pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

January 24, 2020

Mr. T. Greg Merrion, President
Merrion Oil and Gas Corporation
610 Reilly Ave
Farmington, NM 87401

Re: Second Technical Deficiency Letter
ET Braddock Well Pad
Application No. ESP070218-001 (Initially assigned as PAD0200114)
East Pittsburgh Borough, North Braddock Borough, and North Versailles Township
Allegheny County

Dear Mr. Merrion:

The Department of Environmental Protection ("Department") has reviewed the above referenced application/NOI and subsequent modifications received on October 17, 2019 and has identified the technical deficiencies outlined in the enclosure to this letter. The deficiencies are based on applicable laws and regulations, as well as guidance, such as the Pennsylvania Erosion and Sediment Pollution Control Program Manual 363-2134-008 March 2012 as corrected/amended ("E&S Manual"), and the Pennsylvania Stormwater Best Management Practices Manual 363-0300-002 ("SW BMP Manual"), set forth by the Department to establish means of satisfying the applicable regulatory and statutory requirements. The incomplete submission of the application package terminates the permit decision guarantee process and any agreements that have been made regarding the timeline for the permit application review.

Pursuant to 25 Pa. Code § 102.6(c) in order to obtain an Erosion and Sediment Control ("E&S") Permit for Earth Disturbance Associated with Oil and Gas Exploration, Production, Processing or Treatment Operations or Transmission Facilities ("E&S Permit"), you should submit a response fully addressing each of the technical deficiencies set forth in the enclosure. Please note that this information must be received within thirty (30) calendar days from the date of this letter, on or before February 23, 2020, or the Department may consider the application to be withdrawn by the applicant.

Please submit 1 original and 3 copies of the revised Erosion and Sediment Control plan and the revised Post Construction Stormwater Management plan to the Department, Southwest District Oil and Gas Operations, 400 Waterfront Drive, Pittsburgh, PA 15222.

If you disagree with any of the stated deficiencies, instead of submitting a response to that deficiency, you have the option of requesting that DEP make a permit decision based on the information you have already provided regarding the subject matter of that deficiency. If you choose this option with regard to any deficiency, you should explain and justify how your current

submission satisfies that deficiency. Please keep in mind that if you fail to respond, your application will be considered withdrawn.

Should you have any questions regarding the identified deficiencies, please contact me or Tae-Uk Kim, Ph.D., P.E. at taekim@pa.gov or 412-442-4046 and refer to ESP070218-001, to discuss your concerns or to schedule a meeting. The meeting must be scheduled within the 30 calendar days allotted for your reply. You may also follow your application through the review process via eFACTS on the Web at: https://www.ahs.dep.pa.gov/eFACTSWeb/default.aspx

Sincerely,

Kareen Milcic, P.E.
Environmental Engineering Manager
Southwest District Oil and Gas Operations

cc: Tessa M. Antolick, P.E.
ARM Group Inc.
2548 Park Center Boulevard
State College, PA 16801

Ryan G. Merrion, Vice President, Merrion Oil and Gas Corporation

B. Bailey, P.E.
K. Milcic, P.E.
Tae-Uk Kim, Ph.D. P.E.
M. Stephan
L. Fraley

East Pittsburgh Borough
North Braddock Borough
North Versailles Township
File No. ESP070218-001

ENCLOSURE

DEP File No. ESP070218-001
ET Braddock Well Pad

OUTSTANDING TECHNICAL DEFICIENCIES

The following items should be included in the resubmittal of your application or the submission of additional information to obtain an Erosion and Sediment Control ("E&S") Permit for Earth Disturbance Associated with Oil and Gas Exploration, Production, Processing or Treatment Operations or Transmission Facilities ("E&S Permit"). Please be advised that the deficiencies contained in this letter are based on the requirements of applicable law and regulations, including, but not limited to the following: 25 Pa. Code §§ 102.4(b)(5), 102.4(b)(6), 102.6(c), 102.8(f), 102.8(g), 102.8(h), and 102.11(a). Specific sections are noted below only to assist in identifying the appropriate deficiency and requirement.

It is noted that the cover letter of the October 15, 2019 submission contains an incorrect date of the Department's previous Technical Deficiency Letter (TDL). The correct date of the previous deficiency letter is July 26, 2019.

1. NOI (25 Pa. Code §§ 102.4(c), 102.6(a)(1), 102.6(c)(1))

    a. Section D.3. Summary Table for Supporting Calculation and Measurement Data
        i. The data of the 2 yr and 100 yr of pre-development of PCSM POI1 and SR POI1 are different from each other. In addition, the data of 100 yr of pre-development of SR POI2 differs from the calculation(s). Please revise the summary table in response to the PCSM revisions that are noted below. For example, the response to comment number 3 in this letter may impact the Summary Table.

    b. Section H. Permit Coordination
        i. Please update this section with any recent information relative to any pending permits. For example, the well permit number is not provided and the information relating to the water management plan, PPC plan, FP-001, etc. is not provided.

2. E&S narrative (25 Pa. Code §§ 102.6(c), 102.4(b)(4), 102.4(b)(5), 102.4(b)(6), 102.11(a))

    a. Some of the design of the BMPs in the E&S plan were not based upon the most recent version of the Pennsylvania Erosion and Sediment Pollution Control Program Manual 363-2134-008 (March 2012 as corrected/amended) ("E&S Manual"). Please see the comments below relating to the sediment trap, anti-seep collar, temporary channels, etc. Please be sure that the narrative is consistent with any design changes.
    b. Sediment Trap
        i. The embankment spillway data was not provided in Standard E&S Worksheet #19. Since there is no additional temporary riser, the embankment emergency spillway design of sediment trap could be the

same as the design of the wet pond. This design was already submitted in E&S drawing details and PCSM narratives/calculations/drawings. Please revise the submission to include all necessary corrections.

c. Anti-Seep Collar
   i. The design of the anti-seep collar provided on E&S drawing detail does not conform to the recent Department Standard established in the E&S Manual. Please refer to page 205 of the E& S Manual: "Metal anti-seep collars may be used on temporary basins and should meet the standards of Standard Construction Detail #7-15. Plastic anti-seep collars may be an acceptable alternative. Concrete anti-seep collars should be used on permanent basins and should meet the standards of Standard Construction Detail #7-16." The BMPs are permanent (wet pond), so the details on the E&S and PCSM/SR drawings do no conform to the Standard Construction Detail #7-16. The anti-seep collar should be a min 2,000 psi and Standard #7-16 Concrete anti-seep collars should be used. Please revise the drawings accordingly. Please be advised that Section D.1.A of the NOI has been checked (Standard E&S) and certified in Section I of the NOI.

d. Channels
   i. The new channel drainage area summary table provided in the revised submission did not contain an explanation of the phrase of "Stage 2." In addition, the temporary channel calculation was not designed for a temporary condition. For example, the design of permanent channel PC-2 and temporary channel PC-2 proposed flows of 2.12 cfs and 0.37 cfs, respectively, but in the calculation a flow of 2.12 cfs is used. Please provide, for example for PC-2, the proof of bottom width: flow depth ratio is max 12:1 to avoid erosion in the channel bottom in the temporary condition(s). Please provide an explanation of Stage 2 and revise the temporary channel calculations. Please be advised that Section D.1.A of the NOI has been checked (Standard E&S) and certified in Section I of the NOI.

e. Rip-Rap Calculation
   i. Rip-rap is proposed at, for example, the newly designed PC-3, but there is no supporting calculation(s) provided. Please review your submission and provide supporting calculations were rip-rap is proposed in the channel design.

3. PCSM/SR narrative (25 Pa. Code §§ 102.6(c), 102.8(b), 102.8(f), 102.8(g), 102.8(h), 102.11(a))
   a. Please review the outstanding deficiencies and revise the narratives accordingly. For example, when a calculation is changed, please be sure to correct the corresponding narrative.

   b. Rate Calculations - Section 3.1 PCSM Hydrology Calculations
      i. Post Undetained POI1 - The dimension of channel flow remains inconsistent with the design of E&S calculations (diversion berm). Please

revise the channel input data to be consistent with the permanent E&S design of the diversion berm.

ii. Post POI2 - The dimension of channel flow remains inconsistent with the design of E&S calculations (PC-3). Please revise the channel input data to be consistent with the permanent E&S design of PC-3.

c. Rate Calculations - Section 3.2 SR Hydrology Calculations

i. The meadow area used in the SR pre-development POI1 data (area, sq. ft.) is not consistent with the meadow area that is used in the PCSM pre-development POI1 data (area, sq.ft.).

ii. Post POI2 - The dimension of channel flow remains inconsistent with the design of E&S calculations (PC-3). Please revise the channel input data to be consistent with the permanent E&S design of PC-3.

d. Section 6.0 Stormwater Facilities Maintenance and Inspection Plan

i. On page 4 of the new submission, the maintenance of "b)" is not related with the proposed wet pond, (the BMP proposed in the application), and it does not conform to BMP 6.6.2. It appears that it is consistent with the requirements for a detention pond (BMP 6.6.3). Please revise the narrative to include the maintenance of the proposed wet pond and revise the application accordingly.

ii. On page 5 of the new submission, the title of "c)", "earthen" is not correct/consistent based on the details of drawings (the proposed level spreader is "structural" BMP 6.8.1). "Earthen" may not be used in PCSM stage and the outlet of the wet pond or the sediment trap (please refer to page 253 of E&S manual). To be consistent with the drawing, please remove the word "earthen." Please be advised that Section D.1.A of the NOI has been checked (Standard E&S) and certified in Section I of the NOI.

iii. On page 7 of the new submission, the first paragraph that starts with "Grass cover…" is not applicable for your proposed vegetative filter strip design due to the proposed "meadow" condition(s). Please revise this narrative.

e. Section 2.0, Section 4.0, and Section 6.0

i. Section 2.0 Pre/Post Development Hydrology summary should be revised to be consistent with the changes that are made because of deficiencies identified in this letter

ii. Section 4.0 Emergency Spillway Calculation should be revised to include the new 100 yr capacity of detained POI1. Please be advised a new calculation(s) of Section 4.0 was not provided. Please provide the calculation.

iii. The supporting calculation of the proposed structural level spreader should be provided.

4. Drawings (25 Pa. Code §§ 102.4(b)(4), 102.4(b)(5), 102.4(b)(6), 102.8(b), 102.8(f), 102.8(g), 102.8(h), 102.11(a))

a. E&S C707: The channel data has been revised but please revise the drawing to be consistent with changes that are made because of deficiencies identified in this letter.

b. N-1: Please make all necessary corrections to be consistent with the changes that are made because of deficiencies identified in this letter.

c. PCSM/SR C602 (previous C601): The items have been revised but please additionally revise this drawing (C602) to be consistent with the changes that are made because of deficiencies identified in this letter.

d. Please make all necessary corrections of drawings to be consistent with the changes that are made because of deficiencies identified in this letter. For example, the new drawing E&SC709 did not depict that a trench is being proposed. Please revise this drawing by checking the box to indicate that a trench is being proposed. Another example is that the new WS-3B drawing does not depict the proposed grades.

e. Please explain why the outlet pipe protections of the sediment trap changes from the erosion and sedimentation stage to the post construction stage (wet pond). Different outlets are proposed. On drawing C704A there is a "Basin Outlet" and on drawings WS-2A/WS-3A/SR-1 there is a "Structural Level Spreader." This change in outlet protection may need to be addressed in the construction sequence as well.

5. Geotech Report/Geologic Hazard Mitigation Plan (25 Pa. Code §§ 102.4(c), 102.6(a)(1), 102.6(c)(1), 102.4(b)(5), 102.8(f))

a. Please provide the seal and signature of the Professional Licensed Engineer on the drawing in Appendix G of Appendix J (the Geotech Report).

b. Per the newly provided cross sections of filling and cutting plan (e.g. C704C), for example, the cutting or excavation is up to 8.1 ft depth nearby the boring B-10. According to the B-10 boring log data, the black coal fragment is found at 5.1 ft depth. Please provide a plan to avoid and handle Acid Producing Rock (APR) in reference to the fact sheet recent version 09/2018.