Meeting Date: June 24, 2021 **Meeting Location:** Virtual Meeting (Zoom)

Attendees:

Name	Company	Title
John Yungblut	Township of Huron-Kinloss	Director of Public Works
Tracey Howe	Township of Huron-Kinloss	Admin Assistant - Public Works
Duane Rutter	Veolia Water Canada	Project Manager
Nancy Mayhew	Veolia Water Canada	QMS Representative
Sarah Telford	Veolia Water Canada	Alt. QMS Representative

Summary Items:

ITEM FOR DISCUSSION	DATE(S) / STATUS	COMMENTS
Staff/Council Changes	Staff is current	Current
Commitment and Endorsement	Current	New electronic signatures (2021)
Drinking Water System: Updates/Changes	Updates to Google	Add SCADA and ET upgrades
Risk Assessment	Oct 29, 2020 - To be reviewed for 2021	Review Pandemic details, Ripley ET
Standard of Care, Roles and Responsibilities	Current	Google version
Competencies/Training	In-progress	Training in development for DWQMS
Communications	Effective	Review - bi-weekly meetings
Essential Supplies and Services	Current	
Infrastructure Review	To be discussed	Breaks, repairs, new subdivisions
Infrastructure Maintenance/Renewal/ Capital Plan	Capital plan: November 2020	Woodhaven, Laidlaw, Inglis Lucknow Standpipe
Sampling/Monitoring	As per schedule - current	AWQIs, SCADA trending
Equipment Calibration and Maintenance	As per schedule - current	Jobs Plus
Emergency Management/Contingency	In-progress	Needs review and update
Emergency Exercise Test	COVID-19 pandemic	Request participation with future Municipal exercise
Internal/External Audits	IA: Completed May 8-11, 2020 EA: (S2) May 26, 2020 EA: (RA) May 27, 2019	Staff changes, training IA CAR: 3 Minor Non-Con EA (S2): Adequate (none)
Management Review	Previous - June 2020	April - May time frame is better
Continual Improvement	On-going	After Action Reporting, Improvement Plan, spreadsheets
Changes to DWQMS (2.0)	Finalized	Google format

Staff/Council Changes:

- Veolia Staff: No changes in 2020
- Town Staff: No changes in 2020
- Council: No changes in 2020

Commitment and Endorsement: Signatures current

Drinking Water System Changes:

Location	Document	Number	Expiry Date
Blairs Grove	PTTW	6154-988KDE	May 31, 2023
Huronville South	PTTW	3332-9N6H8L	November 1, 2024
Murdoch Glen	PTTW	6123-A2UQBM	October 14, 2025
Point Clark	PTTW	1852-9YQMAY	November 1, 2024
LAKESHORE	MDWL	087-102	April 28, 2026
LAKESHORE	DWWP	087-202	n/a
HURONVILLE SUBDIVISION DISTRIBUTION	MDWL	087-101	April 28, 2026
HURONVILLE SUBDIVISION DISTRIBUTION	DWWP	087-201	n/a

Location	Document	Number	Expiry Date
Lucknow	PTTW	7631-AQYS3J	September 29, 2027
LUCKNOW	MDWL	087-103	April 28, 2026
LUCKNOW	DWWP	087-203	n/a

Location	Document	Number	Expiry Date
Ripley	PTTW	0651-9RUQ9M	December 31, 2024
RIPLEY	MDWL	087-104	April 28, 2026
RIPLEY	DWWP	087-204	n/a

Location	Document	Number	Expiry Date
Whitechurch	PTTW	1124-A4DMYC	November 28, 2025
WHITECHURCH	MDWL	087-105	April 28, 2026
WHITECHURCH	DWWP	087-205	n/a

Comments:

BM Ross and Associates submitted applications for MDWL and DWWP renewals in 2020.

A new Financial Plan will be required for the next MDWL and DWWP renewals (due by fall of 2025).

Risk Assessment:

- Risk Assessment was conducted on October 29, 2020.
- Some changes with regards to the addition of the Ripley Elevated Tank were noted but needs to be reassessed after the Elevated Tank has been on-line for a while (in 2021).

Standard of Care, Roles and Responsibilities:

- Applies to Municipal Councils and Management
- Safe Drinking Water Act, 2002 – Section 19
- All Council members have been informed of the WCWC Standard of Care training. This will be reiterated when the Annual and Summary Reports are submitted.

Competencies and Training:

- Gary Nicholson, Ben Nethery, Ryan Mackay, Nancy Mayhew, Bill Wraith
- Nancy Mayhew is the Overall Responsible Operator; John Graham is the back-up ORO
- Nancy Mayhew is Quality Assurance and Compliance Specialist and QMS Representative

Communications:

- Contact information – phone, fax and email
- Website information - Reference to the drinking water documents can be found on the Township of Huron-Kinloss website by clicking: Town Hall/Documents Library/Public Works
- Between Township, Municipalities and other Agencies
- Huron-Kinloss Connects app for residents to submit requests/complaints/observations

Essential Supplies and Services:

- Diesel generator servicing (Murdoch Glen Pumphouse, Ripley Fire Hall, Ripley Arena, Ripley Sewage Pumping Station, Lucknow Sewage Pumping Station, Whitechurch Pumphouse, and two portable generators)
- Replacement parts for chlorine feed system
- Sodium hypochlorite supply
- Sodium silicate supply
- SCADA support staff (Eramosa Engineering) and e.RIS support (Westin)
- SCADA computer/server, remote access via approved cyber-secure portals
- Construction crew for emergencies (Kempton Construction/Rick Elliott Construction)
- Communications (HuronTel)

Infrastructure Review:

- Distribution system: 6 water main breaks:
  - Lakeshore - 1 on Sunrise and 1 on Annie's Cres
  - Ripley - 1 on McGill St and 1 on William St
  - Lucknow - 1 on Rose St and 1 on Hayes St
  - We have developed a spreadsheet to track the water main breaks for compliance to the Level of Service regulatory requirement (2020)
- Ripley Elevated Tank: placed in-service as a supply in August 2020
- Lakeshore Standpipe: cleaning was performed in 2017. AWWA Std. suggests 3-5 year inspection intervals (NOTE: draining vs. ROV)
- Lucknow Standpipe: in a state of disrepair; application for funding has been declined - will use reserves - tentatively to begin 2023
- Point Clark Pumphouse: SCADA upgrade completed; hydro issues causing problems to WPs and HLPs - new MCC in 2021 - hydro monitoring
- Blairs Grove Pumphouse: SCADA upgrade completed; Well #2 collapsed and is permanently out-of-service (to be abandoned); Well #3 inspection, flow testing, and approvals completed - monitoring well now equipped and running as production well
- Murdoch Glen Pumphouse: diesel generator spill containment area needs to be relined or coated to seal up cracks
- Huronville Pumphouse: hydro issues causing problems - hydro monitoring
- Ripley Pumphouse: flow meter needs to be replaced with a mag meter
- Lucknow # 4 and # 5 Pumphouses: well inspections to be scheduled (L5 completed in 2021)
- Whitechurch Pumphouse: issues with rate of flow control valve; installed temporary spool piece until valve could be repaired; mixing tank had blockages inside that were cleaned out

Infrastructure Maintenance, Rehabilitation, and Renewal:

- Distribution system: New water main in 2020 (Inglis St, Woodhaven, Laidlaw); tie-ins on Finlay, Blake and Malcolm Sts; valve replacement on Lake Range Dr at Huron Rd
- Proposed for 2021: Huronville South SCADA upgrade, Lucknow Well 4 inspection and mag meter, Wheeler St (Havelock to Inglis), Boiler Beach/Penetangore Row, Lucknow Well 5 flow testing and upgrade

Sampling, Testing, and Monitoring:

- Equipment; SCADA
- MECP Inspections:

Lakeshore:	98.80%	(previous 98.7%)
Ripley:	98.14%	(previous 98.42%)
Lucknow:	98.13%	(previous 98.28%)
Whitechurch:	98.19%	(previous 100%)

Equipment Calibration and Maintenance:

- Continuous monitoring equipment (on-line analyzers)
- Hand-held monitoring equipment (pocket analyzers)
- Standby power (generators) - included with Town maintenance schedule

  NOTE: The new MDWL will require that all equipment used for the calculation of CT must be calibrated annually or more frequently as outlined by manufacturer (i.e. flow meters, pH probes, temperature probes, reservoir level sensors ← NEW).

Emergency Management:

- Contingency Plan review - in-progress - addition of Ripley Elevated Tank
- Protocol for response and recovery - to be outlined in Contingency Plan depending on emergency
- Emergency response training and testing - COVID-19 pandemic; **AAR/IP is also used**
- Owner/Operating Authority responsibilities - Veolia to act on behalf of the Owner
- Municipal Emergency Plan - available on the Township website
- Emergency Communication protocol - Veolia to notify Owner and other Agencies as required
- Emergency contacts - updating the Contingency Plan to be site specific (to include Epcor)
- After Action Reports / Improvement Plan: Review of actual events for continual improvement

Internal Audits:

- Completed on May 8-11, 2020 - Internal Audit completed by Nancy Mayhew
    - Minor Non-conformance: Element 6 - Drinking Water System Description
    - Minor Non-conformance: Element 7 and 8 - Risk Assessment and Outcomes
    - Minor Non-conformance: Element 20 - Continual Improvement
- These were all closed off.

External Audits:

- May 27, 2019 (SAI Global) – Re-Accreditation
- May 26, 2020 (SAI Global) - Surveillance Audit
- Outcomes – completed Risk Assessment, updated Operational Plan (Google format), electronic signatures for commitment and endorsement

Management Review:

a) Incidents of Regulatory Non-Compliance (MECP):

Lakeshore, Lucknow, and Ripley mechanical flow meters

- The flow measuring devices were not calibrated or verified in accordance with the requirements of the MDWL issued under Part V of the SDWA.
    - These meters are in the process of being replaced with mag meters since mechanical meters are considered obsolete and parts are unavailable for them.
    - The flow meters have been re-verified to include accuracy measurements.

Ripley

- Measures were not in place to protect the groundwater and/or GUDI source in accordance with any the Municipal Drinking Water Licence and Drinking Water Works Permit issued under Part V of the SDWA.
    - Insufficient fuel tank inspection
    - The fuel tank was inspected by a TSSA Technician in February 2021 and deemed unfit for use (report pending).

b) Incidents of Adverse Drinking Water Quality:

a. AWQI # 151411 - Ripley Pumphouse Treated water
    i. Arsenic exceedance: 16.3 µg/L - resample was 4.0 µg/L

c) Deviations from Critical Control Point (CPP) limits and response actions:

LAKESHORE:

No.	Hazard	CCP Limit	Deviation	Actions
7	Chemical feed system failure	1.0 mg/L residual alarm and lockout	None	None
12	Contamination of the chlorine contact chamber with improperly disinfected water	1.0 mg/L residual alarm and lockout	None	None
13	High Lift Pump failure	SCADA and Sensaphone alarms	None	None
14	High Lift Pump lock-out due to control loss	SCADA and Sensaphone alarms	None	None
15	Inadequate chlorine residual in distribution system	1.0 mg/L residual alarm and lockout; daily residuals, weekly sampling, semi-annual flushing	None	None
18	Loss of system pressure	Pressure alarms, backup pumps	None	None

RIPLEY:

No.	Hazard	CCP Limit	Deviation	Actions
7	Chemical feed system failure	1.0 mg/L residual alarm and lockout	None	None
9	Degradation of liquid chlorine	Dosage calculation, strength determination	None	None
11	Contamination of the chlorine contact chamber with improperly disinfected water	1.0 mg/L residual alarm and lockout	None	None
14	Inadequate chlorine residual in distribution system	1.0 mg/L residual alarm and lockout; daily residuals, weekly sampling, semi-annual flushing	None	None
15	Water main break	Pressure alarms, backup pumps	None	None
17	Loss of system pressure	Pressure alarms, backup pumps	None	None

Deviations from Critical Control Point (CPP) limits and response actions (Continued):

LUCKNOW:

No.	Hazard	CCP Limit	Deviation	Actions
7	Chemical feed system failure	1.0 mg/L residual alarm and lockout	None	None
10	Contamination of the chlorine contact chamber with improperly disinfected water	1.0 mg/L residual alarm and lockout, pre-contact analyzer alarm and lockout	None	None
11	Inadequate chlorine residual in distribution system	1.0 mg/L residual alarm and lockout; daily residuals, weekly sampling, semi-annual flushing	None	None
12	Water main break	Pressure alarms, backup pumps	None	None
14	Loss of system pressure	Pressure alarms, backup pumps	None	None

WHITECHURCH:

No.	Hazard	CCP Limit	Deviation	Actions
7	Chemical feed system failure	1.0 mg/L residual alarm and lockout	None	None
12	Contamination of the chlorine contact chamber with improperly disinfected water	1.0 mg/L residual alarm, pre-contact analyzer alarm	None	None
13	Inadequate chlorine residual in distribution system	1.0 mg/L residual alarm and lockout; daily residuals, weekly sampling, semi-annual flushing	None	None
14	Water main break	Pressure alarms	None	None
16	Loss of system pressure	Pressure alarms	None	None

d) The efficacy (effectiveness) of the Risk Assessment process:

Calendar Year and 36 Month Review:

The current calendar annual review and 36-month team review is deemed to be not as effective as intended, as it was difficult to schedule the Review with team members being unavailable. A new Google format is in-progress so Operators will be able to review and add comments remotely. Also, involving staff in the development of SOPs, Contingency Plans, etc. is in-progress. The 12-month Risk Assessment review was completed in 2020.

e) Internal and Third-Party Audit results:

Internal Audit:

An Internal Audit was conducted May 8-11, 2020. Other Veolia staff (off-site) have completed audit training and are available to assist with future Internal Audits.

Third-Party Audit:

A Surveillance Audit (S2) was conducted by SAI Global on May 26, 2020. This was a remote audit and the following elements were sampled:

1. **Element 3 - Commitment and Endorsement**
   - Conforms
2. **Element 4 - Quality Management System Representative**
   - Conforms
3. **Element 7 - Risk Assessment**
   - Conforms
4. **Element 8 - Risk Assessment Outcomes**
   - Conforms
5. **Element 19 - Internal Audits**
   - Conforms
6. **Management Review**
   - Conforms
7. **Continual Improvement**
   - Conforms

f) Results of emergency response testing:

COVID-19 pandemic was used as the emergency response testing in 2020. It has illuminated the need for procedures that would allow for non-certified staff to be able to step in as needed, and as outlined in O. Reg. 75/20.
It has also illuminated some deficiencies in remote access to documents, and changes to the way current procedures are used when dealing with in-person situations.

** Veolia has requested participation in future Municipal Emergency Exercises with the Township of Huron-Kinloss as they relate to the drinking water. **

NOTE: Documentation of the F-0 Tornado that hit the Lakeshore area in August 2020 was shared with Veolia for review.

g) Operational Performance:

No issues have been noted. Reports are supplied to the Township of Huron-Kinloss on a regular basis. Supply volumes and capacities for 2020 were:

Site	PTTW Max/day	Peak/day	Avg/day	Peak Capacity %	Average Capacity %
Blairs Grove	2,621.00	1,702.35	143.97	64.95	5.53
Huronville South	3,927.74	1,298.66	415.95	33.06	10.62
Murdoch Glen	1,814.40	730.17	128.92	40.24	7.13
Point Clark	3,273.12	1,709.37	1,226.81	52.22	37.51
Ripley Wellhouse	864.00	818.00	357.41	94.68	28.93
Ripley ET Well #3	2,016.00	699.73	33.92	34.71	1.69
Ripley ET Well #4	1,386.00	652.61	58.61	47.09	4.22
Lucknow # 4	935.00	765.24	340.97	81.80	36.60
Lucknow # 5	1,500.00	921.30	179.89	61.40	12.00
Whitechurch	260.00	757.44	613.23	9.40	7.70

h) Raw water supply and drinking water quality trends:

- No serious incidents. Events are reported to the Township of Huron-Kinloss on a regular basis as required. In 2020, the Ripley ET wells had positive E.Coli results (first time this has ever happened on any of HK's raw water wells), so this resulted in a new protocol for resampling when raw EC results are reported (not considered adverse).
- An Annual Report Summary is prepared and submitted to the Township on an annual basis.
- A Monthly Report is also prepared and submitted to the Township on a monthly basis.
- A summary of the 2020 raw water quality (Total Coliform, E. Coli and turbidity) was submitted during the Management Review.

i) Follow-up on Action Items from previous Management Reviews:

a. QMS Representative to distribute Management Review Meeting Minutes.
b. Valve turning/flushing/hydrant inspection templates from HK for asset management
c. Lean training (Veolia) - not completed
d. Operations Manual updates (Veolia) - in-progress (to Google format)
e. New Operational Plan with signatures (Veolia)
f. Risk Assessment (Veolia and Township of HK)
g. QMS Representative to schedule next year's Management Review for May

j) The status of Management Action Items identified between reviews:

a. The 2019 Management Review Meeting Minutes was not distributed by Nancy Mayhew after the meeting was conducted. (NM will ensure distribution of minutes).

b. Lean training was not completed in 2019 or 2020. Seeking virtual courses.

c. Operations Manual updates are being reformatted to the Google format and are in-progress.

d. A new Operational Plan with signatures was submitted June 14, 2019, however, it was recreated and revamped into the current version (October 28, 2020) that is available on the Google Drive (electronic signatures not published publicly) and on the Township website.

e. Risk Assessment was completed on October 29, 2020.

f. The 2020 Management Review is scheduled to be completed by the second week of June 2020.

k) Changes that could affect the Quality Management System

Third-Party audit results have illuminated the need for Veolia to reorganize its filing system. TOMRMS has been recommended, however, challenges exist with setting it up in the cloud-based Google format. Veolia is working on a more organized filing system within the Google platform.

l) Consumer feedback:

Events are reported to the Township on a regular basis. A summary is sent on a monthly basis, plus an Annual Report is also provided. The *Request, Inquiry, Complaint and Locates* forms seem to be sufficient, as well as the Google Sheets for locates. Tracey has been providing locate numbers to expedite the Google Sheet updates. Huron-Kinloss has provided the Huron-Kinloss Connects interactive app for residents to report issues.

m) The resources needed to maintain the Quality Management System:

Training for QMS Staff and Operators is ongoing, but has come to a standstill with the pandemic. Involving the Operators in the Risk Assessment review, procedure development, document and records control and data trending/tracking is in-progress.

- It is understood that HK Council members have been made aware of the Standard of Care. Training courses are available at the Walkerton Clean Water Centre. https://wcwc.ca/training/courses/

n) The results of the Infrastructure Review:

The Township is advised as required, and through meetings and correspondence. A Capital Plan was submitted November 1, 2019 for the 2020 Capital Plan. A spreadsheet has been developed to keep track of water main breaks and equipment repair and maintenance.

Location	Item	Last Inspection Date	Inspection Due Date
Blairs Grove	Reservoir	2010	2021
Huronville South	Reservoir	2010	2021
Murdoch Glen	Reservoir	2010	2021
Point Clark	Reservoir	2010	2021
Ripley PH	Reservoir	2010	2021
Huronville South	Well and well pump	2011	2021 - budget for 2022
Murdoch Glen	Well and well pump	2006	Overdue - budget for 2022
Point Clark	Well # 2 and well pump Well # 3 and well pump	2014/2019 2015	2029 2025
Ripley PH	Well # 1 and well pump Well # 2 and well pump	2007 2013	Well #1 to be abandoned 2023
Ripley ET	Well # 3 and well pump Well # 4 and well pump	2019 2019	2029 2029
Lucknow	Well # 4 and well pump Well # 5 and well pump	Unknown 2009	2021 2021
Whitechurch	Well # 1 and well pump Well # 2 and well pump	2003 2003	Both Overdue - budget for 2022
Murdoch Glen	Contact Water Main	2006	discussion
Ripley Wellhouse	Contact Water Main	2003	discussion
Ripley ET	Contact Water Main	2018	discussion
Lucknow # 4	Contact Water Main	2006	discussion
Lucknow # 5	Contact Water Main	2006	discussion
Whitechurch	Contact Water Main	2006	discussion
Lakeshore	Standpipe	2016/2017	2021 ROV
Ripley	Elevated Tank	2018	warranty period
Lucknow	Standpipe	2007	n/a - 2023

o) Operational Plan currency, content, and updates:

Continuous Improvement updates that are deemed beneficial, based on previous Internal Audits and Risk Assessment reviews, and employee inputs, etc. will be considered for revisions to the Operational Plans on a regular basis. A Risk Assessment was conducted in 2020, however, a review is required and will be discussed amongst the Operators (i.e Ripley ET and COVID-19). A new cloud-based format is in-progress to facilitate remote reviews.

p) Staff suggestions:

Regular daily and monthly meetings would give Operators and Staff the opportunity for feedback on an on-going basis. Unfortunately, this has been suspended due to the pandemic. Jobs Plus and Corrective Maintenance issues are also discussed and documented.

- Staff provided feedback at tailgate meetings and in response to alarm events.
- Staff communicate via email, text and phone to share information.
- Staff have inquired about tablets for locates, a computer at the Fire Hall for email and accessing documents on the Shared Google Drive, and a new printer/scanner for logsheets, Chain of Custody sheets, etc..

Other Management Review considerations

The Management Review participants shall review all data presented, and where necessary, identify deficiencies related to:

- Effectiveness of the QMS and related procedures
- Ability of the Operating Authority to implement the QMS
- Provision of adequate human and financial resources
- The level of consumer satisfaction

For all deficiencies identified, the Management Review participants shall identify action items, personnel responsible for implementing action items, and timelines for action items. Minutes will be issued by the Project Manager or QMS Representative, to the participants.

Records of Management Reviews, recommendations, decisions, action items, personnel responsibilities, and timelines shall be forwarded to the Owner upon completion. This reporting is also carried out on a regular calendar year basis to best suit the needs of the Owner and Operating Authority, such as with the Annual Summary.

Records shall be maintained by the Project Manager (or QMS Representative). The records shall reflect all new action items and any decisions made by the review team, deficiencies, which personnel are responsible for action items, and timelines.

Events are reported to the Township on a regular basis as required. A Calendar Year Report Summary is also prepared for submission to the Township of Huron-Kinloss.

Action Items from this Management Review meeting:

1. QMS Representative to issue meeting minutes.
2. Risk Assessments to be completed in 2021.
3. Confirm that Management Reviews are to be conducted each calendar year (Jobs Plus).
4. Updates to the Operational Plan, Operations Manuals and Contingency Plans (new format).
    a. Tracey Howe provided a copy of the Township hydrant template.
    b. Tracey Howe arranged for access to the Bruce County ArcGIS mapping.
5. Veolia to be involved in future Emergency Exercises.
    a. Tracey Howe provided a copy of the Tornado Report issued by Chris Cleave.
6. A schedule for the Infrastructure Review Capital items.
7. This report will serve as the 2020 Management Review record.

Future reviews are intended to take place annually in March, April, or May time-frame as scheduling allows.

2020 - WASTEWATER REVIEW

RIPLEY - Class 2 Collection, Class 1 Treatment
LUCKNOW - Class 1 Collection, Class 1 Treatment

ITEM FOR DISCUSSION	DATE(S) / STATUS	COMMENTS
Wastewater System: Updates/Changes	Google accessibility	ECA, C. of A., design manuals
Competencies/Training	Current	In-house training in development
Communications	Effective	Review - bi-weekly meetings
Essential Supplies and Services	Current	To be added to Google
Standard of Care, Roles and Responsibilities	In-progress	Looking for Ministry documents
Sampling/Monitoring	As per schedule - current	ECA, C. of A. requirements, trending
Equipment Calibration and Maintenance	As per schedule - current	Jobs Plus
Operations Manuals	In-progress	To be updated and added to Google
Risk Assessment	To be conducted in 2021	Similar format to DWS Risk Assessment
Emergency Management/Contingency Plan	In-progress	Needs review and update
Infrastructure Review	To be discussed	Breaks, repairs, new subdivisions, infiltration monitoring, complaints
Infrastructure Maintenance/Renewal/ Capital Plan	Capital plan: November 2020	Collection system inspection, wet well, pumps, recommendations from infiltration monitoring
Emergency Exercise Test	COVID-19 pandemic	Request participation with future Municipal exercise
Internal Audits	Premier audit pending	to be conducted in 2021
Wastewater Review	Premier review pending	with DWQMS Management Review
Continual Improvement	On-going	After Action Reporting, Improvement Plan, spreadsheets

Wastewater System: Updates/Changes

- The Lucknow ECA, Lucknow Operations Manual and Design Notes (BM Ross) and associated documents are available in the Shared Google Drive for Operators.
- The Ripley C. of A., amended C. of A., the Ripley Operations Manual and Design Notes (BM Ross) and associated documents are also available in the Shared Google Drive.

Competencies and Training:

- Gary Nicholson, Ben Nethery, Ryan Mackay, Nancy Mayhew, Bill Wraith
- Nancy Mayhew is the Overall Responsible Operator for Lucknow and Ripley Treatment; John Graham is the back-up ORO, and ORO for Ripley Collection.

Communications:

- Incidents/events are reported to the Township as they happen, and during Zoom meetings.
- All maintenance and complaints are to be included in the annual sewage reports.

Essential Supplies and Services:

- Current list of suppliers, service providers, etc.. is available in the Shared Google Drive.
- Still investigating a pump to be used for emergency bypass to Cell #1.

Standard of Care, Roles and Responsibilities:

- The Owner and Operating Authority's responsibilities are described in O. Reg. 129/04 https://www.ontario.ca/laws/regulation/040129

Sampling and Monitoring:

Municipal Utility Monitoring Program (MUMP): (Both Wastewater Facilities)

- Ministry on-line (monthly) forms populated with data and submitted annually for intermittent discharge facilities, and due by February 14th (45 days from last day of reporting year).
  - http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/FormDetail?OpenForm&ACT=RDR&TAB=PROFILE&SRCH=1&ENV=WWE&TIT=2063&NO=012-2063
  - forms are submitted to www.wastewaterreporting@ontario.ca and MECP Inspector
  - data includes: influent volume, bypass volume, raw and final effluent sample results

Wastewater Systems Effluent Regulations (WSER): (Ripley only)

- Federal Effluent Regulatory Reporting Information System (ERRIS) portal (on-line) - data submitted as monitoring reports, annually by February 14th:
  - https://erris-sirre.ss.ec.gc.ca/en
  - data includes: which months effluent was deposited, total # days deposited, total volume (m^3) deposited, average CBOD (mg/L), and average Total Suspended Solids (mg/L)

Benthic Macroinvertebrate Sampling and Assessment: (Ripley only)

- The Pine River Benthic Macroinvertebrate Community Monitoring 2020 was completed by Natural Resource Solutions Inc., as a condition of the Effluent Discharge Extension dated May 1, 2019 by the Owen Sound District of the MECP.
- **Conclusions:** *"The consistent environmental water quality both upstream and downstream of the Ripley Sewage Treatment Facility outflow during both 2008 and 2020 suggest that there is limited impact of the Ripley Sewage Treatment Facility outflow on the environmental water quality within the South Pine River. The differences observed between monitoring years would suggest that any potential changes with water quality within the Pine River are related to other environmental factors."*
- This report was submitted to the MECP on November 4, 2020 and it was confirmed by Heather Lovely (MECP Inspector), that the report was received and the incident has been closed.

RIPLEY WASTEWATER TREATMENT FACILITY

Raw Sewage Influent:

- Daily Peak: 1,770 m^3
- Daily Average: 354 m^3 (see note)
- Rated Capacity: 600 m^3/day
- Performance: 59.1%
- Aluminum sulphate dosage (average): 94.7 mg/L
- Raw sewage samples collected bi-weekly at sewage pump station

NOTE: Certificate of Approval requirement:

The Owner shall, when annual average flow reach 500 m^3/day (83.3% capacity), further examine the lagoon performance and receiving stream and confirm, in writing, to the District Manager and the Director, that the rated capacity of 600 m^3/day will have no negative impact on the receiver.

Parameter	Typical Domestic Sewage Loadings (mg/L)	2020 Raw Sewage Loadings (mg/L)
BOD_5	110 - 400	177.3
Total Kjeldhal Nitrogen	20 - 85	34.1
Total Phosphorus	4 - 15	4.53
Total Suspended Solids	100 - 350	227

Sewage Discharge Effluent: (Between Oct 15 - May 1)

- Spring: 105,074 m^3 (32 days)
- Fall: 59,922 m^3 (15 days)

TOTAL: 164,996 m^3 (47 days)

WSER Annual Average: 451 m^3

NOTE: The annual average is calculated using the annual total volume discharged (m^3) divided by 366 (leap year) consecutive days flow as per WSER (Federal) reporting.

- Effluent samples collected weekly during discharge

Parameter	Effluent (mg/L)	Non-Compliance (mg/L)	% Removal
BOD_5	4.9	25.0	97.2%
CBOD	4.0	--	96.8%
Total Kjeldhal Nitrogen	2.8	--	91.8%
Total Phosphorus	0.05	0.8	98.9%
Total Suspended Solids	14.0	30.0	93.8%

Based on the calculated removal rates, it is concluded that the Ripley WW Treatment Facility provided excellent treatment of sewage in 2020.

ADDITIONAL INFORMATION - RIPLEY

Landfill Leachate Disposal:

- Total of 488.38 m^3 hauled (5 loads between July 15 and August 17)
- ECA to be amended for future disposals

Operational Problems, Corrective Actions, and Maintenance:

- Alum line plugged - cleaned
- Alum delivery
- Outfall maintenance - removal of calcium buildup
- Sommers generator service
- Replace wet well rails
- Replace raw sewage pump #1 with new pump
- Raw sewage pump #1 failed - reset
- Flowmeter calibration* - discussion RE: mag meter
- Check raw sewage pump #1 controls
- Repair raw sewage pump #1 overload
- Raw sewage pump #2 failed - overload, high flows
- Backflow preventer verification/testing

Other Observations:

- No complaints were reported in 2020
- No sewage bypasses were required in 2020
- No modifications to the treatment system were required in 2020

Infrastructure Maintenance/Renewal/Capital Items:

Location	Item	Last Inspection Date	Inspection Due Date
Ripley	Collection System	Unknown	When possible
Ripley	Wet Well/Lift Station	2021	As needed
Ripley	Lagoon valving	Unknown	When possible
Ripley	Aeration system in Cell #4	Unknown	When possible
Ripley	Effluent Structure	Spring 2021	Fall 2021
Ripley	Outfall	Spring 2021	Fall 2021

LUCKNOW SEWAGE TREATMENT WORKS

Raw Sewage Influent:

- Daily Peak: 2,282 m^3
- Daily Average: 530 m^3
- Rated Capacity: 750 m^3/day
- Performance: 70.6%
- Raw samples collected quarterly at sewage pump station

Parameter	Typical Domestic Sewage Loadings (mg/L)	2020 Raw Sewage Loadings (mg/L)
BOD_5	110 - 400	241
Total Kjeldhal Nitrogen	20 - 85	36.2
Total Phosphorus	4 - 15	3.74
Total Suspended Solids	100 - 350	264

Aerated Lagoon Effluent (Cell # 3):

- Aluminum sulphate dosage (average): 75.6 mg/L
- After aeration and flow through 3 lagoon cells
- Samples collected monthly at Cell #3 outfall prior to Rapid Infiltration Basins (RIBs)
- pH range between 6.5 - 8.5
- 36 days retention (12 days per cell)

Parameter	Cell # 3 Effluent (mg/L)	Non-Compliance (mg/L)
$CBOD_5$	4.4	20.0
Total Phosphorus	0.29	20.0
Total Suspended Solids	7.0	1.0

Groundwater Seepage to Swale (GWSS):

- One sample result for Total Suspended Solids was 17 mg/L and was related to a rain event and not representative of the actual groundwater seepage to swale. This was reported to the MECP.

Parameter	Effluent (mg/L)	Non-Compliance (mg/L)	% Removal
$CBOD_5$	4.0	5.0	97.4%
Total Suspended Solids	2.6	5.0	99.0%
Total Phosphorus	0.02	0.1	99.4%
Total Ammonia Nitrogen	0.15	2.5	--
Unionized Ammonia	0.0006	0.1	--
E. Coli	1.3 cfu/100 mL	100 cfu/100 mL	--

Based on the calculated removal rates of 92.2% - 99.4%, it is concluded that the Lucknow Sewage Treatment Facility provided excellent treatment of sewage in 2020.

ADDITIONAL INFORMATION - LUCKNOW

Sludge Accumulation:

Sludge accumulates in the bottom of aerated cells. No sludge was removed from the lagoon. The amount of sludge accumulated for 2020 was estimated based on the average amount of solids processed through treatment. Determinations were made using calculations outlined in the *US Army Corps and Engineers Cold Region Research & Engineering Laboratory, Special Report 84-8, Accumulation, Characterization, and Stabilization of Sludges for Cold Region Lagoons, April 1984.*

Annual Accumulated Solids:

Raw: 17,875 kg Total Raw Solids
Cell #3: 564 kg Total Solids at Cell #3
GWSS: 176 kg Total Solids Lost in Final Effluent

Solids Removed:

Total Solids Removed by Lagoon Cells: 17,311 kg
Total Solids to RIBs: 388 kg

Annual Accumulation of Sludge:

Sludge added at Cells: 59.3 mm Annual Increase of Sludge
47.3 mm in Cell #1 (80%)
8.9 mm in Cell #2 (15%)
3.0 mm in Cell #3 (5%)
Sludge added at RIBs: 18.6 mm Annual Increase of Sludge
3.1 mm in each RIB (18.6 ÷ 6)

Accumulation Summary:

With this information, it was estimated that the running total accumulation since the sludge was removed in 2004 is approximately 712 mm (Cell #1: 599 mm, Cell #2: 113 mm, Cell #3: 38 mm).

NOTE: With a sludge depth of approximately 0.7 m in depth, this equates to 16% reduction of treatment volume.

Operational Problems, Corrective Actions, and Maintenance:

- New pH probe installed/calibrated
- Repair to alum line for alum pump #2
- Raw sewage pump #1 removed - sent to Wilson's (wiring issue)
- Alum deliveries (2 in 2020)
- Raw sewage pump #1 reinstalled
- Aerator #4 plugged - reversed and cleared (three separate occasions)
- Sommers on-site for generator service
- Flowmeter calibration
- Aerator #4 tripped - out of service
- Hoist inspections
- Backflow preventer testing
- CT on-site for manhole/wet well cleaning
- Stenner alum pump out of service - alum line failure (repaired)
- Raw sewage pump #1 out of service
- Changed DO probe

Other Observations:

- One complaint was reported in 2020 (sewage backup in basement on Rose St)
- No sewage bypasses were required in 2020
- No modifications to the treatment system were required in 2020

Location	Item	Last Inspection Date	Inspection Due Date
Lucknow	Collection System	2020-2021	Discussion
Lucknow	Wet Well/Lift Station	2021	As needed
Lucknow	Lagoon valving	Unknown	When possible
Lucknow	Aerators	Daily checks	As needed
Lucknow	Effluent Structure	Monthly	Monthly
Lucknow	RIBs	Summer 2020	When possible
Lucknow	GWSS Outfall	Weekly	Weekly

Infiltration-Inflow Investigations:

In 2020, 149 of the 168 sanitary manholes were inspected as part of a sanitary sewer flow monitoring investigation. Debris was removed from the north quadrant (45 manholes). The sewer flow monitoring is expected to be completed in Spring of 2021.

EMERGENT MINISTRY REGULATORY CHANGES

Ontario is adopting a Consolidated Linear Infrastructure Permissions Approach (CLI) for low risk projects related to sewage collection and stormwater management, with a goal of getting important, low-risk public infrastructure projects built sooner by reducing the time it takes between when needs are identified and when citizens can actually benefit.

Under the proposed consolidated process, a Municipality would no longer need to submit individual "pipe by pipe" applications for future alterations provided they are built in accordance with new design criteria and all other ministry approved conditions. These pre-authorizations will allow municipalities to proceed without first having to obtain an individual ministry permission. In certain circumstances, and with Municipal approval, Developers who are constructing infrastructure on behalf of Municipalities can receive pre-authorization if work is being carried out in accordance with the requirements of the Municipality's consolidated linear infrastructure Environmental Compliance Approval (ECA), including meeting ministry design standards.

Consolidated Linear Infrastructure will:

- create an efficient process for low-risk projects
- provide clear, transparent and consistent requirements
- improve environmental protection through updated and consolidated terms and conditions
- establish a more comprehensive picture of sewage works across the Province

The CLI Permissions Approach will replace the current approach for lower risk, routine sewage works and has been modelled after the current framework for Municipal drinking water systems.

All existing and future approvals will be incorporated into two consolidated Environmental Compliance Approvals (ECAs):

- one for Municipal sanitary collection systems
- one for stormwater management works

The first step in the transition will ask Municipalities to apply for a CLI ECA. The plan is to phase in Municipalities according to a schedule, starting with Municipalities with Transfer of Review agreements, then Municipalities with combined sewer overflows, and finally based on population starting from larger to smaller.

The proposed approach is about eliminating duplicative environmental approval processes and will actually enhance environmental protection by ensuring sewage works across the Province are operating with conditions that are consistent with current environmental standards.

Information regarding this emergent program can be found on-line:
https://ero.ontario.ca/notice/019-1080

OTHER CHANGES

Risk Assessment:

- Premier Risk Assessment to be completed in 2021 in the same format as the DWQMS.

Operations Manual/Contingency Plan:

- Procedures to be created in the Shared Google Drive in 2021.

Internal Audit:

- Premier audit will be conducted in 2021 once other documents have been created/updated (in the same format as the DWQMS).

Management Review:

- This is the premier Wastewater Management Review.
- Comments and recommendations are appreciated.

Continual Improvement:

- The intention is to have a wastewater QMS similar to the drinking water QMS.
- Also hoping to streamline the documents and files in the Shared Google Drive for simplicity and easy remote access.

Action Items:

1. Tracey Howe provided a list of all the leachate that was hauled in 2020.

Distributed Management Review Agenda:	June 1, 2021
Distributed Final Management Review:	June 28, 2021

Nancy Mayhew
QMS Representative