

Gatwick Airport Limited

Response to Airports Commission Consultation

Appendix

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Helistrat - Place: Waste Report

Technical Report in
Response to Airports
Commission
Consultation

Module 10: Place
(Waste
Management)

January 2015

Gatwick Airport's Technical Report in response to Airports Commission Consultation

Objective 10: Place - Waste

CONTENTS

Executive Summary

1. Introduction
2. Exclusions from this report
 - a. Energy from Waste re-provision at Heathrow
 - b. Landfill
3. Demolition and Construction Waste
 - a. Corrections to the AC's interpretation of the Gatwick scheme and the mitigation strategies
 - i. Waste forecasts provided with relevant benchmark data
 - ii. Geo-environmental/site remediation strategy to reduce off-site disposal
 - iii. Construction Waste Management Plan
 - iv. Onsite processing and sorting at the Waste Consolidation Centre
 - v. Onsite liquid treatment facility to mitigate offsite transportation and prevent pollution of groundwater and surfacewater
 - vi. Construction Consolidation Centre to limit transportation movements
 - vii. Development of a biomass boiler for construction related food waste to generate hot water
 - b. Commentary on the relative performance and alignment (AC April 2014) of the short listed schemes:
 - i. Gatwick scheme
 - ii. Heathrow NWR scheme
 - iii. Heathrow ENR scheme
4. Operational Waste
 - a. Corrections to the AC's interpretation of the Gatwick scheme and the mitigation strategies
 - i. Self-sufficient concept to waste management to reduce transportation impacts and increase recycling
 - ii. Innovative use of technologies to reduce waste going to landfill/incineration
 - iii. Reduce the reliance on regional waste recycling, treatment or disposal facilities
 - iv. Innovative use of biogas to vehicle fuel for ground transport
 - b. Commentary on relative performance and alignment (AC April 2014) of the short listed schemes:
 - i. Gatwick scheme
 - ii. Heathrow NWR scheme
 - iii. Heathrow ENR scheme
5. Conclusions

Executive Summary

General Comments

The Airport Commissions Appraisal Framework (Module 10 - Place) requested information on how promoters propose to manage and dispose of waste during the construction and operation of a further runway development and how any contaminated elements would be disposed of.

In its May 2014 Updated Scheme Design Submission Gatwick set out how it would propose to manage waste during the construction and operation phases of its second runway proposal.

Gatwick's submissions included a Waste Technical Report including the required Construction Waste Management Plan (CWMP) and separate Geo Environmental Report into ground conditions and potential contamination. The former described how, during both construction and operational phases, Gatwick's proposals are designed to reduce impacts to the environment through waste minimisation, reuse, recycling, recovery and the diversion of waste from landfill where possible. The latter report concludes that the R2 development site is likely to be generally free of contamination, with the exception of some relatively small amounts of hazardous wastes.

Our reading of the AC's Consultation Report, Business Case and Sustainability Assessment for Gatwick Airport Second Runway and supporting technical reports generally reflect the findings of our work but also suggest some misunderstanding of some aspects of our proposals including a misinterpretation about the provision of an 'Energy from Waste' plant.

In contrast to Gatwick's submission, the promoters of the Heathrow schemes have not provided the information that the AC requested in the Appraisal Framework in relation to *'including details of a contamination assessment and how any contaminated elements will be removed, transported and disposed of (AC's Appraisal Framework - paragraph 10.22).'* So far as we are aware, no information was provided by Heathrow ENR scheme, and very limited information from Heathrow NWR scheme. Had this information been provided, the AC would have been alerted to the very significant challenges faced by the Heathrow schemes. We have prepared our own report to assist the AC on this matter (See GAL's *Review and Commentary on Airports Commission Document and Module 16: Delivery*). In relation to the London Heathrow schemes, we consider that the Commissions reports and findings on the operational and in particular the construction waste implications of the short listed schemes have therefore not fully reflected the challenges that the two Heathrow schemes would present.

Construction Waste

Gatwick

Gatwick's geo-environmental report identified that contaminated soils would be negligible. With the exception of some small quantities of asbestos and hazardous construction waste that would need to be sent to landfill or high temperature incineration, other contaminated materials found would be reused on site in conjunction with a Site Remediation Strategy and Materials Management Plan, which formed part of the CWMP. Based on the project's timeframe, desktop studies that have been undertaken and GALs track record of recycling and reuse of demolition, earthworks and construction waste, only a very small level of waste is therefore predicted to be disposed of off-site, and this is well within the regional treatment and disposal capacities.

Gatwick's Construction waste Management plan includes proposals to:

- Provide a Construction Consolidation Centre to optimise deliveries
- Create a Waste Consolidation Centre to sort and bulk waste for reuse & recycling

- Create a tankering facility to control surface water contamination and sediment treatment
- Utilise the on-site concrete crushing and shredding facilities
- Develop a waste food biomass boiler to generate hot water

The Gatwick submission therefore sought to provide the information requested by the AC's Appraisal Framework. This is in stark contrast to the information provided by Heathrow NWR and Heathrow ENR outlined below.

Heathrow ENR

The Heathrow ENR submission has:

- Limited information provided in the submission regarding construction waste
- No geo-environmental assessment has been included in the submission
- Risks and mitigation measures have only been considered at a very high level and do not include any relevant aspects usually expected in a contamination assessment

The Heathrow ENR submission does not provide the level of information requested by the AC's Appraisal Framework. (Jacobs, 10.Place – Assessment, Ch.5, page 142).

Heathrow NWR

The overall consideration of construction waste management contained within the HAL submission is limited.

- Absence of a detailed Construction Waste Management Plan (CWMP).
- No forecasting of waste arisings resulting from the construction process is contained within the document.
- The Geo Environmental Assessment supporting document only makes reference to the need to manage waste appropriately during construction, to complete a Materials Management Plan, and mitigate the loss of agricultural soils, no further detailed plans or proposals are obvious from the documents which have been made available.

The Heathrow NWR submission does not provide the level of information requested by the AC's Appraisal Framework (Jacobs, 10.Place – Assessment, Ch.5, page 125).

Operational Waste

Gatwick

In its Business Case and Sustainability Assessment report, The Airport's Commission states *'The scheme promoter [Gatwick] has identified that a new energy from waste plant could form part of the scheme's waste strategy'* (Jacobs, 10.Place – Assessment, page viii). Whilst Gatwick's Engineering plans and Mitigation Strategy is proposing an Anaerobic Digestion (AD) plant as part of an energy centre, we would wish to make clear to the AC that this is not an Energy from Waste Plant.

Heathrow Schemes

By contrast with Gatwick's submissions, the Heathrow ENR assessment by the AC's consultants Jacobs states'At this stage of the process, the scheme promoter has provided insufficient detail

relating to proposed plans and strategies for managing construction and operational wastes. Neither does the submission contain a contamination assessment (Jacobs, 10.Place – Assessment, page viii).’

The Commission is also right to record that the lack of information submitted by the Heathrow NWR scheme would present a delivery risks to the current Heathrow operation as well as regionally. Jacobs state, *‘No details of utilities’ resilience plans to cope with increased levels of waste generated during operational phase are contained in the [Heathrow NWR] submission. Lack of consultation with local waste utility providers could have implication for the local waste management capacity (Jacobs, 10.Place – Assessment, Ch.5, page 126).’*

Overall

GAL’s proposals support a shift from the predominantly off-site treatment and disposal practice to on-site management and self-sufficiency for the construction and operational phases of the development. This shift will reduce the potential impacts on regional waste treatment and disposal capacities for the current limited recycling, treatment and disposal facilities, as well as actively contributing to long term social, economic and environmental goals for the South East and UK.

In contrast, the information on the Heathrow schemes lack detail. Additional work undertaken by GAL demonstrates that both shortlisted Heathrow schemes are expected to encounter major construction challenges, including significant geo-environmental issues including existing landfill sites and in the case of Heathrow NWR, the development of new Energy from Waste, Clinical Waste, and Materials Recycling facilities. The Commission is right to record that these aspects would present a major delivery risks to the Heathrow schemes based on the very limited data provided by both Heathrow schemes, the regional impacts of relocating the Clinical Waste Incinerator (10,250tpa), the Materials Recycling Facility (40,000tpa), and the Energy from Waste plant (400,000tpa), as well as the excavation of up to 9 million cubic metres of multiple historic industrial landfill sites of which 1 million cubic metres could be contaminated, and require their remediation on site or re-deposit into limited regional hazardous waste sites (See Gal’s *Review and Commentary on Airports Commission Document; RSK Heathrow NWR Commentary on Landfills & Ground Conditions Report; and Module 16: Delivery*).

The AC should establish all the facts and compare each of the short listed schemes against the Appraisal Framework requirements to allow a pragmatic review of all the schemes together. Therefore for purposes of comparison, waste forecast figures for the demolition and construction phases should be sought for the Heathrow schemes and include contaminated land and excavated landfill quantities. Where there are gaps in information that have been requested by the AC, these should be provided to ensure a compliant process has been attained from all of the short listed schemes.

To conclude, the Gatwick submission appears to have met the requirements of the requested information by the AC’s Appraisal Framework and sets out how construction and operational waste is proposed to be managed. In contrast the Heathrow ENR and Heathrow NWR schemes did not provide sufficient detail or information to allow the AC to adequately compare the scheme submissions.

1. Introduction

Following a review of the Airport Commissions Consultation Document (Nov 2014) and the supporting information provided about the three proposed schemes, it will be important for the AC to understand clearly what the proposals entail, and what their consequences might be for the local environment. With this in mind and being cognisant of the aim of the Consultation Documents, GAL have outlined in this report areas for clarification and further consideration by the AC.

This report seeks to answer Q5 of The Consultation Questions raised by the AC in relation to 10. Place - Waste:

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| <i>Questions inviting comments on specific areas of the Commission's appraisal</i> | <i>Q5: Do you have any comments on how the Commission has carried out its appraisal of specific topics (as defined by the Commission's 16 appraisal modules), including methodology and results?</i> |
|--|--|

GAL's reading of the AC's Consultation Report, Business Case and Sustainability Assessment for Gatwick Airport's Second Runway and supporting technical reports generally reflect the findings of our work but also suggest some misunderstanding of some aspects of our proposals including a misinterpretation about the provision of an 'Energy from Waste' plant.

We consider that the Commission's reports and findings on the operational and in particular the construction waste implications of the short listed Heathrow schemes have not fully reflected the challenges that the two Heathrow schemes would present. We consider that this is in part due to the fact that, unlike Gatwick's submission, the promoters of the Heathrow schemes have not provided the information that the AC requested in the Appraisal Framework for example in relation to *'including details of a contamination assessment and how any contaminated elements will be removed, transported and disposed of.'*

This report seeks to identify where the AC has misinterpreted elements of the Gatwick scheme and to highlight where more information should be adduced for the Heathrow schemes to allow a fair comparison and a proper understanding of how the three short listed schemes compare.

2. Exclusions from this report

a. Energy from Waste re-provision at Heathrow

Elsewhere in our response we observe that the proposed Heathrow North West scheme is expected to encounter major construction challenges due to the need to decommission and re-provide a new Energy from Waste (EfW) facility, as well as the Clinical Waste Incinerator and the Materials Recycling Facility that forms a part of the Grondon Integrated Waste Management Complex. The EfW is referred to by Heathrow, however the complex in its entirety (EfW, MRF, & Clinical Waste) has not been identified within the Heathrow submission. The Commission is right to record that these aspects would present a major delivery risks to the Heathrow NWR option based on the very limited data provided by the Heathrow NWR scheme, as well as the regional impacts of relocating the Clinical Waste Incinerator (10,250tpa), the Materials Recycling Facility (40,000tpa), and the Energy from Waste plant (400,000tpa). This topic is addressed further in our response on construction and delivery module.

b. Landfill

Gatwick has hardly any landfilled area within the GAL scheme. Heathrow by contrast encounter 21 landfills containing up to 9 million cubic metres of multiple historic household, commercial and industrial waste, of which up to 1 million cubic metres could be contaminated for the Heathrow NWR scheme which is significantly higher than for GAL. The Heathrow ENR scheme will also encounter major landfill sites. The potential volumes, waste types, available regional capacities, environmental risks, geotechnical challenges, nuisance factor and operational safety of an active airport requires a much more detailed understanding. This topic is addressed further in our response on construction and delivery module (See Gal's *Review and Commentary on Airports Commission Document; RSK Heathrow NWR Commentary on Landfills & Ground Conditions Report; and Module 16: Delivery*) to identify the potential operational and programme constraints associated with the Heathrow proposals.

3. Demolition and Construction Waste

a. Corrections to the AC's interpretation of the Gatwick scheme and the mitigation strategies

- i. Waste forecasts were provided by GAL as well as relevant benchmark data for construction waste generated during the construction of new infrastructure and buildings. The rates that were incorporated into the GAL proposal are in line with the Building Research Establishment (BRE) benchmark rates and were deemed a reasonable assumption as the BRE guidance provides published generation rates based on large-scale projects.

The AC's consultant Jacobs stated that '*Due to the considered low levels of robustness of available benchmark data, and the limited application to the proposed airport schemes, it is considered inappropriate at this stage to include any quantified assessment of likely construction waste forecasts for each of the schemes (Jacobs, 10.Place – Assessment, page vi).*' In our view this statement can only apply to the Heathrow schemes as the Gatwick proposal clearly identified the basis of the forecasted waste volumes that would be produced during the demolition and construction phases of the GAL scheme. All schemes were asked to present waste forecast figures by the AC. Therefore for purposes of comparison, waste forecast figures for the demolition and construction phases should be sought for the Heathrow schemes and include contaminated land and excavated landfill quantities.

- ii. The GAL geo-environmental and site remediation strategy to reduce off-site disposal was based on a preliminary desktop assessment, forecasted volumes of contaminated material from earthworks that were assumed to be negligible as a result of the proposed soil remediation strategy outlined in the geo-environmental report.

The Heathrow schemes have not presented any waste forecast volumes for contaminated land. This is surprising since it was requested in the AC's Appraisal

Framework. GAL have sought to assist by providing further information in its response on Delivery and supporting report (See 2.b. Landfill above).

- iii. The AC requested that *'an assessment of a scheme's waste management plans, and their potential impacts on environmental or other factors'* be prepared by the scheme promoters. GAL submitted a detailed Construction Waste Management Plan (CWMP) outlining the strategy and actions to manage and mitigated waste where ever possible in-line with the UK's waste hierarchy.

When considering the Heathrow schemes, the AC consultant Jacobs stated that *'the overall consideration of construction waste management contained within the HAL submission is limited by the absence of a detailed Construction Waste Management Plan (CWMP)' (Jacobs, 10.Place – Assessment, Ch.5, page 125).* When Jacobs refer to the Heathrow ENR proposal, they state *'the overall consideration of the construction waste management contained within the HH submission is limited by the absence of a Construction WMP (Jacobs, 10.Place – Assessment, Ch.5, page 138).'*

To allow a fair comparison, it will be important to understand how the Heathrow schemes propose to manage Construction Waste. In absence of a fair comparison, it will not be possible to evaluate the environmental impacts as required by the AC's Appraisal Framework.

- iv. The AC's conclusions have not reflected the further mitigating measures that were incorporated into the GAL submission to manage and reduce environmental impacts during construction:

- Onsite processing and sorting at the proposed Waste Consolidation Centre to optimise source segregation of reusable or recyclable materials; reduce transportation movements on and off site; bulk up loads; and manage skip conveyances on site.
- Onsite liquid treatment facility to mitigate offsite transportation and prevent pollution of groundwater and surfacewater
- Construction Consolidation Centre to limit transportation movements and optimise Just-in-Time deliveries and efficiencies.
Development of a biomass boiler for construction related food waste to generate hot water and reduce off site movements

These mitigation measures demonstrate GAL's understanding of the potential environmental impacts associated with construction and how to limit the effects on the local community and environment.

- b. Commentary on the relative performance and alignment of the Airport Commissions Appraisal Framework (April 2014) in relation to each scheme promoter.

- i. Gatwick scheme

The GAL submission strived to address each aspect of the AC's Appraisal Framework to demonstrate how waste would be managed during the construction and operational phases of a further runway development including how any contaminated elements would be removed or disposed of. The minimisation, reuse and recycling of waste, and the diversion of waste from

landfill during construction and operational phases of the development are key drivers for GAL and have been acknowledged by the AC's consultant.

We are pleased that the AC recognises this, Jacobs state *'The approach for identification and management of construction and operational waste outlined by the [GAL] scheme promoter is well considered, and adopts the principles of the waste hierarchy (Jacobs, 10.Place – Assessment, Ch.5, page 115).'*

ii. Heathrow NWR

In contrast to the Gatwick submission, the HAL submission only outlines what was requested by the AC and does not provide forecasted construction waste figures. This does not allow a full comparison against the GAL submission. The AC's consultant Jacobs state, *'As a result of reviewing the HAL submission against the Appraisal Framework provided by the Airports Commission, (Airports Commission, 2014a) it is considered that the scheme promoters have considered construction wastes associated with the development but only in outline. A lack of construction waste arisings forecasts means that proposals for managing waste materials effectively and sustainably are generic (Jacobs, 10.Place – Assessment, page viii).'*

iii. Heathrow ENR scheme

The Heathrow ENR submission, like the Heathrow NWR scheme, provides only very limited and incomplete information. This does not allow a full comparison against the GAL or HAL submission and is therefore incomplete. The AC's consultant Jacobs state, *'At this stage of the process, the scheme promoter has provided insufficient detail relating to proposed plans and strategies for managing construction and operational wastes to determine whether these will be effective in mitigating the environmental impacts of waste management on place (Jacobs, 10.Place – Assessment, Ch.5, page 143).'*

In the absence of information, this does not allow the AC to come to a balanced view of all the submitted schemes. This understanding needs to be rectified in order to properly compare the short listed schemes.

4. Operational Waste

a. Energy from Waste mitigation

In its Business Case and Sustainability Assessment report, The Airport's Commission states *'The scheme promoter [Gatwick] has identified that a new energy from waste plant could form part of the scheme's waste strategy'*. It is important to clear up confusion on this point. Whilst Gatwick's Engineering plans and Mitigation Strategy is proposing an Anaerobic Digestion (AD) plant we would wish to make clear to the AC that this is not an Energy from Waste Plant. The proposed AD plant is a local, on airport, small scale facility that is proposed to be operated in association with the existing Thames Water wastewater treatment facility. The AD plant will generate biogas from airport waste streams such as food waste, sewerage and other organic wastes. The quantities of biogas generated would be used as a supplementary fuel to the proposed Energy Centre, and /or utilised in a biogas-to-vehicle fuel facility for airport ground transport fleets.

Whilst the AC would be right to flag deliverability concerns for (major) Energy from Waste schemes, it is hoped that this explanation has clarified that Gatwick is not proposing such a facility. As such we consider that the delivery risks about which the AC would rightly be concerned about if Gatwick was promoting a new EfW facility, are far lower in association with the proposed Anaerobic Digester plant that would be located adjacent to the new Energy Centre and the existing Thames Water STW facility identified in the submission. Recent examples of similar schemes can be seen in Avonmouth at Bristol STW, where an Anaerobic Digestion plant and STW plant collaborate.

b. Commentary on relative performance and alignment (AC April 2014) of the Gatwick, Heathrow NWR and Heathrow ENR:

i. Gatwick scheme

The AC's consultant Jacobs states ...*'The approach for identification and management of (construction and) operational waste outlined by the scheme promoter is well considered, and adopts the principles of the waste hierarchy... and a ...range of proposals put forward to manage the additional waste volumes arising from the Gatwick 2R scheme (Jacobs, 10.Place – Assessment, Ch.5, page 115 & 111).'*

It is observed by Jacobs that....*'No detailed analysis has been carried out by GAL of existing or future regional capacity to manage operational wastes, although the submission acknowledges this as being required should the scheme progress.'* Based on GAL's waste forecast and mitigation strategies, the proposed volumes of operational waste will be well within the regional treatment and disposal capacities due to the self-sufficient concepts proposed in GAL's submission and the ongoing commitments to recycling 70% by 2020.

ii. Heathrow NWR scheme

The Heathrow NWR submission forecasts passenger numbers for 2030, 2040 and 2050 are in line with the Jacobs estimates for 'Do Something'. However, Jacobs state that the...*'use of waste treatment providers is identified as the preferred option for management of operational waste, rather than additional on-site waste management capacity (Jacobs, 10.Place – Assessment, Ch.5, page 126).'* We consider that this will pose operational issues for the Heathrow scheme to ensure continuity of waste capabilities within the region as well as an increase on local traffic.

A part of the Heathrow proposal is the re-provision of the existing Lakeside Energy from Waste plant, Clinical Waste Incinerator, and Materials Recycling Facility. The AC recognises that *'delays or failure to re-provision could reduce capacity to treat and manage operational waste, transport and emissions off-site could increase, as a consequence of waste being transferred further for treatment. Any loss or delay could impact on the overall regional waste treatment capacity (Jacobs, 10.Place – Assessment, Ch.5, page 121).'*

The AC is correct to highlight this as a major concern due to the risks of delivering the Heathrow NWR scheme and the protection of these regionally significant facilities. The Heathrow proposals during operation do not appear to be innovative or address the local impacts of additional transportation movements.

iii. Heathrow ENR scheme

By contrast with Gatwick's submissions, the Heathrow ENR assessment by the AC's consultants Jacobs states ...'*At this stage of the process, the scheme promoter has provided insufficient detail relating to proposed plans and strategies for managing construction and operational wastes to determine whether these will be effective in mitigating the environmental impacts of waste management on place A further notable absence is the presence of a WMP for operational waste (Jacobs, 10.Place – Assessment, Ch.5, page 143 & 144).*'

The current Heathrow ENR proposal does not appear to have addressed the requirements set out in the AC's Appraisal Framework (paragraph 10.6) that states '*....the waste produced during the (construction and) operation of an airport, and how this will be managed, will also be assessed.*'

5. Conclusions

GAL's proposals support a shift from the predominantly off-site treatment and disposal practice to on-site management and self-sufficiency for the construction and operational phases of the development. This shift will reduce the potential impacts on regional waste treatment and disposal capacities for the current limited recycling, treatment and disposal facilities, as well as actively contributing to long term social, economic and environmental goals for the South East and UK.

In contrast, the information on the Heathrow schemes lack detail. Additional work undertaken by GAL demonstrates that the Heathrow schemes will encounter major construction challenges, including significant geo-environmental issues and, in the case of Heathrow NWR, the decommissioning and development of new EfW, Clinical Waste, and MRF facilities. The Commission is right to record that these aspects would present a major delivery risks to the Heathrow schemes based on the very limited data provided by both Heathrow schemes, the regional impacts of relocating the Clinical Waste Incinerator (10,250tpa), the Materials Recycling Facility (40,000tpa), and the Energy from Waste plant (400,000tpa), as well as the excavation of multiple existing landfill sites containing up to 9 million cubic metres of multiple historic household, commercial and industrial waste, of which 1 million cubic metres could be contaminated and require their remediation on site or redeposit into limited regional hazardous waste sites (See Gal's *Review and Commentary on Airports Commission Document; RSK Heathrow NWR Commentary on Landfills & Ground Conditions Report; and Module 16: Delivery*).

The AC should establish all the facts and compare each of the short listed schemes against the Appraisal Framework requirements to allow a proper comparison of the short listed schemes.

To conclude, the Gatwick submission provides the information requested by the AC's Appraisal Framework. Information provided by the promoters of the Heathrow schemes is insufficient to allow the AC to adequately compare those submissions with Gatwick's proposals. The Heathrow schemes

will encounter significantly greater challenges in construction, delivery and operation and the relative performance of the schemes is not currently reflected in the Commission's assessment.

To summarise the question raised by the AC, please see GAL's summary comments in the table below.

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| <p><i>Q5: Do you have any comments on how the Commission has carried out its appraisal of specific topics (as defined by the Commission's 16 appraisal modules), including methodology and results?</i></p> | <p>The information provided by the Heathrow promoters is generic and not detailed enough for the purposes of assessment according to the AC's consultant Jacobs.</p> |
| | <p>The AC's Appraisal Framework was quite specific on what information was requested. It is regrettable that the promoters of Heathrow NWR and Heathrow ENR have not provided this information. This has hindered the AC's work but it is important that the AC does undertake work on the Heathrow schemes to enable a proper understanding of the construction and operational waste implications. If the information has not been provided, is there an underlying reason behind the lack of information i.e. the disposal of historic landfill and contaminated land posing too much of a cost burden?</p> |
| | <p>The methodologies used by the AC to compare schemes is biased against construction waste. The practice of disregarding construction waste volumes based on the fact that the Heathrow schemes did not provide sufficient information for evaluation appears un-balanced.</p> |