictions for daily averages, I consider that any long-term effects of SO₂ emissions from the briquetting plant discharge are likely to be minor.

Effects of PM₁₀

The health effects of PM₁₀ (particles less than 10 microns in diameter) include irritation of the eyes and nose, exacerbation of existing illnesses in susceptible people, reduced respiratory function, and a reduction in people's ability to resist infection. International research has established a correlation between particulate concentration and mortality rate.

The New Zealand ambient air quality guideline concentrations for PM₁₀ are 50µg/m³ (24-hr average) and 20µg/m³ (annual average). The National Environmental Standard (NES) for air quality has the same value as the 24-hour average guideline, with a permissible excess of one 24-hour period in a 12-month period.

Due to the high degree of mitigation (bag filtration of process and boiler emission sources), the predicted PM₁₀ GLCs caused by the briquetting plant discharge in isolation are relatively small. The contribution from the Solid Energy discharge is predicted to be less than 5µg/m³ (24-hour average) at neighbouring dwellings. The maximum predicted GLC of 15µg/m³ (24-hour average) occurs within the Solid Energy property as a result of building downwash effects and the relatively low height (10m above ground) of process plant emission stacks.

The combined local industrial discharges are predicted to cause daily peak PM₁₀ GLCs of up to 20µg/m³ at neighbouring dwellings. Predicted concentrations at locations to the east of the Maitai River are dominated by PM₁₀ emissions from the Dongwha plant. Accounting for background concentrations caused by non-industrial sources of less than 15µg/m³ (as indicated by MfE² for rural areas), total cumulative PM₁₀ concentrations are predicted to be well within the NES of 50µg/m³ (24-hour average).

² Ministry for the Environment, 2008. Good Practice Guide for Assessing Discharges to Air from Industry, May 2008.

I conclude that any adverse effects of the proposed PM₁₀ discharge are likely to be minor.

Effects of Dust Emissions

There is potential for fugitive dust to be discharged from processing activities, stockpiling of coal and briquettes, and from vehicle movements. A dust management plan has not been provided with the application, but it is proposed that such a plan will be provided if consent is granted.

The dust control measures proposed in the application include the following:

- Installation of a 4m-high earth bund around the site topped with a 2m-high wooden fence.
- Use of water sprinkler systems and water cart to dampen lignite/briquette stockpiles and exposed surfaces/roadways.
- Partial enclosure of conveyors.
- Covering of trucks transporting lignite and briquettes.
- Use of dust suppressants, if required.

The mitigation measures proposed are generally appropriate for an activity of this type. In addition, I recommend that on-site vehicle speed be limited to less than 20km/hr and cleaning or sweeping of dusty areas subject to vehicle movements be undertaken.

Solid Energy proposes to continue dust deposition gauge monitoring around the site and to control dust to comply with a limit of 4g/m²/30 days.

It is important to note that effective dust control is largely dependent on diligent adherence to good site management practices. Taking into account the scale of the proposed plant, the separation distance to neighbouring dwellings and the implementation of appropriate mitigation, I consider that adverse effects of dust emissions are likely to be minor.

The McGorlicks/O'Shea dwelling is approximately 500m northeast of the site and has the greatest potential to be affected by dust emissions, taking into account prevailing wind strength and direction. However the dust control measures proposed, if diligently implemented, are expected to be sufficient to prevent dust nuisance at this distance. The dwelling approximately 400m west of the site (North) is closer, but strong easterly winds likely to cause significant dust entrainment are very rare.

Conclusion

The primary contaminants discharged from the proposed briquetting plant, in terms of potential effects, are SO₂, PM₁₀ and larger suspended particulate matter (dust). I agree with the assessment provided with the application that the effects of the discharge of other contaminants (including nitrogen oxides) from the briquetting plant are likely to be less than minor.

The boiler and the processing plant discharges will be controlled by bag filtration. The emission concentration limits proposed are consistent with current best practice in New Zealand. Because of the degree of mitigation and the scale of the proposed discharge, the total emission rate of primary contaminants is small compared to other local industrial sources (the Dongwha MDF plant and the Alliance meat processing plant).

The contribution from the proposed Solid Energy discharges to cumulative PM₁₀ and SO₂ concentrations in the local Maitava area is relatively small. Combined concentrations of these contaminants are predicted to be within relevant air quality guidelines and standards. Predicted GLCs at local residences and other sensitive receptors indicate that any adverse effects are likely to be minor.

Dust control measures are proposed that are in line with standard practice for this type of activity. A dust management plan and ongoing dust deposition monitoring are planned. Provided that mitigation measures are diligently implemented, any nuisance effects of fugitive dust discharges are assessed as minor.

This technical review concludes that the proposed discharges to air from the Solid Energy briquetting plant at Maitava are not likely to cause adverse effects that are more than minor. Recommended conditions of consent, if granted, will be provided in a separate document.

Please contact me if you wish to discuss any of the above matters further.

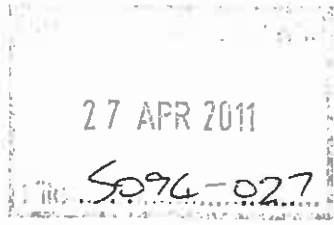
Yours sincerely

A handwritten signature in black ink, appearing to read "John Iseli". The signature is written in a cursive style with a large, sweeping initial 'J'.

John Iseli
Principal Air Quality Consultant

17192

ANDERSONLOYD



E-MAILED

21 April 2011

For: Warren Tuckey

Director of Environmental Management
Environment Southland
Private Bag 90116
INVERCARGIL 9840

Anderson Lloyd
Level 10, Clarendon Tower
Cnr Oxford Terrace &
Worcester Street
Christchurch 8011, New Zealand
PO Box 13831, Christchurch 8141
P: 03 379 0037
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Dear Mr Tuckey

Processing of Briquetting Application

1. We act for Solid Energy New Zealand Limited. This is a revised version of the letter sent to you on 12 April 2011, taking into account the additional information provided by SKM in its memorandum of 19 April 2011.
2. This letter sets out the reasons why we consider that it is appropriate that the air discharge permit application by Solid Energy for the pilot briquetting plant be dealt with on a non notified basis.
3. In summary:
 - a. Since the 2009 amendments to the Resource Management Act, there is no longer a presumption in favour of notification;
 - b. The air quality effects of the proposed briquetting plant are minor or less than minor, so full notification is not required;
 - c. The provision of the additional information by Solid Energy which accompanies this letter confirms that no person is affected in terms of s95E. In terms of SO₂ particularly:
 - i. The use of the WHO Ambient Air Quality Guidelines target 24 hour levels is not appropriate as a measure of who might be affected;
 - ii. But, even if the WHO target guideline were to be used to assess effects, the proposed discharge will not result in levels of SO₂ exceeding that target on any land beyond the Solid Energy site. This is because the WHO target is based on chronic exposure levels which require substantial and prolonged exposure.
 - d. Accordingly, no person is required to be notified of the application in terms of s95E.
 - e. There are no "special circumstances" with respect to this application which would otherwise warrant notification.

Should the application be fully notified?

4. The Resource Management Amendment Act 2009 removed the presumption that local authorities must publicly notify a resource consent application.
5. The Council is only required to publicly notify the application if it considers, based on the information received, that the proposal will or is likely to have adverse effects on the environment that are more than minor.
6. The Assessment of Effects which accompanied the application, together with the additional information accompanying this letter, has comprehensively addressed all effects that could potentially arise from this proposal.
7. The assessment of whether an effect is "minor", for the purposes of making a decision on full notification, is a matter of degree. The term "minor" has been interpreted by the Courts to mean effects that are less than major, or more than simply minute or slight, and are determined after having regard to any mitigation that might be achieved by imposing conditions¹. It is at the lower end of the scale of major, moderate, and minor effects, but must be something more than *de minimus*².
8. We understand that the Council's air quality advisors agree with Solid Energy's advisors, SKM that the effects of the air discharge overall (including SO₂) will be no more than minor.
9. In our opinion, the information that has been provided is both sufficient and reliable in enabling the Council to reach a conclusion that the activity will not have any adverse effects on the environment that are more than minor. Consequently, full notification is not required.

Should the application nonetheless be limited notified?

10. Even if the application is not publically notified, the Council must still notify any affected person. An affected person is a person on whom the affects of the activity will be "minor" or greater (s95E). In 2009, s95E changed the threshold test for affected persons. The Act now provides that a person is not affected for the purposes of limited notification if the effects are less than minor, rather than the more onerous "*de minimus*" test that previously applied³.
11. We understand that the Council's technical advisors agree that the only aspect of the proposal which may lead to the need for limited notification is the potential discharge of SO₂. The question in this context, then, is whether there are effects on any person from the discharge of SO₂ (amongst other things) which are "less than minor", as distinct from "minor".
12. It is our opinion that the information provided by Solid Energy establishes clearly that effects of the discharge are less than minor on all persons having regard to:
 - a. The National Environment Standard for air quality;

¹ *Bethwaite v Christchurch City Council* C85/93.

² *King v Auckland City Council* [2000] NZRMA 145 (HC).

³ The *de minimus* test is discussed in *Bayley v Manakau CC* [1999] NZLR 568.

- b. The 2000 Ministry for the Environment Ambient Air Quality Guidelines; and
- c. The World Health Organisation Ambient Air Quality Target for SO₂.

AirNES

- 13. The AirNES Ambient Air National Environmental Standard includes concentration levels for SO₂. This Standard is the appropriate one against which the council should assess the application in terms of likely effects. The standard consists of a value that must never be exceeded (570 ug/m³, 1 hour mean) and a value that can be exceeded up to 9 times a year (350 ug/m³, 1 hour mean). This means levels of SO₂ can be higher than 350 ug/m³ for nine hours each year, but must never be higher than 570 ug/m³.
- 14. In our opinion, there is a strong argument that these limits constitute the levels above which a person could be considered to be affected in terms of s95E.
- 15. Modelling of ground level concentrations by SKM shows that the discharge will result in ground level concentrations significantly below the AirNES Standard for SO₂. So, if the Council were to take a more conservative approach than identified in the paragraph above, it might wish to apply either the MfE guidelines or adopt the approach used in the Otago and Canterbury Regional air Plans.
- 16. The Ministry's categorisation of air quality, based on the AirNES, is that peak concentrations less than 33% of the 24 hr SO₂ NES (that is, 40 ug/m³) are unlikely to affect air quality. The modeled concentrations are all below this level.

2002 MfE Guidelines

- 17. The Ministry for the Environment's May 2002 Ambient Air Quality Guidelines also provide SO₂ guidelines in addition to those contained in the AirNES Ambient Air Standard. The Ministry for the Environment's May 2002 Ambient Air Quality Guidelines for SO₂ are:
 - a. 350 ug/m³ (as a 1 hour average);
 - b. 120 ug/m³ (as a 24-hour average); and
 - c. The critical level for ecosystems (lichen) of 10 ug/m³.
- 18. The SKM report confirms that SO₂ concentrations at all neighbouring properties are significantly below the Ministry for the Environment's May 2002 Ambient Air Quality Guidelines.
- 19. Even more conservatively, if the Council were to use the Canterbury and Otago RAAQT (Regional Ambient Air Quality Target 24 hr SO₂ of 80 ug/m³), and then to apply the MfE air quality category (even though the categories are not supposed to apply to less than the AirNES levels), that would result in a 33% criteria 24 hr SO₂ of 26.6 ug/m³. Again, the modeled concentrations are all below this level at all residences.
- 20. The AirNES and the 2000 MfE Guidelines are specifically intended to set conservative levels below which effects are insignificant. Consequently,

because the predicted ground level concentrations beyond the Solid Energy site are significantly below both the AirNES and the 2002 Air Quality Guidelines, we consider that no person is affected by the proposed discharge to air.

WHO SO₂ Target

21. In undertaking its assessment of whether any person is affected, should the Council also have regard to the World Health Organisation Ambient Air Quality target 24 hour SO₂ ambient levels?
22. For the reasons which follow, in our opinion it is incorrect to use the WHO target as a basis for determining whether a person is affected for the purposes of s95E.
23. The WHO Ambient Air Quality target for SO₂ is based on studies of air quality in Hong Kong and London. Accompanying this letter is a 2008 report on the use of the WHO Guideline values in the New Zealand context.⁴
24. That report concludes that applying the 24 hour WHO Ambient Air Quality Target of 20ug/m³ in New Zealand is inappropriate for the following reasons, (pages 39 - 40):
 - a. NZ airsheds have a significantly different admixture of air pollutants than those of the international studies and therefore dose-response relationships for 24-hr SO₂ versus health outcomes are likely not to be the same as found in Hong Kong or European cities;
 - b. NZ airsheds typically have much lower levels of other pollutants than the case study areas;
 - c. On review of the full WHO report, it becomes clear that a philosophical change is partly behind the recommendation to lower 24-hr SO₂ guidelines. WHO argues for adoption of a "prudent precautionary" approach when there is considerable uncertainty amongst the researchers regarding the likely cause of statistical associations between SO₂ and population health statistics. However, researchers either did not find a statistical association with health effects and 24-hr SO₂, or where they did, they generally concluded that SO₂ was likely to be a surrogate for their compound(s) that were likely to be causing the observed health trends; and
 - d. In New Zealand, the typical exposure levels are much lower for the population than the measured values displayed in the figures in this report. It is only small, localised, areas that are close to industrial discharges (typically within a few hundred metres of industrial sites) that exhibit similar peak 24-hr SO₂ levels, but again the distribution of ambient levels is likely to be different. Therefore the population health risk associated with international monitoring data is not directly transferable to New Zealand circumstances.

⁴ Review of the World Health Organisations Guideline for 24-hour Sulphur Dioxide – Implications for New Zealand, Environ Medical Services Ltd, Francesca Kelly and Roger Cudmore (copy attached)

25. The WHO target has no statutory standing in New Zealand. Because the New Zealand circumstances differ as described in the 2008 report, unless and until the target is recognised in New Zealand it is inappropriate to base a decision on notification around the SO₂ target.
26. Having said that, however, even if the target level of 20ug/m³ were considered to be the appropriate threshold for the purposes of section 95E, the proposed discharge would not result in concentrations reaching or exceeding that target at any locations beyond the site. This is the case for both:
 - a. The predicted concentrations at neighbouring residences; and
 - b. The predicted concentrations on rural land with no residences beyond the Solid Energy site.
27. It is important to recognise that the WHO target relates to chronic rather than acute exposure. That is, the target of 20ug/m³ relates to day-in and day-out exposure to SO₂, at which level the WHO states that there will be no risk to human health.
28. Detailed modelling has been done to map the patterns of likely maximal concentrations of SO₂, over both short and long term periods relevant for health. The methods used in the modelling present a "worst case scenario".
29. In terms of neighbouring residences, the worst case modelled concentrations resulting from the pilot plant alone show that the WHO target of 20 will never be exceeded. This confirms that the SO₂ concentrations will, in terms of the WHO report, result in no risk to health.
30. In terms of effects on vacant rural land beyond the Solid Energy site, the modelling shows that for the pilot plant alone, concentrations will exceed 20 on only 1 day in any one year on one area of land only. The owner of that land will be on that part of the land only infrequently compared with at the residence. Hence, their exposure will be even less than at the residences. This level of exposure is therefore also significantly less than the "no risk" level.
31. Even using the extremely conservative approach suggested in the second to last paragraph on page 3 of the SKM memo, this indicates no effects.
32. SKM have also modelled the worst case scenario of the briquetting plant discharges being cumulatively assessed with discharges from the Dongwha plant using coal. While the Dongwha air discharge permit allows that company to use coal, it never has used coal, and discussions with Dongwha senior management have confirmed that there is no intention to do so. So, the cumulative effects assessed by SKM in its report are unlikely to ever occur.
33. The appropriate model to use when considering the (highly unlikely) cumulative effects of the pilot plant and the Dongwha plant is the Calpuff model rather than the Ausplume model (for the reasons set out in the SKM memo). The use of the appropriate model confirms that there will be no exceedences of the 20 target at any time at any residence or vacant land beyond the Dongwha site itself. Consequently, the Council can be satisfied that even in this (highly unlikely) worst case scenario, the ground level

concentrations of SO₂ will be below the level of no effect, as determined by WHO.

34. Accordingly, even if the WHO target were used as the measure for assessing who is affected, no persons are affected in terms of section 95E.
35. Moreover, it is important to recognise that the limited notification test is distinct from the test of full notification because it relates to effects on *persons*, not the *environment*. That is, when considering who is affected it is persons as they are now, not persons who might be present in the future. We understand that the Council may take the view that if houses could be built on vacant farm land, then persons who might live in those houses (if they are built) should be considered to be affected, on the basis that this represents the 'future environment'. In our opinion this approach is incorrect in law. Having said that, however, for the reasons set out above, even if the Council were to adopt that approach, SO₂ levels at such possible future residences will still be well below the WHO target level.
36. We understand that some individuals have contacted the Council to request that the application be notified. There is a distinction between an "affected person" (for the purposes of s95E) and an interested person. The fact that a person has signalled that they have an interest in a particular proposal does not necessarily lead to the conclusion that they are adversely affected for the purposes of determining notification. Concern or interest of other persons is not an end in itself – if that was so, every application would have to be advertised on that basis⁵.
37. Accordingly, because no person is affected by the proposal for the purposes of s95B, there is no lawful basis in our opinion for processing the application on a limited notified basis.

Are there special circumstances which nonetheless warrant full notification?

38. Section 95A(4) of the RMA provides:

Despite subsection (3), a consent authority may publicly notify an application if they decide that special circumstances exist in relation to the application.

39. This is a matter for the discretion of the Council. It is an enabling power which a consent authority may, but is not obliged to exercise. For the reasons set out below, it is our opinion that no special circumstances exist in this case.
40. "Special circumstances" means circumstances which are unusual or exceptional but not necessarily extraordinary or unique⁶.
41. Circumstances which are "special" are those which make notification desirable, notwithstanding that notification is not otherwise required under s95A⁷.
42. If what is proposed is specifically envisaged by the District Plan, it could not be described as being out of the ordinary, nor give rise to special

⁵ *Bayley v Manukau City Council; Housiaux v Kapiti Coast District Council* CIV-2003-485-2678.

⁶ *Peninsula Watch Dog Group (Inc) v Minister of Energy* [1996] 2 NZLR 529 (CA).

⁷ *Murray v Whakatane DC* [1997] NZRMA 433 (HC). This case was decided prior to the 2009 amendments removing the presumption to notify. However its consideration of "special circumstances" remains persuasive.

- circumstances. The fact some persons have concerns about a proposal does not give rise to "special circumstances".⁸
43. Furthermore, the belief of the consent authority that a proposal may be contentious, while potentially a contributing factor, will not in and of itself amount to "special circumstances".⁹
 44. Where there is no evidence of adverse effects likely to arise from an activity, it is unlikely that "special circumstances" requiring notification could be justified.¹⁰
 45. We are aware of one case¹¹ (involving an application for consent for a four lot bush subdivision) where the council decided that a special circumstance may exist due to a heightened public awareness and concern in relation to a number of similar proposals that had preceded the present one.
 46. The Court held in that case that there was a particular public interest in subdivisions in the area, and the Council was aware of this interest, and therefore a special circumstance would exist. The Court acknowledged that such an interpretation would be the case particularly where there was an evident history of public interest or concern through the earlier hearings.
 47. That case should be distinguished for a number of reasons. First, the "special circumstances" were not considered strictly relevant in that case as the Council was able to rely on other factors to publicly notify the application. In our opinion, no additional factors arise in the case of the pilot briquetting plant.
 48. Furthermore, the interest in the pilot briquetting plant which is being shown by some individuals (Southland residents and others) is not of the sort envisaged by the Court in *North Holdings Limited*. In that case, there had been a number of previous applications for similar activities (subdivision) and that led the Court to the conclusion that special circumstances existed. The pilot briquetting plant is not the latest in a string of similar applications. It is a stand alone application that should be considered independent of any public opinions that may be expressed about Solid Energy's possible future involvement in Southland.
 49. The pilot briquetting plant appears to be contentious to at least some people. Those concerns arise, not from the effects of the proposal, but rather from what they perceive to be future or subsequent activities for which consent is not sought. When considered in light of the technical evidence which concludes that the effects of the proposal are no more than minor, the interest in the project by some individuals is not enough to amount to special circumstances.
 50. The proposed activity will be located on a site that is zoned Industrial, and which has previously been used for industrial activities. This activity is no different than another industrial activity with the same effects. If special circumstances applied to this activity, any similar industrial activity on the site would have to be treated in the same manner.

⁸ *Bayley v Manukau CC* [1998] NZRMA 396 (HC).

⁹ *Murray v Whakatane DC*.

¹⁰ *Fullers Group Ltd v Auckland RC* [1999] NZRMA 439 (CA).

¹¹ *North Holdings Limited v Rodney DC* High Court, Auckland, CIV 2002-404-2402, 11 September 2003, Lenning J.

51. The effects arising from the proposed activity are anticipated by the District Plan. It is not plausible for an activity with effects anticipated by the District Plan to create special circumstances required notification, simply because there has been some interest expressed in the project. To notify in such circumstances would in our opinion amount to an error of law. We consider that it is entirely lawful and appropriate for the application to be processed on a non-notified basis.
52. We would be happy to discuss the contents of this letter with you if that would be of assistance.

Yours faithfully
Anderson Lloyd



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