1041 PERMIT APPLICATION SUBMITTAL
FOR
TOWN OF RAMAH WASTEWATER SYSTEM
SEWER LIFT STATION
&
WASTEWATER TREATMENT PLANT

JULY 2022

EE JOB NO.: 0043.0001

ELEMENT ENGINEERING LLC
DILIGENT • INNOVATIVE • RESPONSIVE

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EXHIBITS

RESPONSES TO CHAPTER 2, ARTICLE 3 PARAGRAPH 2.303 – SUBMISSION REQUIREMENTS OF THE COUNTY QUIDELINES

SECTION 2.303 (1) COMPLETED APPLICATION FORM

The completed application form can be seen in Exhibit B.

SECTION 2.303 (2) ADDITIONAL REQUIRED INFORMATION

The Director may require submission of any plan, study, survey or other information, in addition to the information required by this Section, at the applicant's expense, as in the Director's judgment is necessary to enable it to review and act upon the application.

To be determined by Director.

SECTION 2.303 (3) MINERAL RIGHTS

Any application which requires compliance with § 24-65.5-101, et seq., C.R.S., (Notification to Mineral Owners of Surface Development) shall not be considered to have been submitted as complete until the applicant has provided a certification signed by the applicant confirming that the applicant or its agent has examined the records of the El Paso County Clerk and Recorder for the existence of any mineral estate owners or lessees that own less than full fee title in the property which is the subject of the application, and stating whether or not any such mineral estate owners or lessees exist. In addition, for purposes of the County convening its initial public hearing on any application involving property which mineral estate owners or lessees owning less than full fee title in the property have been certified by the applicant to exist, the application shall not be considered to have been submitted as complete until the applicant has provided an additional signed certification confirming that the applicant has, at least 30 days prior to the initial public hearing, transmitted to the County and to the affected mineral estate owners and lessees the notices required by C.R.S. §24- 65.5-101, et seq.

Based on an examination of the records of the Clerk and Recorder's Office, no mineral estate owners were found. Confirmation of this can be seen in Exhibit C.

SECTION 2.303 (4) INFORMATION DESCRIBING THE APPLICANT

2.303 (4a): *The names, addresses, including email address and fax number, organizational form, and business of the applicant and, if different, the owner of the Project.*

Owner:
Town of Ramah
113 S. Commercial Street
Ramah CO, 80832
townoframah@juno.com
719-541-2163

Applicant:
Town of Ramah
113 S. Commercial Street
Ramah CO, 80832
townoframah@juno.com
719-541-2163

Engineer:
Element Engineering, LLC
12687 West Cedar Drive, Suite 300
Lakewood, CO 80228
karld@elementengineering.net
303-518-2361

2.303 (4b): *The names, addresses and qualifications, including those areas of expertise and experience with projects directly related or similar to that proposed in the application package, of individuals who are or will be responsible for constructing and operating the Project.*

The names, addresses, and qualifications of the contractor for the construction of the project will be provided after it is determined for the project (a contractor has not been selected). Prior to selecting a contractor, CDPHE approval must be obtained. CDPHE approval cannot be obtained until the 1041 process is completed.

The Town will contract with someone who has to appropriate certification to operate the proposed lift station.

2.303 (4c): *Written authorization of the application package by the Project owner, if different than the applicant.*

The owner is the legal representative of the applicant and is who signed the application and therefore authorizes the application package as seen in Exhibit B.

2.303 (4d): *Documentation of the applicant's financial and technical capability to develop and operate the Project, including a description of the applicant's experience developing and operating similar projects.*

The Town of Ramah is financially sound, and the WWTP is managed and operated by the town. The town sets budgets and rates and determines the need for improvements. The proposed improvements will present a significant change in the financial obligation of the town due to the loan the town will take on to assist in covering construction costs for the project. These costs have been considered in preliminary cost estimates. The Town of Ramah is seeking funding through the CDPHE SRF program and a DOLA Energy/Mineral Impact Assistance Fund grant. The operations and maintenance costs associated with the proposed lift station are expected to increase slightly compared to the existing facility. The town is capable and willing to enact rate changes as necessary to support repayment for the project.

2.303 (4e): *Written qualifications of report preparers.*
The Element Engineering team has had experience with completing the 1041 process. These projects have included lift stations and water treatment plants. The team has also completed numerous other similar projects that have gone through the State of Colorado permitting process.

Nick Marcotte, P.E.
President

Nick Marcotte has over 12 years of experience providing permitting, design, and construction management services for rural towns, cities, and special districts throughout Colorado, Kansas, Wyoming, and Washington. He has specialized expertise in water and wastewater infrastructure and treatment planning, design, CDPHE permitting, hydraulics, municipal infrastructure, master planning, environmental processes, and acquisition of grants and loans to fund various projects.

Karl Duffield, E.I.T.
Project Engineer

Karl has over 5 years of experience in Civil Engineering including wastewater treatment and collection design, water treatment and distribution design, contract documents, and grant funding assistance and coordination.

The complete resumes of the report preparers are included in Exhibit D.

SECTION 2.303 (5) INFORMATION DESCRIBING THE PROJECT

2.303 (5a): *Vicinity map showing the proposed site and the surrounding area.*

A vicinity map of the project, which shows the location of the Town of Ramah Service Area, and the project location can be seen in Exhibit E.

2.303 (5b): *Executive summary of the proposal indicating the scope and need for the Project.*

The existing Ramah wastewater treatment facility consists of one unlined, non-aerated, unpermitted retention pond that does not provide adequate treatment to discharge to groundwater. All wastewater in the collection system is directed to a septic tank that directs flow to the existing lagoon. The lagoon is neither lined nor aerated. The existing pond is not designed for evaporation, therefore, based on the analysis of the water balance, we assume the lagoon is discharging to the groundwater. The existing facility is unpermitted by CDPHE. No flow data exists as no measurement equipment has been installed.

The service area currently includes 72 units and a population of approximately 130 people based on the most recent US Census Bureau data (2019). Though some multi-family units exist in the service area, it consists primarily of single-family homes. The commercial contributors in the service area are not notable. The population of the Town of Ramah has fluctuated between 98 to 132 people over the previous 29 years of reported data from the US Census Bureau. Since 2001 the town has seen a relatively constant increase in population. An average max month flow of 85 gpd per capita was assumed for the service area per standard design conditions. Utilizing this usage rate and the existing population estimate of 132, an existing average daily flow of 11,203 gpd was determined. Using the projected population estimates, the 20-year average day flow was calculated to be approximately 12,855 gpd. In order to be conservative, the design will be for 15,000 gpd. Project proposes to rate the new facility to an influent flow of 0.015 MGD and a permitted influent organic load of 32 lbs BOD5/day, equivalent to an influent BOD concentration of 250 mg/L. An organic loading limit was not issued as this site is unpermitted, and influent BOD monitoring was not required for an evaporative pond facility.

A replacement of the existing plant must be constructed in order to bring the town into and maintain compliance with state discharge permit requirements. The proposed project to bring the wastewater system into compliance includes constructing an evaporation pond wastewater treatment facility that occurs beyond the existing location as the proposed system will be located on a property separate from the existing wastewater facility. The influent lift station to pump effluent from the collection system to the evaporative ponds will also be on separate property from the existing wastewater facility. This will be located within town right-of-way, approximately 200 feet south of the existing influent septic tank along Pikes Peak Ave. Based on the permitted hydraulic limit of 0.015 MGD, the proposed lift station will be designed for peak hour flow, which is projected to be 0.060 MGD, or 42 gpm.

It is anticipated that the lift station and evaporative ponds will be constructed from spring to fall of 2023 with an anticipated construction duration of 7 months.

2.303 (5c): *Plans and specifications of the Project in sufficient detail to evaluate the application against the applicable Review Criteria.*

The plans for the Project are included in Exhibit H. The specifications can be seen in Exhibit G.

2.303 (5d): *Descriptions of alternatives to the Project considered by the applicant. If the Director determines that the nature or extent of the proposal involves the potential for significant damage and warrants examination of other specific, less damaging alternatives, the Director may require the applicant to evaluate and present information on such additional alternatives as part of the application.*

Several alternatives were analyzed by the applicant for this Project. The first alternative was the consolidation with the closest WWTP in the area, which is in Simla, located approximately 5 miles northeast of Ramah. The costs associated with building a 5-mile pipeline would be significantly higher than the other considered alternatives and make this alternative financially infeasible. Therefore, consolidation was determined to not be a viable option.

Another considered alternative was the replacement of the existing lagoon system with a complete Mechanical Facility. Such a facility would require the decommissioning of the existing lagoon system and the complete replacement of the WWTP with a packaged wastewater facility at the existing lagoon treatment site. This alternative would include the construction/installation of an influent flume, influent lift station, sewer force main, influent screening, alkalinity feed system, packaged wastewater treatment plant, chlorine feed system & contact chamber an effluent flume & flow meter and a building for chemical and blowers. Additionally, this alternative would include any necessary biosolids removal from the existing ponds, fill material to decommission the existing ponds, electrical site work, and yard piping. This option was compared with the evaporative pond system and found to be significantly more expansive to construct and operate.

The most cost-effective option determined is the alternative for Complete Retention/Evaporative Pond System. The proposed project includes decommissioning of the existing facility and the construction of a new evaporative pond system and all associated equipment. It was determined to be the best and most feasible alternative and was the chosen project.

2.303 (5e): *Schedules for designing, permitting, constructing and operating the Project, including the estimated life of the Project.*

The proposed schedule for the Project can be seen in the table below.

Task	Start Date	End Date
Complete & Submit 22.6 & 22.9 Site Application to CDPHE	--	Jan 2022
Complete & Submit 22.6 & 22.9 Site Application Ammendment to CDPHE, EL Paso County		Feb 2022
CDPHE Review and Approval of Site Applications	Feb 2022	Jul 2022
Complete & Submit Process Design Report, 100% Plans and Specifications to CDPHE	Jul 2022	Nov 2022
CDPHE Review and Approval of Process Design Report, 100% Plans and Specifications	Nov 2022	Feb 2023
Project Bidding	Mar 2023	Apr 2023
Construction	Apr 2023	Oct 2023

The lift station has an expected life of 20 years, but the pumps will likely need to be replaced every 10 years.

2.303 (5f): *The need for the Project, including a discussion of alternatives to the Project that were considered and rejected; existing/proposed facilities that perform the same or related function; and population projections or growth trends that form the basis of demand projections justifying the Project.*

The Town of Ramah WWTP does not currently have authorization to discharge to groundwater. The existing facility consists of an unlined lagoon that does not provide adequate treatment to discharge to groundwater. A replacement of the existing plant must be constructed in order to bring the town into and maintain compliance with state discharge permit requirements.

Alternatives considered include consolidation to neighboring treatment facilities, construction of a new mechanical facility and construction of complete retention and evaporative pond system. The “No Action” alternative was not considered. The existing facilities are incapable of treating wastewater to the permitted limits. Continued operation in this manner would result in illegal discharges and enforcement actions, and therefore is not a feasible alternative. Consolidation is not considered viable. The closest WWTP in the area is in Simla, located approximately 5 miles northeast of Ramah. The costs associated with building a 5-mile pipeline make this alternative financially infeasible. Therefore, consolidation is not a feasible alternative. A Mechanical Facility would include the decommissioning of the existing lagoon system and the complete replacement of the WWTP with a packaged wastewater facility at the existing lagoon treatment site. This alternative would include the construction/installation of an influent flume, influent lift station, sewer force main, influent screening, alkalinity feed system, packaged wastewater treatment plant, chlorine feed system & contact chamber an effluent flume & flow meter and a building for chemical and blowers. Additionally, this alternative would include any necessary biosolids removal from the existing ponds, fill material to decommission the existing ponds, electrical site work, and yard piping. This option was compared with the evaporative pond system and found to be significantly more expansive to construct and operate.

The most desirable and cost-effective option is the alternative for Complete Retention/Evaporative Pond System. The proposed project includes decommissioning of the existing facility and the construction of a new evaporative pond system and all associated equipment. Complete retention and evaporation ponds are a viable alternative in areas where the moisture deficit (evaporation minus rainfall) exceeds 30 inches annually. These ponds are attractive because they require no treatment components, chemicals, or sampling. Complete retention ponds must be sized to provide the necessary water surface area to evaporate the annual wastewater volume plus the precipitation that falls into the pond throughout the year.

The population of the Town of Ramah has fluctuated between 98 to 132 people over the previous 29 years of reported data from the US Census Bureau. Since 2001 the town has seen a relatively constant increase in population averaging 0.69% annual increase. Assuming an average growth rate of 0.69%, the existing population is estimated at 132 as of 2021. An average max month flow of 85 gpd per capita was assumed for the service area per standard design conditions. Utilizing this usage rate and the existing population estimate of 132, an existing average daily flow of 11,203 gpd was determined. Using the projected population estimates, the 20-year average day flow was calculated to be approximately 12,855 gpd. In order to be conservative, the facility will be designed for 15,000 gpd.

To properly hold and evaporate the 15,000 gpd of wastewater with no overflow, a total top of berm area of approximately 8.5 acres and a total land area of 10.3 acres is required. The ponds will need to be lined with a synthetic liner to avoid any discharge to groundwater.

2.303 (5g): *Description of relevant conservation techniques to be used in the construction and operation of the Project.*

Best management practices will be followed for the construction of the lift station. This includes storm water/drainage conservation techniques.

2.303 (5h): *Description of demands that this Project expects to meet and basis for projections of that demand.*

The proposed lift station is designed to convey an average wastewater flow of 11,203 gpd (7.8 gpm) with a peak hour flow of 60,000 gpd (41.7 gpm). Due to the available pump sizes, the lift station will likely be designed to be pump at 45 gpm, which is a higher flow rate than is required to handle peak hour flows. Because the town is planning on modest future growth, the design flow is based on the future projected flow. The lift station is also designed to limit the amount of time the wastewater will sit in the wet well before being pumped into the system at current average day flows. A more detailed explanation of the flow rates and how the lift station will operate can be seen in the Site Application in Exhibit I.

2.303 (5i): *List of adjacent property owners and their mailing addresses.*

Adjacent property owners to the proposed wastewater treatment facility are as follows:

Owner:	Ramah Municipal Cemetery
Location:	E Ramah Rd
Mailing Address:	113 S. Commercial St Ramah, CO 80832

Owner:	Carl Finney
Location:	35258 E Ramah RD
Mailing Address:	35258 E Ramah RD Ramah, CO 80832

Owner:	Ruben Valdez
Location:	35801 E Ramah Rd
Mailing Address:	35801 E Ramah Rd Ramah, CO 80832-9404

Owner: Youth Education Corp
Location: E Highway 24
Mailing Address 8400 E Crescent PKWY 664
Englewood, CO 80111

Owner: Reskurtas West Inc
Location: Ramah Hwy
Mailing Address: 34250 Harrisville Rd
Calhan, CO 80808-9404

Adjacent property owners to the proposed lift station facility are as follows:

Owner: Cynthia Tompkins
Location: 13 Pikes Peak Ave
Mailing Address: 13 Pikes Peak Ave
Ramah, CO 80832-9519

Owner: Woodrow D Smith
Location: E Second St
Mailing Address: PO BOX 823
Kiowa, CO 80117-8023

Owner: Woodrow D smith
Location: 01-11-61
Mailing Address: PO BOX 823
Kiowa, CO 80117-8023

Owner: Woodrow D Smith
Location: 01-11-61
Mailing Address: PO BOX 823
Kiowa, CO 80117-8023

Owner: Woodrow D Smith
Location: Pikes Peak Ave
Mailing Address: PO BOX 823
Kiowa, CO 80117-8023

Owner: Patrick J McCarthy
Location: Rock Island Ave
Mailing Address: PO BOX 161
Ramah, CO 80832-0161

Owner: Tracey Silva
Location: 104 Rock Island Ave
Mailing Address: 18975 County Rd 101
Ramah, CO 80832-9604

SECTION 2.303 (6) PROPERTY RIGHTS, OTHER PERMITS, AND APPROVALS

2.303 (6a): *Description of property rights that are necessary for or that will be affected by the Project, including easements and property rights proposed to be acquired through negotiation or condemnation.*

The proposed project will take place on the Town of Ramah's property for the proposed evaporative ponds and will take place within and along town and county right-of-way for the lift station and force main. A Work within Right-of-Way Permit will be required for the force main portions that run along the El Paso County right-of-way on East Ramah Rd. This permit will need to be completed and filed by the selected contractor after the bidding process and the project is awarded. The bidding process is anticipated to be completed in the spring of 2023. The blank permit application form is included in Exhibit Z.

2.303 (6b): *A list of all other federal, state and local permits and approvals that will be required for the Project, together with any proposal for coordinating these approvals with the County permitting process. Copies of any permits or approvals related to the Project that have been granted.*

Below is a list of federal, state and local permits and approvals that will be required:

- CDPHE Approval of Design
- Work Within Right of Way Permit (to obtained by the contractor prior to construction; template can be seen in Exhibit Z)
- Site Development Plan

2.303 (6c): *Copies of relevant official federal and state consultation correspondence prepared for the Project; a description of all mitigation required by federal, state and local authorities; and copies of any draft or final environmental assessments or impact statements required for the Project.*

The Site Application for the project, which was submitted to CDPHE, is included in Exhibit I.

SECTION 2.303 (7) LAND USE

2.303 (7a): *Provide a map at a scale relevant to the Project and acceptable to the Department describing existing land uses and existing zoning of the proposed Project area and the Project service area, including peripheral lands which may be impacted. The land use map shall include but need not necessarily be limited to the following categories: residential, commercial, industrial, extractive, transportation, communication and utility, institutional, open space, outdoor recreation, agricultural, forest land and water bodies. Show all special districts (school, fire, water, sanitation, etc.) within the Project area.*

A land use map is attached in Exhibit K. According to this map and the El Paso County Assessor, the project site for the evaporative ponds is Zoned as A-35 (Agricultural) and the lift station project site is zoned as RS-20000 (Residential suburban).

The town of Ramah and the project sites are located within the Big Sandy Fire Protection District and the El Paso County School District No. 100J (Big Sandy School District), based on the El Paso County Assessor's details of the property and as seen in Exhibit L.

The town and project area are located in the Upper Big Sandy Ground Water District. Because the proposed wastewater facility is evaporative and non-discharging, no impacts to the district associated with the project are anticipated. The Upper Big Sandy Ground Water District map is included in Exhibit T.

2.303 (7b): *All immediately affected public land boundaries should be indicated on the map. Potential impacts of the proposed development upon public lands will be visually illustrated on the map as well as described in the text.*

There are no known public lands other than the public right of ways (E Ramah RD and US Hwy 24) that are adjacent to the property.

2.303 (7c): *Specify whether and how the proposed Project conforms to the El Paso County Master Plan.*

The El Paso County Master Plan is made up of several smaller, industry specific management plans. The proposed project falls under the general Area Goal 5.3 of the El Paso County Master Plan, which states that the county's intent should "Ensure adequate provision of utilities to manage growth and development" and goal 5.4, which states the intent to "Use best management practices to protect water quality, conserve water, minimize impacts of flooding and beautify El Paso County". The proposed project achieves both goals by replacing the existing wastewater system that is believed to be leaking into the surrounding groundwater which will improve the surrounding environment by correcting that existing environmental issue. Additionally, by replacing and expanding the existing wastewater system via the proposed evaporative pond treatment system, the Town's wastewater system will be capable of handling the projected future average day flows and accommodate the anticipated community growth.

2.303 (7d): *Specify whether and how the proposed Project conforms to applicable regional and state planning policies.*

This project is in general conformance with all known regional and state planning policies because the proposed project results in the replacement of an unpermitted and failing wastewater treatment system with a permitted, non-discharging, evaporative treatment plant that will bring the Town into compliance with state and county regulations. Furthermore, the project will eliminate an existing wastewater lagoon that has un-tested wastewater seeping into the ground.

2.303 (7e): *Specify whether and how the proposed Project conforms to applicable federal land management policies.*

The project does not involve any federal lands.

2.303 (7f): *If relevant to the Project design, describe the agricultural productivity capability of the land in the Project area, using Natural Resource Conservation Service soils classification data.*

The NRCS soils classification map of the proposed lift station and evaporative pond can be seen in Exhibit M. As seen, the area around the proposed lift station site is mostly Nunn clay loam.
The area around the proposed evaporative pond is comprised mostly of Manzanst clay loam and Terry-Razor complex. The soils in the area around the pond are considered suitable for agriculture and the land was previously used for agricultural production prior to the Town acquiring the parcel for the proposed evaporative ponds. The area around the lift station location has been previously developed and given its

designation as town right-of-way and close proximity to roads and residential structures, it would not be considered suitable for agriculture.

2.303 (7g): *Describe the probability that the Project may be significantly affected by earthquakes, floods, fires, snow, slides, avalanches, rockslides or landslides and any measures that will be taken to reduce the impact of such events upon the Project.*

The project location is not identified as a high hazard site. The project, including the proposed lift station and evaporative ponds location, are located outside of the natural floodplain as documented in the FEMA FIRM Map included in Exhibit Q. To ensure the reduction of risk to flooding, the proposed evaporative pond embankments will be constructed 9 feet above the approximate elevation of the 100-year floodplain. The lift station site will be raised so that the final grade of the lift station structures sit at a minimum of approximately 2.0 feet above the approximate elevation of the 100-year floodplain. The 100-year floodplain base flood is delineated in the FIRM map in Exhibit Q; however, no base flood elevation is determined under the Flood Zone A classification of the surrounding floodplain in Ramah. From the survey of the proposed project area, the elevation of the 100-year floodplain was delineated to be approximately 6087 ft above sea level.

2.303 (7h): *Specify if excess service capabilities created by the proposed Project will prove likely to generate sprawl or strip development.*

The proposed project is designed for the wastewater flows from the Town of Ramah service area. The service area of Ramah currently serves approximately 132 residents and the service area population over the 20-year planning period is projected to grow to 151. The proposed evaporative pond wastewater facility is designed to accommodate the existing and 20-year future flows. The service area in Ramah is not anticipated to grow outside of the existing town limits and average growth within the town limits has been accounted for in the wastewater facility design. Therefore, impacts to proposed wastewater facility and lift station from additional sprawl or development is unlikely.

2.303 (7i): *Specify whether the demand for the Project is associated with development within or contiguous to existing service areas.*

The proposed project will accommodate development within the town limits. The proposed lift station is sized to accommodate existing and projected future average day demand as well as the peak hour demand based on the proposed permitted hydraulic loading limit. The proposed evaporative pond is sized to accommodate the proposed permitted hydraulic loading rate which is greater than both existing and projected future average day demand. There is no associated development from areas outside of the town limits that will be accommodated by the proposed lift station or evaporative ponds.

SECTION 2.303 (8) SURFACE AND SUBSURFACE DRAINAGE ANALYSIS

2.303 (8): *The applicant shall supply a surface and subsurface drainage analysis.*

A drainage analysis is included in Exhibit N. The design plans also include erosion control measures as shown in Exhibit H.

SECTION 2.303 (9) FINANCIAL FEASIBILITY OF THE PROJECT

2.303 (9a): *Relevant bond issue, loan and other financing approvals or certifications (ex: approved bond issues; bond counsel opinion).*

The Town of Ramah is seeking funding through the CDPHE SRF program and the El Paso County American Rescue Plan Act grant program. The town is capable and willing to enact rate changes as necessary to support repayment for the project.

2.303 (9b): *Business plan that generally describes the financial feasibility of the Project.*

The Town of Ramah is seeking funding through the CDPHE SRF program and the El Paso County American Rescue Plan Act grant program. The town is capable and willing to enact rate changes as necessary to support repayment for the project.

SECTION 2.303 (10) LOCAL INFRASTRUCTURE AND SERVICES IMPACTS

2.303 (10): *An impact analysis that addresses the manner in which the applicant will comply with the relevant Permit Application Review Criteria. The impact analysis shall include the following information: description of existing capacity of and demand for local government services including but not limited to roads, schools, water and wastewater treatment, water supply, emergency services, transportation, infrastructure, and other services necessary to accommodate the Project within El Paso County.*

The project is a new lift station to convey flows from the collection system to the new evaporative pond wastewater treatment facility. The new lift station is not anticipated to increase town wastewater flows. The project will not impact the roads, schools, water treatment, water supply, emergency services, transportation, or any other services.

SECTION 2.303 (11) RECREATION OPPORTUNITIES

2.303 (11): *Description of the impacts and net effect of the Project on present and potential recreational opportunities.*

There are no anticipated impacts to present or potential recreational opportunities.

SECTION 2.303 (12) AREAS OF PALEONTOLOGICAL, HISTORIC OR ARCHEOLOGICAL IMPORTANCE

2.303 (12): *Description of the impacts and net effect of the Project on sites of paleontological, historic or archaeological interest.*

It is not anticipated that artifacts of paleontological, historic, or archeological importance will be uncovered during this project; however, if any are uncovered during construction, the appropriate authorities will be notified.

SECTION 2.303 (13) NUISANCE

2.303 (13): *Descriptions of noise, glare, dust, fumes, vibration, and odor levels anticipated to be caused by the Project.*

There will be temporary nuisances including but not limited to noise, dust, fumes, and vibrations during construction due to the required equipment and earthwork that will be required for construction. These are anticipated to be minimal since most of the construction duration will spent on the evaporative ponds site which is 1,000 feet away from the nearest residence.

The project will involve a long-term odor nuisance due to the project being a wastewater lift station. This is mitigated in the design by limiting the amount of time the wastewater sits in the lift station wet well. At average day flows, the wastewater will sit for approximately 20 minutes between pumping cycles. This is less than the maximum allowable detention time of 60 minutes per CDPHE design criteria, which will help limit the odor nuisance. In addition to the limited detention time, a carbon filter will be installed on the air vent for the lift station wet well. The location of the lift station is also adjacent to the existing septic tank.

There are no expected long-term nuisances due to noise, dust, fumes, or vibration from the project.

SECTION 2.303 (14) AIR QUALITY

2.303 (14): *Description of the impacts and net effect that the Project would have on air quality during both construction and operation, and under both average and worst case conditions, considering particulate matter and aerosols, oxides, hydrocarbons, oxidants, and other chemicals, temperature effects and atmospheric interactions.*

During construction, there will be temporary and typical impacts to air quality. These temporary impacts include but are not limited to equipment exhaust emissions, dust, and other chemical fumes. These impacts will be localized to the project site and will not have a permanent measurable effect on the air quality.

Operation of the lift station will not produce measurable negative effects to the air quality.

SECTION 2.303 (15) VISUAL QUALITY

2.303 (15): *Description of the impacts and net effect that the Project would have on visual quality, considering viewsheds, scenic vistas, unique landscapes or land formations within view of the Project area.*

The project will not change the visual quality of the project area because only the top of the lift station with vents and a control panel will be visible. The top of the embankments of the evaporative ponds will be visible from E Ramah Road but are not expected to significantly change the visual quality of the area as it is surrounded by agricultural land. There are no known scenic vistas, unique landscapes, or land formations that will be impeded by the project.

SECTION 2.303 (16) SURFACE WATER QUALITY

2.303 (16a): *Map and/or description of all surface waters relevant to the Project, including description of provisions of the applicable regional water quality management plan, and NPDES Phase II Permit and necessary El Paso County Erosion and Stormwater Quality Control Permit ("ESQCP"), Section 404 Federal Clean Water Act Permit that applies to the Project and assessment of whether the Project would comply with those provisions.*

The two surface water bodies near the project area are the Big Sandy Creek and Antelope Creek. These surface waters are not relevant to the project area because the proposed project will result in a non-discharging evaporative pond treatment facility. The applicable regional water quality management plan is administered by the Upper Big Sandy Ground Water Management District. Applicable provisions set forth by the Upper Big Sandy Ground Water Management District Rules, Regulations and Guidelines dated June, 2009 includes Rule 17, Water Quality, which states 'For the purpose of conserving, preserving, and protecting the groundwater within the district and to ensure that water quality within the District is maintained within the limits established by Colorado State Agencies and Departments having jurisdiction over such matters, all wells and water delivery systems within which foreign matters are added to the water shall be equipped with proactive devices which prevent such foreign matters from entering the groundwater aquifer at any time through the well. Such protectives shall be maintained in proper working conditions at all times. For the purpose of this rule, "foreign matters" shall include, but not be limited to, fertilizers, pesticides, herbicides, and other agricultural chemicals, landfills, plant disposals, sewage, water treatment materials'

As the proposed project in Ramah involves the introduction of "foreign matters" to municipal water supply via sewage as defined by the district, the provisions for water quality set forth by the district apply to this project. The proposed project shall comply with these provisions as the evaporative pond design includes a double layer of synthetic liner around each of the ponds, preventing any foreign matters from the sewage entering the groundwater aquifer. Additionally, the operation of the ponds containment system, which is the double layer of synthetic liners, shall be in proper working condition continuously for the entire operating life of the ponds. Similarly, for compliance with the district provisions set forth in Rule 17, the proposed lift station shall be designed to prevent any foreign matters from entering the groundwater via its fiberglass wet well containment and emergency overflow and alarm system.

Although the town is not directly involved in discussions with the regional groundwater quality management entity, the proposed project is set to adhere to those local groundwater quality management provisions described above. Furthermore, the project is set to improve groundwater quality in the area around Ramah and the Big Sandy Creek and Antelope Creek with the decommissioning and replacement of the existing wastewater lagoon used in the town's wastewater treatment system. Replacing this lagoon with the three proposed evaporative ponds will improve groundwater quality because the existing lagoon is known to be leaking into the ground as it is unlined and exceeds its useful design life.

The town is generallu involved with regional water quality and environmental management as a participating member of the Pikes Peak Area Council of Governments (PPACG). All site applications for wastewater projects in the town are reviewed and governed by the PPACG in addition to the state and county level reviews. Since the construction area for the project will be greater than 1 acre, a Stormwater Management Plan will be completed as part of this project. Additionally, an El Paso County Erosion and Stormwater Quality Control Permit will be applied for by the selected contractor for the project.

2.303 (16b): *Existing data monitoring sources.*

There are no known data monitoring sources.

2.303 (16c): *Descriptions of the immediate and long-term impact and net effects that the Project would have on the quantity and quality of surface water under both average and worst case conditions.*

The two surface water bodies near the project area are the Big Sandy Creek and Antelope Creek. These surface waters are not relevant to the project area because the proposed project will result in a non-discharging evaporative pond treatment facility. The project will deploy preventative measures for any impacts to the surrounding environment, surface and groundwaters through emergency overflow containment, alarms, and pond containment via double layer synthetic liners. Since there are no surface waters relevant to the project, there are no immediate or long-term impacts and net effects that the project would have on the quantity and quality of surface water.

SECTION 2.303 (17) GROUNDWATER QUALITY

2.303 (17a) *Map and/or description of all groundwater, including any and all aquifers relevant to the Project. At a minimum, the description should include:*

(i) Seasonal water levels in each portion of the aquifer affected by the Project.

A geotechnical evaluation was completed by Kumar & Associates, Inc. on March 16, 2022. The report is attached in Exhibit O. According to the geotechnical report, groundwater was encountered at the proposed lift station location both during drilling and when measured again six days later. The water depth at the time of the final reading was 15.3 feet below the ground surface. No groundwater was encountered at the two borings at the proposed ponds site. However, it was noticed that perched surface water may occur within the sands above less permeable clays, particularly after precipitation events.

(ii) Artesian pressure in said aquifers.

Artesian pressures were not observed during the geotechnical evaluation.

(iii) Groundwater flow directions and levels.

Groundwater flow and direction were not determined in the geotechnical evaluation because groundwater was only encountered at a single boring location. Based on the watershed of the local area, groundwater flows would be anticipated to travel to the northwest in the direction of the Upper Big Sandy Creek watershed. The project is not anticipated to affect the groundwater flows or directions.

(iv) Existing aquifer recharge rates and methodology used to calculate recharge to the aquifer from any recharge sources.

An aquifer recharge rate was not observed in the project area. It is not anticipated that the project will impact storage capacity for aquifer recharge.

(v) For aquifers to be used as part of a water storage system, methodology and results of tests used to determine the ability of the aquifer to impound groundwater and aquifer storage capacity.

No aquifers will be used as part of a water storage system for this project.

(vi) *Seepage losses expected at any subsurface dam and at stream aquifer interfaces and methodology used to calculate seepage losses in the affected streams, including description and location of measuring devices.*

The project is not anticipated to come in contact with or affect any subsurface or stream-aquifer interfaces.

(vii) *Existing groundwater quality and classification.*

The groundwater in the area is EPA Class II – Potential or Current Drinking Water.

(viii) *Location of all water wells potentially affected by the Project and their uses.*

A map of the wells within a 1-mile radius of the project is attached in Exhibit P. The closest well to the project is approximately 460 ft from the proposed lift station.

2.303 (17b): *Description of the impacts and net effect of the Project on groundwater.*

There is no anticipated negative impact from the project on groundwater. The project will improve the groundwater in the area by decommissioning the existing wastewater treatment lagoon, which will eliminate the suspected seepage of untested treated wastewater through the lagoon.

SECTION 2.303 (18) WATER QUALITY

2.303 (18a): *Map and/or description of existing stream flows and reservoir levels relevant to the Project.*

The project is not anticipated to affect existing stream flows or reservoir levels.

2.303 (18b): *Map and/or description of existing minimum stream flows held by the Colorado Water Conservation Board.*

There are no known Colorado Water Conservation Board studies that discuss minimum stream flows for the project area.

2.303 (18c): *Descriptions of the impacts and net effect that the Project would have on water quantity.*

The project is not anticipated to have any effect on water quantity.

2.303 (18d): *Statement of methods for efficient utilization of water, including recycling and reuse.*

No water will be utilized for the project.

SECTION 2.303 (19) FLOODPLAINS, WETLANDS, RIPARIAN AREAS, TERRESTRIAL AND AQUATIC ANIMALS, PLANT LIFE AND HABITAT

2.303 (19): *Applicant shall only provide description of foregoing natural conditions, animal and plant life at, but not to exceed, the level of detail required by other federal or state Permits or reviews which are applicable to the Project.*

The FEMA FIRM map, the wetlands map, and the IPaC resource list are attached in Exhibits Q, R and S respectively. The project will not take place near any floodplains or wetlands. According to the IPaC resource list, there are 2 endangered species, 5 threatened species, and 1 proposed threatened species in the planning area. Several of the listed species included in this report are at risk of being affected by water-related activities/use in the N. Platte, S. Platte, and Laramie River Basins. The planning area does not overlap any of these basins; therefore, the proposed project is not expected to affect these listed species. No critical habitats were found at the project location.

SECTION 2.303 (20) SOILS, GEOLOGIC CONDITIONS AND NATURAL HAZARDS

2.303 (20a): *Map and/or description of soils, geologic conditions, and natural hazards including but not limited to soil types, drainage areas, slopes, avalanche areas, debris fans, mud flows, rock slide areas, faults and fissures, seismic history, and wildfire hazard areas, all as relevant to the Project area.*

According to the NCRS Soil map of the area, which is included as Exhibit M, the area around the proposed lift station site is mostly Nunn clay loam. The area around the proposed evaporative pond is comprised mostly of Manzanst clay loam and Terry-Razor complex. The soils in the area around the pond are considered suitable for agriculture and the land was previously used for agricultural production prior to the Town acquiring the parcel for the proposed evaporative ponds. There are no known geologic hazards on or adjacent to the project area including drainage areas, debris fans, mud flows, rock slide areas, faults and fissures, seismic history, or wildlife hazard areas.

2.303 (20b): *Descriptions of the risks to the Project from natural hazards.*

There are no known natural hazards that pose a risk to the project.

2.303 (20c): *Descriptions of the impacts and net effect of the Project on soil and geologic conditions in the area.*

There are no known impacts to the soil and geologic conditions because of the project.

SECTION 2.303 (21) HAZARDOUS MATERIALS

2.303 (21a): *Description of all solid waste, hazardous waste, petroleum products, hazardous, toxic, and explosive substances to be used, stored, transported, disturbed or produced in connection with the Project, including the type and amount of such substances, their location, and the practices and procedures to be implemented to avoid accidental release and exposure.*

The lift station will collect all of the wastewater from the town collection system, which is currently estimated to be an average of 11,203 gpd. With the 20-year projection, it is estimated that the average flow into the lift station will be 12,855 gpd. To be conservative and account for the lack of existing metering to know the true existing average day flow, the peak hour flow rate for the lift station was based on the proposed permitted hydraulic limit of 15,000 gpd. Multiplying that flow by 4 to get the peak hour flow, results in a peak hour flow of 60,000 gpd (42 gpm), which is what the lift station is designed for. In order to minimize the occurrence of accidental release of raw wastewater, the proposed lift station will be equipped with pump failure and high-water alarms. There will be an audible alarm siren and visual alarm light that will activate to alert and draw attention in the surrounding area when an alarm is triggered. The town has

dedicated 24-hour on-call staffing that will quickly respond to emergencies or alarms. In addition to the alarms, a 6,000-gallon tank which equates to 2 hours of storage at the peak hour flow rate, will be used as overflow storage. In order to provide a minimum of 2 hours of peak hour flow or 8 hours of average day flow, the required overflow storage is 5,040 gallons. Therefore, the proposed overflow tank will be capable of holding up to 2.4 hours of peak hour flow if necessary.

2.303 (21b): *Location of storage areas designated for equipment, fuel, lubricants, and chemical and waste storage with an explanation of spill containment plans and structures.*

Currently, all equipment for both the water and wastewater systems are stored at the town well maintenance shed, which is located on South Commercial Street adjacent to the elevated water storage tank. This allows for easy access to any necessary equipment in case of a mechanical failure at the lift station. There are no chemicals that are needed to operate the project, so no chemicals need to be stored.

SECTION 2.303 (22) MONITORING AND MITIGATION PLAN

2.303 (22a): *Description of all mitigation that is proposed to avoid, minimize or compensate for adverse impacts of the Project and to maximize positive impacts of the Project.*

(i) Describe how and when mitigation will be implemented and financed.

The design of the lift station takes steps to minimize potential wastewater spills. The lift station will be equipped with a portable generator quick-connect that will allow a portable generator to be hooked up to the lift station in case there is a loss of power. Emergency storage for more than 2 hours of peak hour flow or 8 hours of average day flow is also provided. The town has access to portable pumps and generators in case of a mechanical or electrical failure. The evaporative ponds wastewater treatment facility is sized for the maximum day flow with a high-water line depth of 3 feet. The total depth of the pond is 5 feet which leaves 2 feet of freeboard as buffer for any emergency periods of high flows and precipitation. The 3 ponds will also be constructed with overflow piping connecting each pond such that any high flows approaching the high-water line will be dispersed among all three ponds. This ensures the 2 feet of freeboard will always be kept across each pond. In addition to overflow protection measures, the ponds will be constructed with a double layer of synthetic liners, preventing any possible seepage, and leaking into the subsurface. Access to the lift station and evaporative pond site will be limited to approved staff members of the town to limit adverse impacts to the public.

(ii) Describe impacts that are unavoidable that cannot be mitigated.

There are no known unavoidable impacts.

2.303 (22b): *Description of methodology used to measure impacts of the Project and effectiveness of proposed mitigation measures.*

Any spill at the lift station or evaporative ponds facility will be reported to CDPHE. Refer to the Site Application located in Exhibit I for more information.

2.303 (22c): *Description, location and intervals of proposed monitoring to ensure that mitigation will be effective.*

The lift station will be equipped with pump failure and high-water alarms that will alert operations staff to emergency situations and/ or high wet well levels. Pumping equipment will include overcurrent and high temperature protection. An audible alarm siren and visual alarm light will activate to alert and draw attention in the surrounding area. The lift station discharge will be equipped with a magnetic flowmeter so that the town can track in real time the volume of flow being pumped to the evaporative ponds as well. The town has dedicated 24-hour on-call staffing that will quickly respond to emergencies or alarms.

SECTION 2.303 (23) ADDITIONAL INFORMATION

2.303 (23): *The Director may request that the applicant supply additional information related to the Project if the Director and/or the Permit Authority will not be able to make a determination on any one of the applicable Review Criteria without the additional information. Such additional information may include applicant's written responses to comments by a referral agency*.

This is noted and will be addressed as requested by the Director.