The City of Cornwall's Infrastructure and Municipal Works Department requires the services of a qualified contractor for a three year period commencing on March 1, 2021 to conduct the Operation and Preventative Maintenance (PM) Program associated with the City's Landfill Site Methane Gas Collection System (MGCS) and Leachate Collection System (LCS) according to the specifications, instructions and regulations as indicated within this document.

1. SUPPORTING DOCUMENTATION

Forming a part of the contract specifications are various construction project documents (MGCS expansion tender specifications and as-builts drawings, LCS / pumping station tender specifications and drawings, ECA and other MECP approval certificates, WDS Annual Reports, etc.) that are available for download from the following link: https:\\cornwall.bidsandtenders.ca

Qualified Proponents are required to thoroughly review all documentation and drawings included. Proponents shall not seek compensation for any adversity which may result from inaccurate review or misunderstanding of any support information.

2. PROJECT OVERVIEW

This RFP requires the successful Proponent to make weekly visits to ensure that the Methane Gas and Leachate Collection Systems are functioning properly and make adjustments, if necessary. The successful Proponent must visit the MGCS building and record readings such as methane and oxygen concentration, flow and flare temperature. **For every week that the successful Proponent fails to perform these weekly visits, he/she shall be penalized at a rate of $2500.00 per week.** This job function is an integral part of reducing odours that are emitted from the Landfill Site and therefore it must be ensured that the MGCS is functioning and at an optimum level. The City of Cornwall, through its current Operations and Maintenance contractor, has a proprietary web-based data logging system that involves a data connection transfer between the Flaring System's Programmable Logic Controller (PLC) through the contractor's Virtual Private Network (VPN) to the contractor's Structured Query Language (SQL) secure database where all plant operating data is copied.

This system allows all data to be stored in a secure, backed-up, off-site location and allows designated Cornwall employees to view, access and download the data, as necessary. As the operating information comes into the database, various calculations, data integration and summaries are performed. The successful Proponent must have the capability to remotely connect through firewall protected internet connection to the RS View32 SCADA (supervisory control and data acquisition) to ensure that the MGCS is functioning at an optimum and attend the site if necessary. The Corporation shall also be granted the ability to connect remotely and access information collected. The following parameters are to be remotely monitored (at a minimum) and continuously recorded for both blowers:

- percentage (%) methane,
- percentage (%) oxygen,
- gas temperature,
- status of all room monitors,
- air line pressure,
- flare temperature,
- vacuum pressure,
- differential pressure,
- flow rate of landfill gas.

For both leachate pumping stations, the following parameters are to be monitored and recorded:

- Pump runtime hours for both pumps
- Flowmeter totalizer and flow rates

For air compressor system:

- Compressor runtime hours
- Ventilation fan operation
- Air dryer operation

For MH2 Flowmeter

- Flowmeter totalizer and Flow rates

The successful Proponent must attend the site within 10 hours of a shutdown to restart the gas collection system. In the event of a pump failure at either leachate pumping stations, the proponent will be required to attend site to restart pumps if necessary depending on the weather conditions (high precipitation, spring meltdown, draught, etc.).

The successful Proponent must provide the following information to the Corporation for the production of the Annual Report by January 31st of each year:

- Water level data from landfill gas collection wells (in Excel format);
- Monthly gas concentration readings from gas collection wells (in Excel format);
- Weekly Monitoring data from the mechanical portion of the gas collection system;
- Any maintenance performed on the landfill gas collection and flaring system including repairs to gas collection wells;
- Dates of shutdowns of the gas collection/flaring system;
- Details of any modification or maintenance to the leachate collection system; and
- Total flow of leachate at pumping stations and MH2.

Job Superintendent – Experience Requirements (See 14.2 (iv))

All Proponents hereunder must furnish with the RFP, complete up to date references which provide satisfactory evidence to the City that the proponents Job Superintendent, who shall have overall responsibility of the MGCS and LCS, has a minimum of 5 years of experience in preventative maintenance and repair associated specifically with Landfill Site MGCS and LCS. The letter shall describe, in detail, the landfill site(s) where MGCS and LCS experience was obtained, complete with contact name, address and telephone number of the landfill supervisor. The designated Job Superintendent shall also provide documentation verifying the minimum of 5 years experience with monitoring of landfill methane gas collection wells for Methane (CH4 %gas), Carbon Dioxide (CO2 % gas), Oxygen (O2 %gas) and Balance Constituents (% balance) concentrations, pressure (inches H2O) and flow rate monitoring. Documentation shall also provide a detailed description of the equipment used to monitor the above noted parameters. The Job Superintendent must hold a G.1 and G.2 or an IMT Certificate under requirements for TSSA to operate landfill gas flaring system and shall also have demonstrated skill and knowledge in electronics and instrumentation. As part of this contract, designated personnel carrying out the work associated with this contract shall provide to the City, documented evidence of “Confined Spaces” training. Proponents unable to demonstrate sufficient qualifications and experience in these areas shall not be considered for this contract.

Substitute Staff

The successful Proponent agrees not to substitute key members of the Project Team during the term of this service contract unless the Project Team member is no longer employed by the successful Proponent. If a staff substitution is required for this reason, the successful Proponent will nominate potential substitutes for the Corporation’s review, and the Corporation will have the sole

right to select the replacement. Prior written authorization from the Corporation will be required before the replacement may commence delivery of services for this contract.

Preventative Maintenance Work Orders (P.M.W.O.)

Conducting Tasks

Through the supervision of the designated Job Superintendent who will have overall responsibility of the implementation of the preventative maintenance program, the successful Proponent shall be required to conduct all tasks as described in each of the preventative maintenance work orders (PMWO), numbered PMWO #1 through PMWO #18. PMWO's shall be carried out according to the schedule as contained within Table 2. The successful Proponent shall maintain accurate reporting details on PMWO report cards regarding each PM task described on PMWO's. The PMWO schedule may be altered by the successful Proponent subject to agreement by the City.

Reference of Applicable Manufacturers Specifications and Manuals

Proponents are cautioned that the task descriptions set out in each PMWO have been simplified however should be sufficient in substance for technicians with appropriate experience in the operation and maintenance of a MGCS and/or LCS. Accordingly, before conducting any of the PMWO tasks, maintenance technicians or staff shall also reference the manufacturer's specifications and/or operations manuals before proceeding.

Documentation and Invoicing

Preventative Maintenance Work Orders

The successful Proponent shall maintain a work order (WO) records system which accurately documents and verifies that specified preventative maintenance (PM) tasks as summarized in Table 2 attached and as described in the contract documents have been fully completed. All completed work order report cards must be authorized by the City's designate before invoicing may proceed. Invoices may be submitted on a bi-weekly basis. Copies of the completed PMWO shall be distributed by the successful Proponent as follows:

- 1 copy to City designate for invoice authorization, attach to invoice
- 1 copy to file at MGCS building
- 1 copy to be maintained by successful Proponent

The successful Proponent shall maintain a neat and accurate filing system at the MGCS building which chronologically records completed PM work order report cards by PMWO number.

As part of the PM portion of this contract, the City shall compensate the successful Proponent for any materials and replacement parts, ie: lubricates, replacement light bulbs, fuses, etc. The successful Proponent is required to supply all labour, equipment, vehicles, small tools and safety apparatus unless otherwise specified.

3. EQUIPMENT AND SPARE PARTS

Safety Equipment
The successful Proponent shall supply and be responsible to ensure that all safety related equipment is certified and calibrated according to specified OHSA Standards at all times throughout the term of the contract at their cost. All documentation on certifications and calibrations shall be immediately forwarded to the City upon receipt.

Spare Parts
The successful Proponent shall appropriately document on work order report cards the usage/installation of supplied spare parts. All damaged or broken parts shall be maintained at the MGCS building for inspection by the city before final disposal.

4. REPAIR WORK ORDERS

General
All repairs associated with the MGCS and LCS are considered outside the scope of this contract. However, the successful Proponent may be authorized by the City to conduct repairs on a "Time and Material" basis. Bidders are cautioned that the City reserves the right to obtain quotations from other contractors for any or all portions, ie: labour, equipment, materials, parts, etc. with any or all identified repair work associated with the MGCS or LCS. Proponent must have the abilities and certification to make such repairs.

As Required: Labour Rates - Items 19 and 20
Labour associated with repair work orders shall be considered as an allowance and shall be utilized as directed by the City. In an event that a portion or all of the allowance items are not utilized over the course of the contract, it shall not constitute a basis for claims for damages or anticipated profits for the amount that may or may not be dispensed in part or in full.

Proponents are required to submit an hourly rate for the specified labour profile based on a predetermined number of work hours. The number of repair work hours indicated for the specified labour profile shall be utilized for evaluation

purposes only and are only estimated hours. Bidders are cautioned that the City of Cornwall makes no guarantees that these quantities will be achieved but they may be exceeded.
Hourly wage rates shall be submitted by bidders based on the following labour profiles:

Item 17 - Job Superintendent (on site)
Item 18 - All other labour (on site)

All hourly wage rates shall be comprised of a fixed hourly rate comprised of labour, equipment (ie: vehicle, small tools, etc.) administration, supervision, bonding, overhead and fee for service in order to carry out necessary repairs. Only actual work on site shall be considered as chargeable time (travel time will not be paid).

Materials

As part of repair work orders associated with the MGCS and LCS which have been authorized by the City, the successful Proponent may be required to purchase materials, consumables and/or replacement parts. Proponents are cautioned that the City shall reimburse the successful Proponent at a rate of 115% of the cost of all materials, consumables and replacement parts purchased in order to fully conduct repairs of the MGCS and/or LCS authorized by the City. Copies of the original invoices shall be submitted by the successful Proponent as verification of material purchases. The City reserves the right to purchase any materials, consumables and/or replacement parts required for the maintenance and repair of the MGCS and LCS.

Rental Equipment

As part of the repair work orders associated with the MGCS and LCS which have been authorized, the successful Proponent may be required to rent specialized equipment in order to efficiently conduct the work required. Bidders are cautioned that the City shall reimburse the successful Proponent at a rate of 115% of rental rate invoice price subject to approval by the City prior to the use of such equipment for the purposes of conducting authorized repair work.

Repair Work Order Documentation

Repair work orders which have been authorized by the City for completion by the successful Proponent, shall be documented by the successful Proponent on a work order report card. The perceived cause of the problem and the steps carried out to complete the repair shall also be recorded. Additionally, all information with respect to replacement parts purchases, a copy of the parts invoice (which shall include information such as, but not limited to: part description, part number, manufacturer, vendor name, vendor phone numbers, vendor address, etc.) shall also be attached to the work order report card.

Confined Space Training

Before commencement of any work associated with this contract, the successful Proponent shall be required to submit to the City a list of the names of the employees who shall conduct contract work whereby confined space training is applicable. The list of names shall be accompanied by copies of certificates verifying that the employees listed have successfully obtained an approved "Confined Space Training" course.

The successful Proponent shall maintain an updated list of employee names complete with proof of Confined Space Training certificates (copies are acceptable) posted within the MGCS building. All records which document confined space entries conducted within the City Landfill(s) shall be maintained with the applicable P.M. or repair work order report card.

The successful Proponent shall be required to develop and maintain a written Confined space entry program and procedures (as per Confined Space O. Reg. 632/05). The Confined space entry program and procedures shall contain (at minimum) the following:

1. Duties of workers
2. Onsite rescue procedures, rescue equipment and methods of communication
3. Personal protective equipment, clothing and devices
4. Isolation of energy and control of material movement
5. Attendants responsibilities
6. Adequate means for entering and exiting
7. Atmospheric testing
8. Adequate procedures for working in the presence of explosive or flammable substances
9. Ventilation and purging

The successful Proponent shall provide all rescue equipment and personal protective equipment, clothing and devices required.

5. PREVENTATIVE MAINTENANCE WORK ORDER (PMWO) PRICING

Fixed Rate Per PMWO

Proponents are required to submit the specified information on Table 1 - Schedule of Unit Prices regarding the number of man hours (Column 'A') required to conduct the tasks described in each individual PMWO and a fixed hourly rate (Column 'B'). The resultant calculation of submitted man hours (Column 'A') multiplied by the fixed hourly rate (Column 'B') establishes the fixed rate (Column 'C') to be paid by the City to the successful Proponent for each time the PMWO tasks are conducted by the successful Proponent's staff.

The bid price per PMWO derived and submitted by bidders in Column 'C' per item, shall be a fixed price, valid for the term of the contract. The bid price submitted for each PMWO shall be comprised of all costs including but not limited to, the supply of qualified manpower, vehicles, equipment, tools, insurances, bonding, coordination, supervision, administration, overhead profit, etc. in order to fully conduct the tasks as described in each PMWO.

PMWO Frequency

As indicated on each of the PMWO.'s as well as on Table 1 - Schedule of Unit Prices, an annual frequency has been established for each PMWO **Bidders are cautioned that the City reserves the right to decrease or increase the frequency of any or all of the PMWO's at any time throughout the duration of this contract.** Any change in PMWO frequency as may be stipulated by the City during the term of this contract shall not constitute a basis for claims for damages or anticipated profits for the amount that may be dispensed in part or in full.

Calculation of Total Bid Price

Annual pricing associated with individual PMWO's (Column 'E') shall be based on the established fixed price per PMWO (Column 'C') multiplied by the annual frequency (Column 'D').

The sum of the individual annual price calculations (Column 'E') established for each PMWO, (Item #1 through Item 18), plus bid price submissions for labour associated for Repair Work Orders, as required (Items 19 and 20), plus 13% HST shall be utilized for the purposes of tender evaluation and award.

Basis for Payment

Payment shall be based on the contract unit bid price and shall be compensation in full for each occasion the work is completed as outlined.

Table 1 - PMWO PRICING SCHEDULE

ITEM #	DESCRIPTION	HOURS PER PMWO A	FIXED HOURLY RATE B	FIXED PRICE PER PMWO A x B C	ANNUAL QTY D	ANNUAL PRICE C x D E
1	PMWO #1		$	$	52	$
2	PMWO #2		$	$	52	$
3	PMWO #3		$	$	12	$
4	PMWO #4		$	$	7	$
5	PMWO #5		$	$	52	$
6	PMWO #6		$	$	2	$
7	PMWO #7		$	$	2	$
8	PMWO #8		$	$	4	$
9	PMWO #9		$	$	1	$
10	PMWO #10		$	$	2	$
11	PMWO #11		$	$	1	$
12	PMWO #12		$	$	52	$
13	PMWO #13		$	$	1	$
14	PMWO #14		$	$	12	$
15	PMWO #15		$	$	2	$
16	PMWO #16		$	$	6	$

"As Required" - REPAIR WORK ORDERS				
ITEM #	DESCRIPTION	A HOURLY RATE	B ESTIMATED HRS	C A X B
17	JOB SUPERINTENDENT (ON SITE)	$	+/- 150	$
18	ALL OTHER LABOUR (ON SITE)	$	+/- 150	$
ANNUAL SUBTOTAL (Sum of Items 1 through 20)				$
HST				$
TOTAL ANNUAL PRICE				$
Total Contract Price (Total Annual Price x 3)				$
(THIS FORM MUST BE INCLUDED WITH SUBMISSION)				

PMWO#1

TASK: **Weekly Inspection of Methane Gas Collection System**
FREQUENCY: **Once Weekly**
SCHEDULE: **Thursdays or Fridays, weeks 1 through 52**

DESCRIPTION:

1. Review all operating conditions of all panels and analysers verifying all are working properly. Record all required monitoring information as specified by Certificate of Approval. Complete daily record information sheet or verify if record has been completed by others. Replace any burnt out panel lights and fuses from the control panel, analyser panel or ambient monitoring system as required.
2. Visually inspect blowers, associated piping, condition of flare equipment, propane tank and associated piping for detection of leaks, worn or faulty components, excessive vibration and deterioration of insulation around piping. Replace fuses as required.
3. View flame in combustion flare through viewing port to monitor flame stability and condition of insulation on flare walls. Note any unusual noise vibrations and/or odours. Clean viewing port glass as required. Ensure protective screens are secure.
4. Check condition of condensate pump.
5. Replace all building interior and perimeter lights as required. Ensure door locks and gate locks are in place and operational - lubricate as necessary.
6. The MGCS building (equipment container) shall be maintained in a continuous neat, clear and tidy state. Mop floors as required, wipe dirt and dust from panels and electronic equipment as required. Snow removal and grass/weed control is performed by a third party who is contracted through the City of Cornwall. Any deficiencies in grass or snow removal should be reported to the City's supervisor.
7. Record all deficiencies or potential problems. Deficiencies or problems requiring prompt attention shall be reported <u>immediately</u> to the City designate.

PMWO#2

TASK: **Weekly Inspection of Leachate Collection System**
FREQUENCY: **Once Weekly**
SCHEDULE: **In conjunction with PMWO#1**

DESCRIPTION:

1. Record operating hours for each pump as indicated at each control panel at Pump station #1. Record flow totalizer from flowmeter.
2. Open wet well hatch, visually monitor leachate levels to determine if float mechanisms and/or pumps are operating properly. Inspect visible equipment within the wet well during operation for unusual activity, vibrations, noise or leachate turbulence which may be caused by worn components or defective seals. Do not enter wet well without complying with OHSA Confined Spaces legislation. Ensure three phase power is present. Manually operate each pump at both pump stations to ensure that pumps are operating properly. Replace all defective light bulbs.
3. Record all deficiencies or potential problems. Deficiencies or problems requiring prompt attention shall be reported immediately to the City designate.
4. Repeat above procedure for Pump station #2.

PMWO#3
TASK: Flare Shutdown/Start-up Sequence
FREQUENCY: Monthly
SCHEDULE: See Master Schedule

DESCRIPTION:

1. Read and record the vacuum and pressure reading from the operating blower on the PMWO report card. Shut down blower system. Ensure that the electric or air controlled actuated valves (as applicable) have free movement and are properly seated in the full closed position. Following completion of shut down sequence, manipulate manual butterfly valves on blowers to ensure free movement. Return manual valves to pre-established position.
2. Commence start up procedure for the alternate blower system. Ensure that the electric or air controlled actuator valves (as applicable) have free movement to the full open position.
3. Manipulate sample port ball valves to ensure free movement to full open position and proper sealing in full closed position. Return sample port ball valves to pre-established position.
4. Check automatic louver units to ensure proper operation. Lubricate louvre bearings and actuator arms as required.
   Note: automatic louver unit on N.E. side of flare has been permanently disabled.
5. Check lubrication on blower fan and motor. Add lubrication as required. DO NOT OVER LUBRICATE!
6. Following completion of start sequence of the alternate blower, read and record vacuum and pressure readings. Vacuum and pressure readings from the operating blower should be relatively close to the readings previously taken from the now non-operating blower.
7. Deficiencies or problems requiring prompt attention shall be reported immediately to the City designate.

PMWO#4

TASK: **Test Operation of Drain Traps 1, 3, 4 & 6**
FREQUENCY: **Once Monthly**
SCHEDULE: **3rd week of each month - April through last week of October**

DESCRIPTION:

1. Open chamber lid Caution must be exercised to ensure other appurtenances within the chamber are not damaged.
2. Visually check to ensure all hoses and connections are secure and gauges are operational. Listen carefully for possible air leaks.
4. Upon confirmation of condensate well pump cycling, close chamber lid.
5. Record all deficiencies or potential problems requiring prompt attention and should be immediately reported to the City designate.

Note: During heavy snowfall accumulation conditions, snow removal around condensate wells and exposing of toe drain manholes shall be the responsibility of the successful Proponent. Caution must be exercised in order to avoid damage of associated appurtenances located near the condensate pump chambers.

PMWO#5

TASK: **Methane & Oxygen Analyser Inspection**
FREQUENCY: **Weekly**
SCHEDULE: **In conjunction with PMWO#1**

DESCRIPTION:

1. Verify methane and oxygen analyser by comparing reading on the gas analyser provided by the Corporation.
2. Visually inspect all supply and exhaust lines for any leaks, corrosion, cracks or blockages.
3. Remove and clean both the particulate filter and the coalescent filter. Once cleaned, reinstall filters. Replace filters if necessary.
4. Record all deficiencies or potential problems. Deficiencies or problems requiring prompt attention shall be immediately reported to the City designate.
5. Calibration of methane and oxygen analyser is performed by third party contractor organised by the Corporation.

PMWO#6

TASK: **Ambient Monitoring System Inspection**
FREQUENCY: **Semi-Annual**
SCHEDULE: **Spring and Fall**

DESCRIPTION:

1. Inspect ambient monitoring system and record readings.
2. Record all deficiencies or potential problem. Deficiencies or problems requiring prompt attention shall be reported immediately to the City designate.
3. Calibration of ambient monitoring system is performed by third party contractor organised by the Corporation.

PMWO#7

TASK: **Blower Pressure/Vacuum Switches**
FREQUENCY: **Twice Annually**
SCHEDULE: **3rd week of April**
3rd week of October

DESCRIPTION:

1. Inspect and calibrate field pressure and vacuum switches (safety devices) located at each blower.
2. Record all deficiencies or potential problems. Deficiencies or problems requiring prompt attention shall be immediately reported to the City designate.

PMWO#8

TASK: **Nitrogen System in Flare Building**
FREQUENCY: **Four times Annually**
SCHEDULE: **2nd week of March, June, September and December**

DESCRIPTION:

1. Lock out power.
2. Verify all components of the nitrogen delivery system.
3. Inspect pressure release valve.
4. Record all deficiencies or potential problems. Deficiencies or problems requiring prompt attention shall be immediately reported to the City Designate.

PMWO#9

TASK: **Inspection and Maintenance Pneumatic Condensate Well Pump Systems**
FREQUENCY: **Once Per Year**
SCHEDULE: **Last week of October**

DESCRIPTION:

1. Drain Trap (DT) 1, 3, 4 & 6 at active site. Do not enter wet well without complying with OHSA Confined Spaces legislation. Exercise caution so as to not damage well pump head appurtenances, ie: hoses, gauges, etc.
2. Release quick disconnect assemblies from both the feed and discharge airlines of the well pump.
3. Loosen well pump cap. Upon fully freeing well pump cap, pull well pump out of well.
4. Conduct recommended maintenance to well pump according to manufacturer's specifications, clean and lubricate applicable components.
5. Reconnect quick disconnect assemblies from both the feed and discharge air lines of the well pump.
6. Tighten well pump cap.
7. Check well pump to ensure operation as per design. Listen carefully for possible air leaks. See manufacturer's specifications.
8. Record all deficiencies or potential problems. Deficiencies or problems requiring prompt attention shall be immediately reported to the City designate.

PMWO#10

TASK: **Combustion Flare Inspection**
FREQUENCY: **Twice Annually**
SCHEDULE: **3rd week of May**
3rd week of November

DESCRIPTION:

1. Ensure MGCS is shut down and locked out.
2. Shut off flow of propane from propane tank by closing and locking out the inline valve.
3. Remove access panel of combustion flare to enter into combustion flare. Do not enter wet well without complying with OHSA Confined Spaces legislation.
4. Ensure integrity of burners by inspection for signs of corrosion, carbon build up, pitting or other signs of deterioration.
5. Inspect and clean glass inspection ports.
6. Inspect all insulation material and insulation wall fasteners. Remove all loose and visible debris at the base of the combustion flare.
7. Reinstall access panels of combustion flare. Ensure airtight seal around access panel joints.
8. Remove and inspect ignition rod. Ensure integrity of ignition rod by inspection for signs of corrosion, carbon buildup, pitting or other signs of deterioration.
9. Inspect propane supply lines for signs of corrosion or leaks.
10. Ensure propane tank pressure regulator is set correctly.
11. Clean solenoid valve.
12. Reinstate flow of propane by re-opening inline valve.
13. Record all deficiencies or potential problems. Deficiencies or problems requiring prompt attention shall be immediately reported to the City designate.

PMWO#11

TASK: **Inspection of Condensate Pump in Flare Building**
FREQUENCY: **Annually**
SCHEDULE: **First week of October**

DESCRIPTION:

1. Lockout power to condensate pump system.
2. Remove condensate tank cover. Ensure compliance with OHSA "Confined Spaces" legislation before entering condensate pump wet well.
3. Release quick disconnect assemblies from both the feed and discharge airlines of the well pump.
4. Reinstate power to condensate pump.
5. Record all deficiencies or potential problems. Deficiencies or problems requiring prompt attention shall be immediately reported to the City designate.

PMWO#12

TASK: **Inspection of Compressor Container**
FREQUENCY: **Weekly**
SCHEDULE: **In conjunction with PMWO#1**

DESCRIPTION:

1. Record operating hours on compressor.
2. Inspect all hose connections for leaks.
3. Inspect the air dryer control panel and pre-filter, change if necessary.
4. Inspect condensate oil separator, change desiccant if necessary.
5. Record all deficiencies and or potential problems. Deficiencies or problems requiring prompt attention shall be reported immediately to the City designate.

PMWO#13

TASK: **Flame Arrester Inspection**
FREQUENCY: **Once Annual**
SCHEDULE: **2nd week in June**

DESCRIPTION:

1. Ensure MGCS is shutdown and locked out.
2. Carefully remove covering and insulation (for eventual reinstallation) from around the flame arrester housing.
3. Loosen and remove flange bolts.
4. Loosen, on an equidistant basis, (do not remove) outer nuts on all four spreader rods.
5. Clean and inspect. Ensure proper working condition.
   USE EXTREME CAUTION TO PREVENT FLAME ARRESTER FROM FALLING WHEN SPREADING FLANGE FACES. USE CAUTION TO AVOID DAMAGE OF O-RING SEALS.
6. Inspect flame arrester for damage or corrosion. Remove or clean any accumulation of dirt or debris from the flame arrester using compressed air.
7. Following cleaning, reinstall flame arrester in the same orientation as removed. FAILURE TO REINSTALL THE FLAME ARRESTER IN THE SAME ORIENTATION AS ORIGINALLY POSITIONED MAY RESULT IN DAMAGE TO THE MGCS.
8. Loosen, on an equidistant basis, the inner nuts of the four spreader rods in order to allow tightening of the outer spreader rod nuts.
9. Tighten outer spreader rod nuts until flame arrester is held snug while ensuring o-ring seals are properly in place. DO NOT PINCH O-RING SEALS WHEN TIGHTENING SPREADER ROD NUTS.
10. Torque outer spreader rod nuts to ensure proper o-ring sealing. DO NOT OVER TIGHTEN!
11. Reinstall and tighten all flange bolts. DO NOT OVER TIGHTEN.
12. Restart MGCS in order to test for possible gas leaks at the flame arrester seals.
13. Upon confirmation of proper sealing, reinstall insulation and outer insulation covering. Use caulking and metal foil tape to ensure waterproofing of outer covering.
14. Record all deficiencies or potential problems. Deficiencies or problems requiring prompt attention shall be immediately reported to the City designate.

PMWO#14

TASK: **Monitoring of Methane Gas Collection Wells, Laterals and Man Holes - Active Site**
FREQUENCY: **Once Per Month**
SCHEDULE: **Last Week of Each Month**

DESCRIPTION:

1. Contractor must supply G.E.M 2000 or equivalent anemometer.
2. Calibrate G.E.M. 2000 or equivalent for Atmospheric Pressure and Gas/Oxygen.
3. Start well readings at Gas Collection Well #1. Remove the 1" PVC plug on 4" well pipe.
4. Thread in 1" G.E.M. 2000 or equivalent flexible tubing connector and record the pressure in inches of H2O.
5. Start the sampling pump and record the readings of concentrations for Methane, Oxygen, Carbon Dioxide and Balance Constituents.
6. Remove the 1" connector and insert the velocity turbine and record the Feet per Minute value.
7. Adjust the flow valve according to the above results so as to maintain a proper balance of the system. ie. If a well is producing high amounts of Oxygen, turn down the flow valve to reduce the explosion risk in the system. Also, if a well is not producing gases, reduce the flow valve to create more of a vacuum at other higher producing wells.
8. Perform the above for all of the Gas Collection Wells. Currently, there are 56 wells.
9. For Lateral testing, remove the 1" plug from the standpipe and insert the line to draw gas samples. The drop line MUST go past the “T” fitting for a proper gas sampling.
10. For Man Hole testing, remove the 1" plug from the top suction line, place the drop line in and insert the velocity probe to measure the flow. Adjust as required.

PMWO#15

TASK:	**Inspection and Cleaning of Compressed Air Dryer in Compressor Container**
FREQUENCY:	**Twice per Year**
SCHEDULE:	**2nd week in April** **2nd week of October**

DESCRIPTION:

1. Inspect Air Dryers according to Manufacturers' Specifications

PMWO#16

TASK: **Gas Collection Well Water Level Measurements**
FREQUENCY: **Bi-Monthly**
SCHEDULE: **Last Week of Every Second Month**

DESCRIPTION:

1. Ensure that the water level measuring tape is working properly by inserting the end of the tape in water - the device should produce a audible alarm.

2. On the active Landfill Site Wells, remove the 1" threaded plug on the well assembly and lower the measuring tape until the audible alarm is heard.
   On the closed Landfill Site gas collection wells, remove the ½" cap on the well assembly and lower the measuring tape until the audible alarm is heard.
   Record the depth to water from ground level (ie subtract the distance from the ground level to the well entrance from the measurement indicted on the tape). Record total depth of well to ground level.

3. Repeat this procedure at all the gas collection wells in the closed and active Landfill Sites (currently there are 30 in the closed landfill site and 56 in the active landfill site).

Table 2 - PREVENTATIVE MAINTENANCE WORK ORDER 2021 SCHEDULE

PM WORK ORDERS SCHEDULE					
MONTH	**WEEK 1**	**WEEK 2**	**WEEK 3**	**WEEK 4**	**WEEK 5**
JANUARY	1,2,5,12	1,2,5,12	1,2,3,5,12	1,2,5,12,14	
FEBRUARY	1,2,5,12	1,2,5,12	1,2,3,5,12	1,2,5,12,14,16	
MARCH	1,2,5,12	1,2,5,8,12	1,2,3,5,12	1,2,5,12,14	
APRIL	1,2,5,6,12	1,2,5,12,15	1,2,3,4,5,7,12	1,2,5,12	1,2,5,12,14,16
MAY	1,2,5,12	1,2,5,12	1,2,3,4,5,10,12	1,2,5,12	
JUNE	1,2,5,12	1,2,5,8,12,13	1,2,3,4,5,12	1,2,5,12,14,16	
JULY	1,2,5,12	1,2,5,12	1,2,3,4,5,12	1,2,5,12	1,2,5,12,14
AUGUST	1,2,5,12	1,2,5,12	1,2,3,4,5,12	1,2,5,12,14,16	
SEPTEMBER	1,2,5,6,12	1,2,5,8,12	1,2,3,4,5,12	1,2,3,5,12	1,2,5,12,14
OCTOBER	1,2,5,11,12	1,2,5,12,15	1,2,3,4,5,7,12	1,2,5,9,12,14,16	
NOVEMBER	1,2,5,12	1,2,5,12	1,2,3,5,10,12	1,2,5,12,14	
DECEMBER	1,2,5,12	1,2,5,8,12	1,2,3,5,12	1,2,5,12	1,2,5,12,14,16

NOTE: The frequency of this bid item may be reduced within the duration of this contract, reducing the overall costs of the contract for which no compensation shall be paid to the successful Proponent.

Proposed Project Schedule

Item	Date
Issue of RFP	December 16, 2020
Site Visit	December 23, 2020
Deadline for Questions	January 5, 2021
Deadline for Submission	January 19, 2021
Award of RFP – Council Meeting	February 8, 2021
Project Commencement	March 1, 2021

Note: although every attempt will be made to meet dates as listed, the Corporation reserves the right to modify any or all dates at its sole discretion.