Resort Municipality of Whistler: Wastewater Treatment Plant Primary Sedimentation Tank Assessment Report

Project No. 210505

January 26th, 2022

Prepared for:



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Table of Contents

| Executive Summary | 2 |
|--|--------------|
| 1. Introduction | 3 |
| 1.1. Purpose | 3 |
| 1.2. Facility Description | 4 |
| 2. Mechanical Inspection Results Summary | 6 |
| 2.1. Primary Sedimentation Tank 1 (PST1) | 6 |
| 2.2. Primary Sedimentation Tank 2 (PST2) | 7 |
| 2.3. Primary Sedimentation Tank 3 (PST3) | 8 |
| 2.4. Primary Sedimentation Tank 4 (PST4) | 10 |
| 2.5. Equalization System | 11 |
| 2.6. Main Inlet and Outlet Valves | 11 |
| 2.7. Process Piping within the tank areas | 12 |
| 3. Structural Inspection Results Summary | 13 |
| 3.1. Primary Sedimentation Tank 1 (PST1) | 13 |
| 3.2. Primary Sedimentation Tank 2 (PST2) | 13 |
| 3.3. Primary Sedimentation Tank 3 (PST3) | 13 |
| 3.4. Primary Sedimentation Tank 4 (PST4) | 14 |
| 4. Recommendation | 16 |
| 4.1. Mechanical | 16 |
| 4.2. Structural | 16 |
| Appendix 1: Inspection Records Details | 17 |
| Appendix 2: Priority Classification | 171 |
| Appendix 3: Mechanical Equipment List | 173 |
| 4.3. Longitudinal Collector – For All Primary Sedimentation Tank (PST 1, 2, 3) | , and 4) 173 |
| 4.4. Cross Collector | 177 |
| 4.5. Inlet / Outlet Gate Valves | 181 |



Project No:210505

Report: 210505-TEC-03-R1-D

Date: 2022-01-26

Executive Summary

Enginuity Consulting Ltd. (Enginuity) has performed visual inspections and condition assessment of the four Primary Sedimentation/Equalization Tanks (PST1, PST2, PST3, PST4) at the Municipality of Whistler Wastewater Treatment Plant for Resort (RMOW).

The qualitative assessments have been based on visual review from within the tanks, observing all the critical areas to determine conditions, create inventory lists and suggest maintenance & inspection schedules to improve the reliability and operation of the tanks. The tables below summarize the findings. For in-depth details, please reference Section 2: Mechanical Inspection Results and Section 3: Structual Inspection Results.

It should be noted that during the course of this inspection process, PST1 and PST2 had some substantial component failures, which were replaced after the initial visual inspection, however before the completion of this report. These items have been described as "New" in this report.

The table below captures a summary of all findings for the four tanks:

| Priority | Definitions | Total Findings | Percentage |
|----------|--|-------------------|------------|
| 1S | Significant safety issue | 0 | 0% |
| P1E | Engineering and further investigation required | 24 | 17% |
| P1R | Replacement or repair, no engineering required | 2 | 1% |
| P2 | Could potentially lead to P1 in 1-2 years | 99 | 71% |
| P3 | Could potentially lead to P2 in 1-2 years | 16 | 11% |
| | Total | 139 | 100% |

PST1 had a total of 26 New component that have been identified in the body of this report, however, not included in the table above.



Project No:210505

1. Introduction

1.1. Purpose

Inspections of existing facilities will typically involve either qualitative or quantitative approaches. This could include various levels of assessment with the application of different tools and methods. Visual inspections of the Primary Sedimentation/Equalization Tanks fall within Level 0 of the qualitative assessment, defined as "*experience-based subjective assessment of deterioration effects and other damage after visual inspection*" and fall within the following criteria:

- Perform visual field inspection of the identified facilities structures as per Figure 1.
- Report conditions related to visible structural and mechanical reliability and serviceability.
- Provide recommendations for maintenance planning, further inspections, and suggestions for design of reinforcements.



Figure 1. Context of the Structural Assessment Levels (Courtesy of SAMCO, 2006)

Inspection of the RMOW Wastewater Treatment Plant was aimed at identifying structural and mechanical conditions which may potentially affect reliability of the tanks and internal components, with implications on safety and facility operations. Since reduction of serviceability may lead to a limitation of use, the following conditions have been evaluated and reported during the assessment:

Mechanical

- Defective and damaged equipment and or components
- Corrosion
- Misalignment
- General wear and tear

The following have not been evaluated:

- Performance analysis
- Design suitability
- Destructive testing on equipment
- Bearings conditions





ENGINEERING CONSULTING

 Project No:210505
 Report:
 210505-TEC-03-R1-D

 Date:
 2022-01-26

- Equipment internal defects and damages
- Operational observations

<u>Structural</u>

- Spalls (Loss of Concrete) with rusting exposed rebar.
- Rust stain, at visible crack and joints.
- Existing concrete patches or repairs.

The following have not been evaluated:

- Attainment of the maximum resistive capacity.
- Transformation of the structure or part of it into a mechanism.
- Stability of the structure(s) or part of it.
- Sudden change of the assumed structural system (e.g. snap through).

An important goal of this assessment is assisting the Management and Operations teams of the Wastewater Treatment Plant to minimize the operational costs by optimizing inspection, maintenance, and repairs; thus, providing information about the Plant's condition for prioritization of maintenance and repairs. This data is projected to serve management in the planning and decision-making process for expenditures on reliability improvement, and maintenance.

1.2. Facility Description

The Wastewater Treatment Plant of Resort Municipality of Whistler is located at 1135 Cheakamus Lake Rd, Whistler, BC. The four (4) Primary Sedimentation Tanks are housed within the Primary building. Each 31.5m by 6.0m with a depth of 3.2m. During the winter seasons PST1 and PST2 are in operation while PST 3 and PST4 are used for equalization. In the summer seasons the plant generally shuts down either PST1 or PST2 while using PST3 and PST4 as equalization tanks. This facility handles all the wastewater from the town of Whistler.



Figure 1: Location of RMOW Waste Water Treatment Plant (Courtesy of Google Maps)

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|----------|---------------------------------|--|-------------------------------------|--------------------|--|
| | | Draight Not 210505 | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |

The Primary Sedimentation Tanks each consists of a Longitudinal Collector and a Cross Collector. The Longitudinal and Cross Collectors are driven by motors located outside of the tanks. These Collectors carry 'Flights' which scrape the bottom of the tanks to remove the sludge from the tanks. If in operation, the system is rotating continuously.



Figure 2: Inspection in PST1

The tank structure itself is constructed out of concrete. There are three (3) influent gate valves and three (3) effluent gate valves. The sludge is pumped out of the tanks from the bottom of the tanks (under the Cross Collectors).



Figure 3: Concrete Tank, PST1





Project No:210505

Report: 210505-TEC-03-R1-D Date: 2022-01-26

2. Mechanical Inspection Results Summary

The mechanical inspection consists of visual review of equipment within the (Primary Sedimentation) Tanks. It should be note, early in the inspection process, PST1 had major mechanical failure. The (failed) equipment was examined, and the findings can be found in Appendix 1. The equipment has since been replaced with new parts in November 2021 and is in good working condition, these items have been identified as "new" in the summery tables below. Later in the inspection process, PST2 also had major mechanical failure, however the replacement process has not yet started as of the date of this report. PST3 and PST4 are in working condition, other than items summarized in the tables below and details in Appendix 1.

2.1. Primary Sedimentation Tank 1 (PST1)

Note: the inspection was conducted on the failed existing parts. All the equipment has since been replaced.

| SYSTEM | DESCRIPTION | ITEM | PRIORITY | MAINTENANCE / INSPECTION SCHEDULE | EST. COST |
|--------------|------------------------------|--------|----------|--|--------------|
| | Drive motor | M01-1L | P3 | Weekly, sound, performance, data log review | n/a |
| | Drive gearbox | M01-1L | P3 | Weekly, sound, performance, data log review | n/a |
| | Collector chain | M02-1L | new | Monthly, alignment, cleanliness, performance | n/a |
| | Drive chain | M03-1L | new | Monthly, alignment, cleanliness, performance | n/a |
| | Wear shoes | M04-1L | new | Seasonal | n/a |
| | Filler blocks | M05-1L | new | Seasonal | n/a |
| | C-channel fiberglass flights | M06-1L | new | Seasonal | n/a |
| LONGITUDINAL | Drive sprockets | M07-1L | new | Monthly, alignment, cleanliness, performance | n/a |
| COLLECTOR | Dished offset sprocket | M08-1L | new | Monthly, alignment, cleanliness, performance | n/a |
| | Idler sprocket | M09-1L | new | Monthly, alignment, cleanliness, performance | n/a |
| | Shear pin sprocket | M10-1L | new | Monthly, alignment, cleanliness, performance | n/a |
| | Take up assembly | M11-1L | new | Monthly, alignment, cleanliness, performance | n/a |
| | Wall bearings | M12-1L | new | Annually | n/a |
| | Collector wear strips | M13-1L | new | Seasonal | n/a |
| | Shafts, pins and set collars | M14-1L | new | Seasonal | n/a |
| | Skimmer | M15-1L | P1E | Monthly | <\$50K |
| | Drive motor | M01-1C | P3 | Weekly, sound, performance, data log review | n/a |
| CROSS | Drive gearbox | M01-1C | P3 | Weekly, sound, performance, data log review | n/a |

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| W | WHISTLER OF Whistler | | | .240505 | | | Report: | 210505-TEC- |)3-R1-D | |
| | | | Project No | :210505 | | | Date: | 2022-01-26 | | |
| | | Collector chain | | M02-1C | new | Monthl | y, alignment, nance | cleanliness, | n/a | |
| | | Drive chain | | M03-1C | new | Monthly perform | y, alignment, nance | cleanliness, | n/a | |
| | | Wear shoes | | M04-1C | new | Seasor | nal | | n/a | |
| | | Filler blocks | | M05-1C | new | Seasor | Seasonal | | | |
| | | C-channel fiberg | glass flights | M06-1C | new | Seasonal | | | n/a | |
| | | Drive sprockets | | M07-1C | new | Monthly perform | y, alignment, nance | cleanliness, | n/a | |
| | | Dished offset sp | rocket | M08-1C | new | Monthly, alignment, cleanliness, performance Monthly, alignment, cleanliness, performance | | cleanliness, | n/a | |
| | | Idler sprocket | | M09-1C | new | | | cleanliness, | n/a | |
| | Shear pin sprock | | ket | M10-1C | new | Monthly, alignment, cleanliness, performance | | cleanliness, | n/a | |
| | | Take up assemb | | M11-1C | new | Monthly, alignment, cleanline | | cleanliness, | n/a | |
| | | Wall bearings | | M12-1C | new | Annual | ly | | n/a | |
| | | Collector wear s | trips | M13-1C | new | Seasor | nal | | n/a | |
| | | Shafts, pins and | set collars | M14-1C | new | Seasor | nal | | n/a | |

Primary Sedimentation Tank 2 (PST2) 2.2.

| SYSTEM | DESCRIPTION | ITEM | PRIORITY | MAINTENANCE / INSPECTION SCHEDULE | EST. COST |
|--------------|------------------------------|--------|--|--|--------------|
| | Drive motor | M01-2L | P3 | Weekly, sound, performance, data log review | |
| | Drive gearbox | M01-2L | P3 | Weekly, sound, performance, data log review | |
| | Collector chain | M02-2L | P2 | Monthly, alignment, cleanliness, performance | |
| | Drive chain | M03-2L | P2 | Monthly, alignment, cleanliness, performance | \$50K+ |
| LONGITUDINAL | Wear shoes | M04-2L | P2 | Seasonal | |
| COLLECTOR | Filler blocks | M05-2L | P2 | Seasonal | |
| | C-channel fiberglass flights | M06-2L | P1E | Seasonal | |
| | Drive sprockets | M07-2L | P2 | Monthly, alignment, cleanliness, performance | |
| | Dished offset sprocket | M08-2L | P2 | Monthly, alignment, cleanliness, performance | |
| | Idler sprocket M0 | | P1E Monthly, alignment, cleanliness, performance | | |



Project No:210505



ENGINEERING CONSULTING

| Report: | 210505-TEC-03-R1-D |
|---------|--------------------|
| Date: | 2022-01-26 |

| | Shear pin sprocket | M10-2L | P2 | Monthly, alignment, cleanliness, performance |
|-----------|------------------------------|--------|-----|--|
| | Take up assembly | M11-2L | P2 | Monthly, alignment, cleanliness, performance |
| | Wall bearings | M12-2L | P1E | Annually |
| | Collector wear strips | M13-2L | P2 | Seasonal |
| | Shafts, pins and set collars | M14-2L | P2 | Seasonal |
| | Skimmer | M15-1L | P1E | Monthly |
| | Drive motor | M01-2C | P3 | Weekly, sound, performance, data log review |
| | Drive gearbox | M01-2C | P3 | Weekly, sound, performance, data log review |
| | Collector chain | M02-2C | P2 | Monthly, alignment, cleanliness, performance |
| | Drive chain | M03-2C | P2 | Monthly, alignment, cleanliness, performance |
| | Wear shoes | M04-2C | P2 | Seasonal |
| | Filler blocks | M05-2C | P2 | Seasonal |
| | C-channel fiberglass flights | M06-2C | P2 | Seasonal |
| CROSS | Drive sprockets | M07-2C | P1E | Monthly, alignment, cleanliness, performance |
| GOLLEGIOR | Dished offset sprocket | M08-2C | P1E | Monthly, alignment, cleanliness, performance |
| | ldler sprocket | M09-2C | P1E | Monthly, alignment, cleanliness, performance |
| | Shear pin sprocket | M10-2C | P2 | Monthly, alignment, cleanliness, performance |
| | Take up assembly | M11-2C | P2 | Monthly, alignment, cleanliness, performance |
| | Wall bearings | M12-2C | P1E | Annually |
| | Collector wear strips | M13-2C | P2 | Seasonal |
| | Shafts, pins and set collars | M14-2C | P2 | Seasonal |

2.3. Primary Sedimentation Tank 3 (PST3)

| SYSTEM | DESCRIPTION | ITEM | PRIORITY | MAINTENANCE / INSPECTION SCHEDULE | EST. COST |
|-----------|-----------------|--------|----------|--|--------------|
| | Drive motor | M01-3L | P3 | Weekly, sound, performance, data log review | n/a |
| | Drive gearbox | M01-3L | P3 | Weekly, sound, performance, data log review | n/a |
| COLLECTOR | Collector chain | M02-3L | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | | | | | |



Project No:210505

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Report: 210505-TEC-03-R1-D Date: 2022-01-26

| | Drive chain | M03-3L | P2 | Monthly, alignment, cleanliness, performance | n/a |
|----------|------------------------------|--------|-----|--|--------|
| | Wear shoes | M04-3L | P2 | Seasonal | n/a |
| | Filler blocks | M05-3L | P2 | Seasonal | n/a |
| | C-channel fiberglass flights | M06-3L | P2 | Seasonal | n/a |
| | Drive sprockets | M07-3L | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | Dished offset sprocket | M08-3L | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | ldler sprocket | M09-3L | P1E | Monthly, alignment, cleanliness, performance | <\$50K |
| | Shear pin sprocket | M10-3L | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | Take up assembly | M11-3L | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | Wall bearings | M12-3L | P1E | Annually | <\$50K |
| | Collector wear strips | M13-3L | P2 | Seasonal | n/a |
| | Shafts, pins and set collars | M14-3L | P2 | Seasonal | n/a |
| | Skimmer | M15-1L | P1E | Monthly | <\$50K |
| | Drive motor | M01-3C | P3 | Weekly, sound, performance, data log review | n/a |
| | Drive gearbox | M01-3C | P3 | Weekly, sound, performance, data log review | n/a |
| | Collector chain | M02-3C | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | Drive chain | M03-3C | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | Wear shoes | M04-3C | P2 | Seasonal | n/a |
| | Filler blocks | M05-3C | P2 | Seasonal | n/a |
| | C-channel fiberglass flights | M06-3C | P2 | Seasonal | n/a |
| | Drive sprockets | M07-3C | P2 | Monthly, alignment, cleanliness, performance | n/a |
| OULLOTOK | Dished offset sprocket | M08-3C | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | ldler sprocket | M09-3C | P1E | Monthly, alignment, cleanliness, performance | <\$50K |
| | Shear pin sprocket | M10-3C | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | Take up assembly | M11-3C | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | Wall bearings | M12-3C | P1E | Annually | <\$50K |
| | Collector wear strips | M13-3C | P2 | Seasonal | n/a |
| | Shafts, pins and set collars | M14-3C | P2 | Seasonal | n/a |





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210505-TEC-03-R1-D

Project No:210505

Report: Date:

Primary Sedimentation Tank 4 (PST4) 2.4.

| SYSTEM | DESCRIPTION | ITEM | PRIORITY | MAINTENANCE / INSPECTION SCHEDULE | EST. COST |
|--------------|------------------------------|--------|----------|--|--------------|
| | Drive motor | M01-4L | P3 | Weekly, sound, performance, data log review | n/a |
| | Drive gearbox | M01-4L | P3 | Weekly, sound, performance, data log review | n/a |
| | Collector chain | M02-4L | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | Drive chain | M03-4L | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | Wear shoes | M04-4L | P2 | Seasonal | n/a |
| | Filler blocks | M05-4L | P2 | Seasonal | n/a |
| | C-channel fiberglass flights | M06-4L | P2 | Seasonal | n/a |
| LONGITUDINAL | Drive sprockets | M07-4L | P2 | Monthly, alignment, cleanliness, performance | n/a |
| COLLECTOR | Dished offset sprocket | M08-4L | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | Idler sprocket | M09-4L | P1E | Monthly, alignment, cleanliness, performance | <\$50K |
| | Shear pin sprocket | M10-4L | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | Take up assembly | M11-4L | P1E | Monthly, alignment, cleanliness, performance | <\$50K |
| | Wall bearings | M12-4L | P1E | P1E Annually | |
| | Collector wear strips | M13-4L | P1R | R Seasonal | |
| | Shafts, pins and set collars | M14-4L | P2 | Seasonal | |
| | Skimmer | M15-1L | P1E | Monthly | <\$50K |
| | Drive motor | M01-4C | P3 | Weekly, sound, performance, data log review | n/a |
| | Drive gearbox | M01-4C | P3 | Weekly, sound, performance, data log review | n/a |
| | Collector chain | M02-4C | P2 | Monthly, alignment, cleanliness, performance | n/a |
| 00000 | Drive chain | M03-4C | P2 | Monthly, alignment, cleanliness, performance | n/a |
| COLLECTOR | Wear shoes | M04-4C | P2 | Seasonal | n/a |
| | Filler blocks | M05-4C | P2 | Seasonal | n/a |
| | C-channel fiberglass flights | M06-4C | P2 | Seasonal | n/a |
| | Drive sprockets | M07-4C | P2 | Monthly, alignment, cleanliness, performance | n/a |
| | Dished offset sprocket | M08-4C | P2 | Monthly, alignment, cleanliness, performance | n/a |

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| | | Project N | | | | Date: | 2022-01-26 | | |
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| | ldler | sprocket | M09-4C | P1E | Monthly perform | /, alignment, ance | cleanliness, | <\$50K | |
| | Shea | ar pin sprocket | M10-4C | P2 | Monthly, alignment, cleanliness, performance | | | n/a | |
| | Take | Take up assembly | | P2 | Monthly perform | /, alignment, ance | cleanliness, | n/a | |
| | Wall | bearings | M12-4C | P1E | Annuall | у | | <\$50K | |
| | Colle | ector wear strips | M13-4C | P2 | Season | al | | n/a | |
| | Shaft | ts, pins and set collars | M14-4C | P2 | Season | al | | n/a | |

Equalization System 2.5.

| SYSTEM | DESCRIPTION | ITEM | PRIORITY | MAINTENANCE / INSPECTION SCHEDULE | EST. COST |
|--------------|---------------------------------------|------|----------|--------------------------------------|--------------|
| | Piping and fittings (elbows and tees) | M15 | P2 | Annually/Seasonal | n/a |
| | Flowmeter and other instruments | M15 | P2 | Annually/Seasonal | n/a |
| EQUALIZATION | Control valves | M15 | P2 | Annually/Seasonal | n/a |
| | Check valves | M15 | P2 | Annually/Seasonal | n/a |
| | Drain valves | M15 | P2 | Annually/Seasonal | n/a |
| | Gate valves | M15 | P2 | Annually/Seasonal | n/a |

2.6. Main Inlet and Outlet Valves

| SYSTEM | DESCRIPTION | ITEM | PRIORITY | MAINTENANCE / INSPECTION SCHEDULE | EST. COST |
|--------|---|--------|-------------------|--------------------------------------|--------------|
| | Inlet gate valve PST1 (GV 201, 202, 203) | M16-1I | P2 | Annually/Seasonal | n/a |
| | Inlet gate valve PST2 (GV 204, 205, 206) | M16-2I | P1E | Annually/Seasonal | <\$50K |
| | Inlet gate valve PST3 (GV 207, 208, 209) | M16-3I | P2 | Annually/Seasonal | n/a |
| | Inlet gate valve PST4 (GV 210, 211, 212) M16-4I P2 Annually/Seasonal | | Annually/Seasonal | n/a | |
| | Outlet gate valve PST1 (GV 213, 214, 215) | M16-10 | P2 | Annually/Seasonal | n/a |
| | Outlet gate valve PST2 (GV 216, 217, 218) | M16-2O | P2 | Annually/Seasonal | n/a |
| | Outlet gate valve PST3 (GV 219, 220, 221) | M16-3O | P2 | Annually/Seasonal | n/a |
| | Outlet gate valve PST4 (GV 222, 223, 224) | M16-4O | P2 | Annually/Seasonal | n/a |
| | | | | | |

2.7. Process Piping within the tank areas

| SYSTEM | DESCRIPTION | ITEM | PRIORITY | MAINTENANCE / INSPECTION SCHEDULE | EST. COST |
|-------------------------|----------------------|------|----------|--------------------------------------|--------------|
| MISC. PROCESS PIPING | Scales and corrosion | M16 | P1E | Annually/Seasonal | \$50K+ |

For the work required for P1S/P1E/P1R items, please refer to the respective inspection records in Appendix 1. These items are recommended to be completed in 2022.



Project No:210505

Report: 210505-TEC-03-R1-D

Date: 2022-01-26

3. Structural Inspection Results Summary

The structural inspection consists of visual review of the concrete structure within the (Primary Sedimentation) Tanks. The concrete shows potential signs of deterioration. This may be caused by abrasion, etch damage and leaching action. An NDT is required to determine the root cause. In addition, replacement of the wood screens is recommended. Other than items summarized in the tables below and details in Appendix 1, the four (4) Primary Sedimentation Tanks are otherwise in working condition.

3.1. Primary Sedimentation Tank 1 (PST1)

| SYSTEM | DESCRIPTION | ITEM | PRIORITY | EST. COST |
|------------|--|------|----------|--------------|
| | Concrete Deterioration – Abrasion & Etch Damage | S01 | P2 | n/a |
| | Concrete Deterioration – Etch Damage | S02 | P2 | n/a |
| | Concrete Deterioration – Leaching Action and Etch Concrete | | P2 | n/a |
| | Concrete Deterioration – Leaching Action | S04 | P2 | n/a |
| STRUCTURES | Concrete Deterioration – Etch Concrete | S05 | P2 | n/a |
| | Concrete Deterioration – Abrasion Damage and Etch Concrete | S06 | P2 | n/a |
| | Concrete Deterioration – Abrasion Damage, Etch Concrete and Leaching Action | S07 | P2 | n/a |
| | Wood Screen | S08 | P1E | <\$50K |
| | Crack in Grout | S09 | P2 | n/a |

3.2. Primary Sedimentation Tank 2 (PST2)

| SYSTEM | DESCRIPTION | ITEM | PRIORITY | EST. COST |
|------------|---|------|----------|--------------|
| STRUCTURES | Concrete Deterioration – Abrasion & Etch Damage | S10 | P2 | n/a |
| | Concrete Deterioration – Abrasion & Etch Damage | S11 | P2 | n/a |
| | Concrete Deterioration – Leaching Action | S12 | P2 | n/a |
| | Concrete Deterioration – Leaching Action | S13 | P2 | n/a |
| | Wood Screen | S14 | P1E | <\$50K |

3.3. Primary Sedimentation Tank 3 (PST3)

| STSTEM DESCRIPTION TIEM PRIORITY COST |
|---------------------------------------|
|---------------------------------------|

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| | | | Floject No.2 10303 | | Date: | 2022-(| 01-26 |
| | | Possible issues on | concrete on existing construction | | | i | n/a |
| | | joint | | S15 | P | 2 | n/a |
| | Concrete Deteriorat | | tion – Etch Damage | S16 | P | 2 | n/a |
| | Concrete Deteriora | ation – Etch Damage | | P | 2 | n/a | |
| | Concrete Deteriora Concrete | ncrete Deterioration – Abrasion Damage, Etch ncrete | | P | 2 | n/a | |
| | | Concrete Deteriora Concrete – Corrosi | ration – Leaching Action- Damage on osion on Steel Frame | | P | 2 | n/a |
| | STRUCTURES | Concrete Deteriora | tion – Leaching Action | S20 | P | 2 | n/a |
| | | Concrete Deteriora Concrete – Corrosi | tion – Leaching Action – Damage on on on Steel Frame | S21 | P | 2 | n/a |
| | | Frame Corrosion A Concrete Deteriora Concrete | round inlet tion – Abrasion damage, Etch | S22 | P | 2 | n/a |
| | | Crack in Grout | | S23 | P | 2 | n/a |
| | | Minor Corrosion | | S24 | P | 2 | n/a |

3.4. Primary Sedimentation Tank 4 (PST4)

| SYSTEM | DESCRIPTION | ITEM | PRIORITY | EST. COST |
|------------|--|------|----------|-----------|
| | Concrete Deterioration – Abrasion Damage, Etch Concrete | | P2 | n/a |
| STRUCTURES | Concrete Deterioration – Leaching Action | | P2 | n/a |
| | Missing Bolts – Loosen Bracket – Loosen Bolts | S27 | P1R | <\$50K |
| | Corroded screen and supports | S28 | P2 | n/a |

For the work required for P1S/P1E/P1R items, please refer to the respective inspection records in Appendix 1. These items are recommended to be completed in 2022.

Concrete Surface information

- Certain agents and harsh conditions can cause concrete deterioration, as a result, embedment metal and steel rebar can become corroded, and this corrosion will expedite concrete deterioration.
- In the Primary Sedimentation Tanks, microbiological induced corrosion is a potential reason for concrete deterioration. Four events must happen to induce concrete corrosion. These are the formation of H₂S, releasing of H₂S, reducing concrete alkalinity and finally sulfide oxidation. In the below figure, these events are illustrated:

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|--|--|--------------------|------------------------------|
| WHISTLER OF Whistler | Drainat Nov210505 | Report: | 210505-TEC-03-R1-D |
| | Project No:210305 | Date: | 2022-01-26 |
| CONCENTRATION ZONE H ₂ S & CO ₂ CONDENSATE FIL | | TE FILM CONCRETE D | ETORATION |

ASTEWATER LEVEL



WASTEWATER LEVEL

- Microbiological induced deteriorations are not visible but can only be identified by investigating the following evidence of deterioration: •
 - Etch Concrete
 - Leaching action 0
 - Abrasion Damage
- We recommends various NDT and or Destructive test to identify possible corrosion and alkalinity of the concrete.

Project No:210505

210505-TEC-03-R1-D Report:

2022-01-26

4. Recommendation

4.1. Mechanical

It should be noted that the inspections of PST1, PST2, PST3 and PST4 are based on conditions at time of inspection. The inspection schedule and repair/replacement recommendations for PST1 were determined under the assumption all the mechanical equipment will be replaced by November 2021.

Majority of the findings for PST1, PST2, PST3 and PST4 are of P3 and P2 priority in nature, condition that if left "as is", could lead to the potential for further deficiency. The proposed maintenance and inspection schedule shall be referenced and preformed to ensure mechanical items are in good condition.

In addition to the proposed scheduled inspection, further inspection shall be conducted for all moving parts to ensure they are operating in its intended condition and to identify any potential problems within the equipment not visible on the surface:

- If possible, conduct a dry run on the system to investigate if there are any restricted movement on certain items.
- Check the symmetrical movement of the flights to note any asymmetrical movement. •
- Check for slippage of the sprockets on the shafts. •
- Inspect the wall bearings for free movement of the shaft.
- Collect electrical draw information from the drive motors to evaluate for fluctuations on a newly installed PST-1 system vs aging system.
- Engage engineering for the P1E indicated items to further investigate and design corrections as required •
- Construct a PMP (Preventative Maintenance Program) based on findings of this report, OEM recommendations and input from the Operations team.

4.2. Structural

Structural inspection identified items classified mostly of P2, with one being P1R. Items classified as P1R shall be corrected to prevent further issues. Further investigation should be conducted to determine the root cause of the findings.

- Conduct NDT (Non-Destructive Testing) to identify steel corrosion magnitudes.
- Conduct NDT (Non-Destructive Testing) and DT (Destructive Testing) to find Alkalinity of concrete especially near to exposed formwork support.
- Engage engineering for the P1E indicated items to further investigate and design corrections as required





210505-TEC-03-R1-D

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2022-01-26

Report:

Date:

Project No:210505

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| Appendix 1: Inspection Records Details | |
|---|---|
| Item No: | M01-1L – Drive Motor / Drive Gearbox |
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | P3 |
| Location Detail:Tank #1 | Description: |
| | The motor and gearbox were in a fair condition. However, they are in a corrosive environment and is operating continuously. Periodic maintenance plan is required. |
| | Required Action: All manufacturers' maintenance manuals of drivers and motors shall be followed. A mechanical/electrical engineering review may be performed. Detailed data logging/reviewing may be conducted to detect potential operational issues by observing the variance in the load/data log results. |
| <image/> | |



Project No:210505



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| Report: | 210505 |
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5-TEC-03-R1-D 2022-01-26 Date:

| Item No: | M02-1L – Collector Chain |
|---|---|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | New (has been replaced November 2021) |
| Location Detail:Tank #1 | Description: Original Equipment - The collector chains were in fair conditions. However, restrictions on the movement of the wall bearings and sprockets caused increased tension and stresses on the equipment. |
| | Required Action: |
| | All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing large scales periodically to reduce the wear and tear. |
| | |





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Project No:210505

 Report:
 210505-TEC-03-R1-D

 Date:
 2022-01-26

| Item No: | M03-1L – Drive Chain |
|---|---|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | New (has been replaced November 2021) |
| Location Detail:Tank #1 | Description: Original Equipment - The drive chains were in fair conditions. However, restrictions on the movement of the wall bearings and sprockets caused increased tension and stresses on the equipment. |
| | Required Action: All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing large scales periodically to reduce the wear and tear. |
| | <image/> |

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| | Project No:210305 | | Date: | 2022-01-26 | |
| | | | | | |
| Item No: | | M04-1L – Wear Shoes | | | |
| Action Plan & Resolution Timeline Re | equired: | 1 year | acad Nova | umbor 2021) | |
| Location Detail:Tank #1 | | Description: | | | |
| | | Original Equipment – The wear shoes were ir deficiencies were detec | n fair conditi ted. | ons. No major | |
| | | Required Action: | | | |
| | 44. ET THE MOLECULAR AND | | All manufacturers' maintenance manuals of moving parts shall be followed. Inspection of wear shall be conducted on a regular basis. | | |
| | | | | | |

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| WHISTLER Of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D |
| | | | Dale. | 2022-01-20 |
| Item No: | | M05-1L – Filler Blocks | | |
| Action Plan & Resolution Timeline Re Repair Priority: | quired: | 1 year New (has been rent: | aced Nove | mber 2021) |
| Location Detail:Tank #1 | | Description: | | |
| | | Original Equipment - The filler blocks were in deficiencies were detec | i fair conditic ted. | ons. No major |
| | Required Action: - Inspection for all the fasteners shaperiodically. fight assembly - scrow | | ners shall be conducted | |
| | | | | |





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Project No:210505
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 Report:
 210505-TEC-03-R1-D

 Date:
 2022-01-26

| Item No: | M06-1L – C-Channel Fiberglass Flights |
|--|---|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | New (has been replaced November 2021) |
| Location Detail:Tank #1 | Description: |
| | Original Equipment - The flight assembly were in fair conditions. Damage was observed most likely caused when the system failed. |
| | Required Action: |
| The decomposition of the second of the secon | An engineering investigation shall be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing large scales periodically to reduce the wear and tear. |
| | |

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| WHISTLER OF Whistler | Drainat No:240505 | | Report: | 210505-TEC-03-R1-D |
| | Project No:210505 | | Date: | 2022-01-26 |
| | | | | |
| Item No: | | M07-1L – Drive Sprock | et | |
| Action Plan & Resolution Timeline Re | quired: | 1 year | | |
| Repair Priority: | | New (has been repla | aced Nove | ember 2021) |
| Location Detail: Tank #1 | | Description: | | |
| | | The sprockets on the sh | naft were in | a rusty/scaled condition. |
| | | Required Action: | | |
| An engineering in for a root cause a of the mechanical parameters to det plan/possible desident of the cause and the mechanical parameters to det plan/possible desident of the cause and the cause and | | ig investigat se analysis nical system o determine design mod rers' mainte shall be follo the drivers v figuration sin suring ther /friction betv ivers. oving scales tear. ven sprocke on the shaf r shaft/sproc | a nalysis over the malfunctioning cal system along with the corrosion determine a maintenance lesign modification. ers' maintenance manuals of hall be followed. ie drivers within the driving iguration shall be checked suring there is no excessive friction between chains, sprockets, vers. ving scales periodically to reduce ear. en sprockets periodically, ensuring on the shaft and fully synchronized shaft/sprocket without any | |
| | | <image/> | A A A A A A A A A A A A A A A A A A A | |

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| | Project No:210305 | | Date: | 2022-01-26 |
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| Item No: | | M08-1L – Dished Offse | t Sprocket | |
| Action Plan & Resolution Timeline Re | equired: | 1 year | and Nove | |
| Location Detail:Tank #1 | | Description: | aced Nove | ember 2021) |
| | | Original Equipment - The sprockets on the sl | haft were in | a rusty/scaled condition. |
| | | Required Action: | | |
| Sprocket assemblies | | An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | |
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| Project | No:210505 |

| Report: | 210505-TEC-03-R1-D | | |
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| Date: | 2022-01-26 | | |

| Item No: | M09-1L – Idler Sprocket |
|---|--|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | New (has been replaced November 2021) |
| Location Detail:Tank #1 | Description: |
| | Original Equipment - The sprockets on the shaft were in a rusty/scaled condition. The shaft corrosion potentially caused restrictions in the movement of the sprockets. |
| procket assemblies | Required Action: An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. |
| | V CARN SAVER RUL |

| Project No:210505 Report: 210505-TEC-03-R1-D Item No: M10-1L – Shear Pin Sprocket 1 year Action Plan & Resolution Timeline Required: New (has been replaced November 2021) Description: Location Detail: Tank #1 Description: Description: Original Equipment - The spockets on the drive motor shaft were in fair condition. Required Action: • • If the spockets on the drive motor shaft were in fair condition. Required Action: • • If the spockets on the drive motor shaft were in fair condition. Required Action: • • If the spockets configuration shaft were in fair condition. Required Action: • • • If the spockets configuration shaft were in fair condition. Required Action: • <t< th=""><th>Resort Municipality</th><th>RMOW: WWTP Pr Tank Asses</th><th>imary Sedimentation ssment Report</th><th colspan="2">ENGINUITY ENGINEERING CONSULTING</th></t<> | Resort Municipality | RMOW: WWTP Pr Tank Asses | imary Sedimentation ssment Report | ENGINUITY ENGINEERING CONSULTING | | |
|--|--------------------------------------|-----------------------------|---|---|--------------------|--|
| Item No: M10-11 - Shear Pin Sprocket Action Plan & Resolution Timeline Required: 1 year Repair Priority: New (has been replaced November 2021) Location Detail:Tank #1 Description: If the state of the drive motor shaft were in fair condition. Required Action: If the state of the drive motor shaft were in fair condition. Required Action: If the state of the drive motor shaft were in fair condition. Required Action: If the state of the drive motor shaft were in fair condition. Required Action: If the state of the drive motor shaft were in fair condition. Required Action: If the drive motor shaft were in fair condition. Required Action: If the drive motor shaft were in fair condition. Required Action: If the drive motor shaft were in fair condition. Required Action: If the drive motor shaft were in fair condition. Required Action: If the drive motor shaft were in fair condition. Required Action: If the drive motor shaft were in fair condition. Required Action: If the drive motor shaft motor shaft were in fair condition. Required Action: If the drive motor shaft m | WHISTLER of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D | |
| Item No: M10-1L - Shear Pin Sprocket Action Plan & Resolution Timeline Required: 1 year Repair Priority: New (has been replaced November 2021) Location Detail: Tank #1 Description: Image: Control of the drive motor shaft were in fair condition. Original Equipment - The sprockets on the drive motor shaft were in fair condition. Image: Control of the drive motor shaft were in fair condition. Alignment of the driver manuals of moving parts shall be followed. Image: Control of the drive motor shaft were in fair condition. Alignment of the driver smaintenance manuals of moving parts shall be followed. Image: Control of the driver smaintenance manuals of moving parts shall be followed. Alignment of the driver smaintenance manuals of moving parts shall be followed. Image: Control of the driver smaintenance manuals of moving parts shall be followed. Alignment of the driver smaintenance manuals of moving parts shall be followed. Image: Control of the driver smaintenance manuals of moving parts shall be followed. Alignment of the driver smaintenance manuals of moving parts shall be followed. Image: Control of the driver smaintenance manuals of moving parts shall be followed. Cleaning/removing scales periodically to reduce the wear and tear. Image: Control of the driver smaintenance manuals of moving scales periodically to reduce the wear and tear. Image: Control of the driver smaintenance manuals of moving scales periodically the driver smaintenan | | | | Date: | 2022-01-26 | |
| Action Plan & Resolution Timeline Required: Repair Priority: Location Detail:Tank #1 | Item No: | | M10-11 - Shear Pin Sn | rocket | | |
| Repair Priority: New (has been replaced November 2021) Location Detail:Tank #1 Description: Original Equipment - The spockets on the drive motor shaft were in fair condition. Required Action: - All manufacturers' maintenance manuals of moving parts shall be followed. - All manufacturers' maintenance manuals of moving parts shall be tollowed. - All manufacturers' maintenance manuals of moving parts shall be tollowed. - All manufacturers' maintenance manuals of moving parts shall be tollowed. - All manufacturers' maintenance manuals of moving parts shall be tollowed. - All manufacturers' maintenance manuals of moving parts shall be tollowed. - All manufacturers' maintenance manuals of moving parts shall be tollowed. - Image: the drive moving scales periodically to reduce the wear and tan. - Inspecting driven sprockets periodically to reduce the wear and tan. - Inspecting driven sprocket periodically to reduce the wear and tan. - Inspecting driven sprocket without any sippage. - Image: the driven shaft and fully synchronized with the driver shaftsprocket without any sippage. - Inspecting driven sprocket periodically to reduce the wear and tan. - Image: the driven shaft and fully synchronized with the driver shaftsprocket without any sippage. - Inspecting driven sprocket periodically to the driven shaft and fully synchronized with the driven shaft and fully synchronized with the driven shaft and fully synchronized with the driven shaftsprocket without any sippage. | Action Plan & Resolution Timeline Re | quired: | 1 year | IUCKEL | | |
| Location Detail:Tank #1 Description: Original Equipment - The sprockets on the drive motor shaft were in fair condition. Required Action: - All manufacturers' maintenance manuals of moving parts shall be followed Alignment of the drivers within the driving sprockets configuration shall be checked producily ensuring there is no excessive misalignment/fiction between chains, sprockets, shafts, and drivers - Cleaning/removing scales periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage | Repair Priority: | | New (has been repla | aced Nove | mber 2021) | |
| Original Equipment - The sprockets on the drive motor shaft were in fair condition. Required Action: All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the were and theat. Inspecting driven sprockets periodically constraining the year fixed on the shaft and fully synchronized with the driver shafts/sprocket without any slippage. | Location Detail:Tank #1 | | Description: | | | |
| Required Actom: All manufacturers' maintenance manuals of moving parts shall be followed. All manufacturers' maintenance manuals of moving parts shall be followed. All manufacturers' maintenance manuals of moving parts shall be checked periodically ensuring there is no excessive misalignment/ficitor between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the war and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | | Original Equipment - The sprockets on the dr condition. | rive motor sh | aft were in fair | |
| <image/> | | Conditio Require | | Required Action: All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | |
| | <image/> | | 31655 | | UHMW | |

| Report: 210905-TEC-03-Rt-D Date: 2022-01-26 Item No: M11-1L – Take Up Assembly 2022-01-26 Action Plan & Resolution Timeline Required: 1 year 1 year Repair Printry: New (has been replaced November 2021) Description: Location Detail: Tank #1 Description: Original Equipment - The Take Up Assemblies were in fair condition. Image: Condition Detail: Tank #1 Description: Original Equipment - The Take Up Assemblies were in fair condition. Image: Condition Detail: Tank #1 Description: Original Equipment - The Take Up Assemblies were in fair condition. Image: Condition Detail: Tank #1 Description: Original Equipment - The Take Up Assemblies were in fair condition. Image: Condition Detail: Tank #1 Description: Original Equipment - The Take Up Assemblies were in fair condition. Image: Condition Detail: Tank #1 Description: Original Equipment - The Take Up Assemblies were in fair condition. Image: Condition Detail: Tank #1 Description: Original Equipment - The Take Up Assemblies were in fair condition. Image: Condition Detail: Tank #1 Description: Original Equipment - The Take Up Assemblies were in fair condition. Image: Condition Detail: Tank #1 Description: Original Equipment - The Take Up Assemblies were in | Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
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| Item No: M11-1L – Take Up Assembly Action Plan & Resolution Timeline Required: 1 year Repair Priority: New (has been replaced November 2021) Location Detail:Tank #1 Description: Image: Table Up Assembly The Take Up Assembly Image: Table Up Assembly Action Plan & Resolution Timeline Required: Image: Table Up Assemblies were in fair condition. Pescription: Image: Table Up Assemblies were in fair condition. Required Action: Image: Table Up Assemblies were in fair condition. Adigoment of the drivers within the driving sprockets configuration shall be checked periodically ensuing there is no excessive mealignment/fiction between chains, sprockets, shaft, and drivers. Image: Table Up Assemblies were in tair condition. Cleaning/removing cases periodically to reduce the ware and tear. Image: Table Up Assemblies were in tair condition. Cleaning/removing cases periodically to reduce the ware and tear. Image: Table Up Assemblies were in tair condition. Cleaning/removing cases periodically to reduce the ware and tear. Image: Table Up Assemblies were in tair condition. Cleaning/removing cases periodically to reduce the ware and tear. Image: Table Up Assemblies were in tair condition. Image: Table Up Assemblies were in tair condition. Image: Table Up Assemblies were in tair condition. Image: Table Up Assemblies were in tair condition. Image: Table Up Assemblies Were Astreation to the sheft and fully synch | WHISTLER OF Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D |
| Item No: M111_L – Take Up Assembly Action Plan & Resolution Timeline Required: 1 year Repair Priority: New (has been replaced November 2021) Location Detail:Tank #1 Description: Original Equipment - The Take Up Assemblies were in fair condition. Image: the tail of tail of the tail of tail of the tail of tail | | | | Date: | 2022-01-26 |
| Action Plan & Resolution Timeline Required. 1 year Repair Priority: Description: Location Detail: Tank #1 Original Equipment- The Take Up Assemblies were in fair condition. Image: Construction of the driver state o | Item No: | | M11 11 Taka Un Ass | ombly | |
| Repair Priority: New (has been replaced November 2021) Location Detail:Tank #1 Description: Original Equipment - The Take Up Assemblies were in fair condition. Image: Control of the drivers within the driving sprokets configuration shall be clowed. - All manufacturers maintenance manuals of moving parts shall be followed. - All gigment of the drivers within the driving sprokets configuration shall be clowed. - Alignment of the drivers within the driving sprokets configuration shall be clowed. - Alignment of the drivers within the driving sprokets configuration shall be clowed. - Cleaning/removing scales periodically to reduce the wear the driver. - Cleaning/removing scales periodically to reduce the wear shaft sproket without any slippage. - Insect and tear. | Action Plan & Resolution Timeline Re | equired: | 1 year | ennory | |
| Location Detail: Tank #1 Description: Original Equipment - The Take Up Assemblies were in fair condition. Image: Control of the second s | Repair Priority: | • | New (has been repla | aced Nove | mber 2021) |
| Required Action: • All manufacturers' maintenance manuals of moving parts shall be chocked periodically ensuring there is no excessive misalignment/fiction between chains, sprockets, shafts, and drivers. • Cleaning/removing scales periodically to reduce the wear and tear. • Inspecting driven sprockets periodically ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | Location Detail: I ank #1 | | Description: Original Equipment - The Take Up Assemblie | es were in fa | ir condition. |
| <image/> | | | Required Action: - All manufactures moving parts - Alignment of the sprockets comperiodically end misalignments shafts, and dress of the shafts of the shafts, and dress of the shafts of the shafts, and dress of the sh | rers' mainter shall be follo the drivers w figuration sh nsuring there (friction betw ivers. oving scales tear. ven sprocke on the shaft r shaft/sproc | nance manuals of owed. vithin the driving nall be checked e is no excessive veen chains, sprockets, s periodically to reduce ts periodically, ensuring t and fully synchronized ket without any |
| | | | | | |

Page | 27

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
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| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D |
| | F10ject N0.210303 | | Date: | 2022-01-26 |
| Item No: | | M12-11 - Wall Bearing | | |
| Action Plan & Resolution Timeline Re | quired: | 1 year | 5 | |
| Repair Priority: | | New (has been repla | aced Nove | mber 2021) |
| Location Detail: I ank #1 | | Description: Original Equipment - | | |
| | | The wall bearings were Required Action: | in a rusty/so | caled condition. |
| shafts assembles | | An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting shafts and wall bearings periodically, ensuring they are functioning properly within the whole power transmission system. | | |
| | | | | |

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| WHISTLER Of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D |
| | | | Date: | 2022-01-26 |
| Item No: | | M13-1L – Collector Wea | ar Strip | |
| Action Plan & Resolution Timeline Re | quired: | 1 year | | |
| Repair Priority: | | New (has been repla | aced Nove | mber 2021) |
| | | Original Equipment - The wear strips were in deficiencies were detec | fair condition ted. | ns. No major |
| | | Required Action: | | |
| | | All manufactu moving parts Inspection of regular basis. | rers' mainter shall be follo wear shall be | nance manuals of wed. e conducted on a |
| | | | | |

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| WHISTLER Of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |
| Item No: | | M11_11 _ Shafts Pine : | and set colla | re | |
| Action Plan & Resolution Timeline Re | quired: | 1 year | | 15 | |
| Repair Priority: | • | P2 | | | |
| Location Detail:Tank #1 | | Description: Original Equipment - The shafts were in a rus | sty/scaled co | ondition. | |
| shafts assemblies | | Required Action: - An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. - All manufacturers' maintenance manuals of moving parts shall be followed. - Cleaning/removing scales periodically to reduce the wear and tear. - Inspecting shafts and wall bearings periodically, ensuring they are functioning properly within the whole power transmission system. | | | |
| <image/> | | | | | |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
|--------------------------------------|--|--|--|--|--|
| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | Project No:210505 | | Date: | 2022-01-26 | |
| Itom No: | | M15 11 Climmor | | | |
| Action Plan & Resolution Timeline Re | auired: | 1 vear | | | |
| Repair Priority: | | P1E | | | |
| Location Detail:Tank #1 | | Description: | tu/acalad ac | ndition | |
| | | Operations noted witho skimmer, they are pron | ut occasiona e to seizing. | al movement of the | |
| | | Required Action: - An engineerir for a root cau of the mechan parameters. - Consider a re All manufactu moving parts | ng investigat se analysis nical system vised design rers' mainte shall be follo | ion should be performed over the malfunctioning along with the corrosion n for better reliability. nance manuals of owed. | |
| <image/> | | | | | |

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ENGINEERING CONSULTING

210505-TEC-03-R1-D Report:

| | Draigat No.210505 | | Report. | 210303-1E0-03-1(1-D |
|---|-------------------|---|---|--|
| | Project No.210303 | | Date: | 2022-01-26 |
| | | | | |
| Item No: | | M01-1C – Drive Motor | Drive Gear | box |
| Action Plan & Resolution Timeline Required: | | 1 year | | |
| Repair Priority: | | P3 | | |
| Location Detail:Tank #1 | | Description: | | |
| | | The motor and gearbox However, they are in a operating continuously. required. | a were in a fa corrosive er Periodic ma urers' mainte notors shall t l/electrical er l. Detailed da ucted to deta serving the v | air condition. Invironment and is aintenance plan is enance manuals of be followed. Ingineering review may ata logging/reviewing ect potential operational eariance in the load/data |
| | | | | |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report Project No:210505 | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | | | Report: Date: | 210505-TEC-03-R1-D 2022-01-26 | |
| Item No: Action Plan & Resolution Timeline Re Repair Priority: Location Detail:Tank #1 | Quired: | M02-1C - Collector Chain 1 year New (has been replaced November 2021) Description: The collector chains were in fair conditions. Required Action: - All manufacturers' maintenance manuals of moving parts shall be followed. - Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. - Cleaning/removing large scales periodically to reduce the wear and tear. | | | |
| | | | | | |

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| WHISTLER of Whistler | | Project No:210505 | |
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| Item No: | | | |
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Report: 210505-TEC-03-R1-D

Date:

2022-01-26


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| WHISTLER Of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D | |
| Item No: Action Plan & Resolution Timeline Re Repair Priority: Location Detail:Tank #1 | M04-1C – Wear Shoes 1 year New (has been repla Description: The wear shoes were in deficiencies were detec Required Action: - All manufactu moving parts - Inspection of | aced Nove n fair condition ted. | mber 2021) ons. No major nance manuals of owed. e conducted on a | | |
| | HPR 25 ST CR053 SE CR054 SE SE CR054 SE SE SE CR054 SE SE CR054 SE SE CR054 SE SE SE CR054 SE SE | regular basis. | | | |
| | | | | | |



| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |
| | | | | | |
| Item No: | | M06-1C – C-Channel F | iberglass Fl | ights | |
| Action Plan & Resolution Timeline Re Repair Priority: | quirea: | 1 year New (has been repla | aced Nove | ember 2021) | |
| Location Detail:Tank #1 | | Description: | | | |
| | HEW CONCRETE HASE TOTORE TOTORE TOTORE SC 1204.0 TOTORE | The flight assembly we Required Action: | re in fair cor | iditions. | |
| | | An engineering investigation shall be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing large scales periodically to reduce the wear and tear. | | | |
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| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER of Whistler | Project No :210505 | | Report: | 210505-TEC-03-R1-D | |
| | 110/00110.210000 | | Date: | 2022-01-26 | |
| Item No: | | MOZ 1C Drive Spreek | ot | | |
| Action Plan & Resolution Timeline Re | auired: | 1 vear | el | | |
| Repair Priority: | | New (has been repla | aced Nove | mber 2021) | |
| Location Detail:Tank #1 | | Description: | - ft | o wysłu (o o olo di o ovoditi o v | |
| Image: series of the series | | Required Action: - An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. - All manufacturers' maintenance manuals of moving parts shall be followed. - Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. - Cleaning/removing scales periodically to reduce the wear and tear. - Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | | |
| | | | 10 SMAIDOC 2 PLCS 2 PLCS 3 SANDAC 2 PLCS 3 SANDAC 2 PLCS 3 SANDAC 2 PLCS 3 SANDAC 2 PLCS 3 SANDAC 2 PLCS 3 SANDAC 2 PLCS 3 SANDAC | | |

Page | 38

| RMOW: WWTP Resort Municipality Tank As | | rimary Sedimentation ssment Report ENGINEERING CONSULTIN | | | |
|--|-------------------|--|-------------|--|--|
| WHISTLER Of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |
| Item No: | | M08-1C – Dished Offse | t Sprocket | | |
| Action Plan & Resolution Timeline Re Repair Priority: | quired: | 1 year New (has been repla | aced Nove | mber 2021) | |
| Location Detail:Tank #1 | | Description: | | | |
| Location Detail. Failer # | | Required Action: - An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. - All manufacturers' maintenance manuals of moving parts shall be followed. - Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. - Cleaning/removing scales periodically to reduce the wear and tear. - Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slinnage | | | |
| | | CAST 750 URETHANE BODY | SET SION | SPIT PTCHEM PTCH | |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
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| WHISTLER Of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D |
| Item No: Action Plan & Resolution Timeline Re Repair Priority: Location Detail:Tank #1 | M09-1C – Idler Sprocke 1 year New (has been repla Description: The sprockets on the sh The shaft corrosion pote movement of the sprock Required Action: - An engineerin for a root cause of the mechar parameters to plan/possible | Date: aced Nove aced | 2022-01-26 mber 2021) a rusty/scaled condition. ed restrictions in the on should be performed over the malfunctioning along with the corrosion a maintenance fication. | |
| | UP 229 T WV EL 601.00 UP 229 T WV EL 600.00 UP 220 PU UP 20 P | Alignment of t sprockets con periodically en misalignment/ shafts, and dr Cleaning/remain the wear and Inspecting driving they are fixed with the driven slippage. | shall be follo he drivers w figuration sh nsuring there (friction betw ivers. oving scales tear. ven sprocke on the shaft r shaft/sproc | wed. ithin the driving hall be checked is no excessive reen chains, sprockets, periodically to reduce ts periodically, ensuring and fully synchronized ket without any |
| | | CHAIN SAVER RUI | 39 3/4-10NC #31453 587 5CREV(5- 2 PLC5 2-13 X 3* #31453 BOLT PLC5 3.438 | I OLDED HIN HIGHER HIGHER HIGHER HIGHER HIGHER |





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| Project N | o: 210 5 | 505 |
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 Report:
 210505-TEC-03-R1-D

 Date:
 2022-01-26

| Action Plan & Resolution Timeline Required: 1 year Repair Priority: New (has been replaced November 2021) Location Detail/Tank #1 Description: The sprokets on the drive motor shaft were in fair condition. Required Action: Required Action: - All manufacturers' maintenance manuals of moving parts shall be followed. All manufacturers' maintenance manuals of moving parts shall be followed. - Alignment of the drivers within the driving sprokets configuration shall be checked periodically ensuing there is no excessive missignment/ficial verse within the driving sprokets periodically to reduce the wear and tear. Image: Im | Item No: | M10-1C – Shear Pin Sprocket |
|---|---|---|
| Repair Priority: New (has been replaced November 2021) Location DetailTank #1 Description: Image: the sprackets on the drive motor shaft were in fair condition. Required Action: Image: the sprackets on the drive motor shaft were in fair condition. Required Action: Image: the sprackets on the drive motor shaft were in fair condition. All manufacturers' maintenance manuals of moving parts shall be followed. Image: the sprackets on figuration shaft be checked periodically ensuring there is no excessive missignment/friction shaft be checked periodically ensuring there is no excessive missignment/friction between chains, sprockets, shafts, and drivers. Image: the spracket be sprivate and the driver shaft sprocket sprivate and the shaft and fully synchronized with the driver shaft/sprocket without any sippage. Image: the spracket sprivate and the shaft and fully synchronized with the driver shaft/sprocket without any sippage. | Action Plan & Resolution Timeline Required: | 1 year |
| Location Detail: Tank #1 The sprockets on the drive motor shaft were in fair condition. Required Action: All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/fiction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and drear. Inspecting driver such as prockets periodically one they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | Repair Priority: | New (has been replaced November 2021) |
| The sprockets on the drive motor shaft were in fair condition. Required Action: All manufacturers' maintenance manuals of moving parts shall be followed. All grament of the drivers within the driving sprockets and periodically ensuring there is no excessive misalignment/fiction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically to reduce the wear and tear. Inspecting driven sprockets periodically to reduce the wear and tear. Inspecting driven sprockets without any slippage. | Location Detail:Tank #1 | Description: |
| | | The sprockets on the drive motor shaft were in fair condition. Required Action: All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. |
| | <image/> | 316SS |
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| Project | NO:210505 |

 Report:
 210505-TEC-03-R1-D

 Date:
 2022-01-26

| Item No: | M11-1C – Take Up Assembly |
|---|---|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | New (has been replaced November 2021) |
| Location Detail:Tank #1 | Description: |
| | The Take Up Assemblies were in fair condition. Required Action: - All manufacturers' maintenance manuals of moving parts shall be followed. - Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. - Cleaning/removing scales periodically to reduce the wear and tear. |
| | Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. |
| | |

| Resort Municipality | ality RMOW: WWTP Primary Sedimentatio | | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER OF Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D | | |
| | F10ject N0.210303 | | Date: | 2022-01-26 | | |
| | | | | | | |
| Item No: | | M12-1C – Wall Bearing | S | | | |
| Action Plan & Resolution Timeline Re Repair Priority: | equirea: | 1 year New (has been renl: | aced Nove | mber 2021) | | |
| Location Detail:Tank #1 | | Description: | | | | |
| LOCATION DECISIT. TELEVILY # 1 | Required Action: - An engineerir for a root cau of the mechan parameters to plan/possible - All manufactu moving parts - Cleaning/rem the wear and - Inspecting sh ensuring they whole power | in a rusty/s ing investiga se analysis nical system o determine design moc urers' mainte shall be foll oving scale tear. afts and wa are functio transmissio | caled condition. | | | |
| | | | | | | |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
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| WHISTLER Of Whistler | Proiect No: 210505 | | Report: | 210505-TEC-03-R1-D |
| | | | Date: | 2022-01-26 |
| Item No: | | M13-1C – Collector Wea | ar Strip | |
| Action Plan & Resolution Timeline Re Repair Priority | quired: | 1 year New (has been repla | aced Nove | mber 2021) |
| Location Detail:Tank #1 | | Description: | | |
| | | I he wear strips were in deficiencies were detect | fair conditio ted. | ns. No major |
| | Required Action: - All manufactur moving parts s - Inspection of v regular basis. | rers' mainte shall be follo wear shall b | nance manuals of owed. e conducted on a | |
| | | | | |



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| | WHISTLER OF Whistler | | | | Report: | 210505-TEC-03-R1-D |
| | | | Project No:210505 | | Date: | 2022-01-26 |
| | | | | | | |
| | Item No: | | | M01-2L – Drive Motor / | Drive Geart | XOC |
| | Action Plan & Resolution Tim | neline Re | equired: | 1 year | | |
| | Location Detail:Tank #2 | | | Description: | | |
| Location Detail: I ank #2 | | | The motor and gearbox However, they are in a operating continuously. required. | were in a fa corrosive en Periodic ma | air condition. wironment and is aintenance plan is | |
| | | | | Required Action: - All manufactu drivers and m - A mechanical be performed may be conduissues by obs log results. | rers' mainte otors shall k /electrical er . Detailed da ucted to dete erving the v | nance manuals of be followed. ngineering review may ata logging/reviewing ect potential operational ariance in the load/data |
| | | | | | | |





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Project No:210505

| Report: | 210505-TEC-03-R1-D |
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| Date: | 2022-01-26 |







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Project No:210505

| Report: | 210505-TEC-03-R1-D |
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| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | Project No: 210505 | | Report: | 210505-TEC-03-R1-D | |
| | , | | Date: | 2022-01-26 | |
| | | | | | |
| Item No: Action Plan & Resolution Timeline Re | auired: | M04-2L – Wear Shoes 1 vear | | | |
| Repair Priority: | | P2 | | | |
| Location Detail:Tank #2 | | Description: | fair conditi | ana No major | |
| BEENDALT BEENDA | | deficiencies were detected. Required Action: - All manufacturers' maintenance manuals of moving parts shall be followed. - Inspection of wear shall be conducted on a regular basis. | | | |
| | | | | | |

| Resort Municipality | RMOW: WWTP Pr Tank Asse | imary Sedimentation ssment Report | ENGINUITY ENGINEERING CONSULTING | | |
|--------------------------------------|----------------------------|---|-------------------------------------|--------------------------|--|
| WHISTLER Of Whistler | stler | | Report: | 210505-TEC-03-R1-D | |
| | Project No:210505 | | Date: | 2022-01-26 | |
| | | | | | |
| Item No: | | M05-2L – Filler Blocks | | | |
| Action Plan & Resolution Timeline Re | equired: | 1 year | | | |
| Location Detail:Tank #2 | | P2 Description: | Description: | | |
| Location Detail: I ank #2 | | The filler blocks were in fair conditions. No major deficiencies were detected. | | | |
| | fight assembly | Required Action: - Inspection for periodically. | all the fast | eners shall be conducted | |
| | | | | | |



Project No:210505



ENGINEERING CONSULTING

Report: 210505-TEC-03-R1-D Date:

2022-01-26

| Item No: | M06-2L – C-Channel Fiberglass Flights |
|--|---|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | P1E |
| Location Detail:Tank #2 | Description: |
| | The flight assembly were in fair conditions. |
| The second distance of | An engineering investigation shall be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing large scales periodically to reduce the wear and tear. |
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| WHISTLER Of Whistler | Project No:210505 | | Report: Date: | 210505-TEC-03-R1-D 2022-01-26 | |
| Item No: Action Plan & Resolution Timeline Required: Repair Priority: Location Detail:Tank #2 | | M07-2L – Drive Sprocket 1 year P2 Description: The sprockets on the shaft were in a rusty/scaled condition. Particle - An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. - All manufacturers' maintenance manuals of moving parts shall be followed. - Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. - Cleaning/removing scales periodically to reduce | | | |
| | | the wear and Inspecting dr they are fixed with the drive slippage. | tear. iven sprocke d on the sha er shaft/spro | ets periodically, ensuring ft and fully synchronized cket without any | |

CHAIN SAVER RU

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
|-------------------------|--|------------------------|--|---|--|
| WHISTLER Of Whistler | Draiget No. 210505 | | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |
| | | | | | |
| Item No: | | M08-2L – Dished Offse | t Sprocket | | |
| Repair Priority | equirea: | P2 | | | |
| Location Detail:Tank #2 | | Description: | | | |
| P Spocket assemblies | Sprocket assembles | | Required Action: An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | |
| | | CAST 750 URETHANE BODY | SIET SIGON SEGON SPROCHET RO LACK REPRO UHAW TAL SPROCKET RIM | SPLIT PTCH EM PTCH | |

| | Resort Municipality |
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| WHISTLER | of Whistler |



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Report:

210505-TEC-03-R1-D

| | Project No: 210505 | | Date: | 2022-01-26 | |
|--|---------------------------|---|---|--|--|
| | | | | | |
| Item No: | | M09-2L – Idler Sprocket | | | |
| Action Plan & Resolution Timeline Re | equired: | 1 year | | | |
| Repair Priority: | | P1E Description: | | | |
| | | The sprockets on the sh The shaft corrosion pote movement of the sprock Required Action: | naft were in a entially caus kets. | a rusty/scaled condition. ed restrictions in the | |
| The second secon | | An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any driver sprocket sprocket without any driver sprocket without any driver sprocket without any driver sprocket sprocket sprocket without any driver | | | |
| | | Sippage. | 39 3/4-10NC = \$1435 SE SCREVS 2 FLC3 2-13 X 3" #31455 BOLT 1-438 | NOT THE OPEN AND T | |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGIN | GINUITY EERING CONSULTING |
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| WHISTLER OF Whistler | Project No: 210505 | | Report: | 210505-TEC-03-R1-D |
| | 110,000 110.2 10000 | | Date: | 2022-01-26 |
| Itom No: | | M10 2L Shoor Din Sr | vraakat | |
| Action Plan & Resolution Timeline Re | auired: | 1 vear | DIOCKEL | |
| Repair Priority: | | P2 | | |
| Location Detail:Tank #2 | | Description: | | |
| | | The sprockets on the d condition. | rive motor s | hatt were in fair |
| | | Required Action: | , ., | |
| | | moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | |
| <image/> | | 316SS | | UHMW |

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| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | 110jeet 100.210000 | | Date: | 2022-01-26 | |
| | | | | | |
| Item No: | auirad | M11-2L – Take Up Ass | embly | | |
| Repair Priority: | quileu. | P2 | | | |
| Location Detail:Tank #2 | | Description: | | | |
| Location Detail: Tank #2 | | Required Action: - All manufacturers' maintenance manuals of moving parts shall be followed. - Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. - Cleaning/removing scales periodically to reduce the wear and tear. - Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | | |
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| WHISTLER OF Whistler | Droject No.210505 | | Report: | 210505-TEC-03-R1-D |
| | | | Date: | 2022-01-26 |
| | | | | |
| Item No: | | M12-2L – Wall Bearing | s | |
| Action Plan & Resolution Timeline Re | quired: | 1 year | | |
| Repair Priority: | | P1E Description: | | |
| Location Detail. Fairk #2 | | The wall bearings were | in a rusty/s | scaled condition. |
| | | Required Action: | | |
| service of the servic | | An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting shafts and wall bearings periodically, ensuring they are functioning properly within the whole power transmission system. | | |
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| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | | GINUITY EERING CONSULTING | |
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| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |
| | | | | | |
| Item No: M13-2L – Collecte | | M13-2L – Collector We | ar Strip | | |
| Action Plan & Resolution Timeline Re | equired: | 1 year | | | |
| Repair Priority: | | P2 Description: | | | |
| | 2 Description: The wear strips were in deficiencies were detec | | fair conditio ted. | ns. No major | |
| | Required Action: - All manufactu moving parts - Inspection of regular basis. | | urers' maintenance manuals of s shall be followed. f wear shall be conducted on a s. | | |
| | | | | | |





| Resort Municipality | RMOW: WWTP Pr Tank Asses | imary Sedimentation ssment Report | ENGINUITY ENGINEERING CONSULTING | | |
|-------------------------|-----------------------------|--|-------------------------------------|--------------------|--|
| WHISTLER Of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D | |
| | Floject No.210303 | | Date: | 2022-01-26 | |
| | | | | | |
| Item No: | and an all | M14-2L – Shafts, Pins a | and set colla | ars | |
| Repair Priority: | quirea: | P2 | | | |
| Location Detail:Tank #2 | | Description: | | | |
| | | The shafts were in a rus | sty/scaled c | ondition. | |
| shafts assemblies | | An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting shafts and wall bearings periodically, ensuring they are functioning properly within the whole power transmission system. | | | |
| | | | | | |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER OF Whistler | Project No: 210505 | | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |
| Item No: | | M15-2L – Skimmer | | | |
| Action Plan & Resolution Timeline Re | quired: | 1 year | | | |
| Repair Priority: | • | P1E | | | |
| Location Detail:Tank #2 | | Description: | | | |
| | | The skimmer is in a rus Operations noted without skimmer, they are prove Required Action: - An engineering for a root cause of the mechang parameters. - Consider a re All manufactu moving parts | er is in a rusty/scaled condition. noted without occasional movement of the ney are prone to seizing. Action: An engineering investigation should be performed or a root cause analysis over the malfunctioning of the mechanical system along with the corrosion harameters. Consider a revised design for better reliability. All manufacturers' maintenance manuals of noving parts shall be followed. | | |
| | | | | | |







Project No:210505



ENGINEERING CONSULTING

Report: 210505-TEC-03-R1-D Date:

2022-01-26

| Iter of NIC | |
|---|---|
| Item No: | MU1-2C – Drive Motor / Drive Gearbox |
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Phoney. | P3 |
| Location Detail: I ank #2 | Description: |
| | The motor and gearbox were in a fair condition. |
| | Required Action: |
| | All manufacturers' maintenance manuals of drivers and motors shall be followed. A mechanical/electrical engineering review may be performed. Detailed data logging/reviewing may be conducted to detect potential operational issues by observing the variance in the load/data log results. |
| | |

Project No:210505



ENGINEERING CONSULTING

 Report:
 210505-TEC-03-R1-D

 Date:
 2022-01-26





ENGINEERING CONSULTING

Project No:210505

| Report: | 210505-TEC-03-R1-D |
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| Date: | 2022-01-26 |

Item No: M03-2C – Drive Chain Action Plan & Resolution Timeline Required: 1 year Repair Priority: **P2** Location Detail:Tank #2 Description: The drive chains were in fair conditions. PA 12 ST -AH 4219 NEW_CONCRET AH 4216 FOA 600 FRP -(SC 1204.2) FUTURE SC 1203.2 GV 211 **Required Action:** All manufacturers' maintenance manuals of -MAX L. L. 250 ST ∇ DS 100 SS moving parts shall be followed. NEW F Alignment of the drivers within the driving IRS 25 ST SEE (sprockets configuration shall be checked UH 249 CROSS PA 50 ST periodically ensuring there is no excessive misalignment/friction between chains, sprockets, TD 200 ST shafts, and drivers. 0 EL. 599.800 (0)Cleaning/removing large scales periodically to reduce the wear and tear. / 12 ST PS 200 ST PA 3251.3 4 ¥.

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |
| Item No: | | M04.2C Wear Shoes | | | |
| Action Plan & Resolution Timeline Re | quired: | MU4-2C - Wear Shoes | | | |
| Repair Priority: | • | P2 | | | |
| Location Detail:Tank #2 | | Description: | fair aanditi | ana Na majar | |
| | | deficiencies were detec | ted. | JIS. NO MAJOI | |
| N 12 201 C 201 | | Required Action: - All manufacturers' maintenance manuals of moving parts shall be followed. - Inspection of wear shall be conducted on a regular basis. | | | |
| | EB | | | | |



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| WHISTLER Of | Whistler | Project No:210505 |
| | | |
| Item No: | | |
| Action Plan & R | esolution Timeline Re | equired: |
| Repair Priority: | | |
| Location Detail: | Tank #2 | |
| | | |



ENGINEERING CONSULTING

Report: 210505-TEC-03-R1-D Date:

2022-01-26



| Resort Municipality | Resort Municipality of Whistler RMOW: WWTP Primary Sedimentation Tank Assessment Report Project No:210505 | | ENGINUITY ENGINEERING CONSULTING | |
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| WHISTLER of Whistler | | | Report: | 210505-TEC-03-R1-D |
| | | | Date: | 2022-01-26 |
| Itom No: | | | | |
| Item NO: Action Plan & Resolution Timeline Pa | quired: | 1 vear | et | |
| Repair Priority: | | P1E | | |
| Location Detail:Tank #2 | | Description: | | |
| Image: series of the series | | Required Action: - An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. - All manufacturers' maintenance manuals of moving parts shall be followed. - Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. - Cleaning/removing scales periodically to reduce the wear and tear. - Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | |
| | | | 129 <u>PA-10NC</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> <u>PA-10XS</u> | |

| Resort Municipality | | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
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| WHISTLER | HISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D |
| | | 110ject 10.210303 | | Date: | 2022-01-26 |
| Project No:210505 | | M08-2C – Dished Offse 1 year P1E Description: The sprockets on the sh - An engineerin for a root cause of the mechar parameters to plan/possible - All manufactu moving parts - Alignment of the sprockets com periodically end misalignment shafts, and dr - Inspecting drive they are fixed with the driver slippage. | aft were in a naft were in a ng investigati se analysis o nical system o determine a design modi rers' mainter shall be follo the drivers w ifiguration sh nsuring there friction betw ivers. oving scales tear. ven sprocket on the shaft r shaft/sproc | a rusty/scaled condition. on should be performed over the malfunctioning along with the corrosion a maintenance fication. nance manuals of wed. ithin the driving hall be checked thin the driving hall be checked the is no excessive een chains, sprockets, periodically to reduce ts periodically, ensuring and fully synchronized ket without any | |
| | | | CAST 750 URETHANE BOOY | NET SIGN | SPLIT |

BORE W/STDKW&(2) SET SCREWS

BLACK REPRO UHMW SEGMENTAL SPROCKET RIM

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
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| WHISTLER OF Whistler | Project No :210505 | | Report: | 210505-TEC-03-R1-D |
| | | | Date: | 2022-01-26 |
| | | M09-2C - Idler Sprocket 1 year P1E Description: The sprockets on the shaft were in a rusty/scaled condition. The shaft corrosion potentially caused restrictions in the movement of the sprockets. Required Action: - An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. - All manufacturers' maintenance manuals of moving parts shall be followed. - Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. - Cleaning/removing scales periodically to reduce the wear and tear. - Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | |
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Project No:210505



ENGINEERING CONSULTING

| Report: | 210505-TEC-03-R1-D |
|---------|--------------------|
| Date: | 2022-01-26 |

Item No: M10-2C - Shear Pin Sprocket Action Plan & Resolution Timeline Required: 1 year **Repair Priority: P2** Location Detail:Tank #2 Description: The sprockets on the drive motor shaft were in fair condition. Required Action: All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving _ sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. ann : Maraith Thank an Inn an 40 Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. UHMW 316SS


Project No:210505

RMOW: WWTP Primary Sedimentation Tank Assessment Report



ENGINEERING CONSULTING

 Report:
 210505-TEC-03-R1-D

 Date:
 2022-01-26



| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
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| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D |
| | | | Date: | 2022-01-26 |
| Itom No: | | | | |
| Action Plan & Resolution Timeline Re | auired: | 1 vear | S | |
| Repair Priority: | | P1E | | |
| Location Detail:Tank #2 | | Description: | | |
| | Image: State of the s | Description: The wall bearings were in a rusty/scaled condition. Required Action: - An engineering investigation should be perfor a root cause analysis over the malfunction of the mechanical system along with the comparameters to determine a maintenance plan/possible design modification. - All manufacturers' maintenance manuals or moving parts shall be followed. - Cleaning/removing scales periodically to rethe wear and tear. - Inspecting shafts and wall bearings periodic ensuring they are functioning properly within whole power transmission system. | | ion should be performed over the malfunctioning along with the corrosion a maintenance ification. nance manuals of owed. s periodically to reduce I bearings periodically, ning properly within the n system. |
| | | | | |
| Page 72 | | | | 2/7/2022 |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report Project No:210505 | | ENGINUITY ENGINEERING CONSULTING | | |
|---|--|--|-------------------------------------|--------------------|--|
| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |
| Item No: | | M13-2C – Collector We | ar Strin | | |
| Action Plan & Resolution Timeline Re | quired: | 1 year | | | |
| Repair Priority: | • | P2 | | | |
| Location Detail:Tank #2 | | Description: | | | |
| III Z 201 III Z 201 III Z 201 IIII Z 201 IIII Z 201 IIII Z 201 IIII Z 201 IIIII Z 201 IIIII Z 201 IIIIII Z 201 IIIII Z 201 IIIII Z 201 IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII | | Required Action: - All manufacturers' maintenance manuals of moving parts shall be followed. - Inspection of wear shall be conducted on a regular basis. | | | |
| | | | | | |

| Resort Municipality | RMOW: WWTP Pr Tank Asse | imary Sedimentation ssment Report | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | F10ject 110.2 10303 | | Date: | 2022-01-26 | |
| Item No: | | M14-2C – Shafts, Pins | and set colla | Irs | |
| Action Plan & Resolution Timeline Re | quired: | 1 year | | | |
| Repair Priority: | | P2 Description: | | | |
| Location Detail: Tank #2 | NU CLOOR PART (C) 100 CO (C) | Description: The shafts were in a rusty/scaled condition. Required Action: - An engineering investigation should be perf for a root cause analysis over the malfunction of the mechanical system along with the comparameters to determine a maintenance plan/possible design modification. - All manufacturers' maintenance manuals of moving parts shall be followed. - Cleaning/removing scales periodically to react the wear and tear. - Inspecting shafts and wall bearings periodic ensuring they are functioning properly within whole power transmission system. | | | |
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| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
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| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D |
| | Project No:210505 | | Date: | 2022-01-26 |
| | | | | |
| Item No: | | M01-3L – Drive Motor / | Drive Gear | box |
| Action Plan & Resolution Timeline Re | equired: | 1 year | | |
| Repair Phoney: | | P3 | | |
| | | Description: The motor and gearbox were in a fair condition. However, they are in a corrosive environment and is operating continuously. Periodic maintenance plan is required. Required Action: - All manufacturers' maintenance manuals of drivers and motors shall be followed. - A mechanical/electrical engineering review be performed. Detailed data logging/review may be conducted to detect potential oper issues by observing the variance in the load log results. | | air condition. hvironment and is aintenance plan is enance manuals of be followed. ngineering review may ata logging/reviewing ect potential operational variance in the load/data |
| | | | | |



Project No:210505



ENGINEERING CONSULTING

 Report:
 210505-TEC-03-R1-D

 Date:
 2022-01-26





Project No:210505



ENGINEERING CONSULTING

Report: 210505-TEC-03-R1-D

Date: 2022-01-26



| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report Project No:210505 | | ENGINUITY ENGINEERING CONSULTING | |
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| WHISTLER OF Whistler | | | Report: | 210505-TEC-03-R1-D |
| | | | Date: | 2022-01-26 |
| Item No: | | M04-31 - Wear Shoes | | |
| Action Plan & Resolution Timeline Re | equired: | 1 year | | |
| Repair Priority: | | P2 | | |
| Location Detail:Tank #3 | | Description: | c · · · · · · | |
| | | I he wear shoes were in deficiencies were detec | n fair conditi sted. | ons. No major |
| General de la construction de la | | Required Action: - All manufacturers' maintenance manuals of moving parts shall be followed. - Inspection of wear shall be conducted on a regular basis. | | |
| | | | | |







ENGINEERING CONSULTING

 Report:
 210505-TEC-03-R1-D

 Date:
 2022-01-26

| Item No: | M06-3L – C-Channel Fiberglass Flights |
|---|---|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | P2 |
| Location Detail:Tank #3 | Description: |
| | The flight assembly were in fair conditions. Damage was observed most likely caused when the system failed. |
| | Required Action: |
| Grow Count & Flor | An engineering investigation shall be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing large scales periodically to reduce the wear and tear. |
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| Resort Municipality | Tank Asses | Tank Assessment Report | | ENGINEERING CONSULTING | | |
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| WHISTLER of Whistler | Draiget No. 210505 | | Report: | 210505-TEC-03-R1-D | | |
| | | | Date: | 2022-01-26 | | |
| Itom No. | | M07.2L Drive Correct | -1 | | | |
| Action Plan & Resolution Timeline Re | auired: | IVIU7-3L – Drive Sprock | el | | | |
| Repair Priority: | | P2 | | | | |
| Location Detail:Tank #3 | | Description: | | | | |
| Sprocket assemblies | | Required Action: - An engineerir for a root cau of the mechai parameters to plan/possible - All manufactu moving parts - All manufactu moving parts - Alignment of sprockets cor periodically el misalignment shafts, and dr - Cleaning/rem the wear and - Inspecting dri they are fixed with the drive slippage. | ng investiga se analysis nical system o determine design moo rers' mainte shall be foll the drivers with figuration set figuration between friction between friction between ven sprocket on the sha r shaft/sprocess | tion should be performed over the malfunctioning a long with the corrosion a maintenance dification. enance manuals of owed. within the driving hall be checked re is no excessive ween chains, sprockets, s periodically to reduce ets periodically, ensuring ft and fully synchronized cket without any | | |
| | | VIGNO CHAIN SAVER RUI | 239 3/4-10NC 27L03 27L03 /2-13 X 3* #31453 80LT PLC5 3.438 | 1.000 Process in the second se | | |

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| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D |
| | Project No.2 10303 | | Date: | 2022-01-26 |
| Itom No: | | MOO 2L Dishard Offer | | |
| Action Plan & Resolution Timeline Re | auired: | MU8-3L – Dished Offse | t Sprocket | |
| Repair Priority: | | P2 | | |
| Location Detail:Tank #3 | | Description: | | |
| | | The sprockets on the shaft were in a rusty/scaled condition. | | |
| sprocket assemblies | | An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver select with the stream. | | |
| | | Slippage. | SET SION | SPLIT SPLIT SPLIT MICHEDA WITCHE |

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| Droject No.210505 | Report: | 210505-TEC-03-R1-D | |
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| Project No:210505 | Date: | 2022-01-26 | |
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| Item No: | M09-31 – Idler Sprocket |
|---|--|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | PIE |
| Location Detail:Tank #3 | Description: |
| | The sprockets on the shaft were in a rusty/scaled condition. The shaft corrosion potentially caused restrictions in the movement of the sprockets. |
| sprocket assemblies | An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. |
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| WHISTLER OF Whistler | Project No :210505 | | Report: | 210505-TEC-03-R1-D | |
| | 110jeet 100.210000 | | Date: | 2022-01-26 | |
| | | | | | |
| Item No: | | M10-3L – Shear Pin Sp | procket | | |
| Action Plan & Resolution Timeline Re Repair Priority: | equirea: | 1 year | | | |
| Location Detail:Tank #3 | | P2 Description: | | | |
| | | The sprockets on the drive motor shaft were in fair condition. | | | |
| | 1 | Required Action: | | | |
| | | All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sproch shafts, and drivers. Cleaning/removing scales periodically to red the wear and tear. Inspecting driven sprockets periodically, ens they are fixed on the shaft and fully synchror with the driver shaft/sprocket without any slippage. | | | |
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| Resort Municipality | RMOW: WWTP Pr Tank Asse | imary Sedimentation ssment Report | ENGINUITY ENGINEERING CONSULTING | |
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| | Project No:210505 | | Date: | 2022-01-26 |
| | | | • | |
| Item No: | | M11-3L – Take Up Ass | embly | |
| Action Plan & Resolution Timeline Re | equired: | 1 year | | |
| Location Detail:Tank #3 | | P2 Description: | | |
| Location Detail: Tank #3 | | The Take Up Assemblies were in fair condition. The Take Up Assemblies were in fair condition. Required Action: - All manufacturers' maintenance manuals of moving parts shall be followed. - Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. - Cleaning/removing scales periodically to reduce the wear and tear. - Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | |
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| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
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| WHISTLER Of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D |
| | Project No:210505 | | Date: | 2022-01-26 |
| Item Nee | | | | |
| Item No: Action Plan & Resolution Timeline Re | auired: | M12-3L – Wall Bearing | 8 | |
| Repair Priority: | | P1E | | |
| Location Detail:Tank #3 | | Description: | | |
| | | The wall bearings were Required Action: | in a rusty/s | caled condition. |
| set of the | An engineer for a root ca of the mech parameters plan/possibl All manufac moving part Cleaning/ren the wear an Inspecting s ensuring the whole powe | | se analysis over the malfunctioning nical system along with the corrosion o determine a maintenance design modification. urers' maintenance manuals of shall be followed. noving scales periodically to reduce tear. nafts and wall bearings periodically, are functioning properly within the transmission system. | |
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| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |
| | | | • | | |
| Item No: | | M13-3L – Collector We | ar Strip | | |
| Action Plan & Resolution Timeline Re | equired: | 1 year | | | |
| Location Detail:Tank #3 | | P2 Description: | | | |
| | | The wear strips were in deficiencies were detec | i fair conditio ted. | ons. No major | |
| | | Required Action: - All manufactu moving parts - Inspection of regular basis. | urers' mainte shall be foll wear shall b | enance manuals of owed. be conducted on a | |
| | | | | | |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report Project No:210505 | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | | | Report: Date: | 210505-TEC-03-R1-D 2022-01-26 | |
| Item No: Action Plan & Resolution Timeline Required: Repair Priority: Location Detail:Tank #3 | | M14-3L – Shafts, Pins and set collars 1 year P2 Description: The shafts were in a rusty/scaled condition. | | | |
| service of the servic | | Required Action: - An engineerir for a root cau of the mechan parameters to plan/possible - All manufactu moving parts - Cleaning/rem the wear and - Inspecting sh ensuring they whole power | ng investigat se analysis nical system o determine design mod urers' mainte shall be follo oving scales tear. afts and wal r are function transmission | ion should be performed over the malfunctioning a long with the corrosion a maintenance lification. mance manuals of owed. s periodically to reduce I bearings periodically, ning properly within the n system. | |
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| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D | | |
| | Project No:210505 | | Date: | 2022-01-26 | | |
| Item No: Action Plan & Resolution Timeline Re Repair Priority: Location Detail:Tank #3 | equired: | M15-3L – Skimmer 1 year P1E Description: The skimmer is in a ru Operations noted with skimmer, they are pro Required Action: - An engineer for a root ca of the mecha parameters. - Consider a r - All manufact moving parts | | sty/scaled condition. Dut occasional movement of the ne to seizing. Ing investigation should be performed use analysis over the malfunctioning anical system along with the corrosion evised design for better reliability. urers' maintenance manuals of a shall be followed. | | |
| | | | | | | |



Project No:210505



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Report: 210505-TEC-03-R1-D Date:

2022-01-26

| Item No: | M01-3C - Drive Motor / Drive Gearbox |
|---|---|
| Action Plan & Resolution Timeline Required: | 1 vear |
| Repair Priority: | P3 |
| Location Detail:Tank #3 | Description: |
| | The motor and gearbox were in a fair condition. However, they are in a corrosive environment and is operating continuously. Periodic maintenance plan is required. |
| | All manufacturers' maintenance manuals of drivers and motors shall be followed. A mechanical/electrical engineering review may be performed. Detailed data logging/reviewing may be conducted to detect potential operational issues by observing the variance in the load/data log results. |
| <image/> | |





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| Report: | 210505-TEC-03-R1-D |
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| Date: | 2022-01-26 |

| Item No: | M02.3C Collector Chain |
|--|---|
| Action Plan & Resolution Timeline Required | |
| Repair Priority | P2 |
| Location Detail:Tank #3 | Description: |
| Location Detail Tank 45 | Description. The collector chains were in fair conditions. Required Action: - All manufacturers' maintenance manuals of moving parts shall be followed. - Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. - Cleaning/removing large scales periodically to reduce the wear and tear. |
| | |

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Project No:210505

| Report: | 210505-TEC-03-R1-D |
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| Date: | 2022-01-26 |

Item No: M03-3C – Drive Chain Action Plan & Resolution Timeline Required: 1 year **Repair Priority: P2** Location Detail:Tank #3 Description: The drive chains were in fair conditions. PA 12 ST -AH 4219 AH 4216 -SC 1204.2) Required Action: MAX L. L. EL. 605.000 250 ST All manufacturers' maintenance manuals of -moving parts shall be followed. HRS 25 ST CROSS SEE (Alignment of the drivers within the driving -UH 249 sprockets configuration shall be checked PA 50 ST EL 601.0 PA 40 ST periodically ensuring there is no excessive TD 200 ST misalignment/friction between chains, sprockets, 0) F EL. 599.800 0 shafts, and drivers. LEV Cleaning/removing large scales periodically to -PS 200 ST reduce the wear and tear. PA 3251.3







| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
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| WHISTLER Of Whistler | Project No:210505 | | Report: Date: | 210505-TEC-03-R1-D 2022-01-26 |
| Item No: Action Plan & Resolution Timeline Re Repair Priority: Location Detail: Tank #3 | quired: Image: state stat | M07-3C – Drive Sprocket 1 year P2 Description: The sprockets on the shaft were in a rusty/scaled condition - An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosic parameters to determine a maintenance plan/possible design modification. - All manufacturers' maintenance manuals of moving parts shall be followed. - Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. - Cleaning/removing scales periodically to reduce the wear and tear. - Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | a rusty/scaled condition. a rusty/scaled condition. tion should be performed over the malfunctioning a along with the corrosion a maintenance lification. enance manuals of owed. vithin the driving hall be checked e is no excessive veen chains, sprockets, s periodically to reduce ets periodically, ensuring ft and fully synchronized cket without any |
| | | CHAIN SAVER RUI | 239 3/4-IONC 27.03 27.03 //2-13.73 # #31635 BOLT PLCS 18.458 | 100 PIECRAL PROCEPTIAL PROC |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | Project No:210505 | | Report: Date: | 210505-TEC-03-R1-D 2022-01-26 | |
| Item No: Action Plan & Resolution Timeline Required: Repair Priority: Location Detail:Tank #3 | | M08-3C – Dished Offset Sprocket 1 year P2 Description: The sprockets on the shaft were in a rusty/scaled condition. Required Action: | | | |
| | An engine for a roc of the mean parameter plan/post All manumeter plan/post All manumeter plan/post Alignmeter sprocket periodic misalign shafts, at Cleaning the weat spin parameter with the slippage | | The investigation should be performed cause analysis over the malfunctioning chanical system along with the corrosion is to determine a maintenance ible design modification. acturers' maintenance manuals of arts shall be followed. of the drivers within the driving configuration shall be checked ly ensuring there is no excessive ient/friction between chains, sprockets, d drivers. removing scales periodically to reduce and tear. g driven sprockets periodically, ensuring xed on the shaft and fully synchronized river shaft/sprocket without any | | |
| | | CAST 750 LINETHINKE BODY | INSET HSION | SPLIT CONTRACT | |

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| WHISTLER Of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D | | |
| | , | | Date: | 2022-01-26 | | |
| Itom No: | | MOD 2C Idlar Spreaks | .4 | | | |
| Action Plan & Resolution Timeline Re | auired: | M09-3C – Idler Sprocket | | | | |
| Repair Priority: | | P1E | | | | |
| Location Detail:Tank #3 | | Description: | | | | |
| | | The sprockets on the shaft were in a rusty/scaled condition. The shaft corrosion potentially caused restrictions in the movement of the sprockets. | | | | |
| | An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | | | | |
| | | UNARY SAVER RUI | 239 2/4 1910 27 105 SET SCREVS- 27 ICS 2 7 ICS 3 435 SOLT 7 CS 3 435 | HIGGAL BROCET HI HIGGAL HIGGAL COPOLY IER NB | | |



Project No:210505



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ort: 210505-TEC-03-R1-D e: 2022-01-26

| Item No: | M10-3C – Shear Pin Sprocket |
|---|---|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | P2 |
| Location Detail:Tank #3 | Description: |
| | The sprockets on the drive motor shaft were in fair condition. |
| | Required Action: All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. |
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Project No:210505



ENGINEERING CONSULTING

| Report: | 210505-TEC-03-R1-D |
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| Date: | 2022-01-26 |



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| WHISTLER Of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |
| Itom No: | | M12.20 Mall Dearing | | | |
| Action Plan & Resolution Timeline Re | auired: | 1 vear | S | | |
| Repair Priority: | | P1E | | | |
| Location Detail:Tank #3 | | Description: | | | |
| | | Required Action: An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting shafts and wall bearings periodically, ensuring they are functioning properly within the whole power transmission system. | | | |
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| Page 101 | | | | 2/7/2022 | |

| Resort Municipality | RMOW: WWTP Pr Tank Asses | imary Sedimentation ssment Report | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |
| Item No: | | M13-3C – Collector We | ar Strip | | |
| Action Plan & Resolution Timeline Re | quired: | 1 year | | | |
| Repair Priority: | | P2 | | | |
| Location Detail:Tank #3 | | Description: | | | |
| LUCAIIOT DEIAI. TAIK #S | | Required Action: - All manufacturers' maintenance manuals of moving parts shall be followed. - Inspection of wear shall be conducted on a regular basis. | | | |
| | | | | | |

| A Re | sort Municipality | RMOW: WWTP Pr Tank Asse | imary Sec ssment Re | mary Sedimentation sment Report ENGINEERING CONS | | GINUITY EERING CONSULTING | |
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| WHISTLER OF | Whistler | Project No:210505 | 5 | | Report: | 210505-TEC-03-R1-D | |
| | | PT0ject N0.210303 | | | Date: | 2022-01-26 | |
| Itom No: | | | M14.20 | Shoffa Dina | | | |
| Action Plan & R | esolution Timeline R | equired: | 1 year | | | 115 | |
| Repair Priority: | | | P2 | | | | |
| Location Detail: | Tank #3 | | Descript | Description: | | | |
| | | Required Action: - An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. - All manufacturers' maintenance manuals of moving parts shall be followed. - Cleaning/removing scales periodically to reduce the wear and tear. | | | | | |
| 12V. 598.500 (PS 200 ST) | 598.500 500 500 500 500 500 500 500 | | Inspecting shafts and wall bearings periodically, ensuring they are functioning properly within the whole power transmission system. | | | | |
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| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D |
| | Project No:210505 | | Date: | 2022-01-26 |
| | 1 | | | |
| Item No: | | M01-4L – Drive Motor / | Drive Gear | box |
| Action Plan & Resolution Timeline Re | equired: | 1 year | | |
| Repair Priority: | | P3 | | |
| | | The motor and gearbox However, they are in a operating continuously. required Action: - All manufactu drivers and m - A mechanical be performed may be condu issues by obs log results. | were in a fa corrosive er Periodic ma rers' mainte otors shall l /electrical e . Detailed d ucted to deta erving the v | air condition. hvironment and is aintenance plan is enance manuals of be followed. ngineering review may ata logging/reviewing ect potential operational variance in the load/data |
| | | | | |



RMOW: WWTP Primary Sedimentation Tank Assessment Report



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2022-01-26

210505-TEC-03-R1-D

Report:

Date:

| Item No: | M02-4L – Collector Chain | | |
|--|---|--|--|
| Action Plan & Resolution Timeline Required: | 1 year | | |
| Repair Priority: | P2 | | |
| Location Detail:Tank #4 | Description: | | |
| B CONSCIENCE OFFICIENCY B CONSCIENCE OFFICIEN | The collector chains were in fair conditions. However, restrictions on the movement of the wall bearings and sprockets caused increased tension and stresses on the equipment. Required Action: All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing large scales periodically to reduce the wear and tear. | | |
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2022-01-26

Report:

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| WHISTLER OF Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D |
| | 1 10ject 100.2 10003 | | Date: | 2022-01-26 |
| | | | | |
| Item No: | | M04-4L – Wear Shoes | | |
| Repair Priority: | equirea. | P2 | | |
| Location Detail:Tank #4 | | Description: | | |
| - <u>11</u> | | The wear shoes were in deficiencies were detection | n fair conditi sted. | ions. No major |
| IN 20 IN 20 IN 20 IN CORRECT BASE IN CONCERNMENT IN CONCERNENT IN CONCERNENT IN CONCERNENT IN CONCERNMENT IN CONCERNE | | Required Action: - All manufactu moving parts - Inspection of regular basis. | irers' mainte shall be foll wear shall b | enance manuals of owed. be conducted on a |
| | | | | |

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| WHISTLER Of Whistler | Project No: 210505 | | Report: Date: | 210505-TEC-03-R1-D 2022-01-26 |
| Item No: Action Plan & Resolution Timeline Re Repair Priority: Location Detail:Tank #4 | equired: | M05-4L – Filler Blocks 1 year P2 Description: The filler blocks were in deficiencies were detect Required Action: - Inspection for periodically. | n fair conditi ted. | ons. No major |
| | | | | |

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Project No:210505



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210505-TEC-03-R1-D

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2022-01-26

Report:

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| Item No: | M07-4L – Drive Sprocket |
|---|--|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Phoney: | P2 Description: |
| Location Detail: Lank #4 | Description: The sprockets on the shaft were in a rusty/scaled condition |
| The second | Required Action: An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any clianage. |
| | sippage. |

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| Item No: | | | |
| Action Plan & Resolution Timeline Required: | | | |
| Repair Priorit | y: | | |
| Location Deta | ail:Tank #4 | | |
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RMOW: WWTP Primary Sedimentation Tank Assessment Report



ENGINEERING CONSULTING

| Report: | 210505-TEC-03-R1-D |
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| Date: | 2022-01-26 |

| Item No: | M08-4L – Dished Offset Sprocket |
|---|--|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | P2 |
| Location Detail:Tank #4 | Description: |
| | The sprockets on the shaft were in a rusty/scaled condition. |
| sprocket assemblies | Required Action: An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. |
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Project No:210505

RMOW: WWTP Primary Sedimentation Tank Assessment Report



| Report: | 210505-TEC-03-R1-D |
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| Date: | 2022-01-26 |

| Item No: | M09-4L – Idler Sprocket |
|---|--|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | P1E |
| Location Detail:Tank #4 | Description: |
| | The sprockets on the shaft were in a rusty/scaled condition. The shaft corrosion potentially caused restrictions in the movement of the sprockets. |
| sprocket assemblies | Required Action: An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. |
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| Resort Municipality | RMOW: WWTP Pr Tank Asse | imary Sedimentation ssment Report | ENGIN | GINUITY EERING CONSULTING |
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| WHISTLER OF Whistler | | | Report: | 210505-TEC-03-R1-D |
| | Project No:210505 | | Date: | 2022-01-26 |
| | • • | | | |
| Item No: | | M10-4L – Shear Pin Sp | procket | |
| Action Plan & Resolution Timeline Re Repair Priority: | equirea: | P2 | | |
| Location Detail:Tank #4 | | Description: | | |
| | | The sprockets on the d condition. Required Action: - All manufactures - Alignment of sprockets comperiodically e misalignment shafts, and d - Cleaning/remetter the wear and | rive motor s urers' mainte shall be foll the drivers v nfiguration s nsuring then /friction betw rivers. noving scale | haft were in fair enance manuals of owed. within the driving hall be checked re is no excessive ween chains, sprockets, s periodically to reduce |
| | | - Inspecting dr they are fixed with the drive slippage. | iven sprocke I on the sha r shaft/spro | ets periodically, ensuring ft and fully synchronized cket without any |
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| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D |
| | Project No:210305 | | Date: | 2022-01-26 |
| | | | | |
| Item No: | | M11-4L – Take Up Ass | embly | |
| Action Plan & Resolution Timeline Re Repair Priority: | equirea: | 1 year | | |
| Location Detail:Tank #4 | | Description: | | |
| LOCAION Detail. Failt #4 | | The Take Up Assembli | es were in f | air condition. |
| | | Required Action: - An engineerin for a root cau of the mecha parameters to plan/possible - All manufactu moving parts - All manufactu moving parts - Alignment of sprockets con assembly sha there is no expletive chai assembly and tensed up protocome chain assembly and the wear and the wear and the set and the | ng investiga ise analysis nical system o determine design mod urers' mainte shall be foll the drivers w nfiguration in all be checke (cessive mis ins, sprocke d drivers and operly. noving scale tear. | tion should be performed over the malfunctioning n along with the corrosion a maintenance dification. enance manuals of owed. within the driving ncluding take up ed periodically ensuring salignment/friction ts, shafts, take up d the driving chain has s periodically to reduce |
| | | | | |

| Resort Municipality | RMOW: WWTP Pr Tank Asse | rimary Sedimentation ssment Report | ENGINUITY ENGINEERING CONSULTING | |
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| | Project No:210505 | | Date: | 2022-01-26 |
| | | | | - |
| Item No: | au vince als | M12-4L – Wall Bearing | S | |
| Repair Priority: | quirea: | P1F | | |
| Location Detail:Tank #4 | | Description: | | |
| | | The wall bearings were Required Action: | in a rusty/s | caled condition. |
| shafts assemblies | | An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting shafts and wall bearings periodically, ensuring they are functioning properly within the whole power transmission system. | | |
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| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | rimary Sedimentation ssment Report | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | Project No:210505 | | Date: | 2022-01-26 | |
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| Item No: | | M13-4L – Collector We | ar Strip | | |
| Action Plan & Resolution Timeline Re | equired: | 1 year | | | |
| Repair Priority: | • | P1R | | | |
| Location Detail:Tank #4 | | Description: | | | |
| | | Missing bolts and cons This lifting off can act a | equently lift s an obstac | ed off strip. le against the flights. | |
| | | Required Action: | | | |
| | | All manufac moving part Cleaning/rei reduce the v Moving of the periodically of the flights malfunctioni system inclu | turers' mai s shall be f moving sca wear and te e flights sh since any a can be fla ing of some uding the V | ntenance manuals of followed. ales periodically to ear. hall be inspected asymmetrical moving igged as e parts of collector Vear strips integrity. | |
| | | | | | |

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| WHISTLER of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D |
| | | | Date: | 2022-01-26 |
| Item No: | · . | M14-4L – Shafts, Pins a | and set colla | ars |
| Action Plan & Resolution Timeline Re Repair Priority: | quirea: | P2 | | |
| Location Detail:Tank #4 | | Description: | | |
| shafts assemblies | | Required Action: - An engineerin for a root caus of the mechar parameters to plan/possible - All manufactur moving parts - Cleaning/rem the wear and - Inspecting sha ensuring they whole power to the share the | ng investigat se analysis nical system o determine design mod irers' mainte shall be follo oving scales tear. afts and wal are function transmission | tion should be performed over the malfunctioning a along with the corrosion a maintenance lification. enance manuals of owed. s periodically to reduce Il bearings periodically, ning properly within the n system. |
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| WHISTLER of Whistler | | Draiget No.210505 | | Report: | 210505-TEC-03-R1-D |
| | | Project No:210505 | | Date: | 2022-01-26 |
| Item No: Action Plan & Resolution Timeli Repair Priority: Location Detail:Tank #4 | ane Re | quired: | M15-4L – Skimmer 1 year P1E Description: The skimmer is in a rus Operations noted withous skimmer, they are prone Required Action: - An engineering for a root cause of the mechar parameters. - Consider a re - All manufactur moving parts | ty/scaled cor ut occasiona e to seizing. Ig investigati se analysis c nical system vised design rers' mainter shall be follo | ndition. I movement of the on should be performed over the malfunctioning along with the corrosion of or better reliability. nance manuals of wed. |
| | | | | | |







Project No:210505



ENGINEERING CONSULTING

| Report: | 210505-TEC-03-R1-D |
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| | |

Date: 2022-01-26

| Item No: | M01-4C – Drive Motor / Drive Gearbox |
|---|---|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | P3 |
| Location Detail:Tank #4 | Description: |
| | The motor and gearbox were in a fair condition. However, they are in a corrosive environment and is operating continuously. Periodic maintenance plan is required. |
| | Required Action: |
| | All manufacturers' maintenance manuals of drivers and motors shall be followed. A mechanical/electrical engineering review may be performed. Detailed data logging/reviewing may be conducted to detect potential operational issues by observing the variance in the load/data log results. |
| | |

| WHISTLER | Resort Municipality of Whistler |
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ENGINEERING CONSULTING

| Report: | 210505-TEC-03-R1-D |
|---------|--------------------|
| Date: | 2022-01-26 |

| Item No: | M02-4C – Collector Chain |
|--|---|
| Action Plan & Resolution Timeline Required: | 1 vear |
| Repair Priority: | P2 |
| Location Detail:Tank #4 | Description: |
| 34.12.31 SC 12042 GZ 220 SC 12032 SC 12042 GZ 220 SC 12042 GZ 220 SC 12042 SC 12042 SC 12042 SC 12042 | The collector chains were in fair conditions. |
| 220 3T COLLECTOR SEDIMENTATION NO. COLLECTOR SEDIMENTATION COLLECTOR SEDIMENTATION COLLECTOR SEDIMENTATION COLLECTOR SEDIMENTATION COLLECTOR SEDIMENTATION COLLECTOR SEDIMENTATION COLLECTOR SEDIMENTATION COLLECTOR SEDIMENTATION | Required Action: All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing large scales periodically to reduce the wear and tear. |
| | |

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ENGINEERING CONSULTING

Project No:210505

| Report: | 210505-TEC-03-R1-D |
|---------|--------------------|
| Date: | 2022-01-26 |

Item No: M03-4C – Drive Chain Action Plan & Resolution Timeline Required: 1 year Repair Priority: **P2** Location Detail:Tank #4 Description: The drive chains were in fair conditions. PA 12 ST -AH 4219 NEW AH 4216 FOA 600 FRP Required Action: -SC 1204.2) GV 211 All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving 250 ST - \boxtimes DS 100 S sprockets configuration shall be checked NEW P periodically ensuring there is no excessive HRS 25 ST CROSS SEE (UH 249 misalignment/friction between chains, sprockets, CROSS PA 50 ST shafts, and drivers. TD 200 ST Cleaning/removing large scales periodically to 0 F EL. 599.800 0 reduce the wear and tear. W 12 ST PS 200 ST PA 3251.3

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | EN | GINUITY EERING CONSULTING | |
|--|--|--|--|---|--|
| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |
| Item No [.] | | M04-4C - Wear Shoes | | | |
| Action Plan & Resolution Timeline Re | quired: | 1 year | | | |
| Repair Priority: | · | P2 | | | |
| Location Detail:Tank #4 | | Description: | | | |
| A Image: A to a set of the | NTW CONCRETE BASE FOUR CONCRETE FOUR CONCRETE FOUR CONCRETE FOUR CONCRETE | deficiencies were detec | ted. | ons. No major | |
| | DUIDE CE 1201 TURK TURK DE 100 SI DE 100 SI CE 10 | Required Action: - All manufactu moving parts - Inspection of regular basis. | irers' mainte shall be foll wear shall b | enance manuals of owed. be conducted on a | |
| | | | | | |



| Resort Municipality | Tank Assessment Report | | ENGINEERING CONSULTING | | |
|--------------------------------------|---|---|--|---|--|
| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | Project No:210505 | | Date: | 2022-01-26 | |
| | | | | | |
| Item No: | | M06-4C – C-Channel F | iberglass Fli | ights | |
| Action Plan & Resolution Timeline Re | equired: | 1 year | | | |
| Repair Priority: | | P2 | | | |
| | NEW FORCHETE RAGE (CT 1704.2) | The flight assembly wer | re in fair con | ditions. | |
| | Image: Construction Construction Image: Construction Construc | Required Action: - An engineerin for a root cause of the mechar parameters to plan/possible - All manufactur moving parts - Alignment of the sprockets com periodically en misalignment shafts, and dr - Cleaning/remereering | ig investigat se analysis o determine design mod rers' mainte shall be follo the drivers v ifiguration sl nsuring ther friction betv ivers. oving large ear and tear | ion shall be performed over the malfunctioning a long with the corrosion a maintenance ification. nance manuals of owed. vithin the driving hall be checked e is no excessive veen chains, sprockets, scales periodically to | |
| | | | | | |

RMOW: WWTP Primary Sedimentation

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| Resort Municipality | RMOW: WWTP Primary Sedimenta Tank Assessment Report | | | GINUITY EERING CONSULTING |
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| WHISTLER OF Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D |
| | | | Date: | 2022-01-26 |
| Item No: Action Plan & Resolution Timeline Re | quired: | M07-4C – Drive Sprock 1 year | et | |
| Repair Priority: | | P2 | | |
| Location Detail:Tank #4 | | Description: The sprockets on the sh | naft were in a | a rusty/scaled condition. |
| ALL 23 C 12012 C 12012 C 2120 C 21 | | Required Action: An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | |
| | | CHAIN SAVER RUI. | 139 3/4-10NC #31453 Set SCREVI3 2 PICS PICS PICS 1438 | |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
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| WHISTLER Of Whistler | Design Nov240505 | | Report: | 210505-TEC-03-R1-D |
| | | | Date: | 2022-01-26 |
| Hom No. | | M00 40 Distant Offer | 1 On an all a t | |
| Item No: Action Plan & Resolution Timeline Re | auired: | MU8-4C – Dished Offse | t Sprocket | |
| Repair Priority: | | P2 | | |
| Location Detail:Tank #4 | | Description: | | |
| Location Detail. Tank #4 | | Required Action: - An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. - All manufacturers' maintenance manuals of moving parts shall be followed. - Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. - Cleaning/removing scales periodically to reduce the wear and tear. - Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | |
| | | | IET SIGN 903.075 907.00 | SPLIT BOR HTCH CAA HCH CAAA |

| Resort Municipality | RMOW: WWTP Pr Tank Asses | imary Sedimentation ssment Report | ENGINUITY ENGINEERING CONSULTING | |
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| WHISTLER OF Whistler | Decided No.040505 | | Report: | 210505-TEC-03-R1-D |
| | FI0ject No.210303 | | Date: | 2022-01-26 |
| Item No: | | M09-1C - Idler Sprocke | .+ | |
| Action Plan & Resolution Timeline Re | quired: | 1 year | , | |
| Repair Priority: | | P1E Description: | | |
| | HER CONRETE BASE SC 1202 FUTURE CC 1202 FUTURE CC 1202 FUTURE CC 1202 FUTURE CC 1202 FUTURE FUTURE CC 1202 FUTURE | The sprockets on the sh The shaft corrosion pote movement of the sprock Required Action: - An engineerin for a root caus of the mechar parameters to plan/possible | naft were in a entially cause (ets. g investigati se analysis c nical system determine a design modi | a rusty/scaled condition. ed restrictions in the on should be performed over the malfunctioning along with the corrosion a maintenance fication. |
| | | All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. | | |
| | | CHARI SAVER RU | 39 3/4104C #31653 95 SCREWS 2 PLCS 2-13 43 # 81653 BOLT 1CS | |



Project No:210505



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| Report: | 210505-TEC-03-R1-D |
|---------|--------------------|
| Date: | 2022-01-26 |

| Item No: | M11-4C – Take Up Assembly |
|---|---|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | P2 |
| Location Detail:Tank #4 | Description: |
| | The Take Up Assemblies were in fair condition. Required Action: All manufacturers' maintenance manuals of moving parts shall be followed. Alignment of the drivers within the driving sprockets configuration shall be checked periodically ensuring there is no excessive misalignment/friction between chains, sprockets, shafts, and drivers. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting driven sprockets periodically, ensuring they are fixed on the shaft and fully synchronized with the driver shaft/sprocket without any slippage. |
| | |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER OF Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | Project No: 210505 | | Date: | 2022-01-26 | |
| | | | 1 | | |
| Item No: | auiradu | M12-4C – Wall Bearing | S | | |
| Repair Priority: | equirea. | P1E | | | |
| Location Detail:Tank #4 | | Description: | | | |
| | HEW CONCRETE Image: Concrete <t< td=""><td colspan="2">Description. The wall bearings were in a rusty/scaled condition. Required Action: - An engineering investigation should be perform for a root cause analysis over the malfunction of the mechanical system along with the correct parameters to determine a maintenance plan/possible design modification. - All manufacturers' maintenance manuals of moving parts shall be followed. - Cleaning/removing scales periodically to redu the wear and tear. - Inspecting shafts and wall bearings periodical ensuring they are functioning properly within t whole power transmission system.</td><td>ion should be performed over the malfunctioning along with the corrosion a maintenance ification. nance manuals of owed. s periodically to reduce I bearings periodically, ning properly within the n system.</td></t<> | Description. The wall bearings were in a rusty/scaled condition. Required Action: - An engineering investigation should be perform for a root cause analysis over the malfunction of the mechanical system along with the correct parameters to determine a maintenance plan/possible design modification. - All manufacturers' maintenance manuals of moving parts shall be followed. - Cleaning/removing scales periodically to redu the wear and tear. - Inspecting shafts and wall bearings periodical ensuring they are functioning properly within t whole power transmission system. | | ion should be performed over the malfunctioning along with the corrosion a maintenance ification. nance manuals of owed. s periodically to reduce I bearings periodically, ning properly within the n system. | |
| <image/> | | | | | |
| Page 130 | | | | 2/7/2022 | |

| Resort Municipality | RMOW: WWTP Pr Tank Asses | imary Sedimentation ssment Report | ENGINUITY ENGINEERING CONSULTING | | |
|---|-----------------------------|--|-------------------------------------|--------------------|--|
| WHISTLER Of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |
| Item No: | | M13-4C – Collector We | ear Strip | | |
| Action Plan & Resolution Timeline Re | quired: | 1 year | | | |
| Location Detail:Tank #4 | | Description: | | | |
| | | Not accessible. | | | |
| Image: second constraints I | | Required Action: - All manufacturers' maintenance manuals of moving parts shall be followed. - Inspection of wear shall be conducted on a regular basis. | | | |
| | | | | | |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
|--|--|--|-------------------------------------|--------------------|--|
| WHISTLER OF Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | Project No:210505 | | Date: | 2022-01-26 | |
| | | | | | |
| Item No: | auirod | M14-4C – Shafts, Pins | and set coll | ars | |
| Repair Priority: | quilea. | P2 | | | |
| Location Detail:Tank #4 | | Description: | | | |
| 1 Image: Strate st | | The shafts were in a rus | sty/scaled c | ondition. | |
| RUTHER | | Required Action: An engineering investigation should be performed for a root cause analysis over the malfunctioning of the mechanical system along with the corrosion parameters to determine a maintenance plan/possible design modification. All manufacturers' maintenance manuals of moving parts shall be followed. Cleaning/removing scales periodically to reduce the wear and tear. Inspecting shafts and wall bearings periodically, ensuring they are functioning properly within the whole power transmission system. | | | |
| | | | | | |
| Page 132 | | | | 0,000 | |
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ENGINEERING CONSULTING

Project No:210505

Report: 210505-TEC-03-R1-D Date: 2022-01-26







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Project No:210505

| Item No: | M16-1I |
|--|---|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | P2 |
| Location Detail:Tank #1 | Description: |
| HICK 63 ST W 25 ST | GV 201, GV 202, GV 203 Scales at the gates and the gate valves blades was observed. Actuators are in a fair condition. |
| Max LL Max LL | An engineering investigation should be performed for overall Gate Valves performances/integrity. All manufacturers' maintenance manuals of the valves and actuators shall be followed. Cleaning periodically the scales on the gates and blades inside the tank can increase the valve/actuator performance and sealing properties. |
| Main Gate valves and actuators (Inlet valves) | |
| <image/> | <image/> |





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Project No:210505
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| Item No: | M16-2I |
|---|--|
| Action Plan & Resolution Timeline Required: | 1 year |
| Repair Priority: | P1E |
| Location Detail:Tank #2 | Description: |
| HWS 75 ST AH 4218 HWS 75 ST AK 75 ST HW 75 ST HW 75 ST HW 7 | GV 204, GV 206 Scales at the gates and the gate valves blades was observed. Actuators are in a fair condition. GV 205 A displaced gasket was observed. Repair is required. Required Action: An engineering investigation should be performed for overall Gate Valves performances/integrity. All manufacturers' maintenance manuals of the valves and actuators shall be followed. Cleaning periodically the scales on the gates and blades inside the tank can increase the valve/actuator performance and sealing properties. |
| | |
| | GV 204 GV 206 |
| | GV 205 |
| | |





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Project No:210505





RMOW: WWTP Primary Sedimentation



| | Resort Municipality | Tank Assessment Report Project No:210505 | | ENGINEERING CONSULTING | | |
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| WHISTLER | of Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | | | | Date: | 2022-01-26 | |
| | | | | | | |
| Item No: | | | M16-4I | | | |
| Action Plan | & Resolution Timeline Re | equired: | 1 year | | | |
| Repair Prio | rity: | | P2 | | | |
| Location De | etail:Tank #4 | | Description: | | | |
| EL 610.500 350x300 HRR 63 5T HRR 63 5T HRR 63 5T GG 1203.2 | | GV 210, GV 211, GV 212 Scales at the gates and the gate valves blades was observed. Actuators are in a fair condition. | | | | |
| | (<u>SC 1204.2</u>) (FUTURE) | | Required Action: | | | |
| PRIMARY GALLERY PRIMARY GALLERY PRIMARY GALLERY PRIMARY GALLERY PRIMARY GALLERY NV. EL. 600.400 PRIMARY GALLERY NV. EL. 599.000 PRIMARY GALLERY NV. EL. 599.000 PRIMARY GALLERY MAIN Gate valves and actuators (Inlet valves) | | An engineering investigation should be performed for overall Gate Valves performances/integrity. All manufacturers' maintenance manuals of the valves and actuators shall be followed. Cleaning periodically the scales on the gates and blades inside the tank can increase the valve/actuator performance and sealing properties. | | | | |
| | | | GV 210 | | GV 211 | |









| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
|---|--|---|-------------------------------------|--------------------|---|
| WHISTLER Of Whistler | Project No: 210505 | | Report: | 210505-TEC-03-R1-D | |
| | | | Date: | 2022-01-26 | |
| Item No: | | M16-10 | | | |
| Action Plan & Resolution Timeline Re | quired: | 1 year | | | |
| Repair Priority: | | P2 Description: | | | |
| T-HEAD OPERATOR (TYP.) 606.000 300 ST WEIR SEE (1206) 10 ST EL. 605.000 (YP.) | | GV 213, GV 214, GV 215 Scales at the gates and the gate valves blades was observed. Actuators are in a fair condition. Required Action: - An engineering investigation should be performed for overall Gate Valves performances/integrity. - All manufacturers' maintenance manuals of the valves and actuators shall be followed. - Cleaning periodically the scales on the gates and blades inside the tank can increase the valve/actuator performance and sealing properties. | | | |
| | | | | | Main Gate valves and actuators (Outlet va |
| GV 213 G | V 214 | | GV 215 | | |





ENGINEERING CONSULTING

Project No:210505



| WIISTLE Of Whistler Project No:210505 Report: 210605-TEC-03-R1-D Item No: Action Plan & Resolution Timeline Required: 1 year Repair Priority: P2 Location Datail: Tank #3 CV 219, GV 220, GV 221 Scales at the gates and the gate valves blades was observed. Actuators are in a fair condition. Action Datail: Tank #3 CV 219, GV 220, GV 221 Scales at the gates and the gate valves blades was observed. Actuators are in a fair condition. Repair Priority: P2 Location Datail: Tank #3 CV 219, GV 220, GV 221 Scales at the gates and blades was observed. Actuators are in a fair condition. Repair Priority: P2 Location Datail: Tank #3 CV 219, GV 220, GV 221 Scales at the gates and blades was observed. Actuators shall be followed. All manufacturers maintenance manuals of the valves and actuators shall be followed. Repair Priority: Cale valves and actuators (Outlet valves) Clearing periodically the gates and blades inside the tank can increase the valves/actuator performance and sealing properties. Struct GV 219 GV 220 GV 219 GV 220 GV 221 Scale valves and actuators (Outlet valves) Scale valves va | Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
|---|---|--|---|-------------------------------------|--------------------|--|
| Project No.2 Justs Date: 2022-01-26 Item No: M16-3.0 Action Plan & Resolution Timeline Required: 1 year Repair Photo: P2 Location Detail: Tank #3 Description: GV 219 GV 220 GV 221 Scales at the gate valves blades was observed. Actuators are in a fair condition. Action Detail: Tank #3 Coverall Gate Valves performances/integrity. Autor of the gate and the gate valves blades was observed. Actuators are in a fair condition. Required Action: *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** *** •** •** | WHISTLER Of Whistler | Project No: 210505 | | Report: | 210505-TEC-03-R1-D | |
| Item No: M1630 Action Plan & Resolution Timeline Required: 1 year Repair Priority: P2 Location Detail:Tank #3 Description: xer Image: Construction of the set values blades was observed. Actuators are in a fair condition. xer Image: Construction of the set values blades was observed. Actuators are in a fair condition. xer Image: Construction of the set values blades was observed. Actuators are in a fair condition. xer Image: Construction of the set values blades was observed. Actuators are in a fair condition. xer Image: Construction of the set values blades was observed. Actuators and blades inside the tank can increase the values and actuators shall be followed. xer Cleaning periodically the scales on the gates and blades inside the tank can increase the values and actuators shall be followed. xer Image: Construction of the values of the values of the values and actuators (Outlet values) Wain Gate values and actuators (Outlet values) CV 219 GV 219 GV 220 GV 219 GV 220 GV 219 GV 220 | | | | Date: | 2022-01-26 | |
| Item No: M16:30 Action Plan & Resolution Timeline Required: 1 year Repair Priority: P2 Location Detail Tank #3 CV 219, CV 220, CV 221 Scles at the gates and the gate valves blades was observed. Actuators are in a fair condition. Required Action: Arriver Arriver Arriver Image: State of the gate valves blades was observed. Actuators are in a fair condition. Required Action: Arriver Arriver Arriver Image: State of the gate valves blades was observed. Actuators shall be performed for overall Gate Valves performances/integrity. All manufactures maintenance manuals of the valves and actuators shall be followed. Communicativers Arriver An engineering investigation should be performed for overall Gate Valves performance and sealing properties. Barriver Main Cate valves and actuators (Outlet valves) All manufactures maintenance manuals of the valveactuator performance and sealing properties. GV 219 GV 220 GV 221 | | | | | | |
| Action Plan & Resolution Timeline Required: Repair Princip Total Tank #3 Second the gate values blades was observed. Actuators are in a fair condition. Required Action: Action Plan Use the gate values blades was observed. Actuators are in a fair condition. Required Action: Actuators shall be followed Cleaning periodically the scales on the gates and baseling properties. | Item No: | | M16-3O | | | |
| Repair Priority: Description: Location Detail: Tank #3 Description: States at the gate valves blades was observed. Actuators are in a fair condition. Scales at the gate valves blades was observed. Actuators are in a fair condition. Required Action: - An engineering investigation should be performed for overall Cate Valves performance manuals of the valves and cluators shall be followed. - Cleaning periodically the scales on the gates and blades inside the tank can increase the valves and cluators (Outlet valves) Wain Gate valves and actuators (Outlet valves) GV 219 GV 220 GV 219 GV 220 GV 220 | Action Plan & Resolution Timeline Required: | | 1 year | | | |
| Set provide GV 219, GV 220, GV 221 Scales at the gates and the gate values blades was observed. Actuators are in a fair condition. Required Action: Art regimeering investigation should be performed for overall Gate Values performances/integrity. All manufacturers' maintenance manuals of the values and actuators shall be followed. Celoning periodically the scales on the gates and blades inside the tank can increase the values and actuators (Outlet values) | Repair Phonty: | | P2 Description: | | | |
| Required Action: Image: Construction of the sector of the secto | Location Detail: Lank #3 | | GV 219, GV 220, GV 221 Scales at the gates and the gate valves blades was observed. Actuators are in a fair condition. | | | |
| GV 219 GV 220 GV 219 GV 221 | | | An engineering investigation should be performed for overall Gate Valves performances/integrity. All manufacturers' maintenance manuals of the valves and actuators shall be followed. Cleaning periodically the scales on the gates and blades inside the tank can increase the valve/actuator performance and sealing properties. | | | |
| | GV 219 | GV 220 | | GV 221 | | |





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Project No:210505
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| Resort Municipality | / Tank Assessment Report | | ENGINEERING CONSULTING | | |
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| WHISTLER OF Whistler | | | Report: | 210505-TEC-03-R1-D | |
| | Project No:210505 | | Date: | 2022-01-26 | |
| | | [<i>i</i> - | | | |
| Item No: | auirod: | M17 | | | |
| Repair Priority: | quirea. | P1F | | | |
| Location Detail:Tank #1. 3 and 4 | | Description: | | | |
| | | Scales and possible corrosion for some portions of the pipes and supports that did not have proper sleeve were observable in the tank areas. | | | |
| | | Required Action: | | | |
| Process Piping | | An engineering investigation/specific piping inspection/NDE should be performed for determining the remaining life span of the piping system in those areas. Cleaning periodically the scales and annually inspection of the piping system is recommended to check the corrosion level and piping system integrity | | | |
| <image/> | | | | | |

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| Resort Municipality | RMOW: WWTF Tank As | ntation | ENGINI | GINUITY EERING CONSULTING | | | | |
|---------------------------------------|-------------------------------|----------------------------------|--|------------------------------|----------------------|--|--|--|
| WHISTLER Of Whistler | Project No:2105 | 05 | | Report: | 210505-TEC-03-R1-D | | | |
| | | 05 | | Date: | 2022-01-26 | | | |
| Item No: | | | 503 | | | | | |
| Action Plan & Resolution Timeline Reg | uired: | | 1 vear | , | | | | |
| Repair Priority: | | | P2 | | | | | |
| Location Detail:Tank #1 | | Description: | | | | | | |
| | | Concrete Deterio | ration —Le | eaching Action | on and Etch Concrete | | | |
| | ENTER OF FERMENTER EL 601.500 | Required Ac | tion: | | | | | |
| | | - NDT tes | st to ident | ify Cover an | d Possible steel | | | |
| Concrete wall near outlet gate | | corrosic - Destruc especia | Destructive test to find Alkalinity of concrete especially near to exposed formwork support. | | | | | |
| | | | | | | | | |
| Remarks: | | | | | | | | |
| | | | | | | | | |

| Resort Municipality | RMOW: WWTF Tank As | Primary Sedimer sessment Report | ntation | ENGINUITY ENGINEERING CONSULTING | | |
|--|------------------------------|--|--------------|-------------------------------------|--------------------|--|
| WHISTLER Of Whistler | Drojact No. 2105 | 05 | | Report: | 210505-TEC-03-R1-D | |
| | Project No:2105 | 05 | | Date: | 2022-01-26 | |
| | | | | | | |
| Item No: | | | S04 | | | |
| Action Plan & Resolution Timeline Requ | uired: | | 1 year | | | |
| Repair Priority: | | Description | PZ | | | |
| | | Concrete Deterior | ation –Le | eaching Acti | ion | |
| | | | | | | |
| | TARK COFFEDWENTER EL 601.500 | Required Ac | tion: | if Courses | ad Daasible staal | |
| | | - NDT tes | n no ident | ity Cover ai | nd Possible steel | |
| Concrete Roof. access lid | | - Destruc | tive test to | o find Alkali | inity of concrete | |
| Multiple Location | | especially near to exposed formwork support. | | | | |
| | | | | | | |
| | | | | | | |

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| WHISTLER Of Whistler | Droject No. 2105 | 05 | | Report: | 210505-TEC-03-R1-D |
| | | 05 | | Date: | 2022-01-26 |
| Iters No. | | | 005 | | |
| Action Plan & Resolution Timeline Regu | lired. | | 505 1 vear | | |
| Repair Priority: | dired. | | P2 | | |
| Location Detail:Tank #1 | | Description: | | | |
| | | Concrete Deterior | ation –Et | ch Concrete | |
| | | | | | |
| | TER COT FEMELATER EL. 601.500 | Required Ac | tion: | | |
| | | - NDT tes | st to ident | ify Cover an | d Possible steel |
| Side View Concrete Wall- Multiple Location | | - Destruc | tive test t | o find Alkalir | nity of concrete |
| | | especia | lly near to | exposed for | rmwork support. |
| | | | | | |
| Remarks: | | | | | |
| | | | | | |

| Resort Municipality | RMOW: WWTP Primary Sedimentati Tank Assessment Report | | | ENGINI | GINUITY EERING CONSULTING |
|--|--|--------------|-------------|---------------|------------------------------|
| WHISTLER Of Whistler | Proiect No:2105 | 05 | | Report: | 210505-TEC-03-R1-D |
| | ., | | | Date: | 2022-01-26 |
| Item No: | Itom No: | | | | |
| Action Plan & Resolution Timeline Reg | uired: | | 1 vear | , | |
| Repair Priority: | | | P2 | | |
| Location Detail:Tank #1 | | Description: | | | |
| | Concrete Deterior Concrete | ration –At | orasion Dam | nage and Etch | |
| | | | | | |
| | 9 10 150 10 150 10 10 10 10 10 10 10 10 10 10 10 10 10 | Required Ac | tion: | | |
| | | - NDT tes | st to ident | ify Cover an | d Possible steel |
| | | corrosic | on. | , | |
| Concrete Wall- Bottom of tank-Multiple | Location | - Destruc | tive test t | o find Alkali | nity of concrete |
| | | especia | iny near io | o exposed id | onnwork support. |
| | | | | | |
| | | | | | |
| Remarks: | | | | | |

| Resort Municipality | RMOW: WWTP Primary Sec Tank Assessment R | | ntation | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER of Whistler | Project No:2105 | 05 | | Report: | 210505-TEC-03-R1-D | |
| | | | | Dale. | 2022-01-20 | |
| Item No: | | | S07 | | | |
| Action Plan & Resolution Timeline Requ | uired: | | 1 year | | | |
| Repair Priority: | | Description: | P2 | | | |
| | 446405E \$53076628 | Concrete Deterio Leaching Action | ration –At | prasion Dan | nage, Etch Concrete and | |
| Side View Concrete Wall- Bottom of tank-Multiple | Location | Required Ac - NDT te corrosic - Destruc especia | ction: st to ident on. tive test t Ily near to | ify Cover ar o find Alkali o exposed f | nd Possible steel nity of concrete ormwork support. | |
| | | | | | | |
| | | | | | | |
| Remarks: | | 1 | | | | |
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| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ntation | ENGIN | GINUITY EERING CONSULTING |
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| WHISTLER Of Whistler | Project No:2105 | 05 | | Report: | 210505-TEC-03-R1-D |
| | | | | Dale. | 2022-01-20 |
| Item No: | | | S08 | | |
| Action Plan & Resolution Timeline Requ | uired: | | 45 day | /S | |
| Repair Priority: | | Description | P1E | | |
| | Totolozziareteze | Wood Screen – d Fasteners on woo replacement. | eterioratii od screen | ng. – corroded | and require |
| | | | | | |
| | TANK | Required Ac | tion: | | to with factors |
| Side View Rotted Wood Screen | | - Replace Conside HDP. | e wood so er using a | reen compl different ty | ete with fasteners. be of material such as |
| | | | | | |
| | | | | | |
| Remarks: | | | | | |
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| Resort Municipality | RMOW: WWTF Tank As | P Primary Sedime ssessment Report | ntation | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | Project No:2105 | 05 | | Report: | 210505-TEC-03-R1-D | |
| | | | | Date: | 2022-01-26 | |
| Item No [.] | | | S09 | | | |
| Action Plan & Resolution Timeline Requ | uired: | | 1 year | , | | |
| Repair Priority: | | | P2 | | | |
| Location Detail:Tank #1 | 4 | Description: | | | | |
| Top View | | Crack in Grout Required Ac | tion: Grout. | | | |
| | | | | | | |
| Remarks: | | | | | | |
| | | | | | | |

| Resort Municipality | RMOW: WWTP Primary Sedimentat Tank Assessment Report | | | t ENGINE | | | |
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| WHISTLER Of Whistler | Project No:2105 | 05 | | Report: | 210505-TEC-03-R1-D | | |
| | | | | Date. | 2022-01-20 | | |
| Item No: | | | S10 | | | | |
| Action Plan & Resolution Timeline Requ | uired: | | 1 year | , | | | |
| Repair Priority: | | | P2 | | | | |
| Location Detail:Tank #2 | | Description: | | | | | |
| | | Concrete Deterioi Concrete | ration —At | brasion Dam | lage and Etch | | |
| | | | | | | | |
| L. e1.00 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 | TER OF FEMALENTER EL. 601.500 | Required Ac | tion: | | | | |
| | | - NDT tes | st to ident | ify Cover an | id Possible steel | | |
| Side View | | corrosic | on. | a final Alliali | alter of a company | | |
| Concrete Wall- Bottom of tank-Multiple | Location | Destructive test to find Alkalinity of concrete especially near to exposed formwork support. | | | | | |
| | | | | | | | |
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| Resort Municipality | RMOW: WWTP Primary Sed Tank Assessment Re | | ntation | ENGINUITY ENGINEERING CONSULTING | | | |
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| WHISTLER Of Whistler | | | | Report: | 210505-TEC-03-R1-D | | |
| | 110ject No.2100 | 00 | | Date: | 2022-01-26 | | |
| Item No: | | | S11 | | | | |
| Action Plan & Resolution Timeline Requ | uired: | | 1 year | | | | |
| Repair Priority: | | | P2 | | | | |
| Location Detail:Tank #2 | 4 | Description: | | · D | | | |
| | фексионала 4 скононнала 4 Ф Ф Ф Ф Ф | Concrete Deterior | ration —Ai | orasion Dan | lage and Etch | | |
| | | | | | | | |
| | TER COT FERMUNTER EL 601.500 | Required Ac | ction: | | d Dessible steel | | |
| | | - NDT tes | st to ident on. | iny Cover ar | 10 Possible steel | | |
| Concrete Wall- Bottom of tank-Multiple | Location | Destructive test to find Alkalinity of concrete especially near to exposed formwork support. | | | | | |
| | | | | | | | |
| | | | | | | | |

| Resort Municipality | RMOW: WWTF Tank As | ntation | ENGIN | GINUITY EERING CONSULTING | | | |
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| WHISTLER Of Whistler | Project No: 210505 | | | Report: | 210505-TEC-03-R1-D | | |
| | | | | Date: | 2022-01-26 | | |
| | | | 040 | | | | |
| Item No: Action Plan & Desclution Timeling Desc | uirodi | | \$12 4 voor | | | | |
| Repair Priority: | | | P2 | | | | |
| Location Detail Tank #2 | | Description: | 12 | | | | |
| | Concrete Deterior | ration –Le | eaching Action | n | | | |
| | | | | | | | |
| | NTER OF FEMALNTER EL 601.500 | Required Ac | ction: | | | | |
| 20 CONVOCODO 10 10 10 10 10 10 10 10 10 10 10 10 10 | | - NDT tes | st to ident | ify Cover ar | id Possible steel | | |
| Side View Concrete Wall, Bottom of tank Multiple | Location | - Destruc |)N. •tive test t | o find Alkali | nity of concrete | | |
| | Location | especially near to exposed formwork support. | | | | | |
| | | | | | | | |
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| WHISTLER Of Whistler | | | | Report: | 210505-TEC-03-R1-D | |
| | | | | Date: | 2022-01-26 | |
| Item No [.] | | | S13 | | | |
| Action Plan & Resolution Timeline Requ | uired: | | 1 year | | | |
| Repair Priority: | | | P2 | | | |
| Location Detail:Tank #2 | | Description: | | | | |
| | | Concrete Deterio | ration –Le | eaching Acti | on | |
| | | | | | | |
| | TER OF FEMENTER EL 601.500 | Required Ac | ction: | | | |
| | | - NDT te | st to iden | tify Cover ar | nd Possible steel | |
| Side View Concrete Wall- Bottom of tank-Multiple | Location | corrosio - Destruc especia | on. ctive test f ally near to | o find Alkali c exposed fo | nity of concrete ormwork support. | |
| | | | | | | |
| | | | | | | |
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| Resort Municipality | RMOW: WWTP Primary Sedimentation | | | ion ENGINUIT | | |
|--|----------------------------------|---|--------------------------|-------------------|------------------------|--|
| WHISTLER OF Whistler | Project No:2105 | 05 | | Report: | 210505-TEC-03-R1-D | |
| | , | | | Date: | 2022-01-26 | |
| Item No: | | | S1/ | | | |
| Action Plan & Resolution Timeline Regi | uired: | | 45 day | /S | | |
| Repair Priority: | | | P1E | - | | |
| Location Detail:Tank #2 | | Description: | | | | |
| | TATGIOSE STOLES | Wood Screen – d Fasteners on woo replacement. | eterioratii od screen | ng. – corroded | and require | |
| | | | | | | |
| | TER COF FERMENTER EL. 601.500 | Required Ac | tion: | | | |
| | | - Replace | e wood so | reen compl | ete with fasteners. | |
| Side View Potted Wood Screen | | Conside HDP | er using a | different ty | pe of material such as | |
| Rolled Wood Scieen | | 101. | | | | |
| <image/> | | | | | | |



| Resort Municipality | RMOW: WWTP Primary Se Tank Assessment R | | Primary Sedimentation sessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | Project No:2105 | Drojaat No: 210505 | | Report: | 210505-TEC-03-R1-D | | |
| | 1 10jeet No.2 10000 | | | Date: | 2022-01-26 | | |
| Itom No: | | | Q16 | | | | |
| Action Plan & Resolution Timeline Reg | lired. | | 1 vear | , | | | |
| Repair Priority: | | | P2 | | | | |
| Location Detail:Tank #3 | | Description: | | | | | |
| Too View Side View Concrete Wall | | Description: Concrete Deterioration –Etch Damage Required Action: - NDT test to identify Cover and Possible steel corrosion. - Destructive test to find Alkalinity of concrete. - Anchorage review | | | | | |
| | | | | | | | |
| | | | | | | | |
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| Resort Municipality | RMOW: WWTF Tank As | Primary Sedimentation sessment Report | | ENGINUITY ENGINEERING CONSULTING | | | | |
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| WHISTLER Of Whistler | Project No:2105 | 05 | | Report: | 210505-TEC-03-R1-D | | | |
| | | | L a / = | Date: | 2022-01-26 | | | |
| Item No: | due de | | S17 | | | | | |
| Action Plan & Resolution Timeline Requerces | ured: | | 1 year | | | | | |
| Location Detail Tank #3 | | Description: | 12 | | | | | |
| Location Detail: I ank #3 | | Concrete Deterio | ration –Et | ch Damage | | | | |
| | 1500 100 (F5 5209) F2 603.700 5 5208) F2 603.700 5 5208 | Required Ac | ction. | | | | | |
| | | - NDT te | st to ident | ifv Cover an | d Possible steel | | | |
| | | corrosic | on. | ily covol al | | | | |
| Concrete Wall and connection | | - Destruc | ctive test t | o find Alkalii | nity of concrete. | | | |
| | | | | - Anchorage review. | | | | |
| | | | | | | | | |
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| Resort Municipality | RMOW: WWTF Tank As | P Primary Sedimentation ssessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | Project No:2105 | 05 | | Report: | 210505-TEC-03-R1-D | |
| | -, | | | Date: | 2022-01-26 | |
| Item No: | | S19 | | | | |
| Action Plan & Resolution Timeline Requ | uired: | | 1 year | | | |
| Repair Priority: | | Description: | PZ | | | |
| Location Detail: I ank #3 | | Concrete Deterior Concrete – Corros | ration – Lo sion on S | eaching Act teel Frame | ion- Damage on | |
| EL 60.000 - 100 - | TRR COT FERMENTER EL 601.500 | Required Ac | tion: | :f. Causa an | d Dessible steel | |
| | | - NDT tes corrosio | st to ident on. | ity Cover ar | 10 Possible steel | |
| Concrete Roof – Roof Hatch | Destructive test to find Alkalinity of concrete. Fix Concrete. Paint - Repair Steel Frame | | | | | |
| | | | | | | |
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| Resort Municipality | RMOW: WWTF Tank As | ntation t | GINUITY EERING CONSULTING | | | |
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| WHISTLER of Whistler | Project No:2105 | Project No:210505 | | Report: | 210505-TEC-03-R1-D | |
| | | | | Date: | 2022-01-26 | |
| Item No: | | | S20 | | | |
| Action Plan & Resolution Timeline Req | uired: | | 1 year | | | |
| Repair Priority: | | | P2 | | | |
| Location Detail:Tank #3 | | Description: | | | | |
| | | Concrete Deterio | ration – L | eaching Ac | tion | |
| | | | | | | |
| | TARE EL 601.500 | Required Ac | | 1.0 | | |
| Сами В. 598,500 L. 598,5000 | | - NDT tes | st to ident | ity Cover a | nd Possible steel | |
| Side View Congrate Roof Multiple Logation | | - Destruc | DN. Stive test t | o find Alkali | inity of concrete | |
| | | | | | | |
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| Resort Municipality | RMOW: WWTF Tank As | Primary Sedimentation ssessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | Droiget No. 210505 | | | Report: | 210505-TEC-03-R1-D | |
| | | 05 | | Date: | 2022-01-26 | |
| Item No: | | | S21 | | | |
| Action Plan & Resolution Timeline Requ | uired: | | 1 year | • | | |
| Repair Priority: | | | P2 | | | |
| Location Detail:Tank #3 | | Description: | | | | |
| | | Concrete Deterior | ation – L sion on S | eaching Act | ion – Damage on | |
| | TER COF FERMENTER EL 601.500 | Required Ac | tion: | | | |
| | | - ND1 tes | st to ident | ity Cover ar | nd Possible steel | |
| Concrete Wall | | - Destruc | tive test t | o find Alkali | nity of concrete. | |
| | | Fix Concrete. Paint - Repair Steel Frame. | | | | |
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| Resort Municipality | RMOW: WWTF Tank As | RMOW: WWTP Primary Sedimentation Tank Assessment Report Project No:210505 | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | Project No:2105 | | | Report: | 210505-TEC-03-R1-D | |
| | | | | Date: | 2022-01-26 | |
| Item No: | | S23 | | | | |
| Action Plan & Resolution Timeline Req | uired: | | 1 year | | | |
| Repair Priority: | | | P2 | | | |
| Location Detail:Tank #3 | | Description: | | | | |
| | | Crack in Grout | | | | |
| | | | | | | |
| | T-1 (200 100 100 100 100 100 100 100 100 100 | Required Ac | tion: | | | |
| | | - Repair | Grout. | | | |
| Side View | | | | | | |
| Drive Gear Box | | | | | | |
| | | | | | | |
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| Resort Municipality | RMOW: WWTF Tank As | Primary Sedimentation sessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | Draiget No. 210505 | | | Report: | 210505-TEC-03-R1-D | |
| | | 05 | | Date: | 2022-01-26 | |
| | | | | | | |
| Item No: | · . | | S24 | | | |
| Action Plan & Resolution Timeline Requ | uired: | | 1 year | | | |
| Location Detail:Tank #3 | | Description: | Γ2 | | | |
| | | Minor Corrosion | | | | |
| | | Required Ar | tion: | | | |
| | LL 807.500 | - Renair | Steel Sun | port- Paint | | |
| Side View | | i topui i | | | | |
| Drive Gear Box | | | | | | |
| | | | | | | |
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| WHISTLER of Whistler | Project No:2105 | 0505 | | Report: | 210505-TEC-03-R1-D | |
| | | | | Dale. | 2022-01-20 | |
| Item No [.] | | | S26 | | | |
| Action Plan & Resolution Timeline Requ | uired: | | 1 year | | | |
| Repair Priority: | | | P2 | | | |
| Location Detail:Tank #4 | | Description: | | | | |
| | COLORE SPOTGER | Concrete Deterior | ation – Le | eaching Act | ion | |
| | | | | | | |
| | TER OF FERMENTER EL 601.500 | Required Ac | tion: | | | |
| | | - NDT tes | t to ident | ify Cover ar | nd Possible steel | |
| Side View Roof- Multiple Location | | - Destruc | n. tive test t | o find Alkali | nity of concrete | |
| | | 2001.00 | | | | |
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| Resort Municipality | RMOW: WWTP Primary Sedimentat Tank Assessment Report | | | ntation ENGINU ENGINEERING CONS | | |
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| WHISTLER OF Whistler | Project No ·2105 | 05 | | Report: | 210505-TEC-03-R1-D | |
| | | | | Date: | 2022-01-26 | |
| Item No: | | S27 | | | | |
| Action Plan & Resolution Timeline Requ | uired: | | 1 year | | | |
| Repair Priority: | | | P1R | | | |
| Location Detail:Tank #4 | + | Description: | accon Dr | | n Dolto | |
| | | Missing Doits – L | JUSEII DIa | ICKEL- LOOSE | IT DOILS | |
| | | | | | | |
| | | Required Ac | tion: | | | |
| | | - Install N | lew Bolts | | | |
| Side View Multiple Location | | - Review | Loosen E | Bolts. | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| Resort Municipality | RMOW: WWTF Tank As | P Primary Sediments Sessment Report | ntation | ENGINUITY ENGINEERING CONSULTING | | |
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| WHISTLER Of Whistler | Draigat No.2105 | 05 | | Report: | 210505-TEC-03-R1-D | |
| | Project No: 2103 | 05 | | Date: | 2022-01-26 | |
| | | | | | | |
| Item No: | in di | | S28 | | | |
| Action Plan & Resolution Timeline Requ | ured: | | 1 year | | | |
| Location Detail:Tank #4 | | Description: | 12 | | | |
| | TOIGIDEE SECRET | Corroded screen | and supp | orts | | |
| | | Deswired As | tion. | | | |
| | TANK EL 601.500 | Required Ac | tion: | eroon and su | nnort | |
| | | | - woou 50 | aleen and Su | ρροπ. | |
| Wood Screen | | | | | | |
| | | | | | | |
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Report: 210505-TEC-03-R1-D

Appendix 2: Priority Classification

<u> P1SI</u>

A priority 1 finding considered to be a serious deficiency and posing an immediate safety risk to personnel or to the equipment.

ACTION PLAN & RESOLUTION REQUIREMENTS

- a) Immediate action and resolution required. Inspector must verify resolution prior to close out meeting and prior to leaving the site.
- b) Inspector must still document P1SI findings in the Inspection Report and marked as 'closed'.

<u>P1S</u>

A priority 1 finding that represents a significant safety issue and is considered to be a serious deficiency related to the safety of personnel or to the safety of the equipment. Lack of attention for correction may result in high risk of injury, bodily harm, or business loss. (E.g. Findings related to fall protection issues, such as ladders, platforms, stairs/stair treads, railings, elevated walk ways, etc.)

ACTION PLAN & RESOLUTION REQUIREMENTS

- a) Action Plan & Resolution Timeline required within 45 days of inspection date.
- b) Site should immediately log P1S findings into the site's maintenance register correcting the most serious items first.

<u>P1E</u>

A priority 1 finding that requires engineering to resolve. (E.g. Serious corrosion or indication that equipment are compromised and that it will require engineering assistance to assess the repair and/or replacement).

ACTION PLAN & RESOLUTION REQUIREMENTS

- a) Action Plan & Resolution Timeline required within 45 days of inspection date.
- b) Site should immediately log P1E findings into the site's maintenance register.
- c) Since in most cases P1Es are not quick fixes, a timeline is suggested to complete the fix.

<u>P1R</u>

A priority 1 finding that does not require engineering to assess or determine the design and Action Plan. (E.g. A finding that would be defined as replacement in kind of a structural or mechanical item, or that can be repaired without the need for engineering.)

ACTION PLAN & RESOLUTION REQUIREMENTS

- a) Action Plan & Resolution Timeline required within 45 days of inspection date.
- b) Site should immediately log P1R findings into the site's maintenance register with an Action Plan to repair or replace.
- c) The P1R is suggested to be resolved within 6 months of the inspection date with the most serious findings being addressed first.

<u>P2</u>

A significant enough condition that if left "as is", could lead to the potential for deficiency within 1-2 years.



2022-01-26

210505-TEC-03-R1-D

Report: Date:

ACTION PLAN & RESOLUTION REQUIREMENTS

- a) Action Plan & Resolution Timeline required within 1 year of inspection date.
- b) Site should immediately log P2 findings into the site's maintenance register with a 'low priority'.

Project No:210505

c) In most cases, these items can be addressed after all the P1 items are resolved.

<u>P3</u>

A significant enough condition that if left "as is", could lead to or become a P2 within 1-2 years. (E.g. Typically defined as coating failures with active corrosion and in the beginning stages of loss of material thickness.)

ACTION PLAN & RESOLUTION REQUIREMENTS

- a) Site should log P3 findings into the site's maintenance register with a 'low priority'.
- b) These items can be addressed through normal housekeeping and property improvement initiatives.





ENGINEERING CONSULTING

Appendix 3: Mechanical Equipment List

4.3. Longitudinal Collector – For All Primary Sedimentation Tank (PST 1, 2, 3, and 4)

| Description | Quantity | Picture / Drawing |
|--|-------------------|-------------------|
| VC720NM Non Metallic Collector Chain c/w F228 attachment every 10 feet | 420' | |
| | | |
| VC78NM Non Metallic Drive Chain | 20' | SPRING PIN |
| | | |
| UHMW Carry Wear Shoes | Forty-two (42) | |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
|---|--|--|-------------------------------------|--------------------|
| WHISTLER Of Whistler | Project No: 210505 | | Report: | 210505-TEC-03-R1-D |
| | | | Date: | 2022-01-26 |
| UHMW Return Wear Shoes | Forty-two (42) | | | |
| 8" Polypropylene Filler Blocks | Forty-two (42) | | | |
| 3" x 8" x 216.50" Long C Channel Fiberglass Flights | Twenty- one (21) | | | |
| VC720-23T Molded Drive Sprocket, 22.21" PD, 3 15/16" bore | Two (2) | | | |

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|---|--|-------------------|-------------------------------------|--------------------|
| WHISTLER Of Whistler | Project No:210505 | | Report: | 210505-TEC-03-R1-D |
| | TIOJECTIO | F10ject N0.210303 | | 2022-01-26 |
| VC78-40T Dished Offset Sprocket, 33.25" PD, 3 15/16" bore | I6" One (1) | | | |
| VC720-17T Molded Idler Sprocket, 16,59" PD, 3 15/16" Bore | Six (6) | | | |
| VC78-11T Shear Pin Sprocket, 9.26" PD, 2" Bore | One (1) | 316SS | UHMW | |

| Resort Municipality | | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
|---------------------|---|--|------------------------------------|-------------------------------------|--------------------|
| | | Project No:210505 | | Report: | 210505-TEC-03-R1-D |
| | Take up Assembly, consists of one (1) VC78-7T Sprocket | One (1) | | | |
| | each Peak Cap Wall Bearings, 3 15/16" bore | Eight (8) | | | |
| | 3/8" thick x 3" wide x 120" long UHMW Wear Strip | Thirty- eight (38) | | | |
| | UHMW Set Collar, 3 15/16" Bore | Eight (8) | 5/16-18 UNC *3365 BUT 2 PLCS | | |



4.4. Cross Collector

| Description | Quantity | Picture / Drawing |
|---|-----------------------|-------------------|
| VC720NM Non Metallic Collector Chain c/w F226 attachment every 5 feet | 140' | |
| VC78NM Non Metallic Drive Chain | 20' | |
| | | |
| UHMW Carry Wear Shoes | Twenty- eight (28) | |

| Resort Municipality | | RMO | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
|---------------------|---|-----------------------|--|--|-------------------------------------|--|--|
| | | Droiget | Project No: 210505 | | 210505-TEC-03-R1-D | | |
| | | | | | 2022-01-26 | | |
| | 6" Filler Blocks | Twenty- eight (28) | /enty- ht (28) | | | | |
| | 3" x 6" x 57" Long C Channel Fiberglass Flights | Fourteen (14) | | | | | |
| | VC720-23T Molded Drive Sprocket, 22.21" PD, 1 15/16" bore | Two (2) | | | | | |
| Resort Municipality | | RMOV | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
|---------------------|---|----------|--|------------------|-------------------------------------|--|
| | | Project | Project No: 210505 | | 210505-TEC-03-R1-D | |
| | | 1 10,000 | | Date: 2022-01-26 | | |
| | VC78-40T Dished Offset Sprocket, 33.25" PD, 1 15/16" bore | One (1) | ne (1) | | | |
| | VC720-17T Molded Idler Sprocket, 16,59" PD, 1 15/16" Bore | Four (4) | | | | |
| | VC78-11T Shear Pin Sprocket, 9.26" PD, 1 1/4" Bore | One (1) | 2231E | | -UHMW | |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | ENGINUITY ENGINEERING CONSULTING | |
|---|--|-------------------------------------|--------------------|
| WHISTLER Of Whistler | Draiget No:240505 | Report: | 210505-TEC-03-R1-D |
| | Project No: 210303 | Date: | 2022-01-26 |
| Take up Assembly, consists of (1) VC78-7T Sprocket | ne (1) | | |
| Peak Cap Wall Bearings, 1 S 15/16" bore | x (6) | | |
| 3/8" thick x 3" wide x 120" Iong UHMW Wear Strip | ur (4) | | |

| Resort Municipality | RMOW ty | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
|-----------------------------------|------------|--|--------------|-------------------------------------|--|
| WHISTLER of Whistler | Draiget | Project No: 210505 | | 210505-TEC-03-R1-D | |
| | Project | | | 2022-01-26 | |
| UHMW Set Collar, 1 15/16" Bore | Six (6) | | | | |
| Skimmer | One (1) | The acute called | | | |
| Scum Collection Pumps | One (1) | The scum collection pumps were | not accessib | le for photographs. | |

4.5. Inlet / Outlet Gate Valves

| Description | Quantity | Picture / Drawing |
|------------------------------|----------|-------------------|
| Inlet PST 1 and PST 2 only: | Four (4) | |
| GV 201, 203, 204 and 206 | | |
| Square 762 x 762 (30" x 30") | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| Resort Municipality | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | |
|--|--|----------|-------------------------------------|--------------------|
| WHISTLER Of Whistler | Project No :210505 | | Report: | 210505-TEC-03-R1-D |
| | | | Date: | 2022-01-26 |
| Inlet PST 1 and 2 only: T GV 202 and 205 | īwo (2) | <image/> | | |
| Inlet PST 3 and PST 4 only:FGV 207, 209, 210 and 211Rising stem, floor pedestal mountSquare 762 x 762 (30" x 30") | our (4) | | | |

| Resort Municipality | ty RMOW: WWTP Primary Sedimentation Tank Assessment Report Project No:210505 | | ENGINE | GINUITY EERING CONSULTING |
|---|--|----------|---------|------------------------------|
| WHISTLER Of Whistler | | | Report: | 210505-TEC-03-R1-D |
| | | | Date: | 2022-01-26 |
| Inlet PST 3 and 4 only: GV 208 and 212 Rising stem, floor pedestal mount Square 610 x 610 (24" x 24") | Гwo (2) | <image/> | | |
| Outlet PST 1 and PST 2 only: GV 213, 214, 215, 216, 217 and 218 Self-contained, non rising stem complete with floor box and cover. Square 610 x 610 (24" x 24") | Six (6) | | | |

| | MResort Municipalit | RMOW: V | RMOW: WWTP Primary Sedimentation Tank Assessment Report | | ENGINUITY ENGINEERING CONSULTING | | |
|---|--|-------------|--|--|-------------------------------------|--|--|
| WHISTLER of Whistler | | Project No. | Project No: 210505 | | 210505-TEC-03-R1-D | | |
| | | FIOJECTINO | | | 2022-01-26 | | |
| Outlet GV 21 and 2 Self-c stem o and co Squar | PST 3 and PST 4 only: 19, 220, 221, 222, 223 24 ontained, non rising complete with floor box over. e 610 x 610 (24" x 24") | Six (6) | | | | | |