

May 15, 2026

Mr. Jerad Vaughn, Facility Manager
Google Inc.
1600 Amphitheatre Parkway
Mountain View, Oklahoma 94043

Re: Notice of Deficiencies (“NOD”) - Engineering Report No. ERS000051260380
Facility No. TBD

Notice of Deficiencies

Dear Mr. Vaughn:

On April 15, 2026, the Department of Environmental Quality (“DEQ”) received an engineering report entitled, “Wastewater Collection & Treatment – Total Retention” prepared by Ian M. Corbin, , of HDR, Engineering Inc.. A project cost of \$27,686,000.00 was proposed in the Engineering Report with Google Inc. as the funding source. The engineering report proposes to summarize the alternatives considered for domestic wastewater collection and domestic wastewater treatment (WWT) system. Proposed items include the following:

Phase 1 (Day 1):

- Two (2) new 7.6 acre evaporation lagoons with double HDPE liners.
- One (1) new 28,700 gpd conventional activated sludge package wastewater treatment system that contains:
 - One (1) new screening unit with two (2) automatic influent screens.
 - One (1) new 14,350 gallon flow equalization tank.
 - Two (2) new 11,936 gallon aeration tanks.
 - Two (2) new 10 ft diameter clarifiers.
- One (1) new duplex gravity filter.
- One (1) new UV disinfection system with one (1) channel and two (2) banks in series.
- One (1) new 143,500 gallon wastewater holding tank.
- One (1) new sludge holding zone for offsite sludge disposal
- Two (2) new sanitary sewer lift stations with grinder pumps and force mains.

Phase 2 (Day 2):

- One (1) new discharge in to Cloud Creek including a cascade aeration manhole.

Listed below are deficiencies which prevent this submittal from being approvable as an engineering report according to the Oklahoma Administrative Code (“OAC”). The following questions and comments need to be addressed prior to approval of the engineering report by DEQ.

1. The proposed facility does not currently have a Facility Identification Number assigned. Please fill out the included form (DEQ Form 583-D) and submit it with your next submittal.
2. The proposed facility does not currently have an approved method of financial assurance in accordance with **OAC 252:656-3-2(e)**. Please contact April Eberle, Supervising Environmental

Attorney for the Office of General Counsel of DEQ, at (405) 702-7184 to start the financial assurance process. Financial assurance must be completed before a Construction Permit can be issued.

3. The engineering report proposes a discharging location to Cloud Creek with Phase 2 (Day 2). An approved 208 Plan/Wasteload Allocation (WLA) was not submitted with the engineering report. In addition, calculations to show that the proposed facility can meet the limits of the 208 Plan/WLA were not provided. **OAC 252:656-3-4(a)(1)** states, "Establish the existing and anticipated design average and design peak flows and waste load for the existing and ultimate conditions. Include the basis for projecting initial current and/or future dry and wet weather flows and waste load for the existing, or initial, service area, and the anticipated future service area. For discharging facilities, the report must demonstrate that the proposed project complies with the design flow in the 208 Plan and other applicable OPDES permit limits." **OAC 252:656-3-4(a)(3)(G)(i)** states, "[For the selected alternative, include] a description of the processes, including biosolids management, in detail and the identification of the location of the plant and the site of any discharges; a status of compliance with the 208 Plan, and if applicable, include current revisions with copy of DEQ approval letter, if approved in the current 208 Plan" **OAC 252:656-3-4(a)(7)** states, "Identify the receiving stream and its wasteload requirements according to the Water Quality sections of OAC 252:606 and Oklahoma's Water Quality Management Plan (208 Plan)." Please show that this requirement will be met and include the required 208 Plan/WLA.
4. A schematic of the proposed wastewater treatment system including the package treatment facility was not included. **OAC 252:656-3-4(a)(3)(C)** states, "A schematic diagram(s) of all existing and proposed treatment processes." Please show that this requirement will be met.
5. Advantages and disadvantages for each discussed alternative were not included in the engineering report. **OAC 252:656-3-4(a)(3)(F)** states, "A description of the ability of each alternative to meet the owner's needs, address violations cited in any enforcement orders, satisfy public and environmental concerns, and comply with regulatory requirements. The report must demonstrate the compatibility of each alternative with existing, comprehensive, and areawide development plans. Provide a short description of environmental impacts that may preclude any alternatives." Please include this information.
6. The submitted engineering report included calculations for the proposed evaporation total retention lagoons, but did not include calculations for the proposed conventional activated sludge water treatment facility. **OAC 252:656-3-4(a)(3)(G)(iv)** states, "Provide supporting calculations in sufficient detail to demonstrate compliance with DEQ design requirements to assure adequate capacity for the collection and treatment system as a whole to transport and treat the wastewater or reclaimed water." Please include the necessary calculations to show that this requirement will be met.
7. The included Test Pit Aquifer Condition Evaluation states that the groundwater was measured for approximately four (4) days (August 4, 2025 through August 8, 2025). Section 5.5 of the included Geotechnical Engineering Report states, "Groundwater encountered in borings while drilling was measured to be between 1.5 (el 722) and 15 feet (el 672) below the existing ground surface. ... For design purposes, the groundwater level should be considered at the surface." **OAC 252:656-3-4(a)(5)** states, "Include 6 months of data on the groundwater level." Please show that this requirement will be met.

8. A sludge management/disposition plan must be approved before a construction permit can be issued. The submitted engineering report states that sludge will be taken offsite for disposal. **OAC 252:656-3-4(a)(8)** states, "Discuss the available alternatives for biosolids reuse and/or disposal (OAC 252:606 and OAC 252:515). Submit a sludge management or sludge disposition plan to DEQ for approval. All biosolids that will be land applied and/or disposed in a landfill must comply, at a minimum, with the Class B pathogen reduction requirements contained at 40 CFR, Part 503, adopted by reference at OAC 252:606." **OAC 252:656-19-1** states, "A sludge management plan shall be approved by the DEQ before any construction permit for a new or upgraded wastewater treatment facility can be issued. On-site sludge dewatering facilities shall be provided for all plants although the following requirements may be reduced with on-site liquid sludge storage facilities or approved off-site sludge disposal." Please include information regarding the submittal of a sludge management plan.
9. The submitted engineering report includes an Anticipated Schedule, but is missing dates for several required items. **OAC 252:656-3-4(a)(14)** states, "The report must propose a schedule to: (A) obtain funds to complete the proposed project; (B) submit construction plans, specifications, and permit application(s); (C) start construction; (D) complete construction, and (E) attain compliance with applicable OPDES discharge permits." Please include this information.
10. The submitted engineering report does not show that the separation distances from any part of the wastewater treatment units meets the required 100 foot minimum from the property line. **OAC 252:656-9-1(a)** states, "Local ordinances and zoning requirements may establish separation distances greater than those required by this Chapter. The minimum separation distance from any public water supply well is 300 feet. The minimum distance requirements from any public water supply intake structure will be determined on a case by case basis. No part of any wastewater treatment or conveyance unit shall be constructed or extended within 100 feet of a plant site property line. Measurement for lagoons shall be from the centerline of the nearest dike." Please show that this requirement will be met.
11. Section 3 of the submitted engineering report states, "In earlier design phases the determination was made that wastewater influent would be treated onsite via a package biological treatment system where treated effluent is initially routed to an onsite evaporation lagoon during Day 1 operations and ultimately discharged to an onsite surface water location for full build out. This engineering report pertains only to discharge to the evaporation pond for total retention." **OAC 252:656-9-1(c)** states, "Design sewage treatment plants for an estimated 20-year population projection. Construction may occur in phases to reduce initial cost." **OAC 252:656-9-1(d)** states, "For facilities to be built in phases, the engineer shall furnish design data for ultimate plant capacity. The data shall include size, type, loading and location of all units. Use dashed lines to show units that are to be constructed as a later phase. Furnish a hydraulic profile showing the water elevations of all units and the flood elevation of streams that can affect the plant site. Detailed design data are required for all units to be constructed as Phase I." Please submit all calculations and required information for the 20-year design of the proposed wastewater treatment system.
12. The submitted engineering report did not address required influent and effluent flow measurement. **OAC 252:656-9-2(d)(1)** states, "Provide for the measurement of incoming flow at all non-industrial wastewater treatment plants. Where all incoming flow to a plant having a design flow of less than 0.5 mgd is through a single pump station, flow measurements may be satisfied by the calibration of pumps and the installation of run-time meters. Weirs must not be used to measure influent flow." **OAC 252:656-9-2(d)(2)** states, "For discharging systems, provide for the

measurement of wastewater effluent flow in accordance with the system's OPDES permit and OAC 252:606. For lagoon effluent, a baffle shall be provided to prevent the discharge of surface debris and algae to a depth of at least one foot (1') below the weir crest." Please show that these requirements will be met.

13. The proposed evaporation lagoons (total retention lagoons) have a depth of 10 feet. Section 5.5 of the included Geotechnical Engineering Report states, "Groundwater encountered in borings while drilling was measured to be between 1.5 (el 722) and 15 feet (el 672) below the existing ground surface. ... For design purposes, the groundwater level should be considered at the surface." **OAC 252:656-11-1(c)** states, "Use sound sanitary and engineering practices to protect groundwater aquifers and public water supplies from pollution from lagoons. Maintain a 4-foot separation between the lagoon bottom and the highest known groundwater elevation." Please show that the required four (4) feet of separation distance from the highest known groundwater elevation will be met.
14. The engineering report states that two (2) lagoon cells will be provided and two (2) lagoon cells are shown in Attachment E. However, Section 3.2 of the submitted engineering report states, "As a note, the calculations shown in Attachment D will not represent the actual length and width of the final lagoon design, nor do they reflect the multiple cell design; the output of these calculations are the total surface area and depth." The submitted calculations are also only for the sizing of one (1) lagoon cell. In addition, the required acreage of the lagoon surface area is shown to be well above five (5) acres. **OAC 252:656-11-2(c)(1)** states, "Where more than one acre of surface area is needed, provide at least two cells. For those systems greater than five (5) acres surface area provide at least two primary cells." Please include calculations that include all proposed lagoon cells. In addition, show that the required two (2) primary cells and at least one (1) evaporation cell are provided.
15. Section 3.2 of the submitted Engineering Report states, "Average precipitation and evaporation rates for the last 10 years are 50.3 and 63.2 inches, respectively." **OAC 252:656-11-2(c)(1)(B)** states, "Base the evaporation rates on the annual average pan evaporation minus the 90th percentile annual precipitation for the geographical location, as contained in Appendix E." **Appendix E** states that for Muskogee County, the average rainfall is 56.82 inches per year and the average pan evaporation is 80 inches per year. Please provide calculations that show that include the values from Appendix E.
16. The proposed total retention lagoons are stated to have an operating depth of seven (7) feet. **OAC 252:656-11-2(c)(1)(C)** states, "The system shall be designed with a five (5) foot operating depth, with three (3) feet of freeboard." Please show that this requirement will be met and update any calculations as necessary.
17. The lagoons shown in Attachment E are not round, square, or rectangular. **OAC 252:656-11-3(b)(5)** states, "Round, square or rectangular lagoons with rounded corners, with a length not more than three times the width constructed without islands, peninsulas or coves." Please show that this requirement will be met.
18. A grit chamber was not included in the wastewater treatment facility. **OAC 252:656-13-2(a)** states, "Grit chambers are required at all mechanical sewage treatment plants, ahead of pumps and other equipment that may be damaged by grit." Please show that this requirement will be met.

19. The engineering report proposes a Wastewater Holding Tank for backup/emergency purposes. The proposed tank is a steel tank with a concrete floor. Tanks for emergency wastewater storage are not allowed in **OAC 252:656**. Emergency storage for wastewater must be basins that follow the requirements of **OAC 252:656-13-4**.
20. A complete design analysis and calculations for the proposed conventional activated sludge treatment plant was not included. **OAC 252:656-16-1(a)** states, "Submit a complete design analysis for all suspended growth systems to DEQ for review." Please show that this requirement will be met.
21. Primary clarifiers were not included in the proposed conventional activated sludge treatment plant. **OAC 252:656-16-1(b)** states, "The conventional activated sludge process must be preceded by primary treatment in the form of a primary clarifier(s) in accordance with 252:656-17. Provide equipment necessary to adequately remove sludge as it accumulates and transport it to sludge treatment facilities." Please show that this requirement will be met.
22. The system design information for the proposed conventional activated sludge treatment plant was not included in the submitted engineering report. **OAC 252:656-16-1(c)** states, "Submit a comprehensive discussion of all functional design calculations used to size activated sludge treatment facilities. Include the following: (1) influent wastewater characteristics, (2) temperature range of wastewater, (3) primary treatment of the waste, (4) hydraulic and organic loading applied to the aeration basin, (5) anticipated mixed liquor suspended solids level to be maintained in the aeration basin, (6) aeration time, (7) oxygen and mixing requirements for average and peak flows, (8) recirculation and sludge wasting, (9) degree of treatment anticipated, and (10) equation(s) used to compute treatment efficiency." Please include the system design information required.
23. The design criteria for the proposed aeration basins was not included. **OAC 252:656-16-1(d)(1)** states, "The minimum design criteria for activated sludge systems are listed in Appendix A, Design Tables." Please include the design criteria for the proposed aeration basins and show that they meet the requirements of **Appendix A**.
24. Design calculations for the aeration equipment was not provided. **OAC 252:656-16-1(e)(1)** states, "Aeration equipment must be capable of maintaining at least 2.0 mg/l of dissolved oxygen in the mixed liquor at all times and provide thorough mixing.(A) CBOD removal. Where data is not available, the design oxygen requirement for the activated sludge process is 1.1 lb O₂/lb peak BOD applied to the aeration basins. ... (B) Nitrification. For nitrification the oxygen requirement for oxidizing ammonia must be added to the requirement for carbonaceous BOD removal. The nitrogen oxygen demand (NOD) shall be taken as 4.6 lb O₂/lb NH₃ at peak diurnal flow. Assure sufficient alkalinity to maintain pH as required by 252:656-16-3 (b)(3). If the alkalinity is not sufficient, then chemical addition must be required." **OAC 252:656-16-1(e)(2)** states, "Normal air requirements for all activated sludge processes, except extended aeration, is 1,500 ft³/lb peak BOD for aeration basin loading." Please show that these requirements will be met.
25. The return sludge rates for the proposed conventional activated sludge treatment plant was provided. **OAC 252:656-16-1(h)(1)** states, "Design all return pumping systems for the capability to be operated at the following return rates: (A) Standard Rate: (i) 15% minimum to (ii) 75% maximum (B) Carbonaceous Stage of Separate Stage Nitrification: (i) 15% minimum to (ii) 75% maximum (C) Step Aeration: (i) 15% minimum to (ii) 75% maximum (D) Extended Aeration: (i)

50% minimum to (ii) 150% maximum (E) Nitrification Stage of Separate Stage Nitrification: (i) 50% minimum to (ii) 200% maximum.” Please show that this requirement will be met.

26. Single stage nitrifications calculations were not included in the submitted engineering report. **OAC 252:656-16-3(b)** states, “Design processes according to the requirements of 252:656 and submit all design calculations. The following factors will have a significant impact on the nitrification process: ammonia and nitrite concentrations, BOD/TKN ratio, dissolved oxygen concentration, temperature, alkalinity and pH. The following steps shall be considered in the design of the suspended growth reactor and the resulting calculations submitted to DEQ for review. If actual kinetic coefficients cannot be obtained, textbook values may be used for design.” Please include the required calculations and ensure that they meet the requirements of **OAC 252:656-16-3(b)**.
27. The primary clarifier design was not included in the submitted engineering report. **OAC 252:656-17-2(b)** states, “Surface settling rates for primary tanks shall not exceed 1,000 gal/ft²/day at design average flows or 1,500 gal/ft²/day for peak hourly flows. Peak hourly flow is based upon a 2-hour sustained peak, as defined by Wastewater Engineering: Treatment, Disposal & Reuse, Metcalf & Eddy, Inc. 4th Edition(2003). The primary clarifier must have a minimum side water depth of twelve feet (12'). Clarifier sizing shall be calculated for both flow conditions and the larger surface area determined shall be used. Primary settling of normal domestic sewage can be expected to remove 30 to 35% of the influent BOD. However, anticipated BOD removal for sewage containing appreciable quantities of industrial wastes (or chemical additions to be used) shall be determined by laboratory tests and consideration of the quantity and character of the wastes.” Please show that this requirement will be met.
28. The final clarifier design was not included in the submitted engineering report. **OAC 252:656-17-2(c)** requires that final clarifiers be designed in accordance with **Appendix B**. Please include the final clarifier design and show that it will meet these requirements.
29. Primary and final clarifier weir loading rate calculations were not included in the submitted engineering report. **OAC 252:656-17-2(e)(2)** states, “Weir loadings shall not exceed 10,000 gal/linear foot/day for plants designed for average flows of 1.0 mgd or less. ... Where the flow is pumped to the clarifier, the weir length shall be based on the average pump delivery rates to avoid short-circuiting.” Please show that this requirement will be met.
30. The submitted engineering report does not mention acquiring the required Oklahoma Pollutant Discharge Elimination System (OPDES) permit. **OAC 252:656-21-1(b)** states, “A disinfection system used to comply with the disinfection requirements: (1) in an OPDES permit shall be designed, constructed and operated to meet bacteria limits in the Water Quality Standards and the OPDES permit.” **OAC 252:656-21-3(b)** states, “A wastewater treatment system utilizing a UV system to comply with disinfection requirements in an OPDES permit and/or to disinfect Category 3 reclaimed water shall be: (A) sized using the: (i) design peak hourly flow for OPDES permits.” **OAC 252:656-23-1(a)** states, “A wastewater treatment system: (1) required to have filtration to maintain OPDES permit compliance shall be sized using the design peak hourly flow.” Please show that an OPDES will be obtained.
31. Calculations to show the effluent quality were not provided. **OAC 252:656-21-3(a)(2)** states, “[UV systems shall only be used to disinfect effluent having] BOD and suspended solids

concentrations no greater than 30 mg/l at any time.” Please show that this requirement will be met.

32. The return rate of the backwash water from the proposed filters was not mentioned in the submitted engineering report. **OAC 252:656-23-1(e)(4)** states, “The return rate of backwash water from filtration systems to treatment units shall not exceed 15% of the wastewater design daily average flow rate to the treatment units.” **OAC 252:656-23-1(e)(5)** states, “The hydraulic and organic load from the backwash water shall be taken into account in the overall design of the treatment plant.” Please show that this requirement will be met and include any necessary calculations.
33. Sizing of the proposed filters and the supporting calculations were not provided in the submitted engineering report. **OAC 252:656-23-1(i)(2)** states, “Filtration rates shall not exceed 5 gpm/ft² at the peak hourly flow for OPDES permits or the anticipated design flow for water reuse systems with the largest unit out of service.” Please show that this requirement will be met.
34. Calculations for the sizing of the proposed cascade aeration manhole were not provided. **OAC 252:656-23-3(a)** states, “Cascade aeration may be used where site topography permits. Head requirements will vary from three to ten feet, depending on the initial DO, temperature of the wastewater and the required DO level before discharge. The formulas used to determine the required cascade height are listed in Appendix C.” Please show that this requirement will be met.

Please submit a revised report which addresses the items noted above. If you have any questions or comments, please contact Julie Jacob at (405) 702-8242 or at the letterhead address.

Respectfully,



D. Adam Divine, P.E.
Construction Permit Section
Water Quality Division