

**Ready for Reuse Grant RRG-034.1 and RRG-047 Funding Approval Request
 KEP Groundwater Remediation – 2018
 Kenosha Engine Plant (KEP), 5555-30th Avenue, Kenosha Wisconsin**

January 31, 2018

In accordance with the Intergovernmental Agreement between the City of Kenosha and the Wisconsin Department of Natural Resources; the City of Kenosha (City) is requesting approval of the expenditure of the Ready for Reuse Grant funds awarded as Grant RRG-034.1 and RRG-047 to conduct groundwater remediation at the Kenosha Engine Plant. The plan is for an 12-24-month program that includes the preparation of a groundwater remedial design report, technical bid specifications, public bid support, on-site observation and documentation of the groundwater remediation with an estimated amount for the publicly bid contract for groundwater remediation.

Scope of Work:

- Prepare a groundwater remediation design report in general conformance with NR724.
- Prepare and publish a 30-day public notice for groundwater remediation.
- Prepare Injection Permit applications.
- Prepare plans and specifications for publicly bid groundwater remediation. Conduct pre-bid meeting.
- Conduct groundwater remediation. Document remediation contractor activities and prepare a groundwater remediation documentation report.

Budget

The estimated costs are:

Remedial Activity	Eligible Costs	Matching Costs	Total Costs
Remediation Design Report	\$ 45,000.00	\$ 9,900.00	\$ 54,900.00
Injection Permit applications	\$ 5,000.00	\$ 1,100.00	\$ 6,100.00
Public notice	\$ 500.00	\$ 110.00	\$ 610.00
Plan & Specifications with bid support	\$ 35,000.00	\$ 7,700.00	\$ 42,700.00
Remediation documentation	\$ 25,000.00	\$ 5,500.00	\$ 30,500.00
Remedial Contractor (RRG-034.1)	\$1,502,773.17	\$330,610.10	\$1,833,383.27
Total RRG-034.1	\$1,613,273.17	\$354,920.10	\$1,968,193.27
*Remedial Contractor (RRG-047)	\$ 257,000	\$ 56,540.00	\$ 313,540.00
Total costs	\$1,870,273.17	\$411,460.10	\$2,281,733.27

*Note that this is only partial use of grant RRG-047, the remainder is proposed for 2018 and 2019 KEP O&M

Schedule

Task Name	Duration in Work Days	Start	Finish
Groundwater Design Report	35 days	Mon 2/26/18	Fri 4/13/18
Injection Permits	22 days	Thu 3/1/18	Fri 3/30/18
Groundwater Bid Documents	25 days	Mon 3/19/18	Fri 4/20/18
WDNR review of Design and bid	60 days	Wed 4/25/18	Tue 7/17/18
Bid Groundwater Remediation	35 days	Fri 6/29/18	Thu 8/16/18
Groundwater Remediation Documentation assumes 4 mon events-on-site part time	48 days	Mon 8/27/18	Wed 10/31/18
Groundwater Remediation Report	30 days	Mon 11/12/18	Fri 12/21/18
Groundwater Remediation Contractor	260 days	Mon 8/27/18	Fri 8/23/19

1. The schedule assumes the initial groundwater treatment event would take place over a two-month period and that the documentation report presented would discuss that treatment event.
2. Other monitoring events that would be required or additional treatment days would be documented in separate reports.
3. Additional monitoring events are not shown on the schedule because they are dependent upon the remediation design.
4. The groundwater remediation contractor timeframe includes time that could be required if a follow-up treatment is needed after 1 year.

Please respond with your concurrence of this Work Plan to:

Shelly Billingsley, P.E.
 City of Kenosha
 Director of Public Works
 625 52nd Street, Room 305
 Kenosha, WI 53140



**Ready for Reuse Grant RRG-047 Funding Approval Request
Kenosha Engine Plant Operations & Maintenance 2018
Kenosha Engine Plant (KEP)
5555 30th Avenue, Kenosha Wisconsin**

January 31, 2018

In accordance with the Intergovernmental Agreement between the City of Kenosha and the Wisconsin Department of Natural Resources; the City of Kenosha (City) is requesting approval of the expenditure of the Ready for Reuse Grant funds awarded as Grant RRG-047. The City of Kenosha (City) is requesting approval of the scope of work, cost estimate and schedule presented below for reimbursement from the Ready for Reuse Grant RRG-047.

Background:

Three groundwater recovery systems are operating at the former Kenosha Engine Plant (KEP), 5555 30th Avenue, Kenosha, Wisconsin. The three operating systems require ongoing maintenance and monitoring. This work authorization request covers routine operation and sampling of the groundwater recovery systems, maintenance needed for systems operations and perimeter groundwater monitoring for evaluation of the function of the groundwater recovery systems. The future plans for these systems are to discontinue groundwater flow control, as soil remediation was conducted in 2017 and groundwater remediation is planned for later in 2018. The plan for these systems is for another one-two years of operation. These groundwater recovery systems will not be necessary after groundwater treatment has mitigated the source areas and attenuation monitoring begins.

O&M costs for the KEP include operation and maintenance of the three groundwater recovery systems including electricity, groundwater discharge, and data transmission line and maintenance of the temporary cover and other City fees as listed below. This request covers work planned for the 2018 calendar year.

Scope of Work:

The proposed scope of work based on the following assumptions:

- The cost estimate for the monthly maintenance visits includes one to two staff for 3 days per month for 12 months (January 2018 through December 2018). The estimate includes staff time for a daily check of the PLC system via computer. An allowance of \$1,000 for the cost of minor repair parts has been included in the estimate.
- The cost estimate for routine quarterly or semi-annual maintenance includes two staff for one day. The quarterly maintenance is an add-on to one of the routine monthly visits. Four quarterly events are included in the cost estimate.
- The cost estimate for non-routine maintenance (e.g. thunder storm power outages) assumes that two extra site visits per month may be required. This assumes one staff person for two days per month over a 12-month period.
- The cost estimate for two groundwater sampling events of 25 groundwater monitoring wells located around the perimeter of the KEP.
- The cost estimate for utility and vendor costs associated with the operation and maintenance at the KEP.

The tasks that will be completed as part of the scope of work include the following activities:

- a. Conduct routine monitoring and maintenance of three recovery systems. One day per system per month is anticipated to be required based on historical data (3 days per month). The monthly maintenance may or may not be completed on each of the systems within a single week, but could be combined with a non-routine visit if a system shut down occurs near the scheduled time for a regular maintenance visit. Routine monitoring activities may include the following:
 - i. Routine Monthly
 - Record key operating parameters, chart the data and analyze trends for:
 - o Sump and extraction well flow rates
 - o VOC concentrations
 - Record motor hours
 - Clean flow meters and in-line filters (central only)

- Check float switches – clean if needed
 - Inspect system piping for damage or leaks
 - Inspect building and surrounding area
 - Remotely monitor system (daily)
 - Inspect containment sump/floor seal
 - Inspect lighting and electrical systems
 - Manually operate and check valves (to prevent valves from seizing)
 - Manually test safety interlocks on pressure switches and alarm notification system
 - Check and test phone line, radio tower and radio leads
 - Verify ventilation system operation
 - Check first aid and eye wash stations
 - Maintain locks and security
- b. Conduct routine quarterly or semi-annual monitoring and maintenance of three groundwater recovery systems. Three days per quarter for routine quarterly monitoring and maintenance and two days per quarter for non-routine maintenance are included in the estimated costs. Routine and non-routine quarterly activities may include:
- i. Routine Quarterly and/or Semi-annually
 - Pull and Clean Pumps
 - Check sump depth and remove any floating sludge
 - Perform preventative maintenance on air stripper, oil/water separators and holding tanks by checking for iron fouling and cleaning as needed.
 - Change air filters on blowers or building ventilation systems
 - Perform discharge permit required sampling
 - Perform discharge permit required reporting
 - ii. Non-routine maintenance (response to alarm conditions)

Each of the groundwater recovery systems is controlled by a programmable logic controller (PLC) for the systems input and output control signals (pumps on/off, pump motor speed, blower on/off, building temperature thermocouple signals, level transmitters signals and setpoints, of/off switches, flow meters signals and setpoints etc.). In the event of a system upset, the PLC shuts the system down and an alarm condition on the PLC indicates system shutdown. The estimated cost for review of the non-routine maintenance is included in the monthly visits above. Costs for necessary repairs will be provided before the repair is conducted if the costs of the system components requiring replacement exceed \$1,000.
- c. Recovery System Semi-annual Sampling
- The influent and effluent from each recovery system will be sampled for VOCs, GRO and DRO (per the current permit). There is one influent sample for the Central system (Sumps 18), one influent sample at Sump 6 and three influent samples from the Southern system (Sumps 7, 15 and 17R) for a total of five influent samples. There is one effluent sample at each of the three recovery systems for a total three samples. The semi-annual system sampling will be conducted during a maintenance visit.
- d. Recovery System Reporting
- The results of the semi-annual influent/effluent sampling will be tabulated and provided to the City as part of the WDNR-required semi-annual report. The semi-annual report will provide a tabulated operational summary of the reporting period. The table will include total gallons pumped, days of operation, and calculated average pumping rate. Two semi-annual reports are planned for 2018.
- e. Perimeter Groundwater Sampling Events
- Sample 26 perimeter wells twice (April 2018 and October 2018) for VOCs (EPA method 8260) for verification of continued on-site containment of contamination by the recovery systems. The two sampling events will include the following activities:
- Collect groundwater samples from 26 monitoring wells and piezometers during each semi-annual sampling event as listed on Table 1. The well locations are depicted in Figure 1. Three duplicate samples will be collected for quality assurance purposes. Depth to groundwater measurements will be collected prior to well purging. The wells will be purged using low flow techniques and purged until field

parameters (pH, dissolved oxygen, temperature, conductivity and oxidation-reduction potential) are stable. The samples will be collected using low flow sample rates with a peristaltic pump.

- Groundwater samples will be submitted to Pace Analytical for chemical analysis of volatile organic compounds (VOC). Depth to groundwater and field parameters including dissolved oxygen, pH, temperature, conductivity and oxidation reduction potential (ORP), will be measured during each sampling event.
- Prepare a water table potentiometric surface map.
- Tabulate the field and laboratory analytical results on summary tables.
- Provide the maps and tables in a brief letter report that includes a copy of the laboratory analytical results.
- Purge water will be treated at the central remediation system, through the air stripper and discharged to the sanitary sewer.

f. Vendor/Utility Provided Services

Annual costs are also incurred for electricity to operate the systems, a dedicated data line for communication between the systems and for remove monitoring, Kenosha Water Utility sewerage treatment fees, and landscape maintenance of the vegetated temporary caps.

Budget

The work will be conducted on a time and materials basis in accordance with the terms of the Master Services Consulting Agreement between the City of Kenosha and AECOM Technical Services, Inc. The estimated fees are:

Operations and Maintenance Activity	Service Provider	Eligible Costs	Matching Costs	Total Costs
O&M of groundwater recovery systems	AECOM Labor	\$ 80,000		
Two perimeter groundwater monitoring events	AECOM Equipment, materials, supplies and travel	<u>\$ 5,000</u>		
	AECOM Subtotal	\$ 85,000	\$ 18,700	\$103,700
Lab fees for O&M monitoring and groundwater sampling events	Laboratory Analytical Fees (system and groundwater samples)	\$ 5,000	\$ 1,100	\$ 6,100
Remote Systems monitoring	Verizon (dedicated data line)	\$ 500	\$ 110	\$ 610
Electricity for groundwater systems	We Energies	\$ 15,000	\$ 3,300	\$ 18,300
Groundwater discharge fees	Kenosha Water Utility	\$ 13,500	\$ 2,970	\$ 16,470
City fee	Stormwater Fees	\$ 96,000	\$ 21,120	\$117,120
Temporary cap maintenance	Cap Maintenance	<u>\$ 35,000</u>	<u>\$ 7,700</u>	\$ 42,700
	Total annual costs	\$250,000	\$ 55,000	\$305,000

Schedule

Three days per month for routine monthly maintenance.

Three days per quarter for routine quarterly monitoring and maintenance.

Two days per quarter for non-routine maintenance.

Flow meter readings are provided to the City water utility for sanitary sewer discharge monthly billing.

Semi-annual recovery systems sample reporting will be provided as part of the semi-annual WDNR report form.

Please respond with your acceptance of this Work Plan to:

Shelly Billingsley
 City of Kenosha
 Director of Public Works
 625 52nd Street, Room 305
 Kenosha, WI 53140
sbillingsley@kenosha.org