

**Response to Comments on Preliminary Construction Permit No.
AQ0934CPT01
Donlin Gold, LLC – Donlin Gold Project**

Prepared by Brittany Crutchfield June 30, 2017

This document provides the Alaska Department of Environmental Conservation's (Department's) reply to all public comments on the preliminary decision to issue Construction Permit No. AQ0934CPT01 to Donlin Gold, LLC (Donlin) for the Donlin Gold Project. The Department provided opportunity for public comment from April 12, 2017 through May 12, 2017. Donlin was the only commenter.

The Department's responses are shown in *Times New Roman italic font*.

Comments on the Permit:

Comments 1 through 17 are verbatim. The remaining comments Donlin submitted as a red line text document with comments. These comments listed here are written explanations of the changes they requested and include any comments listed in that document.

1. Page 1 of 98 – Please replace “Stan Foo” with “Andy Cole” under permit contact. A Responsible Official Add/Change Form was submitted to ADEC under separate cover on May 9, 2017.

Response: *Revised as requested.*

2. Page 8 of 98 – Please replace the single operation year “Rating/size” with the following life of mine ranges to be consistent with the approach used for the remaining “Mining Activities”:
 - a. Dozer – 39,868 – 77,567 hr/yr
 - b. Grader – 3,970 – 45,778 hr/yr

Response: *Revised as requested.*

3. Page 11 of 98 – Please add EU IDs 54 and 58 to Conditions 6.1 and 6.2. These are conveyor drop points with the potential for dust emissions. Please remove EU IDs 113 through 120 from Conditions 6.1 and 6.2. These units are fugitive dust sources (drilling, blasting, etc.) subject to the Fugitive Dust Control Plan under Section 14 of the Permit AQ0934CPT01. The initial compliance verifications under Condition 6.2 are not appropriate for these source types.

Response: *Revised as requested.*

4. Page 11 of 98 – Please remove EU IDs 38, 44, 45, and 113 through 120 from Condition 7. These units do not exhaust through a stack and therefore are not subject to the particulate matter standard listed in this condition.

Response: *Condition 7 was not revised as requested because 18 AAC 50.055(b) applies to all industrial process and fuel-burning equipment. The Department considers these emission units to be part of the industrial process.*

5. Page 13 of 98 – Please replace the word “extinguished” with “terminated (temporarily or permanently) or relocated to outside the COA” in Condition 12 and replace the word

“extinguishing” with “terminating (temporarily or permanently) or relocating to outside the COA” in Condition 12.1, in order to be consistent with Donlin’s Easement Re-route Plan.

Response: The Department left the wording as is. Donlin used the term “extinguished” in Table 1 of their Public Access Control Plan (PACP), which is included as Section 13 of the permit. Therefore, using the term “extinguished” or “extinguishing” in Condition 12 provides consistency within the permit. The proposed parenthetical was also inadequate for permitting purposes since the term “temporarily” erroneously implies that the easement could be re-established during the life of the mine.

6. Page 15 of 98 – Please insert “calculate the hours of operation based on the operation logs if available, otherwise,” after “if the meter is not operational” in Condition 19.3.a to allow for a more accurate account of hours in the unlikely event of an hour meter failure.

Response: Revised as requested.

7. Pages 16, 47, 48, and 97 of 98 – The current language states, “if dust is present, apply water...” regarding fugitive dust activities. For all of these activities, some dust is expected due to the nature of these activities, and Donlin will use best practical methods (BPMs) to reduce this dust in accordance with the Fugitive Dust Control Plan under Section 14 of Permit AQ0934CPT01. The current language as stated could be interpreted to require watering if **any** dust is present at **any** time. Because some dust is expected during most times from these activities (as assumed in the air quality analysis), please revise the current language to, “If **excessive** dust is present” to acknowledge that some dust is inherent with all fugitive dust activities, and preventable measures are only required when excessive or higher than normal dust is observed.

Response: Revised as requested.

8. Pages 25 and 26 of 98 – Please revise “EU IDs 15 through 18 and 21 through 26” to “EU IDs 15 through 18 and 21 through 22” in Condition 27.1.a to exclude EU IDs 23 – 26 from initial compliance requirements to obtain vendor emission guarantees or perform stack tests. EU IDs 23-26 comprise of 184 small building air-condition heaters with a heat input of only 0.86 to 5 MMBtu/hr per unit. Combustion emissions from these units were estimated using the U.S. EPA emission factors from AP-42. Because of the small size of these units, the current compliance requirements are overly onerous and unwarranted.

Response: EU IDs 23 through 26 were not removed from Condition 27.1 for an initial compliance demonstration. U.S. EPA emission factors from AP-42 are determined from an average of emission units, therefore EU IDs 23 through 26 require an initial compliance demonstration to ensure compliance with the BACT limit. The Department does not believe it is overly onerous for the Permittee to obtain a vendor guarantee for an emission unit with a rated capacity of at least 1.0 MMBtu/hr. The Department understands Donlin’s concern with obtaining a vendor guarantee for emission units with a rated capacity of less than 1.0 MMBtu/hr, therefore for these emission units the permit was revised to allow for a certification of rating and fuel type. The Department believes that for these small units this will be sufficient to ensure initial compliance with the BACT limit.

9. Pages 25 and 26 of 98 – Please remove “PM, PM-10, PM-2.5, and VOC” from the list of pollutants requiring initial compliance verification in Conditions 27.1.a and 27.2.b. Because these units burn ultra-low sulfur diesel and/or natural gas, initial compliance verification for these pollutants is unwarranted. The PM, PM-10, PM-2.5, and VOC emissions from the combustion of clean fuels in these units (ranging from only 2 to 29.2 MMBtu/hr per unit) are low, and were based on U.S. EPA emission factors from AP-42.

Response: “PM, PM-10, and VOC” were not removed from Conditions 27.1.a and 27.2.b for an initial compliance demonstration. U.S. EPA emission factors from AP-42 are determined from an average of emission units, therefore these emission units require an initial compliance demonstration to show compliance with the BACT limit. The Department believes requiring the Permittee to provide an initial compliance demonstration is warranted. See related response to Comment 8.

10. Pages 29 and 30 of 98 – Please remove “NOx” from the list of pollutants requiring initial compliance verification in Condition 30.1.b. NOx emissions from this electrically-heated kiln are small (0.02 lb/hr) and do not warrant initial compliance verification.

Response: NOx was not removed from Condition 30.1.b because the BACT emissions limits for EU ID 88 are based on source test data from a similar unit operated at a different stationary source and therefore EU ID 88 requires an initial compliance demonstration.

11. Page 32 of 98 – Please remove Condition 32.1.a. requiring initial compliance verification for EU IDs 85 through 87. These emission units (Hot Cure Tanks) only have steam vents (with no controls), which may, or may not, be small sources of particulates. The PM emission limit of 0.4 lb/hr limit is a highly conservative estimate, used for modeling purposes. Furthermore, the moisture content of the steam vent is expected to be approximately 100%, making stack testing technically infeasible.

Response: The Department removed Condition 32.1.a.(ii) due to source testing being technically infeasible. The requirement to provide documentation for the assumed emission factor as an initial compliance demonstration was revised to also allow for demonstrable engineering calculations. The Department understands it may not be possible to obtain a manufacturer’s guarantee for this type of emission unit.

12. Page 34 of 98 – Please remove EU ID 103 from Condition 35. EU ID 103 comprises of two electric laboratory dryers that are not a source of particulate emissions, and are not vented to the Dust Collector listed in Table 15.

Response: Revised as requested.

13. Pages 37 and 38 of 98 – Please remove EU ID 108 from Condition 35. EU ID 108 is an electric laboratory dryer that is not a source of particulate emissions, and is not vented to the Dust Collector listed in Table 17.

Response: Revised as requested.

14. Page 47 of 98 – Please revise Table 27 so that emissions from EU IDs 113 and 114 correspond with the revised operation limits set in Conditions 17 and 22.2.

Response: Revised as requested. BACT Emission Limit for PM-2.5/PM-10/PM was revised to 273 tpy as this is the correct combined emissions limit for EU IDs 113 and 114. The Department added a note for the particulates BACT Emission Limit to indicate that it is a combined limit.

15. Page 50 of 98 – Please add “(power plant average)” at the end of Condition 46.1 so that it is consistent with Condition 46.1.a. The stack testing required under Condition 46.1.b. will be averaged across the three units to show compliance with the formaldehyde limit.

Response: The Department did not include “(power plant average)” in Condition 46.1 or 46.1.b. The vendor verification for identical units EU IDs 1 through 12 will be the same, therefore a power plant average emission factor is not adequate for determining PTE as only three of 12 units are required to be source tested at a time. Each tested emission unit must meet the required emission factor to ensure the stationary source is in compliance with the ton per year HAPS avoidance limit. The Department removed the term ‘power plant average’ from Condition 46.1a for clarity.

16. Page 57 of 98 – Please add language to Conditions 62.5 and 62.6, which will allow the Permittee to use the results of the total PM test (front half and back half) for any required PM10/2.5 testing provided that all PM is assumed to be PM10/2.5 for compliance demonstration purposes. This will allow for more streamlined testing procedures.

Response: Conditions 62.5 and 62.6 were not revised as requested because Condition 62.7 allows for Department approved alternative test methods.

17. Page 97 of 98 – Please replace “If dust is not present” with “if excessive dust is not present” in Step 3; “if dust is present” with “if excessive dust is present”, and “write dust present” with “write high dust” in Step 4. See Item 7 for an explanation of these two changes.

Response: Revised as requested.

18. Page 5 of 98 – Please correct Rating/size for EU IDs 58, 59 and 61 to 660 tons, 121 tons, and 135 tons, respectively.

Response: Revised as requested.

19. Page 9 of 98 – Please correct Rating/size for EU ID 158 to 101,367 VMT/yr.

Response: Revised as requested.

20. Page 11 of 98 – Please add “under 18 AAC 50.055(a)(1)” at the end of Condition 6.

Response: Revised as requested.

21. Page 12 of 98 – Please remove the cross reference after “SG-2”.

Response: Revised as requested.

22. Page 13 of 98 – Please revise Condition 12 to include EU IDs 156 and 157. Please revise acronym for the Public Access Control Plan to PACP in Conditions 12 and 13.

Response: Revised as requested.

23. Page 15 of 98 – Please revise reference to 18 AAC 50.045(d). This citation appears to be incorrect.

Response: The reference to 18 AAC 50.045(d) is correct. This regulation regards the handling of bulk materials, which is what Donlin intends to do at the Donlin Gold Project.

24. Page 16 of 98 – Please revise reference to Condition 22.4 in Condition 23. This citation appears to be incorrect.

Response: The Department corrected the cross-reference. Condition 23 now references Conditions 22.2 and 22.3 (emphasis added).

25. Page 27 of 98 – Please revise GHG emissions limit listed in Table 7 to 2,781 tpy (combined). Please remove GHG from initial compliance requirements in Condition 28.1.a.i.

Response: The Department corrected the GHG emissions limit listed in Table 7 as requested as the limit did not include the GHG emissions from EU IDs 29 and 30. The Department also removed GHG from the initial compliance demonstration because the GHG BACT limit is not a short term limit.

26. Page 28 of 98 – Please remove the cross reference to Table 6 in Condition 28.2.a.i.

Response: Revised as requested.

27. Page 44 of 98 – Please revise GHG emissions limit listed in Table 22 to 3,936 tpy (combined with EU ID 28).

Response: The GHG emissions limit listed in Table 22 was revised to 3,934 (combined with EU ID 28) as this is the correct GHG emissions for these two units.

28. Page 45 of 98 – Please revise GHG emission limit listed in Table 23 to 3,936 tpy (combined with EU ID 27).

Response: The GHG emissions limit listed in Table 23 was revised to 3,934 (combined with EU ID 27) as this is the correct GHG emissions for these two units.

29. Page 47 of 98 – Please revise Condition 43.1.b to reference Conditions 17 and 22.2.

Response: Revised as requested.

30. Page 48 of 98 – Please revise Condition 43.2 to reference Conditions 17, 22.2, and 41.2.

Response: Revised as requested.

31. Page 51 of 98 – Please remove Condition 46.1.f.

Response: Condition was removed as requested because this will not make the HAPs avoidance limit any less conservative.

32. Page 52 of 98 – Please add “Subject to Permittee’s rights under AS 46.14.520,” to Condition 50.

Response: Condition 50 was not revised as requested because it is a standard permit condition under 18 AAC 50.345(i) and the commenter did not provide a stationary source specific reason why the condition should be revised.

Comments on the TAR:

Donlin submitted comments on the TAR as a red line text document with comments. Comments listed here are written explanations of the changes they requested and include any comments listed in that document, unless specifically denoted with quotation marks.

1. Page 8 of 86 – Please revise the CO₂e value in Table 1 for PTE for AQ0934CPT01 excluding fugitive emissions to 1,731,120 due to camp incinerator throughput change from 537 tpy to 4,023 tpy.

Response: Revised as requested.

2. Page 8 of 86 – Please revise the VOC and CO₂e values in Table 1 for PTE for AQ0934CPT01 including fugitive emissions to 1,167.6 and 1,764,266, respectively. The increases are due to increase in Camp Incinerator throughput increase from 537 tpy CO₂e to 4,023 tpy CO₂e and blasting increase from 8,445 tpy CO₂e to 11,779 CO₂e.

Response: Revised as requested.

3. Page 12 of 86 – Please revise reference from permit “Section 10” to “Section 9” under Section 3.2 of the TAR.

Response: Revised as requested.

4. Page 17 of 86 -- “Do the ore processing sources EU IDs 38 – 76 belong to fugitive group?”

Response: Yes, they are considered fugitive emission sources.

5. Page 18 of 86 – Please correct the fugitives subtotal for PM.

Response: Total fugitive PM emissions were corrected to be 4,645 tpy. The Department corrected the total PM emissions for Table A-1 to 5,255.6 tpy. Tables 1 and 2 in the TAR and Condition 4.1 in the permit were revised.

6. Page 21 of 86 – Please Revise PM PTE for Wind-Erosion – Short Term Stockpile to 0.3 tpy, and Total Emissions to 30.70 tpy. Please revise PM-10 Total Emissions to 15.4 tpy.

Response: PM PTE and total PM-10 PTE was revised as requested. The Department recalculated the total PM PTE and determined it to be 30.8 tpy.

7. Page 22 of 86 – Please revise emissions for EU IDs 15-16 and EU ID 17. The emissions for these two groups are switched.

Response: Revised as requested.

8. Page 22 of 86 – Please revise EU IDs 122 and 123 to EU IDs 124 and 125, respectively.

Response: Revised as requested.

9. Page 22 of 86 – Please revise the CO₂e value for EU IDs 27-28 to 4,023 tpy, the Subtotal to 1,731,120 tpy, EU ID 114 to 11,779 tpy, and the Total Emissions to 1,742,900 tpy.

Response: Revised as requested. The Department also revised the values for CO₂, CH₄, and N₂O for EU IDs 27-28 and 114, and Fugitives Subtotal for CO₂e.

10. Page 22 of 86 – Please correct Table Note 4 to 130,167 Btu/gal.

Response: Revised as requested.

11. Page 23 of 86 – Please revise EU ID 57 to 67 for Mill Reagents Handling.

Response: Revised as requested.

12. Page 30 of 86 – Please revise note on Table 3-7 to 0.7 lb/MMBtu instead of 0.68 lb/hr at 14 MMBtu/hr.

Response: Revised as requested.

13. Page 34 of 86 – Please revise Emissions Limits in Table 4-2 for Water Sprays to 0.01857 lb/ton.

Response: Revised as requested.

14. Page 38 of 86 – Please correct “control of NOx” to “control of particulates” under Step 3 – Ranking of Remaining Particulate Control Options for Autoclaves.

Response: NOx was revised to “particulates”.

15. Page 49 of 86 – Please revise “3.30 g/hp-hr” to “3.30 g/kW-hr” under Applicant Proposal.

Response: Revised as requested. The Department also revised the units for Table 7-1 in the TAR and Table 8 in the permit to reflect this correction.

16. Page 50 of 86 – Please revise “3.70 g/hp-hr” to “3.70 kW/hp-hr” under Applicant Proposal.

Response: Revised as requested. The Department also revised the units for Table 7-2 in the TAR and Table 8 in the permit to reflect this correction.

17. Page 51 of 86 – Please revise “0.19 g/hp-hr” to “0.19 g/kW-hr” under Applicant Proposal.

Response: Revised as requested. The Department also revised the units for Table 7-3 in the TAR and Table 8 in the permit to reflect this correction.

18. Page 66 of 86 – Please remove EU IDs 103 and 108 from Applicant Proposal.

Response: Revised as requested. The Department updated Section 14.0 to clarify that EU IDs 103 and 108 do not emit particulates and removed additional references to EU IDs 103 and 108 in Section 14.0.

19. Page 71 of 86 – Please revise “1.8 tpy” to “1.7 tpy” under Applicable Proposal.

Response: Revised as requested. The Department also revised Table 38 in the permit to reflect this revision.

20. Page 76 of 86 – Please revise “525 tons per year” to “3,934 tons per year” under Applicant Proposal.

Response: Revised as requested.

21. Page 81 of 86 – Please revise “1,400 tons per year” to “1,921 tons per year” under Applicant Proposal.

Response: Revised as requested.

22. Page 82 of 86 – Please revise “40 tons per year” to “52 tons per year” under Applicant Proposal.

Response: Revised as requested.

23. Page 82 of 86 – Please revise “200 tons per year” to “273 tons per year” under Applicant Proposal.

Response: Revised as requested.

24. Pages 83 and 84 of 86 – Please revise “g/hp-hr” to “g/kW-hr” for the CO, NO_x, and Particulate BACT Limits for EU IDs 35-37.

Response: Revised as requested.

25. Pages 83 and 84 of 86 – Please revise the CO, NO_x, and Particulate BACT Limits for EU IDs 113 & 114 to 1,921 tpy, 52 tpy, and 273 tpy, respectively.

Response: Revised as requested.

26. Page 84 of 86 – Please remove EU IDs 103 and 108 from Table C-3.

Response: Revised as requested.

27. Page 84 of 86 – Please revise BACT Control for EU IDs 115 through 120 from “Water Spray” to “Best Practical Methods/Fugitive Dust Control Plan”.

Response: Revised as requested.

28. Page 85 of 86 – Please revise GHG BACT Limit for EU IDs 15-26 to 176,347 tpy.

Response: Revised as requested.

29. Page 85 of 86 – Please revise GHG BACT Limit for EU IDs 27 & 28 to 3,934 tpy.

Response: Revised as requested.

30. Page 5 of 35 of Appendix D – Please revise heading in Table 1 from “Max. Conc.” to “Design Conc.”

Response: The Department left the heading as is. While the proposed wording has merit, it's not substantive enough to warrant a revised modeling report.

31. Page 5 of 35 of Appendix D – Please revise Max. Conc. for NO₂ Annual from 1.9 to 1.4.

Response: The Department did not revise the NO₂ annual value as it was calculated to be 1.9. The table note for Table 1 explains that the values calculated by the Department are slightly different from what Donlin provided in Table 2-5 of Appendix D of their permit application.