

**TO:** James L. App, City Manager  
**FROM:** Doug Monn, Public Works Director  
**SUBJECT:** Award Contract to Black & Veatch Associates for Design of a Six Million Gallon per Day Water Treatment Facility  
**DATE:** May 15, 2007

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**NEEDS:** For the City Council to consider appropriating funding and authorizing engineering design for a water treatment plant.

- FACTS:**
1. The City will take delivery of water from Nacimiento Lake in June of 2010.
  2. To facilitate the use of water, the City will need to design and construct a six million gallon per day treatment facility at its Thunderbird well field.
  3. The project is estimated to cost approximately seventeen million dollars (\$17,000,000).
  4. The City solicited statements of qualifications/proposals from design firms and received three proposals.
  5. Selection criteria for the design firm was approved by the Council Ad-Hoc Committee on February 20, 2007; all three firms were interviewed March 1, 2007.
  6. The City's selection panel, in consultation with the Council's Ad-Hoc committee, unanimously recommends retaining Black & Veatch to provide design services for the treatment plant.
  7. In addition to extensive experience in the design of water treatment plants throughout the West Coast, Black & Veatch has been providing design services to the County of San Luis Obispo Flood Control & Water Conservation District in the development of the Nacimiento pipeline.
  8. Black & Veatch has provided the City with a cost of \$1,950,000 to design the treatment process and support structures, necessary tanks and blending pipelines, control systems, architectural and landscaping design of the treatment plant, and assistance with contractor outreach and bid phase services.
  9. Staff is requesting an allocation of \$2,150,000 to include a \$200,000 contingency to offset the cost of possible unforeseen conditions.

**ANALYSIS &  
CONCLUSION:**

The Nacimiento Water Project will be an important asset to the City. The continued growth and economic vitality of the City and its inhabitants is predicated upon adequate water resources. Evaluations of the Paso Robles Groundwater Basin published in 2002 pointed to the limited yield of the region's well supply, prompting the City and others to initiate design of the Nacimiento Water Project. Further, deteriorating groundwater quality, particularly reflected as increasing salts levels, is observed throughout the Paso Robles Groundwater Basin such that left un-checked, would continue to deteriorate over the long-term. To ensure deliverability of higher

quality Nacimiento water at the lowest cost construction, a properly functioning and easily maintained treatment facility will be essential.

Therefore, it is in the best interest of the City of Paso Robles and its water users to retain the services of Black & Veatch to provide Professional Engineering Design Services associated with the design of the City's treatment plant.

**POLICY**

**REFERENCE:** Economic Strategy; Integrated Water Resource Plan; Nacimiento Water Project Entitlement Contract.

**FISCAL IMPACT:** Black & Veatch proposes to provide Professional Engineering Design Services for a cost not to exceed \$1,950,000. Because of the scope of the Nacimiento Water Project, complexities involved in design of a public drinking water facility, and the possibility of design amendments, particularly those that may come up during value engineering review of the plant, a \$200,000 contingency should be included. The cost for this service would be paid from the Nacimiento Water Treatment Impact Fee Fund.

Through February 28, 2007, the City has collected a total of \$5,337,000 from the following sources for the Nacimiento Water Project:

Nacimiento Water Development Fee Fund	\$3,042,000
Nacimiento Water User Fee Fund (pipeline project only)	1,696,000
Nacimiento Water Treatment Development Fee Fund	599,000

It was hoped that the treatment facility could be completed on a cash basis using funds accumulated from all three sources. However, the project is estimated to cost \$17 million, and impact fees are being collected at a much slower pace given the slowdown in development activity. With the completion of the Nacimiento Water Project moving forward faster than originally projected, it is likely that long-term financing may be required to fund the Nacimiento Water Treatment Project.

In the near future a complete financing plan for the Nacimiento Water Project will be presented. The financing plan will include an update to funding requirements for the pipeline, the operational cost of the treatment plant, and potential debt service needs. The local treatment plant operational costs and present debt service were not included in the original user fees.

- OPTIONS:**
- a. Adopt Resolution No. 07-xx appropriating \$2,150,000 from Water Operation Funds to Budget No. 229.910.5452.544 and authorizing the City Manager to enter into a contract with Black & Veatch in the amount of \$1,950,000 to provide professional engineering design services associated with the design of the six million gallon per day treatment facility.
  - b. Amend, modify, or reject the above option.

Prepared by: Christine Halley, Water & Utility Consultant,  
TJ Cross Engineers, Inc.

Attachments (2)

- 1) Resolution
- 2) Scope of Work

RESOLUTION NO. 07-

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PASO ROBLES  
APPROPRIATING FUNDS AND AWARDING A CONTRACT  
TO BLACK & VEATCH FOR PROFESSIONAL ENGINEERING DESIGN SERVICES  
ASSOCIATED WITH THE DESIGN OF A WATER TREATMENT PLANT

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WHEREAS, the City of Paso Robles is a partner in securing water from Lake Nacimiento; and

WHEREAS, integration of Nacimiento Water into the City's distribution system will require the construction of a six million gallon per day treatment facility; and

WHEREAS, the construction of the treatment facility must be completed by 2010 to accommodate the acceptance of the Nacimiento Water; and

WHEREAS, the design process will require a professional engineering firm to ensure its functionality and completion by the required date, and;

WHEREAS, because of their demonstrated depth of experience, understanding of the purpose of the treatment plant, direct experience with the Nacimiento Pipeline Project, and the needs of the City, it would appear to be in the best interest of the City of Paso Robles and its water users to retain the service of Black & Veatch to provide Professional Engineering Design Services for the design of the treatment facility at a cost not to exceed. \$1,950,000 plus a contingency of \$200,000 for unforeseen design amendments.

THEREFORE, BE IT RESOLVED AS FOLLOWS:

SECTION 1. The City Council of the City of Paso Robles does approve a one time supplemental budget appropriation from the Water Operations Fund in the amount of \$2,150,000 to budget account 229-910-5452-544; and

SECTION 2. The City Council does hereby award a contract to Black & Veatch for Professional Engineering Design Services associated with the design of the treatment facility in the amount of \$1,950,000, and authorizes the City Manager to execute the contract.

PASSED AND ADOPTED by the City Council of the City of Paso Robles this 15th day of May 2007 by the following votes:

AYES:  
NOES:  
ABSTAIN:  
ABSENT:

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Frank R. Mecham, Mayor

ATTEST:

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Deborah D. Robinson, Deputy City Clerk



## EXHIBIT B

### SCOPE OF WORK – NACIMIENTO WATER TREATMENT PLANT

The project work consists of the following tasks:

- ▼ Task A – Project Management
- ▼ Task B – Preliminary Design Phase
- ▼ Task C – Final Design Phase
- ▼ Task D – Bid Phase Services
- ▼ Task E – Construction Phase Services
- ▼ Task F – Startup Assistance/Training and O&M Manual
- ▼ Task G – Supplemental Tasks

The scope that follows describes the specific work to be performed by Consultant for each of the preceding tasks.

#### TASK A – PROJECT MANAGEMENT

##### Task A.1 – Project Schedule

An initial project schedule will be prepared using Microsoft Project software including design, permitting, bidding, construction, and post-construction activities. City staff will be advised, in writing, of the schedule impact of project technical decisions, and the project schedule will consistently be updated, on at least a monthly basis, to reflect current project status, with emphasis given to meeting milestones associated with major deliverable products. The project schedule will be included in the Preliminary Design Report and updated monthly through the end of the Bid Phase.

##### Task A.2 – Monthly Progress Meetings

Progress meetings will be conducted with City staff on a monthly basis the design phases, or as requested by City. An agenda and meeting minutes will be prepared and distributed to all attendees for each meeting. Meeting minutes will be prepared and submitted within five working days after the meeting. Some progress meetings will be combined with other project meetings, so that a budget of fourteen (14) progress meetings through the end of Bid Phase is included in the budget estimate.

Two (2) meetings with Department of Health Services (DHS) staff in Carpenteria have been budgeted.

##### Task A.3 – Monthly Progress Reports

Monthly progress reports summarizing the status of the work will be prepared through the end of the Bid Phase. Progress reports will include (1) a brief summary of each task that is completed, in-progress, or pending during the reporting period, (2) an estimate of the percentage complete for each task and a listing of milestones achieved, (3) summary of activities of subcontractors during the reporting period, (4) a schedule update and explanation of significant deviations from the approved scope



or schedule, (5) progress relative to schedule and corrective action (if necessary) to be taken by Consultant and/or City, (6) summary of costs incurred during the period, and (7) summary of activities planned for the next reporting period.

## Task A.4 – Project Procedures Manual

Prepare and maintain throughout the project duration a Project Procedures Manual, which shall include the following:

- ▼ Project Scope of Work.
- ▼ Project communications protocol, including City's Construction Manager, if any.
- ▼ Project team organization and roles.
- ▼ Schedule of engineering activities.
- ▼ Directory of addresses and phone numbers for team members.
- ▼ Document filing procedures.
- ▼ Invoice format and invoicing procedures.

Five copies of the draft Project Procedures Manual shall be submitted to the City within one week of the notice to proceed with the work. Following receipt of review comments, ten copies of the final draft of the Project Procedures Manual shall be prepared and distributed to the project participants.

The Project Procedures Manual will be updated, as needed, to reflect the progress of the work and to account for changed conditions.

## Task A.5 – Project Quality Plan

A Quality Assurance/Quality Control (QA/QC) plan will be prepared which will define the procedures to be followed to ensure a high quality product. The QA/QC plan will identify the schedule and level of effort planned for internal quality review and call for evidence of QA/QC review with each design deliverable.

## Task A.6 – Project Standards Manual

A project standards manual shall be prepared at the beginning of the preliminary design phase. This memorandum shall address the criteria to be used for technical design work and CAD preparation of contract drawings. The memorandum shall be prepared to facilitate compliance with City standards and consistency among all of the design team disciplines.

Items to be addressed shall include:

- ▼ Conversion of surveying information to contract drawings.
- ▼ Drawing layout procedures.
- ▼ Drawing layer and text conventions.
- ▼ Standard abbreviations and symbols.
- ▼ Architectural/Structural criteria (wind loads, bearing capacities, seismic criteria, concrete design strength, etc.).



- ▼ Pipe design criteria (minimum cover, yield strengths, safety factors, restraint design procedures, etc.) for yard and transmission pipeline systems
- ▼ Pump design criteria.
- ▼ Civil design criteria.
- ▼ Electrical/I&C design criteria.
- ▼ Mechanical design criteria.
- ▼ Materials of construction.
- ▼ Equipment specifications (pipe, valves, pumps, etc.).
- ▼ Standard details.

## Task A.7 – Project Document Log and File

A formal record of the project shall be established and maintained in the Consultant's office through the end of the Bid Phase. This record shall contain products and calculations, minutes of meetings and/or workshops, correspondence, memoranda, a detailed list of references used, and other pertinent information pertaining to this scope of services. Information that is produced in an electronic format shall be maintained electronically and as hard copy. Non-electronic information shall be maintained as hard copy.

## Task A.8 – Coordination with City Planning Commission

Upon completion of the preliminary design, photo-realistic renderings of the proposed WTP site layout, buildings, and conceptual landscaping requirements will be prepared and submitted to the City for review. Following receipt and resolution of planning department review comments, the proposed rendering drawings will be revised and resubmitted for approval. Final design will proceed only after written approval from the planning department regarding the proposed layouts is received. Planning Commission presentation(s) are addressed separately in Task C.4.

## TASK B – PRELIMINARY DESIGN PHASE

### Task B.1 – Project Kick-off Workshop

A half-day (4 hour) workshop will be conducted with City staff and other interested parties. The purpose of the workshop will be to clarify the City's requirements for the project, review pertinent available data, review project staffing and organization, present initial work plan, and present initial work schedule. An agenda and meeting minutes will be prepared and distributed to all attendees.

### Task B.2 – Identification and Collection of Background Information

Data relevant to the engineering work to be performed will be identified, collected, and assembled. The primary purpose will be to identify data required from the City, utility companies, permittees, agencies with vested interest in the project (e.g. DHS), and other sources to ensure that the design proceeds in accordance with the requirements of the many entities involved. Information shall include, but not be limited to, existing maps, reports, and other data that are readily available in hardcopy



or electronic format. A list of all the documents collected under this task, including a brief item description, will be provided to the City.

## Task B.3 – Surveying, Mapping & Utility Engineering

Complete surveying and aerial mapping of the WTP site and established transmission pipeline alignments shall be performed<sup>1</sup> as follows:

- ▼ Boundary and Topographic Survey and Mapping (NWTP). Consultant shall re-establish and map the City’s “Thunderbird” well site property APN 009-631-001, 18.46 acres +/- and the City’s 2.02 acres +/- property immediately north, APN 009-631-002. This will include procuring a Preliminary Title Report (PTR) and plotting any easements listed therein. This information will be shown on the Base Map described below. It is assumed that all monuments of record exist and are in acceptable locations and that no material discrepancies will occur. Horizontal Control shall be based on the previous control for the 2005 mapping. Vertical Control shall be based upon the City’s Benchmark system.
- ▼ Ground Survey and Base Map (NWTP). Consultant shall perform a topographic survey on the ground to locate surface structures such as water valve lids, water wells, sanitary sewer manholes, storm drain manholes, paint marks indicating underground utilities, bore holes, and other utility structures which are at surface within the project, to include contours at a one foot interval or spot elevations to be compiled to the 2005 aerial mapping, which contained a two foot contour interval. In addition, Consultant shall map the horizontal location of the underground utilities based upon the found surface structures and paint marks along with the City-provided Atlas Maps and As-Built Improvement Plans. This information along with the mapping above shall be compiled to form the “Base Map”.
- ▼ Boundary and Topographic Survey and Mapping (Transmission Pipelines). The mapping for the pipelines shall be an approximately 200 foot wide strip of land. It has been assumed that common trench for the pipeline shall be utilized from the WTP site to a point 4,300 linear feet to the north. The pipeline to the Main East zone shall continue 2,800 linear feet to the connection point at Oak and Santa Ysabel Road. The pipeline to the Main West zone shall continue 4,900 linear feet to the connection point at Spring and Niblick. An additional 2,500 linear feet of surveying for the Ronconi transmission pipeline shall be provided. The combined surveying length for the three pipelines is 14,500 linear feet.

The topographic mapping for the transmission pipelines shall be performed using aerial mapping techniques with ground control (15 aerial target locations). A color digital orthophoto mosaic with a .2’ pixel resolution shall be provided. All mapping shall be done in Imperial Units to a scale of 1 inch = 40 feet with a 1 foot contour interval. The mapping shall show all visible major features such as

<sup>1</sup> Optional surveying and mapping services for the pipeline alignments to Ronconi and Sherwood Wells are addressed in Task G.8



pavement, overhead utility lines, buildings, fences, tree canopies and heavy brush. This mapping shall be added to the Base Map described above.

In addition to the above, Consultant shall perform a topographic survey on the ground to locate surface structures such as water valve lids, water wells, sanitary sewer manholes, storm drain manholes, paint marks indicating underground utilities, bore holes, and other utility structures which are at surface, top of river banks in dense vegetation near proposed crossing within the 200 foot wide strip excepting any work within the railroad right of way, and outside of the Charolais Road right of way. Consultant shall map the horizontal location of the underground utilities based upon the found surface structures and paint marks along with the City-provided Atlas Maps and As-Built Improvement Plans. This information shall be compiled to the Base Map.

Consultant shall re-establish and map portions of the City's easement over properties to the north of the City owned property. There are two APN's under the same ownership in which it is believed the City already has an easement. Consultant shall procure a PTR over this property and plot easements which may conflict with the proposed route, and re-establish the existing City easement. Note: Charolais Road is assumed to be a public street.

- ▼ The Base Map along with an electronic file in AutoCAD LDT3 shall be provided.

## Task B.4 – Geotechnical Investigations

A geotechnical investigation program will be performed including data review, subsurface explorations, laboratory testing, and data analyses. Summary reports will be prepared of the findings and recommendations of the geotechnical investigations. Fugro has been retained as a subconsultant to provide the following services:

### Phase 1: Preliminary Geotechnical Investigation

Under this phase of work, Consultant will perform a preliminary field exploration program and prepare a Preliminary Geotechnical Report to assess the geologic hazards likely to impact the design of the Project (such as seismicity, liquefaction, or seismic settlement), and assist in planning the geotechnical study for the subsequent design-level geotechnical study. The preliminary geotechnical services will consist of the following:

- ▼ Cone Penetration Tests. Perform five (5) cone penetrometer tests (CPTs) to evaluate the subsurface conditions at the site, with soundings advanced to depths of approximately 50 feet below the existing ground surface depending on the conditions encountered (for a total of approximately 300 feet); unless refusal is encountered at a shallower depth. The CPT soundings will be performed using an electric piezocone penetrometer that is advanced into the ground using a hydraulic ram mounted on a truck having a weight of approximately 20-tons. The data will be retrieved electronically for use in subsequent geotechnical analyses, and will





be plotted in the field as the data are being obtained. A dozer will be provided to assist the CPT rig in traversing the site.

- ▼ Evaluation and Preliminary Geotechnical Report. Prepare a Preliminary Geotechnical Report for the Project that will discuss the potential for the WTP site to be impacted by geologic hazards and geotechnical considerations for design. The report will include a discussion of the data review and logs of the explorations, graphics, and a map showing the approximate locations of the field explorations. A draft copy of the report will be submitted in electronic (PDF) format for review by the City. The preliminary geotechnical report is to provide sufficient information regarding liquefaction potential to proceed with foundation and facility design.

Phase 2 – Design-Level Geotechnical Services

Under this phase of work, Consultant will perform design-level geotechnical services for the Project, including data review, field exploration, laboratory testing, and geotechnical analysis as a basis for preparing the geotechnical reports for the design. The design-level geotechnical services will consist of the following:

- ▼ Field Exploration. Perform a field exploration consisting of drilling exploratory bore holes to supplement the CPT soundings obtained during Phase 1. The following tentative field exploration plan at the site is shown below. Borings will be drilled using a truck-mounted drill rig equipped with hollow-stem-augers. The borings will be sampled at approximately 5-foot intervals using standard penetration test (SPT) and modified California split spoon samplers. Closer spaced samples will be obtained in the upper 10 feet of the borings. Bulk samples of selected materials will be obtained from the cuttings retrieved from the auger flights. The borings will be backfilled with the excavated materials upon completion of drilling. The samples will be used to classify the soils encountered, and will be retained for subsequent laboratory testing. A summary of the proposed borings is provided in Table 1 below

This scope of work specifically excludes the search for, and evaluation of, hazardous materials in soil, water, or air. In the event that hazardous materials are encountered during the field exploration, Consultant will be required to report the contamination and to follow protocols required by various agencies. The cost for work performed in association with the discovery of unanticipated hazardous material will be provided on a time and materials basis, and is not included in this proposal.

TABLE 1 - Summary of Proposed Borings

Structure	Tentative Field Exploration
Water Treatment Plant	5 borings to 50 feet 5 borings to 20 feet
Transmission Pipelines	10 borings to 15 feet
Salinas River Crossing	2 borings to 75 feet



Structure	Tentative Field Exploration
TOTALS	650 feet of Drilling

- ▼ Laboratory Tests. Perform laboratory tests on selected samples obtained from the field exploration program to assist in the characterization of the geotechnical engineering properties of the materials encountered. The types and numbers of tests will be selected based on the results of the field exploration program. Laboratory testing shall include, at a minimum, the following: moisture-density determinations, direct shear, collapse and consolidation, grain size, compaction tests, pH, chloride levels, sulfate levels, and minimum electrical resistivity.
- ▼ Reports. Prepare separate Geotechnical Data Reports (GDR) and Geotechnical Interpretative Reports (GIR) for the WTP Site and for the treated water pipelines which will summarize the findings of the subsurface explorations and the results of the laboratory testing. The GIRs will provide design and construction recommendations, which will be incorporated into the project documents. The draft copy of the report will be submitted in electronic (PDF) format for review by the City. Field and laboratory data obtained from the evaluation will be included in the reports. The reports will provide a summary of the data obtained, and the opinions and recommendations regarding:
  1. Soil and groundwater conditions encountered.
  2. Geologic and seismic setting.
  3. Potential for liquefaction and seismic settlement.
  4. Site preparation and grading.
  5. Suitability of excavated materials for use as fill or backfill material.
  6. Requirements for imported fill materials.
  7. Fill placement and compaction.
  8. Design of the pipeline.
  9. Trenchless installation of the Salinas River crossing.
  10. Suitable foundation support for structures, such as from spread footing, driven piles, or drilled shaft foundations.
  11. Foundation support for the buildings and tanks (bearing pressures, foundation widths and depths, and estimated settlement).
  12. Lateral earth pressures (active and at-rest) for the design of retaining walls or buried tanks.
  13. Lateral resistance from passive pressure and friction coefficients.
  14. Resistance to uplift pressures for buried structures.
  15. Ground motion parameters for seismic design including causative fault(s), maximum moment magnitude, ground acceleration, soil profile type, and the fault distance from the site for use with the building code, and including:



- ▼ Earthquake occurrence and the estimated probabilistic peak ground accelerations having a 10 percent probability of being exceeded in a 50-year and 100-year period.
  - ▼ Considerations for near field (short period) and far field (long period) earthquakes; and
  - ▼ Plotted response spectra (pseudo acceleration, displacement, and velocity) for critical damping of 0.5, 2, 5 percent, and extrapolated to a period of 15 seconds.
16. Expansive soil conditions.
  17. Slab-on-grade.
  18. Pavement recommendations for parking lots and access roads based on traffic indices (TI) provided to us.
  19. Construction considerations regarding groundwater conditions, need for temporary slopes or shoring, and excavation characteristics of the soils encountered.
  20. Site drainage.

## Task B.5 – Technical Memorandums

The following technical memoranda (TM) will be developed which will form the basis for the plant facilities.

- ▼ **TM 1: Treatment Alternatives.** Performance criteria for the new treatment plant facilities will be defined and five potential treatment alternatives will be identified. A detailed evaluation of each alternative will be performed and a workshop held with City staff to review the evaluation and recommended treatment alternatives. Treatment processes as allowed per DHS' Lake Nacimiento body contact legislative waiver will be taken into account.
- ▼ **TM 2: Facility Layout/Site Plan.** Based on the results of TM 1, prepare a preliminary phased and ultimate plant layout for the project. The layout shall consider such criteria as site conditions, physical separation of major structures, future expansion, length of chemical pipe runs, and consideration for plant operator safety. The layout will also address architectural/aesthetic treatment according to the newly-adopted City gateway standards.

Consultant is to provide a separate alternative conceptual site plan layout that would incorporate the City's Water Yard<sup>2</sup> on the proposed treatment plant site. Any design- or cost estimating-related work in Task B – Preliminary Design and Task C – Final Design Phase, required in support of relocating the City's Water Yard to the WTP site, would be authorized per an amendment to the Agreement.

A workshop will be held with City staff to review the preliminary layouts.

- ▼ **TM 3: Operations Plan & Hydraulic Analysis.** Following the preparation of the Facility Layout/Site Plan, Consultant shall prepare a TM to document the proposed method of operations for the new facilities, including waste streams

<sup>2</sup> The existing water yard is less than two acres and includes parking for trucks, equipment and vehicles; offices for staff; maintenance bays; and parts inventory. There is no refueling bay.



such as filter backwash and initial discharge-to-waste mode. A detailed hydraulic analysis of the recommended WTP facilities will be performed. The analysis will take into account the hydraulic conditions in the Nacimiento Water Project system; the system hydraulics associated with the Thunderbird, Ronconi and Sherwood Wells will be addressed separately under TM's 11 and 12.

- ▼ **TM 4: Potential Impacts to Existing Distribution System.** A review of the existing distribution system water quality will be performed to determine the compatibility of the new treated surface water with the existing water supplies. Recommendations will be made to alleviate potential issues of introducing the new water source as well as an outline of a response plan to follow at plant start-up. This TM will set the stage for the disinfection alternatives by describing the free chlorine/chloramines issue.
- ▼ **TM 5: Transmission Pipelines & Treated Water Tanks.** Perform alignment refinements of the transmission pipelines located substantially within the City-selected corridor; refer to Figure 1 for anticipated alignment corridor. Establish pipeline design criteria for the new pipelines. Identify connection points in the Main East and Main West Pressure Zones. Recommend treated water tank design criteria to meet CT requirements as well as City storage requirements. Plan on construction of two aboveground welded steel tanks at the proposed plant.
- ▼ **TM 6: Disinfection Alternatives.** Performance criteria for the new disinfection facilities will be defined and potential alternatives will be identified that take into consideration TOC levels with ozone, UV, or possibly chlorine dioxide coupled with free chlorine or chloramine residual. A detailed evaluation of each alternative will be performed and a workshop held with City staff to review the evaluation and recommended disinfection alternatives.
- ▼ **TM 7: Permit Requirements.** Identify Federal, State, Local and private Agency permits and/or agreements that will be required for the new facilities. Consultant shall research and identify the required permits and agreements for the project. The research shall include the following:
  - State Department of Health Services
  - Conditional Use permits
  - NPDES Permit
  - Regional Water Quality Control Board.
  - Department of Water Resources.
  - Permits associated with the Salinas river crossing; essentially, Corps 404 Nationwide Permit, Calif. Dept of Fish and Game Streambed Alteration Agreement, and flood plain development permit.
  - Air Quality Management District.
  - Building and Construction Permits.
  - Zoning Permits or requirements.
  - Caltrans encroachment.
  - UPRR pipeline license agreement.



- ▼ **TM 8: Regulatory Agency Requirements.** Identify jurisdictional agency requirements for implementation of the new facilities. Discuss how major foreseeable regulatory concerns will be addressed in the facility design. Lay out basis of design of a laboratory located within the plant for operator use in assessing regulatory compliance associated with of varying chemical dosages and operational modes. The laboratory facility shall be configured to support operation of the WTP and optimization of chemical dosing (polymers, coagulants, etc.).
- ▼ **TM 9: Solids Handling.** Performance criteria for the new solids handling facilities will be defined and two potential alternatives will be identified. A detailed evaluation of each alternative will be performed and a workshop held with City staff to review the evaluation and recommended solids handling facilities alternatives.
- ▼ **TM 10: I&C, Controls, and Communications.** Identify performance criteria for control schemes at the new facilities. Identify requirements for communications with other City facilities as needed. Provide recommendations for instrumentation and control systems at the new water treatment plant.
- ▼ **TM 11: Well Retrofit & Blending Study.** Evaluate the facility requirements associated with installing new pumps, motors and controls at the Thunderbird and Ronconi Wells. In addition, perform a feasibility level analysis of constructing a new blending pipeline and controls for a future tie-in of a proposed blending line from the Sherwood Wells for arsenic level compliance. Discuss electrical changes (i.e smaller horsepower pumps) anticipated at the Thunderbird and Ronconi Wells.
- ▼ **TM 12: System Modeling and Surge Analysis.** In connection with the treated water pump station and TM 11 study, Consultant shall describe the various hydraulic conditions to be simulated using the City's existing hydraulic network computer model, then the City, under a separate contract with Boyle Engineering Corporation, will obtain those runs. Model results will be provided to Consultant in a timely manner in accordance with the approved project schedule.

Where alternative approaches are presented for City consideration, Black & Veatch will provide an economic comparison of alternatives within each Technical Memo and a recommended course of action. Five (5) copies of each draft TM will be submitted to the City for review. Following receipt and resolution of review comments, five (5) copies of the final TM will be prepared and distributed to the City. Consultant will provide five (5) binders to hold the TM's, and the final TM's will be transmitted to the City for insertion into the binders.

## Task B.6 – Investigate Plant Utility Requirements

Investigate the requirements for the utilities that will be required for the proposed treatment plant including the following:

- ▼ Water
- ▼ Electrical Power
- ▼ Natural Gas (if required)



- ▼ Telephone
- ▼ Sanitary Waste
- ▼ Chemical Wastes

Define the procedures to obtain the required utility connection and services. Meet with Pacific Gas & Electric (PG&E) personnel and define and outline the procedures to obtain electrical power service to the plant in the schedule required for plant startup. Investigate the availability of grants and rebates PG&E and/or the California Public Utilities Commission (CPUC), and make written recommendations to City regarding funding sources to pursue. This information will be summarized as a chapter in the PDR.

## Task B.7 – CEQA Compliance Support

The City intends to obtain a Mitigated Negative Declaration (MND) for the project under CEQA guidelines. Consultant shall provide engineering design and related project information to the City in support of its work associated with the MND. This may include preparation of additional figures, tables, exhibits, drawings, details, or specification sections that are not part of the project submittals. The City will coordinate the MND schedule and information with the agencies.

Consultant shall incorporate MND mitigation provisions and requirements from environmental permits and documents into the project specifications and drawings.

Should a complete Environmental Impact Report (EIR) be required to fulfill CEQA requirements for the Project, the associated Consultant scope of work and budget will be amended as-needed consistent with the requirements of supporting an EIR process.

## Task B.8 – Preliminary Design Report

Prepare a detailed Preliminary Design Report (PDR) including preliminary drawings as required to establish agreement on project scope, site requirements, operating parameters and performance requirements, and implementation approach for the project. The PDR and associated design drawings will represent the 30% design for the Project, upon which Consultant can proceed with final design in an efficient manner. The development of design criteria for the report shall include the following:

- ▼ Design criteria, including flow rates, present and anticipated.
- ▼ Raw water quality - physical, chemical and biological.
- ▼ Design objective, treated water quality.
- ▼ Applicable codes and standards, including fire and safety codes.
- ▼ Local building, planning, and zoning department requirements.
- ▼ Architectural and landscaping treatments with renderings.
- ▼ Site considerations, including subsurface conditions, flood elevations, drainage requirements, etc.
- ▼ Preliminary site plan, building layouts, and architecture.
- ▼ Process and hydraulic systems.
- ▼ Operational monitoring and control systems.



- ▼ Civil design criteria.
- ▼ HVAC design criteria.
- ▼ Electrical design criteria.
- ▼ Structural design criteria, especially considerations for liquefaction potential.
- ▼ Instrumentation design criteria.
- ▼ Miscellaneous support systems.
- ▼ Plant utility requirements.
- ▼ Discussion of the hydraulic analysis and hydraulic profile.
- ▼ Design concepts and alternatives as developed to meet project goals and objectives.
- ▼ Construction scheduling requirements to be included in the construction documents, including anticipated permit limitations.
- ▼ Proposed construction features and materials selection for planned facilities. Materials shall conform to City's standards.
- ▼ Staffing plan.
- ▼ Procurement plan – outline the recommended method of procuring major pieces of equipment and/or systems (i.e., membrane filtration system) and how each procurement relates to the overall prime construction contract.
- ▼ Project schedule including design, bidding, construction, and post construction activities.
- ▼ Other elements of the project as appropriate to define scope and objective.

The work completed will be summarized and presented to the City staff in a technical review workshop. The comments obtained from the City staff at the workshop will be documented in minutes and incorporated into the final report.

The draft PDR will include drawings, schematics, flow diagrams, and process and instrumentation diagrams (P&IDs) that summarize the work and identify the recommended design criteria for the project facilities.

Ten (10) copies of the draft PDR will be submitted to the City for review. Following receipt and resolution of review comments, ten (10) copies of the final PDR will be prepared and distributed to the City.

## Task B.9 – Preliminary Opinion of Probable Construction Costs

Prepare an initial opinion of probable construction cost at the completion of the preliminary design phase including construction costs, engineering costs, testing, permits, contingencies, escalation, and an allowance for administrative costs. The cost estimate will incorporate the engineer's experience with similar projects. Contact will be made with equipment suppliers and manufacturers to obtain budget pricing for major equipment items.

The initial construction cost estimate will be provided at the completion of the preliminary design phase and will also be included as a chapter in the PDR.



## Task B.10 – Value Engineering

The City intends to seat a Value Engineering panel to review the final PDR and preliminary opinion of probable construction cost. Consultant is to participate in a 2-day value engineering session in Paso Robles to review the design approach with the VE Panel.

Since the number of VE Panel proposals and nature and extent of resulting design changes are unknown at this time, the Consultant effort and budget associated with responding to the value engineering proposals and carrying the adopted proposals forth into the final design cannot be determined at this time and will be proposed at the time of the VE study.

## Task B.11 – Coordination with Jurisdictional Agencies

The successful implementation of the project will be contingent upon DHS approval of the facilities. As such, extensive coordination with DHS will be performed at each stage of the project to keep them informed of project technical decisions and the reasons behind those decisions. One copy of the draft PDR will be submitted to DHS and to other jurisdictional agencies having an interest in the project development and design criteria. Meetings with DHS will be conducted to review the project basis and obtain input. DHS (and other jurisdictional agency) comments will be resolved prior to the issuance of the final PDR.

## TASK C – FINAL DESIGN PHASE

### Task C.1 – Final Design and Construction Contract Documents

Consultant shall perform the final design and prepare construction contract documents consisting of front-end contract documents, technical specifications, and contract drawings in sufficient detail to construct the work. The design and construction contract documents will address the new water treatment plant, treated water tanks, and new transmission pipelines to the Main East and Main West Pressure Zones, and be organized for a single construction contract. If City will be procuring any equipment or systems directly, Consultant shall provide all technical specifications and other contract materials required for those purchases.

Since the actual facilities to be designed will not be determined until the PDR is finalized, the facilities assumed for establishing the budget for final design are described more fully below:

- ▼ WTP is 6 MGD expandable to 12 MGD.
- ▼ The NWP turnout will be relocated to a suitable location onsite compatible with the plant layout.
- ▼ Pretreatment will be outdoor flocculation/sedimentation basins, assuming 2 trains now with space for 2 future trains, with initial trains sized for 50' x150' total. A small submersible pump station will be provided for sludge pumping adjacent to the basins. Sludge will be pumped to on-site drying beds. No equipment or power will be required at the sludge drying beds.





- ▼ Filtration will be based on conventional media filters.
- ▼ Chemical feed building will be approximately 6000 sq ft, slab on grade, to house hypochlorite feed and storage and up to 3 other chemical feed and storage systems. Building will be single story with containment areas as required for the chemicals used.
- ▼ The treated water pump station will house 4 pumps for current capacity plus space for 4 additional pumps. Building will be up to 4500 sq ft with no basement. Removable skylights will be provided to facilitate pump removal. Two welded steel tanks are planned for treated water storage. No standby power facility is currently planned for the site, and the raw water reservoir is an optional feature.
- ▼ Admin/Control building will be up to 5000 sq ft and will house offices, locker rooms, control room, and a single bay maintenance area. Building will be single story with no basement.
- ▼ All buildings will be of CMU construction with siding and/or veneer exterior.
- ▼ CCTV and building security systems are not included.
- ▼ Fire protection systems will be provided where required by building codes for the Chemical Feed Building.
- ▼ Electrical circuit and raceway schedules will be provided as part of the construction documents.
- ▼ The transmission pipelines will be designed as shown on the attached Figure 1.
- ▼ The final design will also include new pumps, motors and controls at the Thunderbird and Ronconi Wells as needed.

Complete construction drawings, details, and sections for the work will be prepared. Drawings, sections, and details will be drawn at an appropriate scale to produce clear, accurate, easy-to-read drawings. Construction drawings will be complete and will be subject to final review and acceptance by the City.

All drawings will be completed using AutoCAD 2005. The drawings will be prepared on 22x34-inch sheets and in accordance with City standards. As an example, facility drawings, including P&ID's will be similar in appearance to Consultant's drawings being produced for the Nacimiento Water Project.

Project technical specifications, special provisions, and contract bid documents will be prepared using Microsoft Word. The technical specifications Divisions 2 through 16 will be prepared using Consultant's standards. The front-end contract documents will be developed using the City's standard front-end contract documents.

Design packages will be submitted for review at the 60 and 90 percent complete levels. For each submittal, five (5) sets of half size (11x17-inch) drawings, front-end contract documents, and technical specifications will be provided for review and comment by City staff. Each design progress deliverable will be accompanied by evidence of Black & Veatch's internal QA/QC review. A two week review period is allocated for City review of each submittal.

Design review workshops will be conducted to present, discuss, and review the contract documents at each of the design stage submittals. Each workshop will be conducted with City staff to present the information and findings of the design team



and to summarize the work. Input from City staff will be obtained and incorporated into the contract documents. Meeting minutes will be prepared and distributed to all attendees.

## Task C.2 – Quality Assurance/Quality Control

Each design submittal will undergo Consultant’s QC review as specified in the Quality Assurance/Quality Control (QA/QC) plan (Task A.5)

## Task C.3 – 100% Camera-Ready Design Documents

The review comments of City staff and of Consultant’s independent quality control review team will be addressed and appropriate changes made to the design and construction contract documents. Upon completion, the original mylars of final drawings will be submitted to the City together with one set of the camera-ready project specifications and all other bid documents. The final construction contract documents will be signed and sealed by registered professional engineers licensed in the State of California.

The electronic files of the final drawings, front-end documents and technical specifications shall be provided to the City on CD/DVD.

## Task C.4 – City Presentations

Consultant shall provide support to the City for presentations to the City Council and other committees. Consultant shall organize, prepare, and deliver presentations on project status at City Council or other requested meetings (average of 2 hours each). Scheduled presentations are as follows:

- ▼ Development Review Committee
- ▼ Planning Commission (Task A.8)
- ▼ Informal City Council briefings (3 meetings scheduled in a single day)
- ▼ Formal City Council Presentation

## Task C.5 – Opinion of Probable Construction Costs

The initial opinion of probable construction cost will be included as a section in the PDR and will be subsequently updated at the 60 and 90 percent completion levels and for 100% final design submittal. The opinion of probable construction cost will form the basis upon which the bid schedule items and quantities will be developed.

## Task C.6 – Obtain Permits

Based on the results of TM 7, Consultant shall obtain all permits required for the Project on the behalf of the City. Consultant shall prepare the permit applications, exhibits, drawings and project descriptions; submit the permit applications to agencies; and coordinate the applications with the agencies through approval. The City will pay the related permit application fees. Three hundred (300) man-hours are budgeted for this task.

## Task C.7 – Contractor Outreach and Prequalification



Consultant shall conduct a contractor outreach program for the Project. Outreach shall include conducting a series of interactive workshops leading up to the Project bid opening. The task budget includes two (2) workshops. Workshops will include a presentation and question and answer session.

In preparation for the workshops, Consultant shall contact contractors to raise awareness of the Project, and prepare announcements in printed media including local newspapers, trade magazines and publications.

Consultant shall assist City in preparing contractor prequalification materials (including any subcontractor prequalification) and evaluating prequalification submittals.

## TASK D – BID PHASE SERVICES

### Task D.1 – Pre-Bid Conference

In addition to the contractor outreach (Task A.9), a pre-bid conference will be conducted at a date, time, and location selected by the City to:

- ▼ Instruct prospective bidders and suppliers as to the types of information required by the contract documents and the format in which the bids should be presented.
- ▼ Review special project requirements and contract documents in general.
- ▼ Receive requests for interpretations that will be issued by addendum.
- ▼ Conduct a site visit.
- ▼ Prepare minutes of the conference and issue to all attendees by addendum.

Per Task C.3 above, camera-ready construction contract documents will be supplied to the City. The City will be responsible for reproduction and distribution of the construction contract documents and addenda during the bid phase.

This assumes that there will be only one contract with a prime contractor. No separate MSS and/or integrator contract contemplated.

### Task D.2 – Miscellaneous Bid Phase Services

The following services will be provided during the bid phase:

- ▼ Prepare final Invitation to Bid
- ▼ Interpret construction contract documents and provide written responses to questions from bidders requiring clarification during the bidding period.
- ▼ Prepare addenda to the contract documents as required.
- ▼ Assist City during bid opening.
- ▼ Review and evaluate the qualifications of the apparent successful bidder and the proposed major or specialty subcontractors. The review and evaluation will include such factors as work completed, equipment that is available for the work, financial resources, and technical experience.
- ▼ Prepare and distribute formal bid tabulation sheets, evaluate bids, and make written recommendations to City concerning contract award.



## Task D.3 – Conformed Contract Documents

Consultant shall prepare a set of conformed contract documents at the conclusion of the bidding period. The bidding contract documents will be revised (conformed) to include any bid phase addenda and/or design revisions. One camera-ready conformed set of contract documents will be submitted to the City. One hardcopy and CD containing the electronic files for the conformed documents will be provided to the City.

## TASK E – CONSTRUCTION PHASE SERVICES

It is understood that the City intends to perform a separate procurement for construction management services. Consultant will perform engineering services during the construction phase of the Project. By performing these services, Consultant shall not have authority or responsibility to supervise, direct, or control the Contractor's work or the Contractor's means, methods, techniques, sequences, or procedures of construction. Consultant shall not have authority or responsibility for safety precautions and programs incident to the Contractor's work or for any failure of the Contractor to comply with laws, regulations, rules, ordinances, codes, or orders applicable to the Contractor furnishing and performing the work.

The following tasks are Consultant-provided engineering services during the construction phase.

### Task E.1 – Attend Preconstruction Conference and Meetings

Consultant will participate in a preconstruction conference conducted by the construction manager (CM) and attended by the City and general contractor.

Following start of the on-site construction work, Consultant shall attend bi-weekly progress meetings with the contractor, CM, City, and other involved parties to review and discuss construction procedures and progress, and other matters concerning the project. A budget of thirty-six (36) construction progress meetings is provided in the fee.

### Task E.2 – Submittal Reviews

Consultant shall perform review of submittals during construction of the facilities and for other aspects of the project. Contractor's shop drawing submittals will be reviewed to determine if the equipment and materials proposed by the Contractor comply with the requirements of the Contract Documents. The review is not intended to be a complete check of quantities, dimensions, fabrication details, materials, etc. indicated on the shop drawings, and does not extend to the Contractor's means and methods. Consultant will perform all submittals reviews in a timely manner, so as not to affect progress of the work.

A shop drawing submittal log will be maintained by the CM and periodically distributed to the Consultant, City and the Contractor. A budget for the review of two hundred (200) submittals has been established. The budget includes provisions for an initial review and a second review of each submittal.



## Task E.3 – Contractor Requests for Information (RFI)

Consultant shall interpret the construction contract drawings and specifications, and provide written responses to questions from the contractor requiring clarification during the construction of the project. A log will be maintained by the CM and periodically distributed to the Consultant, City and contractor. Consultant's fee includes a budget for the review and response of one hundred fifty (150) RFIs has been established. Consultant will respond to all RFI's in a timely manner, so as not to affect progress of the work.

## Task E.4 – Review Requests for Change Order

Consultant shall provide engineering support to the City and CM in its review of change orders, including providing a written recommendation regarding City's approval of the change order request and providing any engineering documents required to effect the change.

## Task E.5 – Record Drawings

Consultant shall prepare record drawings once the project construction has been completed based on contractor-furnished "Redline" construction contract drawings. Final record drawings will include all revisions to the original design including revisions resulting from RFIs, change orders, field orders, and any other changes that occur during the construction of the project, as documented by the contractor. Final record drawings will be submitted to the City in both hard copy and electronic format.

## TASK F – STARTUP ASSISTANCE/TRAINING AND O&M MANUAL

### Task F.1 – O&M Manual

A hardcopy operation and maintenance manual will be prepared.

A sample section will be prepared and submitted for client review. After comments are received a final version will be submitted. The remaining chapter subsections will be based on the approved content and format. A submittal schedule will be submitted outlining the Consultant's chapter subsection submittals and the City review schedule.

Equipment manufacturers O&M manuals will be reviewed by the Consultant. The manufacturer's O&M manual requirements are listed in the design specifications and these will be used as the review guideline document.

The O&M manual will include a 5-year scheduled maintenance/warranty inspection schedule for the plant and related facilities.

### Task F.2 – Operations Plan for DHS Approval

An Operations Plan will be prepared for approval by the DHS. The format required by DHS will be followed to obtain approval. This effort will include preparation and modification of the O&M manual standard operating procedures for the facility. Coordination with the City is required to obtain City operations information. Other



tasks will include a field verification of the Standard Operating Procedures (SOPs) and updating the SOPs as procedural changes are made through startup experiences.

### Task F.3 – Outline Requirements for CT Verification

The requirements for contact time (CT) verification will be submitted in a spreadsheet format to the City, based on a variety of blending operational modes. The Consultant will use actual built basin volumes along with disinfection chemical applications, disinfection residuals, and predicted coliform concentrations compared to the actual measured coliform values to compute the CT.

### Task F.4 – Prepare Documentation to Obtain DHS Approval

The documentation needed by the City to obtain the operating permit will be prepared according to the requirements outline by the DHS. The Consultant will obtain and complete the latest forms from the State. These will include the final O&M manual, the final operations plan, and the as-built drawings. Other material and documents outlined in the State guidelines will be reviewed to avoid missing documentation. Attend meetings are requested.

### Task F.5 – Conduct Training Classes

Training classes will be coordinated with the City. The training will include a pre-training site visit and training. Classes will be conducted in classroom and field environments. Shift training and separate training classes will be planned for the operators and maintenance personnel. Shift scheduling will be accommodated.

### Task F.6 – Provide Startup Assistance

The Consultant will prepare for the startup by being on site for one week before startup.

The Consultant will be on site five (5) days (40 hours) each week during the anticipated 12 week startup period. Additional time requirements that may be needed will be approved by the City and billed at an hourly rate determined by the Consultant's bill rate schedule. Duties will include assistance to determine chemical dosages, assistance to correct equipment operating deficiencies, reviewing operating data, suggesting operating routines, assisting with the scheduling maintenance, and other daily operating requirements as needed.

The Consultant will finalize records prepared during the startup period.

### Task F.7 – Computerized Maintenance Package

Assist the City in obtaining a computerized maintenance package for the new Nacimiento WTP. Identify alternative software packages, equipment configuration, and provide written recommendations to the City.

## TASK G – SUPPLEMENTAL TASKS

Supplemental tasks are not a part of the Scope of Work, but rather are suggested tasks for consideration by the City. Supplemental tasks are subject to the written



authorization by the City upon mutual agreement on the required scope and budget for each.

## Task G.1 – Reservoir Water Quality Optimization

Reservoir modeling quality modeling services will be provided as follows:

- ▼ Incorporate refined demands into the model
- ▼ Utilizing model capabilities, evaluate alternative internal baffling configurations and age of water calculations
- ▼ Summarize the findings of the model and recommend the best suited alternative to be implemented into the reservoir design documents

## Task G.2 – Potholing Services

To determine the actual location of existing utilities beyond the level described in Task B.3, Consultant will define the location of critical existing underground utilities, and the City will provide excavation equipment and an operator to perform the potholing. The Consultant will be present to observe the potholing activity and to record the findings of the field measurements. Surveyed locations for critical underground utilities will be performed, as deemed necessary.

## Task G.3 – SCADA System Design or Modifications

The construction of the proposed new facilities could have an impact on the City's existing SCADA system. If requested, Consultant will review the SCADA system and make written recommendations regarding modifications that could be incorporated into the Project. Provide engineering design and procurement recommendations for SCADA system modifications.

## Task G.4 –Pre–Qualification of Contractors

Consultant will conduct a formal pre-qualification process for the general construction contractor for the Project. The scope of work is described below:

- ▼ Prepare an Invitation to Pre-Qualify (IPQ) for the Project and distribute to interested contractors.
- ▼ Provide supplemental information to interested contractors, and answer questions about the Project.
- ▼ Review Pre-Qualification forms received, evaluate, and recommend list of pre-qualified contractors to City.
- ▼ Modify front-end contract documents to include list of pre-qualified bidders.
- ▼ Participate on appeals panel as-needed.
- ▼ Coordinate with City.



## Task G.5 – Membrane System Selection (MSS) and Procurement

### Task G.5.1 – Membrane Procurement Documents

Using Consultant’s membrane procurement model, technical specifications, and EJCDC Front End Documents, a complete set of bidding documents for procurement of a membrane filtration system will be prepared. Bidding documents will include, at a minimum, technical specifications for the membrane filtration system and schedule. A draft set of bidding documents will be submitted to the City for review and comment. Scope of Work is based on solicitation from 3 pre-qualified Vendors; GE-Zenon Membrane Solutions, Pall Corporation, and Siemens Water Technology – Memcor Membranes.

Upon receipt and resolution of City review comments, the bidding documents will be revised and issued as final to the pre-approved MSS to facilitate the submission of competitive bids.

### Task G.5.2 – Membrane Procurement Bid Phase

During the bid phase, Consultant will respond to questions, provide design clarification (as required), administer bids at the City’s office, and prepare the initial bid tabulation.

### Task G.5.3 – Membrane Procurement Bid Evaluation and Award

Once bids are opened, Consultant’s membrane procurement model will be used to evaluate each of the bids received and a life-cycle cost comparison will be prepared for each of the bid combinations. A written recommendation of award will be made to the membrane system supplier whose evaluated bid represents the lowest 20-year life cycle cost to the City.

The bid evaluation process will be summarized in a bid report and a recommendation for award will be made.

### Task G.5.4 – Proof Pilot

The recommended Vendor will be required to operate a Proof Pilot, for 3-30 day cycles with 1 week of review time between cycles, to demonstrate flux stability, cleaning intervals, and transmembrane pressure build-up.

Assistance during additional pilot testing work will be used to further refine the design parameters and to obtain DHS approval of the proposed treatment process. A proposed protocol for pilot testing work will be prepared and submitted to the DHS District Engineer for review and comment prior to proceeding.

Consultant shall participate in weekly conference calls with the Vendor and/or City and will visit the pilot site bi-monthly.

Consultant will provide review and summary of pilot plant report submitted by Vendor with focus on Contract Compliance and regularly acceptance.





## Task G.5.5 – Procurement Contract Administration

Consultant will assist the City with engineering services associated with administration of the equipment procurement contract. The City will act as the primary contact with the equipment contractor, and will administer the procurement contract, including document control.

Consultant will assist the City with the following activities:

- ▼ Submittal reviews;
- ▼ Respond to requests for information (RFI's);
- ▼ Attending review meetings (as-needed; 3 meetings budgeted);
- ▼ Review the engineering aspects of any change orders; and
- ▼ Issue design clarifications.

## Task G.6 – Factory Inspection and Witness Testing Services

Factory inspection services shall be performed to inspect pipe and equipment manufacturing processes. Consultant's staff experienced in factory inspection will visit the manufacturer's facility, witness manufacturing, and prepare a written report summarizing the factory visit.

Witness onsite equipment performance testing, provide assistance to the equipment manufacturer in gathering data, and provide clarifications to the Contract Documents as needed. Provide initial coordination effort between the Contractor, City, and the equipment manufacturer prior to testing.

Deliver written report to City within five days of test or inspection.

## Task G.7 – Specialty Inspection Services

Specialty inspection services will be provided by the Consultant for the following services:

- ▼ Special structural inspection services will be provided for compliance with Building Code requirements on critical structural components of the construction including, but not limited to, rebar placement, concrete pouring, subgrade compaction, masonry construction, structural steel framing connections, etc. An inspection report will be generated for each site visit and provided to the City.
- ▼ Geotechnical Field Observations. Geotechnical field observation services will be provided by the Consultant's geotechnical subconsultant to confirm if the exposed conditions are consistent with the design basis. The geotechnical subconsultant will prepare a site visit report for each site visit and submit to Consultant for distribution to the City.
- ▼ Material Testing Services. Testing of work performed including concrete, asphalt, in-situ moisture content and field density of soils, etc. shall be performed by the Consultant's geotechnical subconsultant to determine compliance with the construction contract documents.



Deliver written report to City within five days of test or inspection.



## Task G.8 – Pipeline Extension to Sherwood Wells

This optional task item addresses the final design of a pipeline extension to Sherwood Wells, and in addition to design, includes geotechnical and surveying and mapping services.

## Task G.9 – Preparation of Plats and Legal Descriptions

As a supplemental service, Consultant can prepare plats and legal descriptions for any easement or property acquisition determined to be required for the Project.

**2007 - 2008**  
**BLACK & VEATCH CORPORATION**

**BILLING RATES**

OWNER: City of Paso Robles  
 PROJECT: Nacimiento Water Treatment Plant Project  
 ENGINEER: Black & Veatch Corporation

Note: These rates shall be in effect from Design NTP through end of Bid Phase Services

<b>Black &amp; Veatch Corporation</b>		
<b>Bill Rates</b>		
<b>Classification</b>	<b>Typical Title</b>	<b>Hourly Rate</b>
Vice President / PM 14	Project Director	\$200
PM 12/13	Senior Project Manager	\$180
PM 11 / Engineer 6, 7, 8	Project Manager/Senior Project Engr.	\$170
Engineer 5	Project Engineer	\$155
Engineer 4	Senior Engineer	\$145
Engineer 3	Staff Engineer	\$130
Engineer 1 or 2	Staff Engineer	\$115
Technical	Senior Technician	\$120
Technical	Adv. Technician	\$105
Technical	Technician	\$95
Designer	CAD Manager / Sr. Engineering Designer	\$120
Designer	Adv. Engineering Designer	\$105
Designer	Designer/Drafter	\$95
Contract Administrator		\$90
Word Processing		\$70
Clerical		\$70

Office expenses shall be reimbursed on a basis of \$8.75 per labor hour billed to cover in-house reproduction & printing, telephone, computer, postage, local travel (within 50 miles of site) and other general office expenses.

Mileage shall be reimbursed at a rate of \$0.445 per mile.

Subconsultants and other direct costs, including outside reproduction charges and long distance travel (beyond 50 miles to site) will be reimbursed at cost plus 10%.

City of Paso Robles Nacimiento Water Treatment Plant Budget Estimate														
Task No.	Task Description	Project Manager	Engineering Manager	Task Leaders	QA/QC	Senior Engineers	Staff Engineers	CAD Operators	Administrative Staff	Total Hours	Labor Cost	Direct Expenses	Sub-Consultants	Total Cost
		195	180	160	175	140	115	100	85					
<b>A</b>	<b>PROJECT MANAGEMENT</b>													
A.1	Project Schedule (Initial + 14 Monthly Updates)	0	4	44	0	0	0	0	0	48	\$7,760	\$420	0	\$8,180
A.2	Monthly Progress Meetings (14)	56	84	28	0	0	0	0	42	210	\$34,090	\$14,440	0	\$48,530
A.3	Monthly Progress Reports (14) / Invoicing	28	56	0	0	0	0	0	56	140	\$20,300	\$1,230	0	\$21,530
A.4	Project Procedures Manual	2	2	8	2	8	20	4	16	62	\$7,560	\$940	0	\$8,500
A.5	Project Quality Plan	2	2	8	20	0	0	0	16	48	\$6,890	\$820	0	\$7,710
A.6	Project Standards Manual	2	2	8	8	10	24	12	16	82	\$10,150	\$1,120	0	\$11,270
A.7	Project Document Log and File (14 Months)	8	8	0	0	0	0	0	112	128	\$12,520	\$1,120	0	\$13,640
A.8	Coordination with City Planning Commission	4	20	32	0	12	24	80	12	184	\$22,960	\$3,610	0	\$26,570
<b>SUBTOTAL - TASK A PROJECT MANAGEMENT</b>		<b>102</b>	<b>178</b>	<b>128</b>	<b>30</b>	<b>30</b>	<b>68</b>	<b>96</b>	<b>270</b>	<b>902</b>	<b>\$ 122,230</b>	<b>\$ 23,700</b>	<b>\$ -</b>	<b>\$ 145,930</b>
<b>B</b>	<b>PRELIMINARY DESIGN PHASE</b>													
B.1	Project Kick-off Workshop	4	4	24	0	8	0	8	8	56	\$7,940	\$1,490	0	\$9,430
B.2	Identification and Collection of Background Information	2	8	8	0	8	40	4	8	78	\$9,910	\$1,680	0	\$11,590
B.3	Surveying, Mapping & Utility Engineering	4	20	0	0	0	0	0	0	24	\$4,380	\$210	\$49,500	\$54,090
B.4	Geotechnical Investigations	4	8	0	8	0	0	0	0	20	\$3,620	\$180	\$128,700	\$132,500
B.5	Technical Memorandums	24	48	352	44	376	364	216	60	1,484	\$198,540	\$31,910	0	\$230,450
B.6	Investigate Plant Utility Requirements	2	4	16	0	16	0	16	8	62	\$8,190	\$540	0	\$8,730
B.7	CEQA Compliance Support	2	4	16	0	0	40	40	0	102	\$12,270	\$1,890	0	\$14,160
B.8	Preliminary Design Report (30% Level Design)	8	56	90	24	88	240	100	80	686	\$86,960	\$6,000	8,800	\$101,760
B.9	Preliminary Opinion of Probable Construction Costs	2	8	20	4	8	40	0	0	82	\$11,450	\$720	0	\$12,170
B.10	Value Engineering	8	12	18	0	8	8	8	8	70	\$10,120	\$610	0	\$10,730
B.11	Coordination with Jurisdictional Agencies	32	8	8	0	16	0	0	16	80	\$12,560	\$700	0	\$13,260
<b>SUBTOTAL - TASK B PRELIMINARY DESIGN PHASE</b>		<b>92</b>	<b>180</b>	<b>552</b>	<b>80</b>	<b>528</b>	<b>732</b>	<b>392</b>	<b>188</b>	<b>2,744</b>	<b>\$ 365,940</b>	<b>\$ 45,930</b>	<b>\$ 187,000</b>	<b>\$ 598,870</b>
<b>C</b>	<b>FINAL DESIGN PHASE</b>													
C.1	Final Design and Construction Contract Documents	48	380	320	0	1,300	1,600	3,380	120	7,148	\$843,160	\$79,500	16,500	\$939,160
C.2	Quality Assurance/Quality Control	4	12	24	80	80	0	0	0	200	\$31,980	\$6,800	0	\$38,780
C.3	100% Camera-Ready Design Documents	8	16	40	12	40	160	88	40	404	\$49,140	\$6,000	0	\$55,140
C.4	City Presentations	16	16	0	0	0	32	8	8	80	\$11,160	\$2,685	0	\$13,845
C.5	Opinion of Probable Construction Costs	2	16	18	36	36	108	8	8	232	\$31,390	\$2,000	0	\$33,390
C.6	Obtain Permits	0	8	0	0	270	0	0	60	338	\$44,340	\$5,000	0	\$49,340
C.7	Contractor Outreach	16	16	16	0	40	100	16	20	224	\$28,960	\$3,460	0	\$32,420
<b>SUBTOTAL - TASK C FINAL DESIGN PHASE</b>		<b>94</b>	<b>464</b>	<b>418</b>	<b>128</b>	<b>1,766</b>	<b>2,000</b>	<b>3,500</b>	<b>256</b>	<b>8,626</b>	<b>\$1,040,130</b>	<b>\$105,445</b>	<b>\$16,500</b>	<b>\$1,162,075</b>
<b>D</b>	<b>BID PHASE SERVICES</b>													
D.1	Pre-Bid Conference	2	8	16	0	0	0	0	0	26	\$4,390	\$1,700	0	\$6,090
D.2	Miscellaneous Bid Phase Services	4	8	40	0	24	24	0	16	116	\$16,100	\$1,000	0	\$17,100
D.3	Conformed Contract Documents	0	0	24	8	0	24	80	16	152	\$17,360	\$2,575	0	\$19,935
<b>SUBTOTAL - TASK D BID PHASE SERVICES</b>		<b>6</b>	<b>16</b>	<b>80</b>	<b>8</b>	<b>24</b>	<b>48</b>	<b>80</b>	<b>32</b>	<b>294</b>	<b>\$37,850</b>	<b>\$5,275</b>	<b>\$0</b>	<b>\$43,125</b>
<b>PM &amp; PREL/FINAL DESIGN SUBTOTAL</b>										<b>12,566</b>	<b>\$1,566,150</b>	<b>\$180,350</b>	<b>\$203,500</b>	<b>\$1,950,000</b>
<b>E</b>	<b>CONSTRUCTION PHASE SERVICES</b>													
E.1	Attend Preconstruction Conference and Meetings	0	0	0	0	0	0	0	0	0	\$0	\$0	0	\$0
E.2	Submittal Review	0	0	0	0	0	0	0	0	0	\$0	\$0	0	\$0
E.3	Contractor Requests for Information (RFI)	0	0	0	0	0	0	0	0	0	\$0	\$0	0	\$0
E.4	Review Requests for Change Order	0	0	0	0	0	0	0	0	0	\$0	\$0	0	\$0
E.5	Record Drawings	0	0	0	0	0	0	0	0	0	\$0	\$0	0	\$0
<b>SUBTOTAL - TASK E CONSTRUCTION PHASE SERVICES</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>F</b>	<b>STARTUP ASSISTANCE/TRAINING AND O&amp;M MANUALS</b>													
F.1	O&M Manual									0	\$0	\$0	0	\$0
F.2	Operations Plan for DHS Approval									0	\$0	\$0	0	\$0
F.3	Outline Requirements for CT Verification									0	\$0	\$0	0	\$0
F.4	Prepare Documentation to Obtain DHS Approval									0	\$0	\$0	0	\$0
F.5	Conduct Training Classes									0	\$0	\$0	0	\$0
F.6	Provide Startup Assistance									0	\$0	\$0	0	\$0
F.7	Computerized Maintenance Package									0	\$0	\$0	0	\$0
<b>SUBTOTAL - TASK F STARTUP ASSISTANCE/TRAINING AND O&amp;M MANUALS</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>TOTAL=</b>		<b>294</b>	<b>838</b>	<b>1,178</b>	<b>246</b>	<b>2,348</b>	<b>2,848</b>	<b>4,068</b>	<b>746</b>	<b>12,566</b>	<b>\$1,566,150</b>	<b>\$180,350</b>	<b>\$203,500</b>	<b>\$1,950,000</b>

Percent = 2.3% 6.7% 9.4% 2.0% 18.7% 22.7% 32.4% 5.9% 100.0% \$ 124.63