

RESOLUTION 06-071

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF KETCHUM, IDAHO, AUTHORIZING THE MAYOR TO EXECUTE A CONTRACT BETWEEN THE CITY OF KETCHUM AND PHARMER ENGINEERING, LLC, FOR SERVICES NECESSARY TO PREPARE AND SUBMIT A TECHNICAL REPORT AS A PREREQUISITE TO THE REUSE OF WASTEWATER EFFLUENT IN AN AMOUNT NOT TO EXCEED \$20,450.

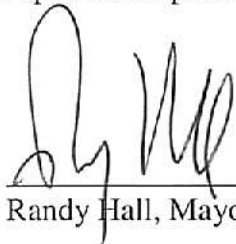
WHEREAS, Pharmer Engineering, LLC presented the City Council with opportunities for wastewater reuse on February 16, 2006; and

WHEREAS, the City Council was eager to begin exploring the reuse of highly treated wastewater; and

WHEREAS, such use of wastewater will conserve the limited, natural water resources of the area, reduce demand on the Sun Valley Water and Sewer District and Ketchum municipal water supplies and reduce the direct discharge into the Big Wood River.

NOW THEREFORE BE IT RESOLVED, that the Ketchum City Council hereby authorizes the Mayor to execute a contract between the City of Ketchum and Pharmer Engineering, LLC, for services necessary to prepare and submit a technical report as a prerequisite to the reuse of wastewater effluent in an amount not to exceed \$20,450.

This Resolution will be in full force and effect upon its adoption this 5th day of June, 2006.



Randy Hall, Mayor

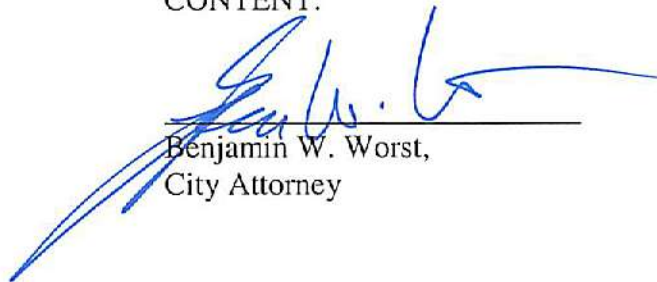
ATTEST:

APPROVED AS TO FORM AND
CONTENT:



Sandra Cady, CMC
City Treasurer/Clerk





Benjamin W. Worst,
City Attorney

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Main body of the document containing several paragraphs of text, which is extremely faint and illegible.

Handwritten signature or initials in the lower-left quadrant.





April 10, 2006

www.pharmereng.com
671 East River Park Lane, Suite 140
Boise, ID 83706
Phone: 208-433-1900
Fax: 208-433-1901

Steve Hansen
Utilities Manager
City of Ketchum
Ketchum, ID 83340

Re: Wastewater Effluent Reuse Proposal

Dear Steve:

Our presentation to the Ketchum City Council and Sun Valley Water & Sewer District Board on February 16, 2006 showed the exciting opportunities for wastewater reuse. We understand that both the Council and Board were eager to begin exploring the reuse of highly treated wastewater in applications meeting Idaho DEQ requirements. Reuse of wastewater effluent will conserve the limited, natural water resources of the area, reduce the demand on the Sun Valley Water and Sewer District (SVWSD) and/or Ketchum municipal water supplies and reduce the direct discharge to the Big Wood River.

Various reuse options include irrigation of pasture, "greenways", parks, golf courses (e.g. Elkhorn), and snowmaking at ski areas. Reuse will require regulatory approval through a permitting process with extensive environmental review and public comment. The process typically begins with site identification, selection and preliminary evaluation.

The City and District are interested in initiating municipal wastewater reuse at the Ketchum / Sun Valley (K/SV) Wastewater Treatment Facilities. The proposed reuse will include irrigation of facilities grounds and the adjacent bike path as a demonstration project.

Implementation of the reuse demonstration project will include permitting, design and construction. Implementation of the facilities reuse is fairly straight forward. Tasks for the project components are presented below, followed by estimated costs for engineering services.

Scope of Work

Permitting

Proposed tasks to complete site permitting for facilities reuse include:

1. Preliminary Site Evaluation
2. Pre-application Review Meeting *w/DEQ*
3. Technical Report Preparation
4. Public Meeting
5. Technical Report Submittal

We will prepare an irrigation system layout drawing for the wastewater plant grounds with the assistance of plant staff. The estimated water flow and usage for each "zone" will be determined and the operating

philosophy, i.e. number of zones operating at one time. The total number of zones being operated will determine the reuse irrigation pump size (pump to be located in the UV Building room). Based on the pump layout drawing and equipment involved, the plant staff can determine if the work is within in-house staff capabilities. Pharmer will assistance with construction management as incidental work to filter project construction, if constructed during the late summer or fall of 2006.

Meetings will be conducted in Tasks 1, 2, 4 and 5 to facilitate permitting. We will finalize concepts and develop preliminary information for meeting with DEQ and others, including maps, schematics, preliminary management approach and loading estimates. It is anticipated that a brief technical report (see attachment) will suffice for permitting this facility.

Operation and Management Plan

Preliminary operation and management (O&M) requirements will be developed as part of the permitting. A detailed operation and management plan is required shortly after system startup. This scope of work does not include development of the final O&M plan.

Estimated Costs

Total estimated costs for permitting and layout of this initial reuse implementation project are \$20,450. Estimated man-hours, labor costs and expenses to complete each task are given in Table 1 below.

Table 1 – Proposed Cost Estimate

Task	Hours	Labor Cost	Expenses	TOTAL
Preliminary Site Evaluation	22	\$2,300	\$300	\$2,600
Pre-application Review Meeting	20	\$2,400	\$100	\$2,500
Technical Report Preparation	84	\$8,600	\$200	\$8,800
Public Meeting	32	\$2,750	\$400	\$3,150
Technical Report Submittal	30	\$3,200	\$200	\$3,400
TOTAL	188	\$19,250	\$1,200	\$20,450

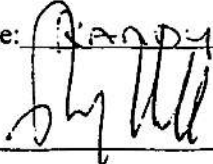
Assumptions for this cost estimate include the following:

- No site data will need to be collected; will use available data
- A relative brief technical report (see attachment) will suffice for permitting this facility
- Two meetings with City and District
- One meeting with DEQ and one public meeting
- Preliminary O&M requirements will be identified
- Design and construction costs assume relatively simple modifications to existing landscape irrigation system.

Our Standard Terms and Conditions are on file with previous proposals. If this letter agreement proposal is acceptable, please sign and date both copies, and return one copy with original signatures to Pharmer Engineering at 671 East River Park Lane, Suite 140, Boise, Idaho, 83706. If you have any questions about this proposal, please call Brad Bjerke at (208) 433-1900.

CITY OF KETCHUM

Printed Name: Nancy Hall

Signature: 

Title: MAYOR

Date: 6/9/06

PHARMER ENGINEERING, L.L.C.

Printed Name: Robert D. Pharmed

Signature: 

Title: President

Date: _____

SUN VALLEY WATER & SEWER DISTRICT (SVWSD)

Printed Name: JAMES D. LOYD

Signature: 

Title: P. ENGINEER, L.L.C.

Date: 10.19.01

We appreciate the opportunity to present you with this proposal. If you have any questions on any of the above, please do not hesitate to give me a call.

Sincerely,



Bradley S. Bjerke, P.E.
Pharmed Engineering, LLC

Cc: Jack Harrison/HyQual

Attachment - Outline for Technical Report

From IDEQ 2005 Guidelines

Suggested Outline for Preparing the Technical Report

A suggested outline for preparing the Technical Report is provided below. Depending upon the facility, the outline below may be reduced or, alternatively, expanded upon. For a renewal permit or a permit modification, the outline may be greatly reduced if previously submitted items are still representative of the applicant's activities.

I. Site Location and Ownership

A. Site Location

1. Describe the location of the wastewater treatment facility and, if different, the location of the land application site.
2. Describe relative locations of important land features (cities, roads...) to the treatment facility and land application site.
3. Describe adjacent land uses and identify distances from the boundary of the land application site(s) to the following buffer objects: dwellings, areas of public access, canals/ditches, private water sources, and public water sources.

B. Site Ownership

1. Identify who owns the land application site. If not owned by the applicant, describe any pertinent leases or agreements in place.
2. Within this section, or referring to an appendix, provide the following documentation:
 - a. Land Application Site Ownership: provide documentation of site ownership for as of land application.
 - b. If the applicant is leasing or renting the land application site, provide an affidavit stating the specifics of the water use agreement or lease stating the actual control over the property.
 - c. Provide copies of any other agreements affecting the ownership and/or operation of the site (right-of-way easements, for example).
 - d. List all local, state, and federal permits/licenses/approvals related to the land application facility. For each, list the date(s) of application, the current status, and, if applicable, the approval date. Include any required planning and zoning approvals and/or required conditional use permits.

II. Process Description

A. Process Flow Description

1. Identify the sources of wastewater. Describe any seasonal variations in the

wastewater (quantity and quality).

2. Describe the flow path of wastewater from the wastewater source to the land application site.
3. Identify the major treatment steps (equipment) of the wastewater treatment facility. For municipal systems, describe the disinfection treatment system and the proposed level of disinfection.
4. Identify sizes and design capacities of major equipment.
5. Identify the flow design basis. For existing sites, present recent wastewater flow data.
6. If applicable, describe any alternate treatment methods being considered.
7. Describe procedures that would be followed if the principal wastewater treatment procedures could not be used temporarily.
8. Identify sources and types of generated waste solids.

B. Land Application Site

1. Identify the number of land application acres.
 - a. If applying for a new permit, identify the proposed number of land application acres.
 - b. If applying for a renewal permit or permit modification: 1) list the current hydraulic management units and associated acres and 2) describe any proposed changes to the land application acreage.
2. Identify the type(s) of irrigation system(s) (pivot, hand lines,...) and the corresponding irrigation efficiency(ies).

III. Site Characteristics

A. Site Management History

1. Describe past and current uses and management of the land application site including: important events and dates, cropping information, historic fertilizer use, and other key past and current site management information.

B. Climatic Characteristics

1. Describe the climatic characteristics of the site including precipitation data, high and low temperature data, frost free days, growing degree days, and prevailing wind direction.

C. Soils

1. Describe site soils. Present Natural Resource Conservation Service (or similar) soil survey information and results of any on-site investigations.

2. Present and interpret available soil monitoring results.
3. If wastewater land application in the non-growing season is proposed, calculate and present the available water holding capacity of the soils.

D. Surface Water

1. Identify and describe the location of surface water(s) near the land application site.
2. As applicable, discuss canals, wetlands, springs, floodplains, and other surface water related site characteristics including beneficial uses.
3. Describe, as appropriate, the influence of site land application activities on nearby surface water(s).

E. Groundwater/Hydrogeology

1. Describe the groundwater system, including: depth to first water, depth to regional groundwater, confined or unconfined (if known), flow direction (if known), and seasonal depth and flow direction variations. If applicable, describe the presence of a major aquifer.
2. Discuss the locations and uses of wells (public wells, private wells, monitoring wells, and injections wells) within ¼ mile of the land application site. Include copies of well logs, if available. The IDWR (Idaho Department of Water Resources, www.idwr.state.id.us) may be contacted for assistance.
3. If a Well Location Acceptability Analysis has been performed for the site, present and interpret results of the analysis.
4. Present and interpret available groundwater monitoring results (upgradient and downgradient of the land application site) and/or on-site investigations.
5. Present and interpret results of any groundwater modeling efforts for the site.

IV. Wastewater Characterization, Cropping Plan, and Loading Rates

A. Wastewater Characterization

1. Identify the quantity of land applied wastewater (per day, per month, per year). Document how the quantity values were determined.
2. Characterize the concentrations of key constituents in the wastewater proposed for land application. Document how the concentration values were determined. Basic constituents of interest are: total nitrogen, total phosphorus, and Chemical Oxygen Demand (COD). Depending on the wastewater source, concentrations of other constituents may be important. For industrial systems, concentrations of total dissolved inorganic solids (TDIS) and/or metals may be pertinent. For municipal systems, total coliform counts may be presented.

B. Cropping Plan

1. Describe proposed crop selection and a 5-year rotation plan.
 - a. For each crop, describe: planting and harvesting data, irrigation sensitivity, rooting depth, expected yield (compare to yield data published by the Idaho Department of Agriculture (see Section 7), and expected crop uptake values for key constituents in the wastewater.
 - b. For each crop, calculate and present the Irrigation Water Requirement (IWR). Document how the IWR value(s) were determined.
 - c. If proposing to utilize wastewater for tree irrigation, present a silvicultural plan (a plan covering the care and cultivation of the trees).

2. Describe the proposed future use of fertilizers at the site. Document nutrient loading associated with fertilizer use.

C. Hydraulic Loading Rate

1. Present the expected wastewater hydraulic loading rates by month for growing season and non-growing season.

2. Describe the availability of supplemental irrigation water for the site and whether or not supplemental irrigation water is expected to be used at the site. Provide documentation that water rights exist to provide supplemental irrigation. If expected to be used, present the typical supplemental irrigation water hydraulic loading rates for potential crops.
3. Discuss irrigation scheduling for the site.

4. If storage of wastewater is proposed, prepare and present a monthly water balance for the storage structure(s) reflecting: number of days of storage, required freeboard, minimum depth, evaporation, precipitation, and flows into and out of the structure.

D. Constituent Loading Rates

1. Calculate and present the expected growing season and non-growing season loading rates for key constituents. If waste solids and/or fertilizers are proposed to be applied to the land application site, reflect the application of these materials in site constituent loading rate calculations.

2. Compare expected constituent loading rates to applicable crop uptake values for the site.

3. Identify the design limiting constituent.

V. Site Management

A. Compliance Activities

1. If applying for a permit modification or a renewal permit, provide a summary and status of compliance activities under the existing permit.

B. Seepage Rate Testing

1. Discuss the need (and, if appropriate, a schedule) for seepage rate testing of wastewater structures or ponds.

C. Site Management Plans

If the site has previously developed any of management plans listed below (or other site specific plans), either separately or as part of the site Plan of Operation, provide any updates to the information presented in the plan(s). If a new site, or if the plans have not been developed for an existing site, address each of the plan topics.

1. *Buffer Zone Plan:*

- a. Discuss disinfection and buffer zone issues for the land application site. Address the following buffer objects: dwellings, areas of public access, canals/ditches, private water sources, and public water sources.
- b. Compare site buffer distances to DEQ guideline buffer distances. As applicable, describe any proposed mitigation measures to potentially reduce the required buffer distances.
- c. Describe current and/or proposed fencing and signing for the facility.

2. *Grazing Management Plan:* required if any grazing activities are proposed at the land application site.

3. *Nuisance Odor Management Plan:* for systems with higher strength wastewater (wastewater with a greater potential to create odors), it is highly recommended that a Nuisance Odor Management Plan be prepared as part of the permit application.

4. *Waste Solids Management Plan:* discuss whether or not solids are to be applied on the permitted reuse site. If so, reflect the application of waste solids in site constituent loading rate calculations. If waste solids are managed off-site, refer to IDAPA 58.01.02, Section 650 regarding sludge usage.

5. *TDIS (Total Dissolved Inorganic Solids) Management Plan:* to address potential increases in TDS (total dissolved solids) concentrations in groundwater and/or excessive salt levels in soils.

6. *Runoff Management Plan:* to address best management practices for minimization of runoff and ponding.

D. Monitoring

1. Describe how the quantity of land applied wastewater is proposed to be monitored (methodology, frequency, location)

2. Describe proposed sampling and analysis of the land applied wastewater (constituents, disinfection level, methodology, frequency, location).
3. Describe method of calculating hydraulic and constituent loading.
4. If supplemental irrigation water is expected to be used, describe how the quantity of land applied supplemental irrigation water is proposed to be monitored (methodology, frequency, location).
5. Describe proposed soil monitoring (constituents, soil depths, methodology, frequency, location).
6. Describe proposed groundwater monitoring (constituents, methodology, frequency, location).
7. Describe how crop uptake values are proposed to be determined (plant tissue monitoring, table values...).
8. Describe other proposed monitoring for the site.
9. Describe meteorological monitoring for site.

E. Site Operations and Maintenance

1. Describe who will operate and maintain the wastewater treatment facilities and land application site.
2. Describe operator certification credentials—credentials currently held and any plans for future certifications.
3. If a party other than the applicant operates and maintains the land application site, submit a copy of the signed contract or agreement outlining how the site will be operated to meet the conditions of the permit.