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October 3, 2022

SENT VIA: EMAIL

Brian Macy
Assistant General Manager
Mission Springs Water District
66575 2nd Street
Desert Hot Springs, CA 92240

SUBJECT: Proposal for Regulatory Support Services for the Mission Springs Water District to Prepare a Nitrogen Control Strategy Technical Report for the Horton Water Reclamation Facility Pursuant to Order R7-2022-0008

Dear Mr. Macy:

Pursuant to your request, West Yost is pleased to present this letter proposal to provide the Mission Springs Water District (MSWD) with a proposed scope of services, budget, and schedule to prepare a Nitrogen Control Strategy Technical Report (Technical Report) pursuant to Waste Discharge Requirements, Order R7-2022-0008 (Permit), which was issued for the Horton Wastewater Treatment Plant (WWTP) by the Colorado Regional Water Quality Control Board (Regional Board) on April 12, 2022.

BACKGROUND

MSWD is owns and operates the Horton WWTP. The treatment facilities include an extended aeration activated sludge process and the secondary-treated effluent is discharged to eight percolation ponds located onsite. Pursuant to Special Provisions, Section G.2.a of the Permit, MSWD is required to submit for review and approval the subject Technical Report. The Technical Report must include:

- A work plan to achieve an effluent limitation for total nitrogen of 10 milligrams per liter (mg/L) or lower of treated wastewater discharged to the ponds.
- A time schedule for any WWTP improvements of other activities necessary to achieve the proposed effluent limitation.

The Technical Report must be submitted within twelve (12) months of adoption of the Permit, or by April 12, 2023.

This letter describes a proposed scope of services, budget, and schedule to prepare the Technical Report. This effort will leverage the following technical efforts/reports:

1. **Study to Evaluate the Effects of Nitrogen Discharges to Groundwater.**¹ This report was prepared pursuant to the previous permit for the Horton WWTP, Waste Discharge Requirements Order R7-2014-0049. The goal of this previous study was to evaluate the effects of nitrogen in the discharges from the WWTP on groundwater. The report provides an overview of the Horton WWTP effluent concentrations, groundwater at wells in the vicinity of the Horton WWTP, and summarizes the conclusions of a statistical evaluation conducted to estimate the significance of the nitrogen in the effluent to the groundwater.
2. **Work Plan to Develop the Coachella Valley Salt and Nutrient Management Plan [CV-SNMP].**² The objective of the CV-SNMP will be to sustainably manage salt and nutrient loading in the Coachella Valley Groundwater Basin (Basin) in a manner that protects its long-term beneficial uses. Implementation of the Work Plan is an ongoing effort led by multiple water and wastewater agencies in the Coachella Valley, including the MSWD. The Work Plan includes a regional groundwater monitoring program that describes: the initial network of monitoring wells; the spatial and vertical gaps in the monitoring network; how the gaps will be filled; and the sampling and analysis protocols. TDS and nitrogen are the main chemical parameters that will be monitored. It is anticipated that the outcome of the Work Plan will be a clarification on what additional protections are needed with respect to discharges from all dischargers within the basin, including the Horton WWTP, to protect the beneficial uses of groundwater in the Coachella Valley.

PROJECT APPROACH

West Yost proposes that the Technical Report will describe a phased approach to meeting the total nitrogen requirements. This phased approach will include the following elements:

1. A characterization of the existing nitrogen concentrations through the entire process of treatment, to disposal, to receiving water (groundwater).
2. A description of potential near-term operational improvements that can be made to reduce the total nitrogen in the discharges from the WWTP. These improvements are expected to include implementation of control measures to achieve more reliable simultaneous nitrification/denitrification in the WWTP's oxidation ditches. The intention with these improvements is to improve performance but not, necessarily, allow the WWTP to meet the 10 mg/L limitation.
3. A Facilities Plan for the potential near-term operational improvements identified in (2.) above.
4. A proposed monitoring program to describe the soil-aquifer treatment that occurs during the percolation process. The results of the monitoring program will provide a more accurate description of nitrogen loading from the wastewater discharges to the underlying groundwater.

¹ EnviroLogic Resources Inc. 2017. *Study to Evaluate the Effects of Nitrogen Discharges to Groundwater – Alan L. Horton Wastewater Treatment Plant, Desert Hot Springs, California*. August 4, 2017.

² West Yost Associates, Inc. 2021. *Workplan to Develop the Coachella Valley Salt and Nutrient Management Plan*. Prepared for the Coachella Valley SNMP Agencies. September 2, 2021.

5. Implementation of the operational improvements and monitoring program in (3.) and (4.) above.
6. A report that assesses the efforts described above, along with the CV-SNMP findings, and identifies additional steps needed to comply with the CV-SNMP, if any.
7. More extensive upgrade to the WWTP, should it be deemed necessary following the completion of steps described above.

MSWD will benefit from completing the work described above within the timeframe of the larger CV-SNMP efforts. As noted above, it is expected that the CV-SNMP will define the broader expectations for the basin with respect to nitrogen loading from all sources and clarify what additional protections are needed with respect to nitrogen discharges from the Horton WWTP. West Yost is currently working to complete the CV-SNMP, and it is expected that the CV-SNMP will be completed by 2026 or 2027. Therefore, the timeline for all efforts that will be proposed in the Technical Report will be consistent with the CV-SNMP timeline.

This letter proposal is to develop the Technical Report required under the Permit, which will include Items 1, 2 and 4 above and a timeline for completing the remaining items.

SCOPE OF SERVICES

The following is a list of the key tasks necessary to perform the proposed Scope of Services, each further described below:

- Task 1. Project Kickoff/Collect Data and Reports
- Task 2. Nitrogen Concentrations through the Treatment/Disposal Process Characterization
- Task 3. Operational Strategies for Reducing Nitrogen Discharges from the WWTP
- Task 4. Nitrogen Removal During Percolation Soil Aquifer Through Shallow Soils Monitoring Plan
- Task 5. Prepare the Nitrogen Control Strategy Technical Report
- Task 6. As-Needed Support
- Task 7. Project Management

Task 1. Project Kickoff/Collect Data and Reports

The objectives of this task are to:

1. Achieve consensus on the objectives of the Technical Report with MSWD and the Regional Board.
2. Compile and review all readily available reports, data, and information necessary to complete the Technical Report.

The main activities of this task include:

- West Yost will prepare for and lead a project kickoff meeting. The agenda for the kickoff meeting will be (i) the anticipated objectives of the final Technical Report (ii) the schedule to complete the Technical Report; and (iii) the reports, data, and information necessary to complete the Technical Report.

- Following the kickoff meeting, West Yost will prepare a data request email.
- West Yost will collect, review, and compile reports, data, and information necessary to complete the Technical Report.

Task 1 Assumptions

- Client will prepare for and attend the kickoff meeting.
- Client will assist West Yost in identifying and compiling the reports, data, and information.
- All requested data will be provided in electronic (MS Excel) format within two weeks of the submitted request.

Task 1 Deliverables

- West Yost will prepare a draft meeting agenda in MS Word format prior to the Kickoff Meeting.
- West Yost will provide an email summarizing action items from the Kickoff Meeting within one week of the meeting.
- West Yost will prepare a data request email, detailing the information needs to support this project.

Task 2. Nitrogen Concentrations through the Treatment/Disposal Process Characterization

The objective of this task is to characterize the nitrogen concentrations through the entire process of treatment, to disposal, to receiving water (groundwater). The main activities of this task include:

- Prepare a site characterization map of surface geology; groundwater basin and subbasin boundaries; the location of the Horton WWTP and its percolation ponds; other local sources of nitrogen loading; the locations of production and monitoring wells; groundwater elevations and flow directions; and the current nitrogen concentrations in groundwater.
- Prepare time-series charts of nitrogen concentrations through the entire process of treatment, to disposal, to receiving water (groundwater).
- Prepare draft text to characterize the nitrogen concentrations through the entire process of treatment, to disposal, to receiving water (groundwater).

Task 2 Deliverables

- West Yost will provide maps of the site in electronic (PDF) format.

Task 3. Operational Strategies for Reducing Nitrogen Discharges from the WWTP

The objective of this task is to assess the feasibility of achieving reduced WWTP effluent nitrogen concentrations through operational changes. The main activities of this task include:

- Review and characterize the WWTP design and process from data/information collected under Task 1 and Task 2.
- Conduct a WWTP site visit and meet with operations staff to gain a better understanding of the current operational strategies and identify opportunities for reducing effluent nitrogen concentrations.

- Develop a conceptual operational approach for reducing nitrogen levels. [Further evaluation of the conceptual approach will be completed following approval of the Technical Report by the Regional Board.]
- Conduct Project Meeting No. 1 with MWWD staff to discuss the findings and recommendations from this task.

Task 3 Assumptions

- WWTP Operations Staff knowledgeable about the secondary treatment system process control strategy will be participate in the site visit and be available to answer questions.

Task 3 Deliverables

- West Yost will prepare a draft meeting agenda in MS Word format prior Project Meeting No. 1.
- West Yost will provide an email summarizing action items from Project Meeting No. 1 within one week of the meeting.

Task 4. Nitrogen Removal During Percolation Through Shallow Soils Monitoring Plan

The objective of this task is to identify the need for, and benefit of, characterizing the soil-aquifer treatment that occurs during the percolation process at the disposal basins. This effort will include developing a monitoring program to collect the data necessary to demonstrate the nitrogen-loss processes at the disposal basins. The main activities of this task include:

- Prepare a map of the recommended soil-aquifer treatment monitoring locations based on the site characterization map developed in Task 2. [Implementation of the monitoring plan will be completed following approval of the Technical Report by the Regional Board.]
- Conduct Project Meeting No. 2 with MWWD staff to discuss the findings and recommendations from this task.

Task 4 Deliverables

- West Yost will provide maps documenting recommended monitoring locations in electronic (PDF) format.
- West Yost will prepare draft meeting agenda in MS Word format prior to the Project Meeting No. 2.
- West Yost will provide an email summarizing action items from the Project Meeting No. 2 within one week of the meeting.

Task 5. Nitrogen Control Strategy Technical Report

The objective of this task is to prepare the Technical Report in accordance with the requirements of Section G.2.a of the Permit. The main activities of this task include:

- Compile the text, tables, and figures prepared in Tasks 2, 3 and 4, prepare an administrative draft Technical Report, and submit it to MSWD for review and comment.
- Lead a conference call with MSWD staff to discuss the administrative draft Technical Report and receive verbal feedback.
- Prepare a draft Technical Report based on the comments and suggested revisions received from MSWD.

- Prepare a cover letter to support submission of the draft Technical Report by MSWD to the Regional Board.
- Lead a conference call with Regional Board and MSWD staff to discuss the draft Technical Report and receive verbal feedback.
- Prepare a final Technical Report based on the comments and suggested revisions received from Regional Board staff.
- Prepare a cover letter to support submission of the draft Technical Report by MSWD to the Regional Board.

Task 5 Assumptions

- MSWD staff will provide one (1) round of review/comment on the administrative draft Nitrogen Control Strategy Technical Report.
- MSWD staff will provide West Yost with written comments and suggested revisions within two weeks of the conference call.
- Regional Board staff will require only one (1) review meeting regarding the draft Nitrogen Control Strategy Technical Report.
- Regional Board staff will provide West Yost and MSWD with written comments and suggested revisions, as appropriate.
- Revisions required by the Regional Board, if any, will be minor. If the Regional Board does not support the Technical Report approach described previously in this letter proposal, a budget amendment may be needed to support a major revision the report.
- MSWD will submit the final Technical Report to the Regional Board.

Task 5 Deliverables

- West Yost will provide an electronic, (PDF) copies of the administrative draft, draft, and final Nitrogen Control Strategy Technical Report.
- West Yost will provide an electronic (word) copy of the draft Technical Report transmittal cover letter, to be printed on MSWD letterhead and submitted with the Technical Report.
- West Yost will provide a GIS layers and mapping prepared for the Nitrogen Control Strategy Technical Report.
- West Yost will provide an electronic (word) copy of the final Technical Report transmittal cover letter, to be printed on MSWD letterhead and submitted with the Technical Report.

Task 6. As-Needed Support

Following submission of the Technical Report, the Regional Board may require additional meetings or information to support the Technical Report approach which could require assistance from West Yost. MSWD may also require support from West Yost in planning and/or developing the next steps for the study. This task provides for these as-needed support services.

The specific work efforts and deliverables under this task cannot reasonably be determined at this time, so the associated fee estimate presented in this letter proposal is based on a nominal effort. The scope of work under this task will be limited to work that has been requested by the MWMC and can be completed within the available budget. All work will be performed on a time and materials basis, and monthly invoices will detail the efforts and costs. Depending on the level of effort required, a scope and budget

amendment may be necessary in the future. If the estimated fee is not expended in the timeframe anticipated for this scope of work, it may also be directed toward the completion of other efforts.

Task 6 Deliverables

- West Yost will be coordinated with MSWD if services are requested.

Task 7. Project Management

This task includes project management related activities, including project initiation, general project coordination, and development and review of project invoices.

Task 7 Assumptions

- The duration for the project will be approximately six months.

Task 7 Deliverables

- West Yost will prepare monthly invoices and descriptions of services performed in PDF format.

PROJECT BUDGET

West Yost’s proposed level of effort and budget for each of the tasks described above is shown in Table 1. West Yost will perform the Scope of Services described above on a time-and-expenses basis, at the billing rates set forth in West Yost’s attached 2022 Billing Rate Schedule, with a not-to-exceed budget of \$92,993. Any additional services not included in this Scope of Services will be performed only after receiving written authorization and a corresponding budget augmentation.

Table 1. Estimated Project Hours and Budget		
Task	Level of Effort, hours	Estimated Budget, dollars
Task 1. Project Kickoff/Collect Data and Reports	36	8,612
Task 2. Nitrogen Concentrations through the Treatment/Disposal Process Characterization	36	8,717
Task 3. Operational Strategies for Reducing Nitrogen Discharges from the WWTP	90	23,704
Task 4. Nitrogen Removal During Percolation Through Shallow Soils Monitoring Plan	44	11,562
Task 5. Nitrogen Control Study Technical Report	106	25,098
Task 6. As-Needed Support	36	10,216
Task 7. Project Management	14	4,484
Total Project Hours and Budget	362	\$92,993

SCHEDULE

West Yost anticipates the following timeline for the key project milestones:

- **Kickoff Meeting:** within one (1) week after receiving notice to proceed
- **Data Request:** one (1) week after kickoff meeting
- **Receive Data from MSWD:** two (2) weeks after receiving data request from West Yost
- **WWTP Site Visit:** three (3) weeks after receiving all required data
- **Progress Meeting No. 1:** six (6) weeks following the site visit
- **Progress Meeting No. 2:** four (4) weeks after receiving all required data
- **Administrative Draft Technical Report (to MSWD):** four (4) weeks following Progress Meeting No. 1. (Anticipated to be seventeen (17) weeks following notice to proceed)
- **Administrative Draft Review Meeting:** one (1) week following submission of the administrative draft Technical Report
- **Comments on Administrative Draft Technical Report from MSWD:** two (2) weeks following the administrative draft Technical Report review meeting
- **Draft Technical Report (to Regional Board):** two (2) weeks following receipt of comments from MSWD. (Anticipated to be twenty-two (22) weeks following notice to proceed)

As noted previously, the Technical Report is due to the Regional Board by April 12, 2023. Therefore, West Yost must receive notice to proceed no later than November 9, 2022, to meet the Permit deadline for submission.

Preparation of the final Technical Report is dependent on the speed of review and comment by the Regional Board, which is uncertain.

Thank you for providing West Yost the opportunity to be of service to the MSWD on this important project. Please call with questions or requests for additional information.

Sincerely,
WEST YOST



Kathryn Gies, PE
Engineering Manager



Andy Malone
Principal Geologist II

Attachment: A. West Yost 2022 Billing Rate Schedule



Attachment A

West Yost's 2022 Billing Rate Schedule

2022 Billing Rate Schedule

(Effective August 1, 2022 through December 31, 2022)*



POSITIONS	LABOR CHARGES (DOLLARS PER HOUR)
ENGINEERING	
Principal/Vice President	\$328
Engineer/Scientist/Geologist Manager I / II	\$310 / \$324
Principal Engineer/Scientist/Geologist I / II	\$280 / \$298
Senior Engineer/Scientist/Geologist I / II	\$251 / \$264
Associate Engineer/Scientist/Geologist I / II	\$215 / \$231
Engineer/Scientist/Geologist I / II	\$173 / \$201
Engineering Aide	\$101
Field Monitoring Services	\$93
Administrative I / II / III / IV	\$89 / \$112 / \$134 / \$148
ENGINEERING TECHNOLOGY	
Engineering Tech Manager I / II	\$322 / \$324
Principal Tech Specialist I / II	\$296 / \$306
Senior Tech Specialist I / II	\$271 / \$283
Senior GIS Analyst	\$245
GIS Analyst	\$232
Technical Specialist I / II / III / IV	\$173 / \$197 / \$221 / \$247
Technical Analyst I / II	\$124 / \$148
Technical Analyst Intern	\$100
Cross-Connection Control Specialist I / II / III / IV	\$129 / \$140 / \$157 / \$175
CAD Manager	\$195
CAD Designer I / II	\$151 / \$171
CONSTRUCTION MANAGEMENT	
Senior Construction Manager	\$313
Construction Manager I / II / III / IV	\$191 / \$205 / \$217 / \$275
Resident Inspector (Prevailing Wage Groups 4 / 3 / 2 / 1)	\$167 / \$185 / \$207 / \$215
Apprentice Inspector	\$151
CM Administrative I / II	\$81 / \$109
Field Services	\$215

- Hourly rates include Technology and Communication charges such as general and CAD computer, software, telephone, routine in-house copies/prints, postage, miscellaneous supplies, and other incidental project expenses.
- Outside Services such as vendor reproductions, prints, shipping, and major West Yost reproduction efforts, as well as Engineering Supplies, etc. will be billed at actual cost plus 15%.
- The Federal Mileage Rate will be used for mileage charges and will be based on the Federal Mileage Rate applicable to when the mileage costs were incurred. Travel other than mileage will be billed at cost.
- Subconsultants will be billed at actual cost plus 10%.
- Expert witness, research, technical review, analysis, preparation and meetings billed at 150% of standard hourly rates. Expert witness testimony and depositions billed at 200% of standard hourly rates.
- A Finance Charge of 1.5% per month (an Annual Rate of 18%) on the unpaid balance will be added to invoice amounts if not paid within 45 days from the date of the invoice.

2022 Billing Rate Schedule

(Effective August 1, 2022 through December 31, 2022)*



Equipment Charges

EQUIPMENT	BILLING RATES
2" Purge Pump & Control Box	\$270 / day
Aquacalc / Pygmy or AA Flow Meter	\$28 / day
Emergency SCADA System	\$35 / day
Gas Detector	\$80 / day
Generator	\$39 / day
Hydrant Pressure Gauge	\$10 / day
Hydrant Pressure Recorder, Impulse (Transient)	\$55 / day
Hydrant Pressure Recorder, Standard	\$40 / day
Low Flow Pump Controller	\$75 / day
Powers Water Level Meter	\$32 / day
Precision Water Level Meter	\$19 / day
Stainless Steel Wire per foot	\$0.03 / day
Storage Tank	\$15 / day
Sump Pump	\$24 / day
Transducer Components (per installation)	\$23 / day
Trimble GPS – Geo 7x	\$220 / day
Tube Length Counter	\$22 / day
Turbidity Meter	\$22 / day
Vehicle	\$10 / day
Water Flow Probe Meter	\$20 / day
Water Quality Meter	\$27 / day
Water Quality Multimeter	\$185 / day
Well Sounder	\$30 / day