2023 Dairy Groundwater Quality Monitoring Report

Threemile Canyon Farms
Boardman, Oregon

for
Threemile Canyon Farms

January 11, 2024

GeoEngineers
Earth Science + Technology

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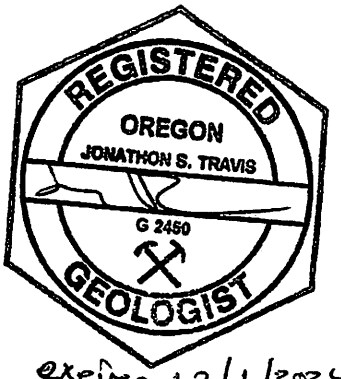
Prepared for:

Threemile Canyon Farms
75906 Three Mile Road
Boardman, Oregon 97818

Attention: Greg Harris

Prepared by:

GeoEngineers, Inc.
8019 West Quinault Avenue, Suite 201
Kennewick, Washington 99336



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Jonathon S. Travis, RG, LG, CWRE
Project Geologist

Kevin A. Lindsey, PhD, LHG, PG
Principal

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1.0 INTRODUCTION

Threemile Canyon Farms (TMCF) conducts routine surface water and groundwater quality monitoring on a site-wide basis as part of their diary operations water quality monitoring program. TMCF is located near Boardman, Oregon.

This annual water quality monitoring report documents the results of TMCFs biannual monitoring activities through September 2023. The purpose of this report is to update the water quality monitoring database and briefly evaluate water quality trends. This report provides TMCF managers with an overview of how water quality conditions reflected in the data reported herein have changed since last reported (GeoEngineers 2023).

This report includes: (1) brief descriptions of the sampling locations and monitoring activities; (2) a summary of the water quality test results; and (3) recommendations for future monitoring activities.

2.0 SAMPLING UNITS

Water quality monitoring at TMCF is conducted via a network of surface water and groundwater (well) monitoring sites (Figure 1, Sampling Location Map). All groundwater monitoring wells are completed in the alluvial suprabasalt sediment aquifer hosted by the Alkali Canyon Formation.

The monitoring sites are situated in strategic groupings in farm areas throughout TMCF. The groupings are referred to in this report as "sampling units." The sampling units are in areas where water use practices and/or dairy-related farm operations could potentially affect groundwater or surface water quality. The five sampling units are briefly described in the subsections below.

2.1. Columbia River Dairies

The Columbia River Dairies (CWU) sampling unit is located in the southern portion of TMCF (Figure 1). The CWU unit contains dairy milking areas, free stalls and open stock pens, manure handling and stockpiling areas, and related dairy operations facilities. The CWU sampling unit is located on a small hill that extends 10 to 20 feet above the surrounding area. Groundwater flow in the vicinity generally is from south to north, though in the immediate vicinity of the unit, the current interpretation of groundwater elevation shows the presence of a groundwater mound. As groundwater flows south towards the unit, it appears to mound and flow away from the unit toward the west, north, and east. This apparent mounding has been present since before the advent of dairy operations (Kennedy/Jenks 2001, 2004). Current CWU monitoring wells include:

- CWU-2 which is located north of and down-gradient of the free stall barn areas.
- CWU-3 which is located west of and generally downgradient of open pen areas.

2.2. Sixmile Dairy

The Sixmile Dairy (SU) sampling unit is located to the northeast of the CWU unit (Figure 1). The SU unit contains dairy milking areas, free stalls and open stock pens, manure handling and stockpiling areas, and related dairy operations facilities. Groundwater flow in the vicinity of the SU sampling unit is generally from the south-southwest to the north-northeast (Kennedy/Jenks 2001, 2004). SU monitoring wells include:

- SU-1 which is located up-gradient of the facility in an area of center-pivot crop fields. SU-1 also is generally downgradient of the CWU sampling unit.
- SU-3 and SU-4A which are located down-gradient of the dairy freestall barns and lagoon, respectively.

2.3. Helfer Raising Facility

The Heifer Raising Facility (HRF) sampling unit lies at the northern edge of TMCF (Figure 1). The HRF sampling unit includes open stock pens and on its north side, several lagoons. Groundwater flow in this area is generally from south to north (Kennedy/Jenks 2001, 2004). However, there may be east-directed and west-directed components of groundwater flow because two monitoring wells located just to the north (down gradient) of the area, HRF MW-2 and HRF MW-3, which fully penetrate and are open to the alluvial materials that host ground water to the south (upgradient) are dry. HRF sampling unit monitoring wells include:

- Simplot MW-7 which is up-gradient.
- HRF MW-1 which is located up-gradient of the manure lagoons, but generally down-gradient of the stock pens.
- HRF MW-2 and HRF MW-3 (Figure 1) are located down-gradient of sampling unit. As noted above, these wells which monitor the sediments overlying basal basalt are dry, as they have been since at least 2010 (GSI 2010) and no samples were collected during 2023.

2.4. RDOU

The RDOU sampling unit lies along the northern edge of TMCF and represents the down-gradient area of groundwater flow for TMCF irrigated areas (Figure 1). All RDOU wells are adjacent to center-pivot irrigated fields. Considering the location of the RDOU monitoring wells and the general south to north groundwater flow in the shallow alluvial aquifer underlying TMCF, overall groundwater quality down-gradient of all TMCF operations (including dairy operations and irrigated agriculture) is monitored by this sampling unit. RDOU monitoring wells include:

- RDOU-1 which monitors the northeastern portion of TMCF.
- RDOU-3A which monitors the northwest portion of TMCF.
- Simplot MW-7 which monitors the northcentral portion of TMCF directly upgradient of the HRF Sampling unit while also providing upgradient monitoring for that unit.

2.5. Surface Water

Five surface water sampling locations are included in TMCFs water quality monitoring program (Figure 1). These sites include three pumping stations on surface water bodies that serve as primary and secondary water sources for TMCF operations and two creeks which drain portions of TMCF. The pumping station sites serve as surrogates for up-gradient water quality conditions as groundwater has not been found in the Alkali Canyon Formation up-gradient of TMCF (Kennedy/Jenks 2001, 2004).

The surface water pumping station sampling locations include:

- **Willow Creek pump station**—located north of the northwestern corner of TMCF serves as the primary irrigation water source for TMCF. The pump station is situated in Willow Lake, which is part of the John Day pool of the Columbia River.
- **Office Pond**—located in the northern part of TMCF south of the HRF sampling unit is surrounded by center-pivot agriculture fields. Water in the office pond is derived from local field drains. The pond is used as a secondary irrigation source.
- **Sixmile Canyon pump (Pump 2)**—located along the northeastern margin of TMCF on Sixmile Creek. Sixmile Creek receives water from field drains and soil seeps. This pump station serves as a supplemental water source for TMCF operations.

The creek sites include:

- **Sixmile Creek**—which samples water several miles downstream of Pump 2 at the northern edge of TMCF.
- **Threemile Creek**—which samples water sourced by field drains and seeps off the north-central edge of TMCF.

3.0 WATER QUALITY MONITORING ACTIVITIES

For this annual report, surface and groundwater quality was assessed from samples collected by IRZ Consulting, LLC on March 14 and 15, 2023 and September 12, 13, and 20, 2023. Field water quality parameters (e.g., pH, temperature, and electrical conductivity) were analyzed on site at the time of sampling. All other chemical analyses were performed by Kuo Testing Labs, Inc., in Pasco, Washington. These parameters include:

- Total dissolved solids (TDS).
- Chloride.
- Total Kjeldahl nitrogen (TKN).
- Chemical oxygen demand (COD).
- Nitrate-nitrogen (Nitrate-N).
- Soluble Reactive Phosphorus (SRP).

Results from the sampling events are provided in Section 4.0. All locations noted above were sampled, with duplicates collected at CWU-2 and RDOU-1.

4.0 WATER QUALITY TEST RESULTS

This section presents analytical test results from samples collected at the TMCF monitoring locations. Figures illustrating the concentrations of all monitored analytes for each location over time are provided in Figures A-1 through A-14 in Appendix A, Water Quality Time Series Plots. The results are summarized by sampling unit in the following subsections. These summarizes are based on visual observations and a trendline calculated using 2nd order polynomial function in Excel®. A table containing analytical test results to date is provided in Table B-1 of Appendix B, Water Quality Result Table.

Groundwater quality analytical results from the 2023 monitoring period are compared against concentration limit values (CLVs) presented in Table 1 at all groundwater monitoring sites for all monitored analytes. Groundwater CLVs were previously established using background data collected prior to 2004 (Kennedy/Jenks 2004). CLVs have not been established for surface water sites.

TABLE 1. MONITORING WELL-SPECIFIC CONCENTRATION LIMIT VALUES (CLV)

Well	pH	EC (µS/cm)	TDS (mg/L)	TKN (mg/L-N)	Nitrate-N (mg/L-N)	Chloride (mg/L)	COD (mg/L)	SRP (mg/L)
CWU-2	8.9	1,731	1,107	7.44	113.5	83.1	178.0	0.463
CWU-3	8.6	1,512	1,009	5.44	47.9	375.1	74.4	0.479
SU-1	8.5	1,284	925	5.14	9.5	236.8	218.8	0.580
SU-3	8.9	1,752	1,039	5.08	46.0	264.1	63.3	0.327
SU-4A	9.1	1,729	1,086	5.52	76.5	52.9	52.7	0.570
HRF MW-1	8.4	1,902	1,157	6.60	65.8	106.9	70.9	0.370
MW-7	8.1	1,778	1,095	7.67	104.6	111.3	74.0	0.581
RDOU-1	8.4	1,503	732	10.31	79.7	70.2	45.0	0.441
RDOU-3A	8.5	1,209	653	5.46	46.6	98.1	61.5	0.601

Notes:
EC is electrical conductance; TDS is total dissolved solids; TKN is total Kjeldahl nitrogen; COD is chemical oxygen demand; and SRP is soluble reactive phosphorous.

The results are also compared to Oregon Department of Environmental Quality (ODEQ) reference or guidance levels (Tables 1 and 3 in OAR 340-040) to evaluate the significance of certain contaminants in groundwater. A reference level of 10 mg/L has been established for nitrate-N. Guidance levels have been established for chloride (250 mg/L), pH (6.5 to 8.5), and TDS (500 mg/L).

It should be noted that the apparent increase in chemical oxygen demand (COD) data may be attributed to the lab increasing their reporting limits in recent years. Originally, when sampling started the reporting limit was less than 5 mg/L. In past years, it has ranged from 40 to 50 mg/L. This seems to have generated false exceedances with a rising trend in a few data sets.

4.1. Columbia River Dairies Sampling Unit

Observations at the CWU sampling sites during the 2023 monitoring period and measured concentrations over time are shown in Figures A-1 and A-2 in Appendix A and are summarized below.

4.1.1. Well CWU-2

- TDS was slightly elevated with respect to 2022, near or lower than levels measured since 2020, lower than historical high concentrations, and displays a decreasing trend.
- Chloride levels relatively continue to be near levels that have been measured since 2018.
- TKN levels continue to be near levels that have been measured since 2019 and display a decreasing trend.
- COD levels were near the high levels measured since 2020, but less than historical highs. The lab over the years has changed their reporting limit that may be causing an artificial rising trend.

- Electrical conductivity (EC) was less than levels measured since 2021, and less than historical high levels.
- Nitrate-N levels were slightly higher than measured in 2022, within the range of levels measured since 2018, and less than the historical highs.
- SRP was similar to, and slightly higher than most levels measured since 2017, but less than historical highs.
- CLV exceedances were not observed in 2023.

4.1.2. Well CWU-3

- TDS levels were higher than previously measured and display an increasing trend.
- Chloride levels were lower than previously measured and display a decreasing trend.
- TKN was at or near levels measured since 2018 and displays a slight decreasing trend.
- COD was higher than in 2022, within the range of levels seen since 2010, and has shown a decreasing trend since 2017/2018.
- EC was higher than measured in 2022, continuing an increasing trend since 2010/2011.
- Nitrate-N levels were higher than measured in 2022, continuing an increasing trend seen since the start of the data record.
- SRP was at or near levels measured since 2018 and the trend has flattened.
- CLV levels are being approached by TDS and were exceeded by EC.

4.2. SU Sampling Unit

Observations at the SU sampling sites during the 2023 monitoring period and concentration changes over time are shown in Figures A-3 through A-5 in Appendix A and are summarized below.

4.2.1. Well SU-1

- TDS levels were higher than 2022, within the range of levels seen since 2012, lower than historical high levels, and the trend has generally flattened since 2012/2013.
- Chloride levels were lower than in 2022, in the low end of the range of levels seen since 2013, less than historical high levels, and a declining trend continues since the start of data collection.
- TKN levels were the same as 2022 and less than levels measured in 2011 through 2016.
- COD was similar to 2022, higher than levels measured since 2018, less than historical high levels measured before 2018, but an increasing trend has been occurring since 2011/2012. The lab over the years has changed their reporting limit that may be causing an artificial rising trend.
- EC was less than 2022, continuing a decreasing trend since 2007/2008.
- Nitrate-N levels were slightly higher than 2022, the highest since 2017, but within the range of levels seen prior to 2017.
- SRP levels were similar to levels seen since 2014.
- CLV exceedances were not observed in 2023.

4.2.2. Well SU-3

- TDS levels were similar to levels measured since 2013 and lower than historical high levels.
- Chloride levels were near or slightly less than levels seen since 2019, lower than levels seen prior to 2015, and display a generally decreasing trend.
- TKN was near levels measured in recent years, less than historical high levels, and display a generally decreasing trend.
- COD levels were higher than typically seen in recent years, but the trend appears to have been relatively flat in recent years.
- EC was near those measured since 2017, lower than previously observed high levels, and display a slight decreasing trend.
- Nitrate-N levels were similar to those seen since 2021, slightly higher than levels measured prior to then, and display a slight increasing trend.
- SRP was similar to levels measured in recent years, less than historical high levels, and the trend has flattened.
- CLV was exceeded by COD in the spring of 2023, but not in the fall of 2023.

4.2.3. Well SU-4A

- TDS levels were near or above levels seen since 2021, and the highest measured since data collection started in 2002.
- Chloride levels were above levels seen in 2022, the highest measured since data collection started in 2003, and continues an increasing trend.
- TKN levels are similar to those seen since 2018 and less than historical high levels.
- COD was at the high end of the range of levels seen since 2016, but not the highest measured in that period, and the trend is relatively flat.
- EC was similar to and higher than the values seen since 2020, continuing an increase seen since 2017.
- Nitrate-N levels were lower than seen in 2022, continuing a decrease seen since 2017, and some of the lowest levels seen in the data record.
- SRP levels are similar to those seen since 2018.
- CLV was exceeded by TDS, chloride, and EC.

4.3. HRF Sampling Unit

Observations at the HRF sampling sites during the 2023 monitoring period and concentration changes over time are shown in Figures A-6 and A-7 in Appendix A and are summarized below.

4.3.1. Well MW-7

- TDS levels were higher than seen in 2022, the highest seen since 2017, and continue an increasing trend.

- Chloride levels were higher than in 2022, some of the highest levels seen since 2005, but the trend over time is relatively flat.
- TKN was the same as seen in 2022, slightly higher than what has usually been seen since 2013, but less than the historical high.
- COD was near or higher than most previously measured levels and displays a general rising trend.
- EC was higher than seen in 2022, continuing an increasing trend seen since 2017.
- Nitrate-N was higher than seen in 2022, continuing an increasing trend seen since 2017.
- SRP was similar to most levels measured since 2015.
- CLV was exceeded by TDS, COD, and nitrate-N in 2023.

4.3.2. Well HRF-MW-1

- TDS level was the highest to-date in the fall of 2023, although the spring level was lower than 2022 and the lowest since 2015. The trend has been flattening in recent years.
- Chloride was slightly higher than in 2022, but well below the high values seen in 2016, continuing a declining trend seen since 2016.
- TKN was less than in 2022, generally continuing a declining trend seen since 2018.
- COD was within the range of values seen since 2012.
- EC was within the range of values seen since 2016.
- Nitrate-N level in the spring of 2023 was the highest on record, continuing an increasing trend seen since 2011. The fall 2023 value is assumed to be incorrect.
- SRP was lower than in 2022 and continues a decreasing trend seen since 2012.
- CLV was exceeded by TDS and nitrate-N in 2023. However, chloride and COD which previously exceeded the CLV were below it in 2023.

4.3.3. Wells HRF-MW-2 and 3

- HRF-MW-2 and HRF-MW-3 continued to be dry during both 2023 sampling events.

4.4. RDOU Sampling Unit

Observations at the RDOU sampling sites during the 2023 monitoring period and concentration changes over time are shown in Figures A-8 and A-9 in Appendix A and are summarized below.

4.4.1. Well RDOU-1

- TDS was the highest on record in the fall 2023 sample although the spring 2023 sample was within the range of levels seen since 2008. The trend has been slightly decreasing since the start of data collection.
- Chloride levels were near those seen in 2022 and less than have been seen since 2012/2013. The trend has flattened in recent years.
- TKN was similar to levels measured since 2015 and less than historical high levels.

- COD levels are similar to 2022, but some of the highest seen since data collection started. The lab over the years has changed their reporting limit causing an artificial rising trend.
- EC was similar to that seen in 2022, but the trend has been generally increasing.
- Nitrate-N was similar to that seen in 2022, but the trend has been generally increasing.
- SRP was similar to levels measured since 2015 and less than historical high levels.
- CLV was exceeded by TDS, chloride, and COD in 2023.

4.4.2. Well RDOU-3A

- TDS was lower than 2022 in the spring 2023 sample which was also one of the lowest level seen to-date, and higher in the fall 2023 sample which was the highest level seen to-date. The trend is relatively flat.
- Chloride was near 2022 levels and the trend has been flat since at least 2009/2010.
- TKN was near 2022 levels and less than historical highs.
- COD was near 2022 levels, but the trend is generally increasing. The lab over the years has changed their reporting limit causing an artificial rising trend.
- EC was near or lower than 2022 levels and the trends is generally decreasing.
- Nitrate-N was near or slightly higher than 2022 levels and the trend shows a very slight increase.
- SRP was near 2022 levels and less than historical highs.
- CLV was exceeded by the fall 2023 TDS sample.

4.4.3. Well MW-7

- See section 4.3.1.

4.5. Surface Water

Observations at the surface water sampling sites during the 2023 monitoring period and concentration changes over time are shown in Figures A-10 through A-14 in Appendix A and are summarized below.

4.5.1. Willow Creek

- TDS levels were within the historical range and show a slight decreasing trend.
- Chloride levels were within the historical range and show a flat trend.
- TKN was within the historical range, although the fall sample was higher than usual.
- COD was within the historical range, but higher than many prior samples. The lab over the years has changed their reporting limit causing an artificial rising trend.
- EC was within the historical range and shows a decreasing trend.
- Nitrate-N was within the historical range and shows a flat trend.
- SRP was within the historical range and shows a generally flat trend.

4.5.2. Office Pond

- TDS levels were higher than 2022 but the trend is generally flattening.
- Chloride levels were within the historical range and show a slightly increasing trend.
- TKN was within the historical range and show a generally increasing trend.
- COD was within the historical range and show a generally increasing trend. The lab over the years has changed their reporting limit causing an artificial rising trend.
- EC was within the historical range and shows a decreasing trend.
- Nitrate-N was at the high end of the historical range and shows an increasing trend.
- SRP was within the historical range.

4.5.3. Pump 2

- TDS levels were near the high end of the historical range, but the trend has been slightly decreasing in recent years.
- Chloride levels were near the high end of the historical range, but the trend has been slightly decreasing in recent years.
- TKN was within the historical range and the trend has been generally decreasing.
- COD was within the historical range, but the trend has been slightly increasing. The lab over the years has changed their reporting limit causing an artificial rising trend.
- EC was near the high end of the historical range, but the trend has been slightly decreasing in recent years.
- Nitrate-N was near the high end of the historical range, but the trend has been flattening in recent years.
- SRP was within the historical range and shows a generally flat trend in recent years.

4.5.4. Sixmile Creek

- TDS levels were within the historical range and show a slight decreasing trend.
- Chloride levels were at the low end of the historical range and show a decreasing trend.
- TKN was within the historical range and shows a decreasing trend.
- COD was within the historical range but shows a slight increasing trend.
- EC was within the historical range and shows a slight decreasing trend.
- Nitrate-N was within the historical range, but the trend has been flattening in recent years.
- SRP was within the historical range.

4.5.5. Threemile Creek

- TDS levels were within the historical range and show a slight increasing trend.
- Chloride levels were within the historical range and show a slight increasing trend.

- TKN was within the historical range and shows a decreasing trend.
- COD was within the historical range but shows a slight increasing trend. The lab over the years has changed their reporting limit causing an artificial rising trend.
- EC was within the historical range but shows a slight increasing trend.
- Nitrate-N was generally higher than previous years and shows a slight increasing trend.
- SRP was within the historical range and shows a generally flat trend.

5.0 SUMMARY AND RECOMMENDATIONS

Water quality analyte concentrations vary across the TMCF area. A specific analyte concentration may be observed to be decreasing at some monitoring locations, stable in some, and increasing in others. In addition, some analytes that one might expect to increase or decrease in tandem, such as TDS, chloride, and EC, do not always show that relationship. The wide range of specific analytes concentrations, their trends, their spatial variability, and the different relationships between them from one location to another point to very complex influences on groundwater quality. These influences could include changing water management, cattle grazing, cropping, fertilization, climate, weather over the 20 plus years of the data record and over the 40,000 odd acres of the project area. It is difficult to attribute any one specific factor to any of the changes in water quality that have been observed at TMCF since water quality monitoring began.

Summaries for each sampling unit are presented below.

5.1. CWU Sampling Unit Summary.

- Well CWU-2: no CLV exceedances observed; decreasing trends in TDS, TKN, EC, nitrate-N, and SRP; flat trends in chloride; slight increasing trends in COD.
- Well CWU-3: TDS is approaching the CLV and EC exceeded it; decreasing trends in chloride, TKN, and COD, flat trends in SRP; increasing trends in TDS, EC, and nitrate-N.

5.2. SU Sampling Unit Summary.

- Well SU-1: no CLV exceedances; decreasing trends in chloride and EC; flat trends in TDS, TKN, and SRP; increasing trends in COD, and nitrate-N.
- Well SU-3: COD exceeded the CLV in the spring but fell below it in the fall: decreasing trends in chloride. TKN, and EC; flat trends in TDS, COD, and SRP; increasing trends in nitrate-N.
- Well SU-4A: TDS, chloride, and EC exceeded the CLV; decreasing trends in TKN, and nitrate-N; flat trends in COD, and SRP; increasing trends in TDS, chloride, and EC.

5.3. HRF Sampling Unit Summary.

- Well MW-7: TDS, COD, and nitrate-N exceeded CLV; decreasing trends in TKN and SRP; flat trends in chloride; increasing trends in TDS, COD, EC, and nitrate-N.

- Well HRF-MW-1: TDS and nitrate-N exceeded CLV, but chloride and COD which previously exceeded the CLV feel below it; decreasing trends in chloride, TKN, EC, and SRP; flat trends in COD; increasing trends in TDS and nitrate-N.

5.4. RDOU Sampling Unit Summary.

- Well RDOU-1: TDS, chloride, and COD exceeded the CLV; decreasing trends in TKN and SRP; flat trends in chloride; increasing trends in TDS, COD, EC, and nitrate-N.
- Well RDOU-3A: TDS exceeded the CLV in the fall sample but not the spring sample; decreasing trends in TKN, EC, and SRP; flat trends in TDS, chloride, and nitrate-N; COD.
- Well MW-7: see Section 5.3.

5.5. Surface Water Monitoring Site Summaries.

CLV's were not calculated for these sites. Observations focused on trends in recent years at the surface water sampling sites include:

- Willow Creek: decreasing trends in TDS and EC; flat trends in chloride, nitrate-N and SRP; increasing trends in TKN and COD.
- Office Pond: decreasing trends in TDS; flat trends in chloride and TKN; increasing trends in COD, ES, nitrate-N, and SRP.
- Pump 2: decreasing trends in TDS, chloride, TKN, EC, and SRP; increasing trends in COD and nitrate-N.
- Sixmile Creek: decreasing trends in TDS, chloride, TKN, and EC; flat trends in nitrate-N; increasing trends in COD and SRP.
- Threemile Creek: decreasing trends in TKN, and SRP; increasing trends in TDS, chloride, COD, EC, and nitrate-N.

6.0 RECOMMENDATIONS

CLV exceedances and increasing analyte levels are not common, but some observed concentration increases warrant continued tracking. For example, COD, EC, and TDS appear to be rising in several sampling units. Based on the data collected to-date it is recommended that semi-annual water quality monitoring be continued to track these changing groundwater quality conditions.

In addition, if water quality data could be reported to the project hydrogeologist within less than four weeks of sample collection it is recommended that resampling and reanalysis occur immediately when: (1) an analyte concentration exceeds its CLV and/or (2) the most recent result falls outside of the previous visual trend. The purpose of the resampling and reanalysis is to confirm that the results are valid.

Consolidating the sampling and analysis effort should also be considered. A single entity, either a subcontractor or a TMCF employee would coordinate all water quality sampling and analysis, data management, reporting, and troubleshooting (including resampling) to better respond to observed water quality changes, develop potential ideas for observed trends, and better document sampling, analysis, and interpretations for regulatory review.

7.0 LIMITATIONS

We have prepared this report for Threemile Canyon Farms 2023 Groundwater Quality Monitoring in Boardman, Oregon. Client may distribute copies of this report to Threemile Canyon Farms' authorized agents and regulatory agencies as may be required for the project.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in this area at the time this report was prepared. The conclusions, recommendations, and opinions presented in this report are based on our professional knowledge, judgment and experience. No warranty or other conditions, express or implied, should be understood.

Any electronic form, facsimile or hard copy of the original document (email, text, table and/or figure), if provided, and any attachments should be considered a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

8.0 REFERENCES

GeoEngineers, 2023, Groundwater Quality Monitoring Report, Threemile Canyon Farms, Boardman, Oregon. Consultant's report prepared by Geoengineers, Inc. for Threemile Canyon Farms, LLC.

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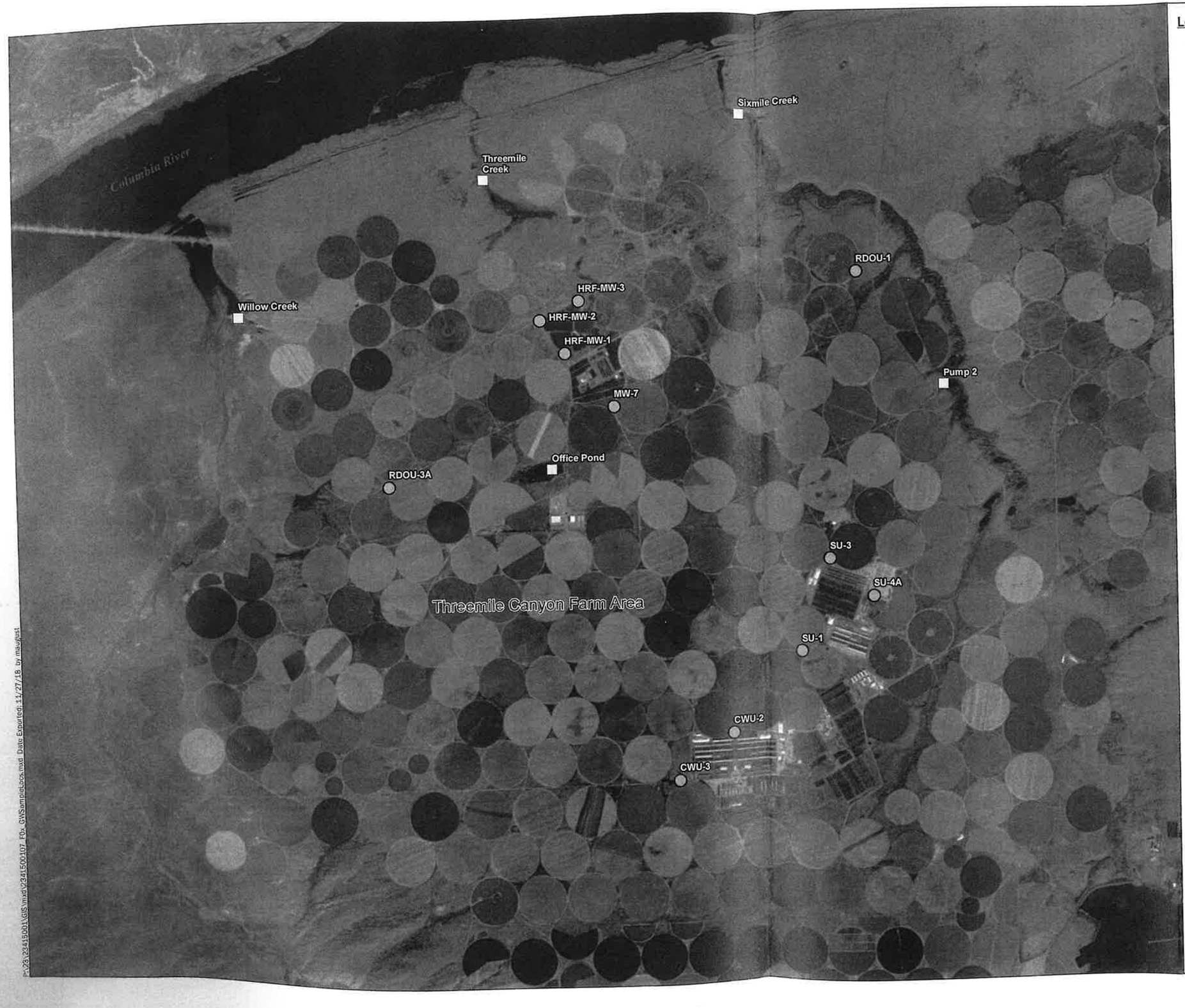
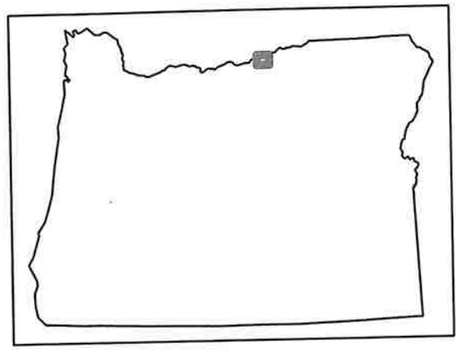
APPENDIX A
Water Quality Time Series Plots



Legend

- Monitoring Well Location
- Surface Water Sample Location



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source:

Projection: NAD 1983 StatePlane Washington South FIPS 4602 Feet

N
W E
S

1 0 1

Miles

Sampling Location Map

Threemile Canyon Farms
Morrow County, Oregon

GeoEngineers

Figure 1

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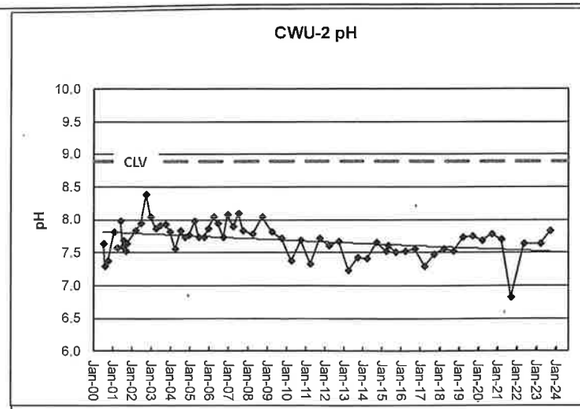

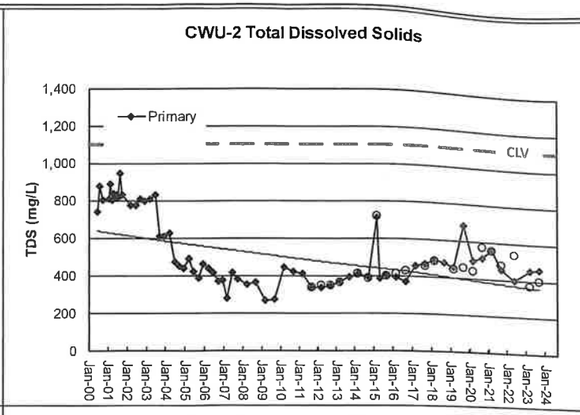

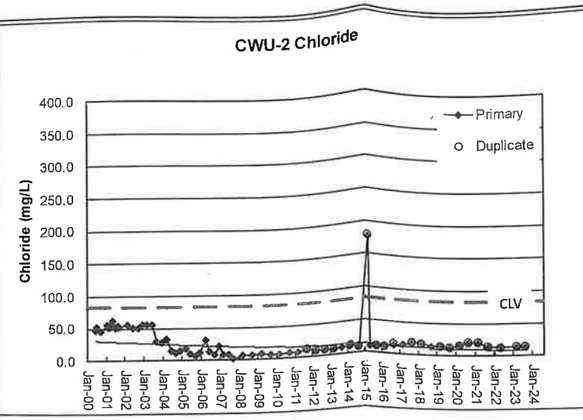

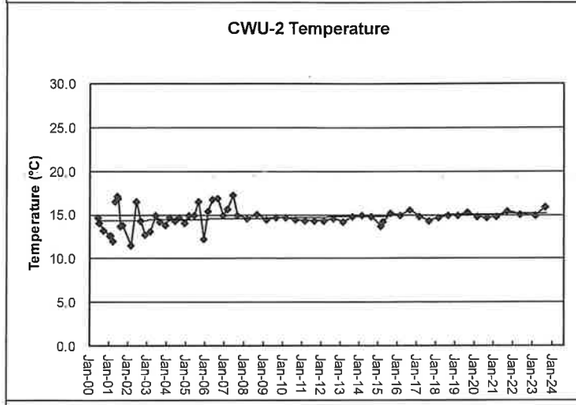

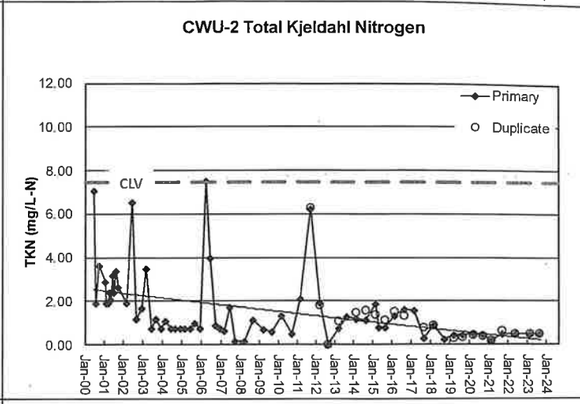

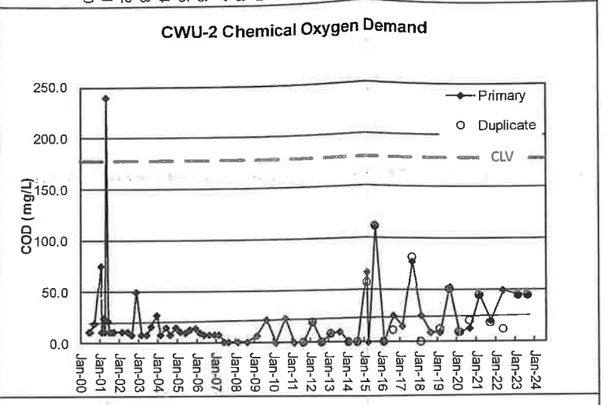

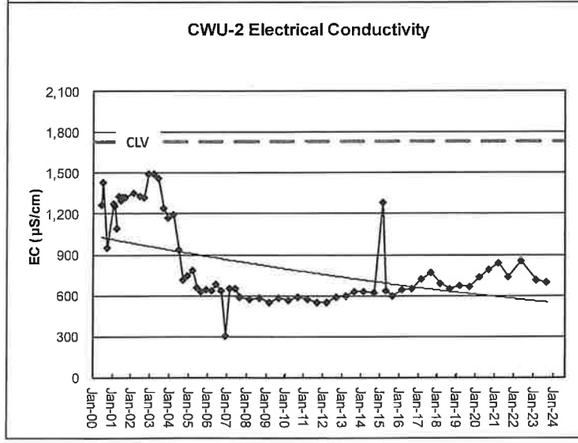

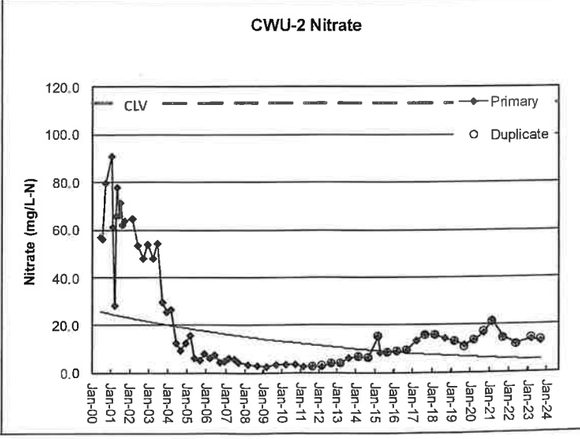

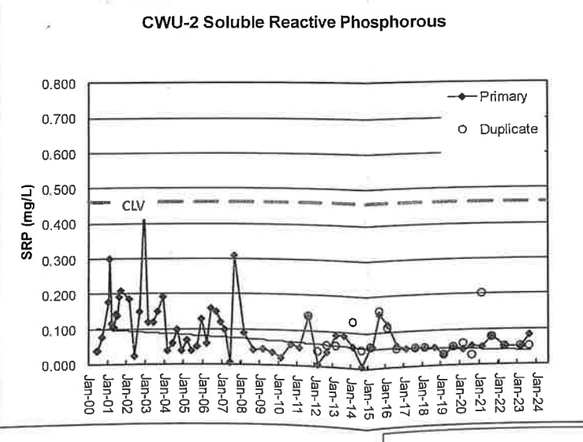

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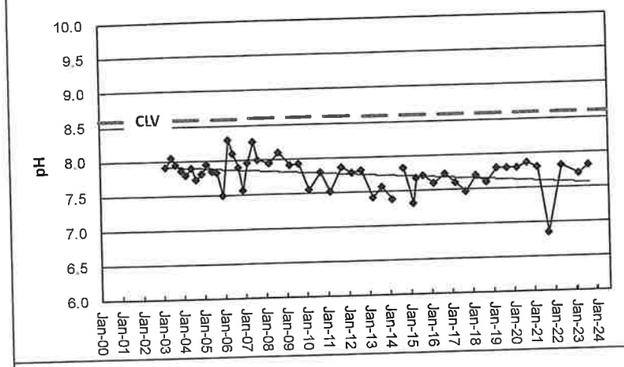
CWU-2 Water Quality Monitoring Results

Threemile Canyon Farms
Boardman, Oregon

GeoEngineers

Figure A-1

CWU-3 pH



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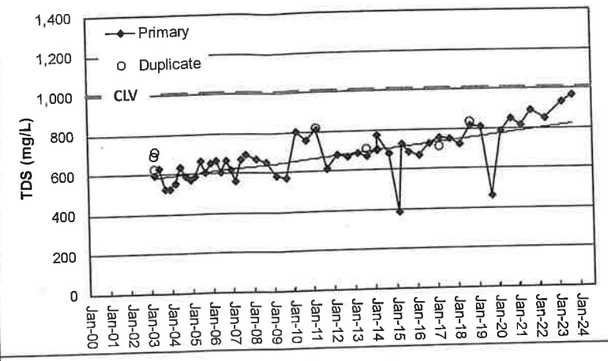
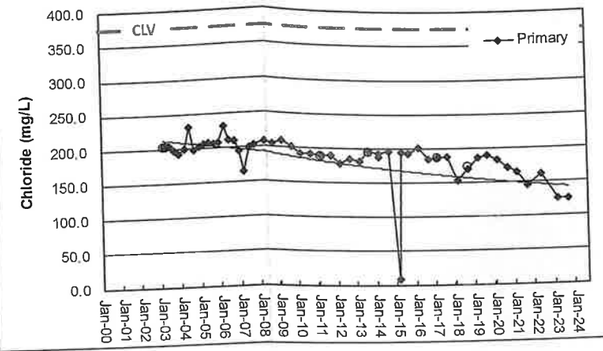
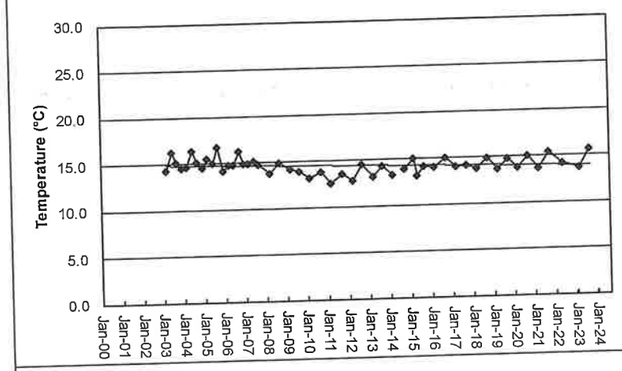


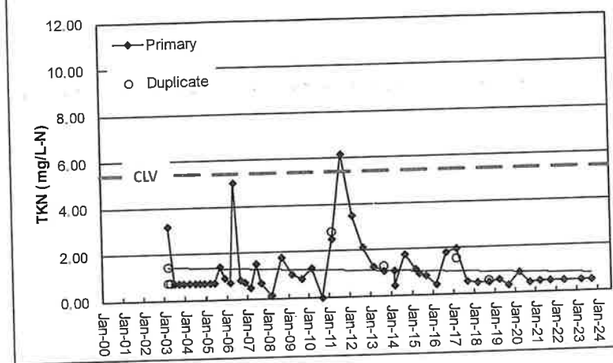
CWU-3 Chloride



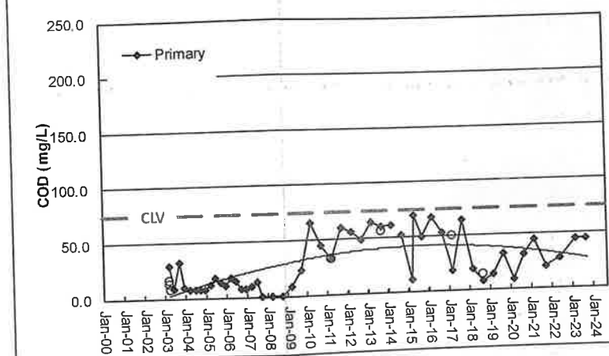
CWU-3 Temperature



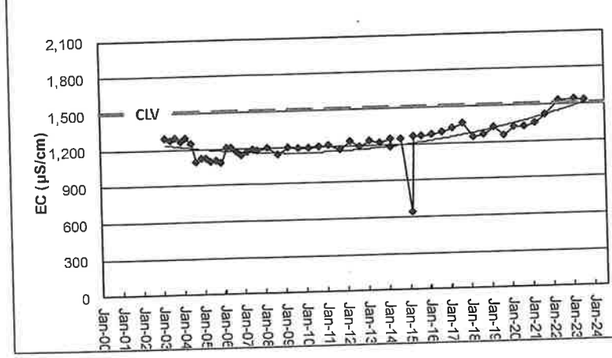
CWU-3 Total Kjeldahl Nitrogen



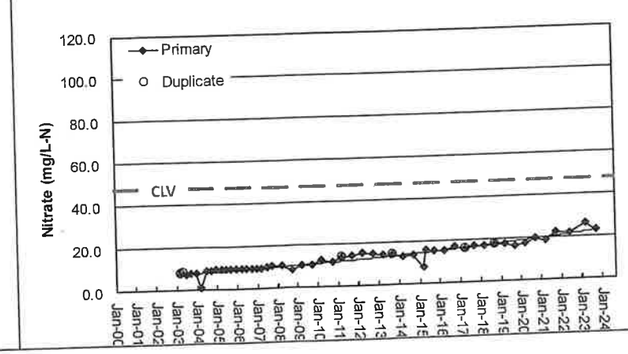
CWU-3 Chemical Oxygen Demand



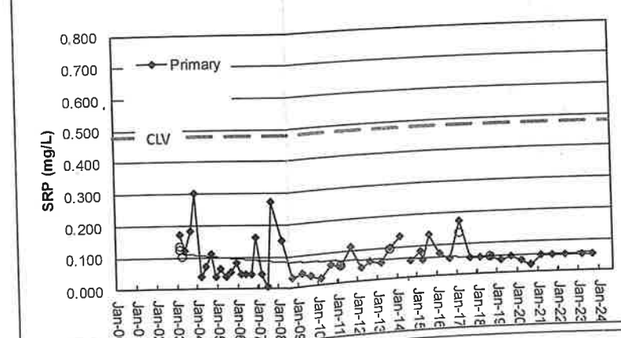
CWU-3 Electrical Conductivity



CWU-3 Nitrate



CWU-3 Soluble Reactive Phosphorous



CWU-3 Water Quality Monitoring Results

Threemile Canyon Farms
Boardman, Oregon

GeoEngineers

Figure A-2

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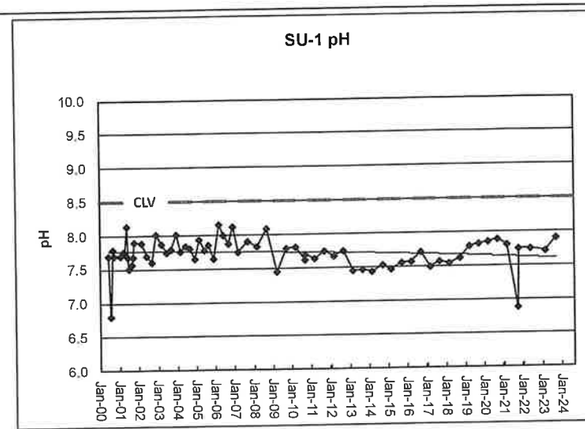

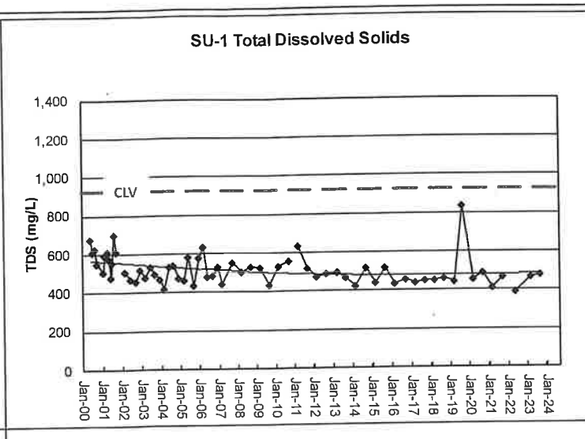

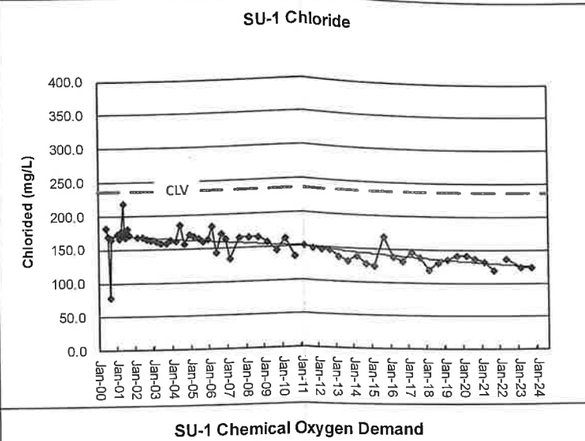

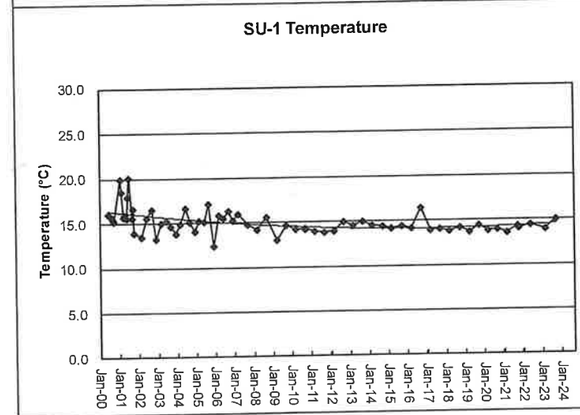

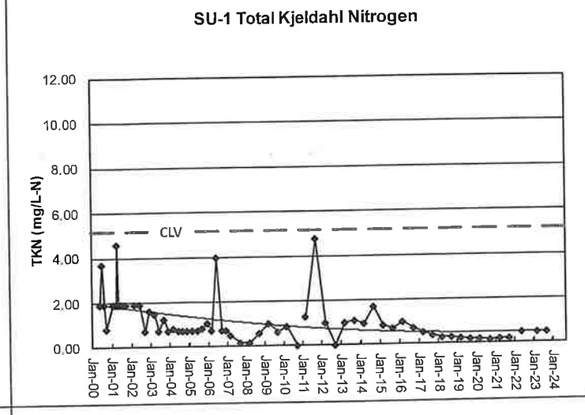

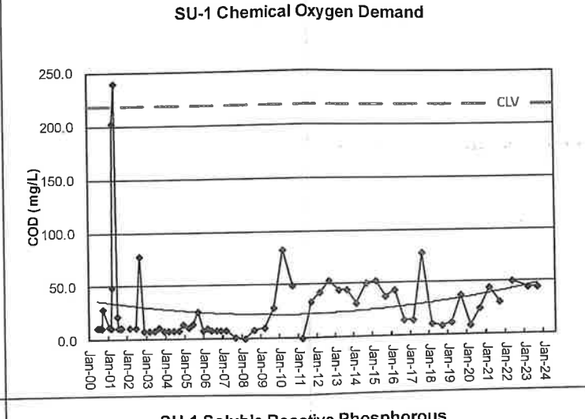

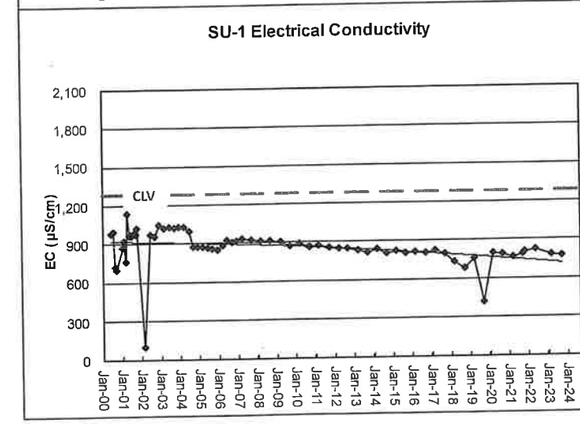

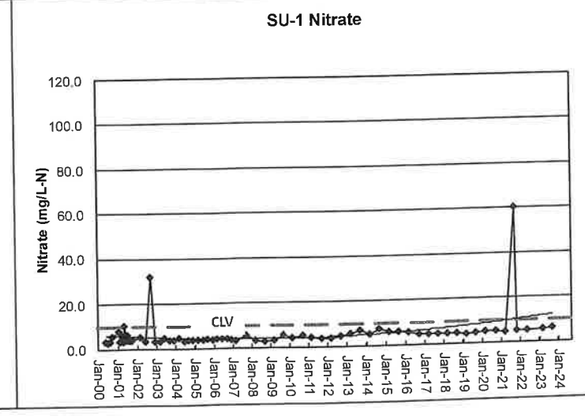

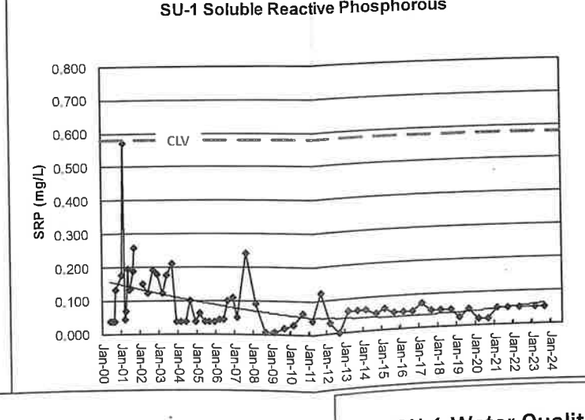

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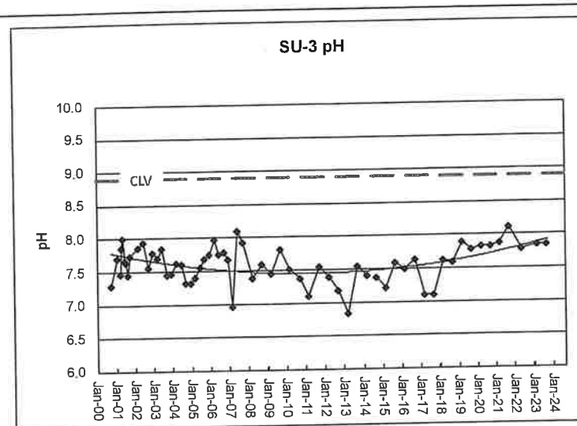
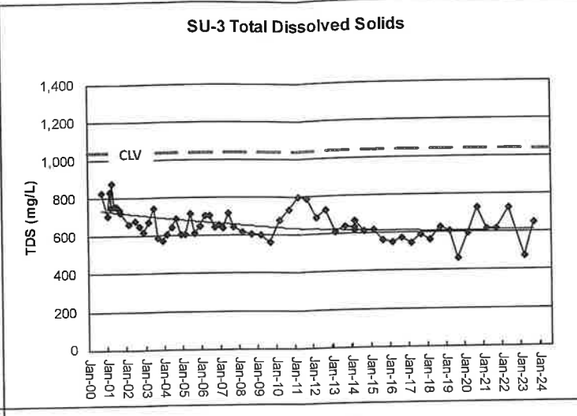
SU-1 Water Quality Monitoring Results

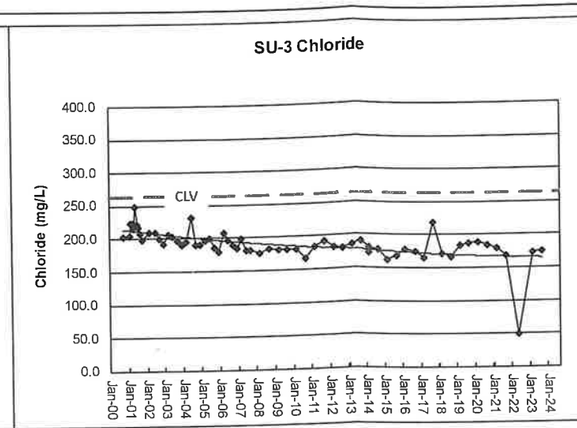
Threemile Canyon Farms
Boardman, Oregon

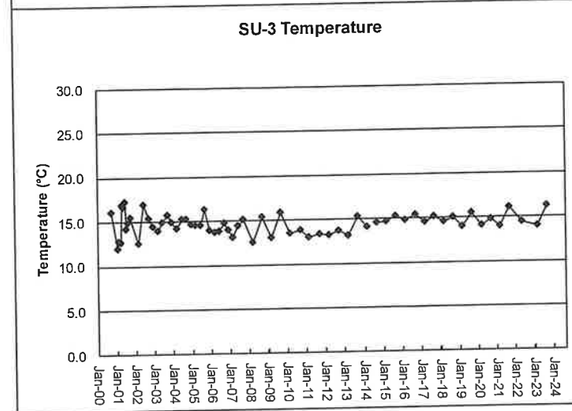
GeoEngineers

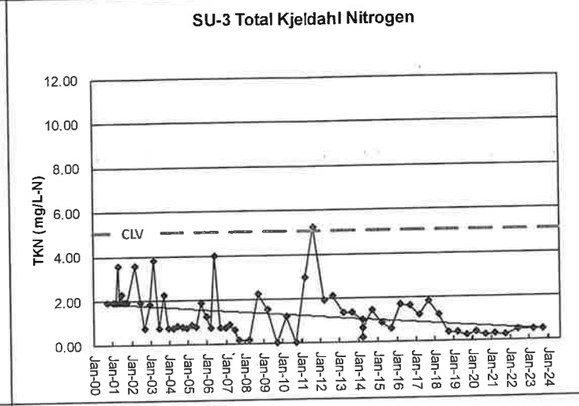
Figure A-3

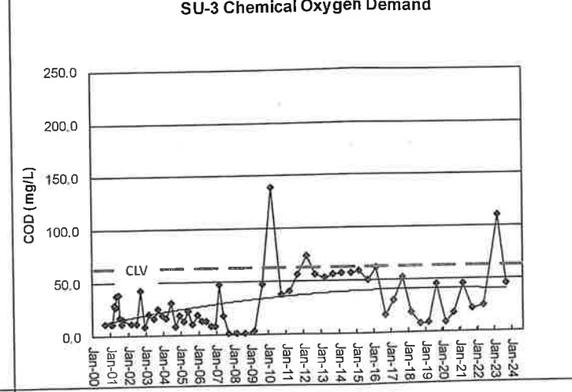


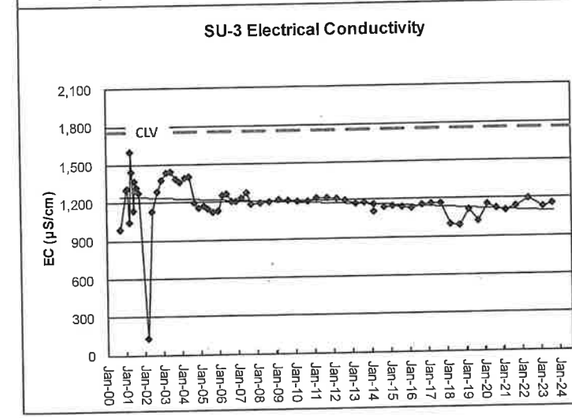


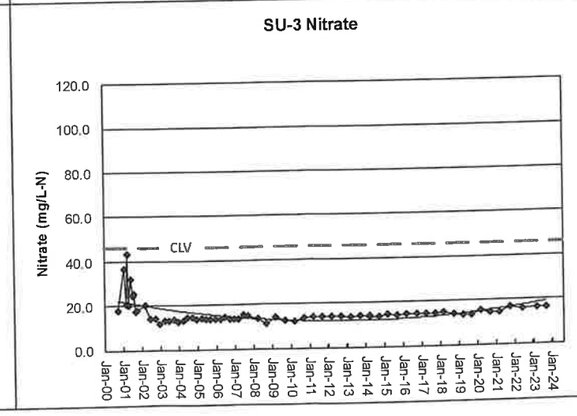


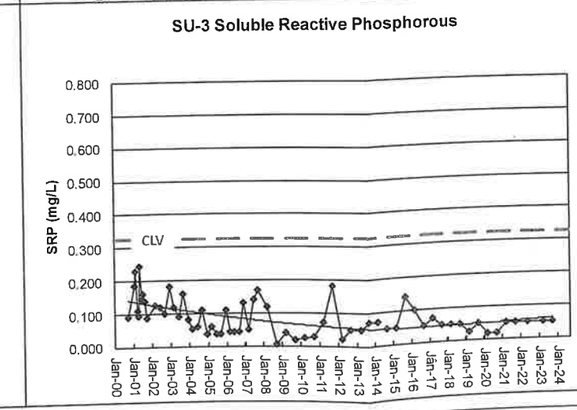












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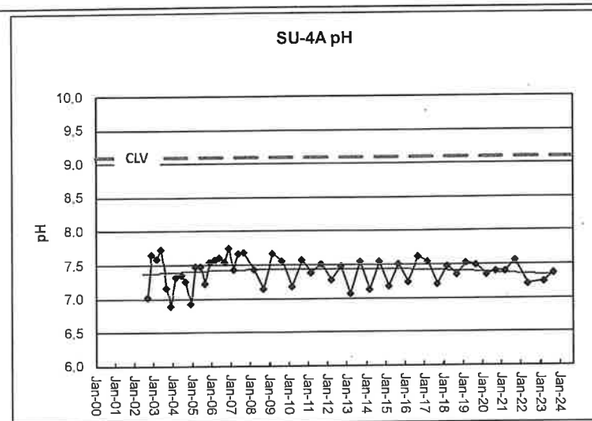
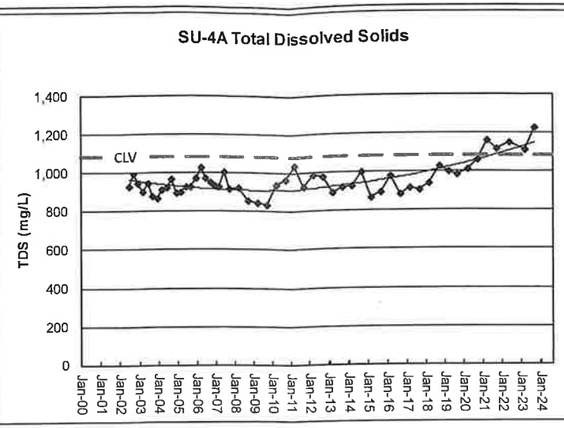
SU-3 Water Quality Monitoring Results

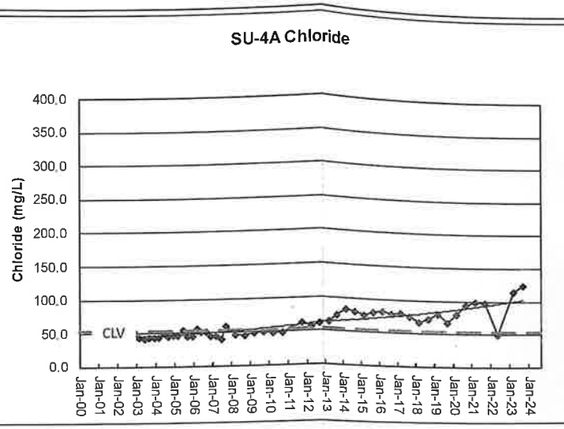
Threemile Canyon Farms
Boardman, Oregon

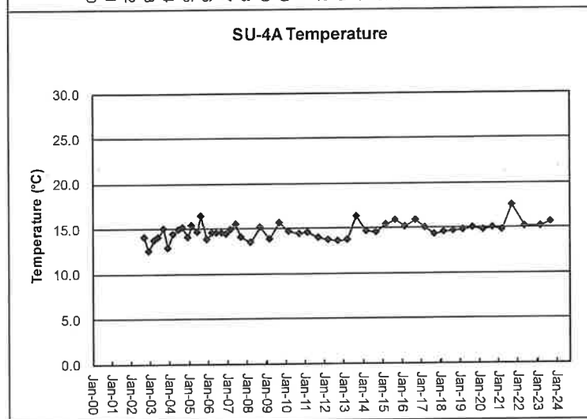
GeoEngineers

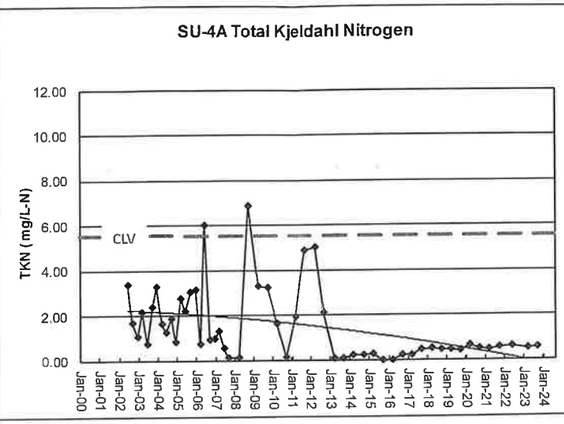
Figure A-4

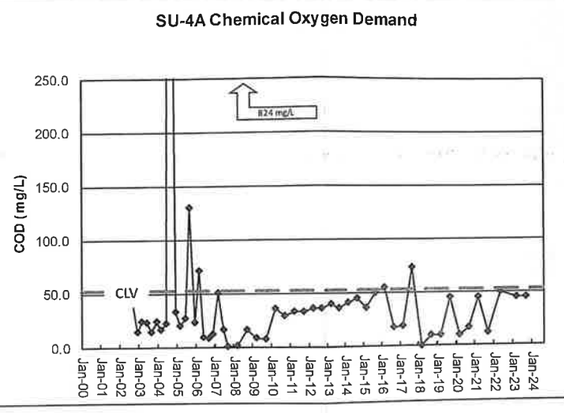


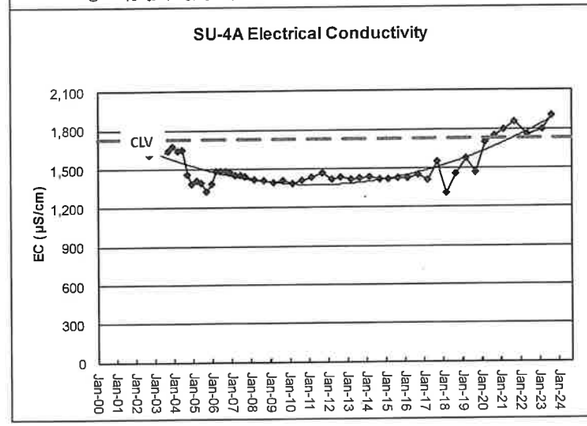


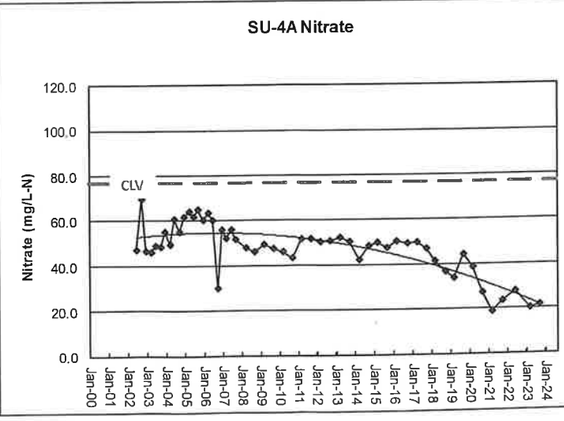


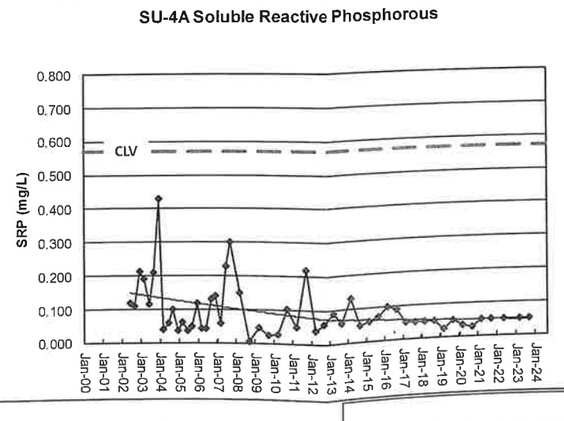












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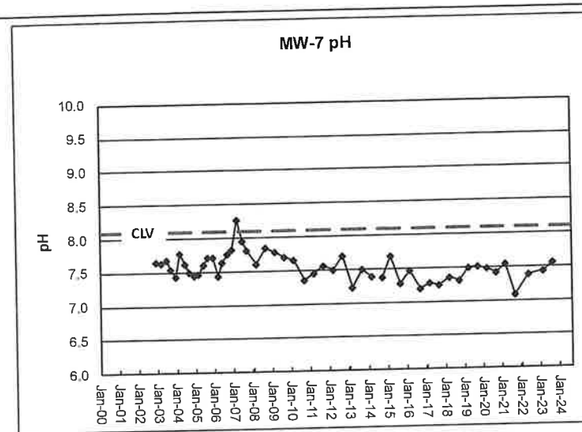
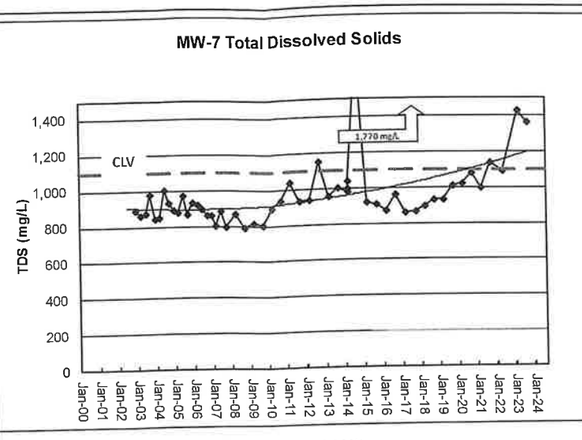
SU-4A Water Quality Monitoring Results

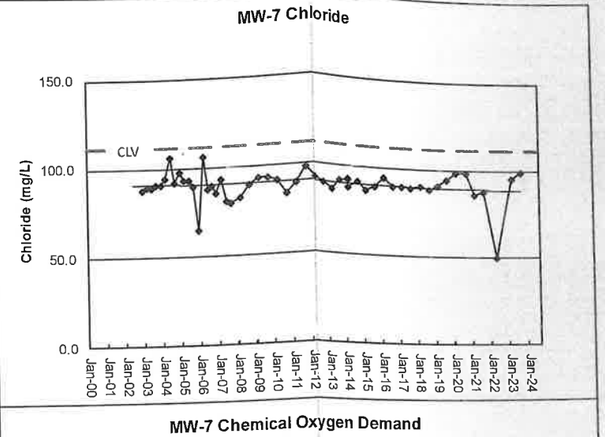
Threemile Canyon Farms
Boardman, Oregon

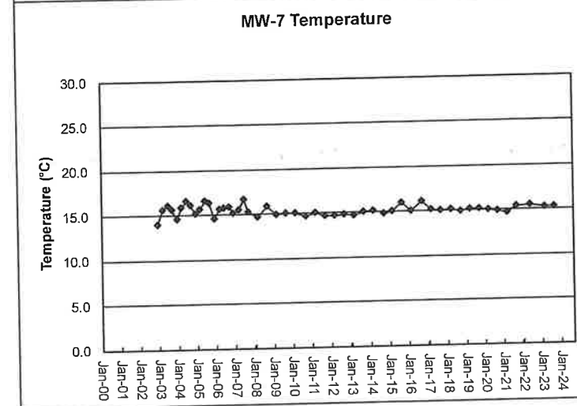
GeoEngineers

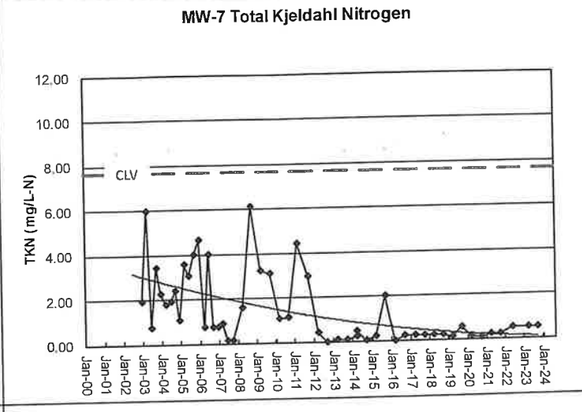
Figure A-5

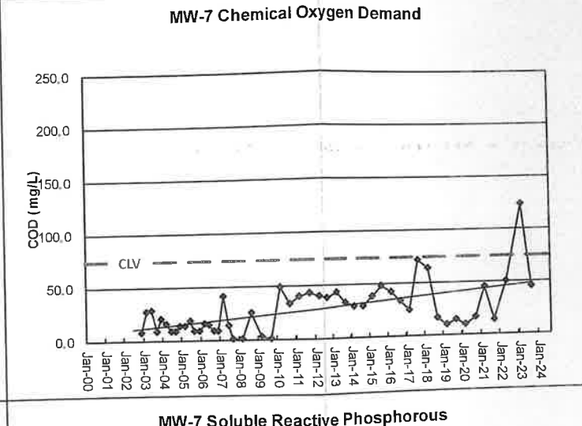


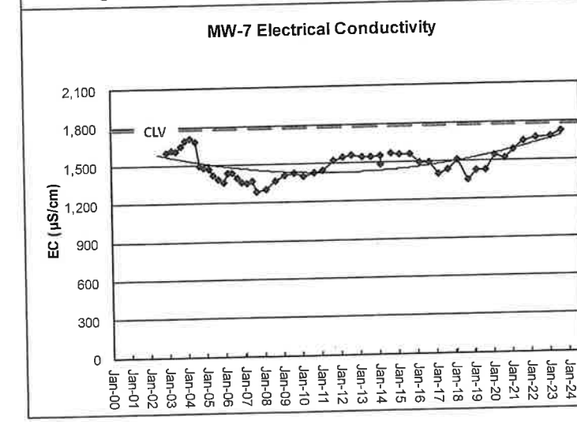


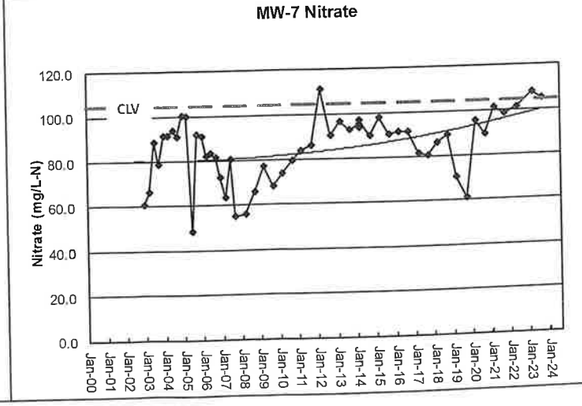


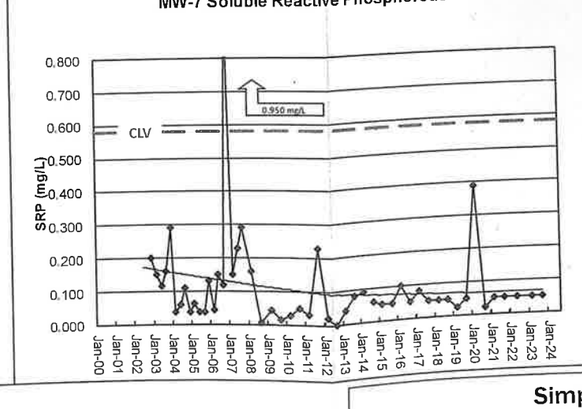












Simplot MW-7
Water Quality Monitoring Results

Threemile Canyon Farms
Boardman, Oregon

GeoEngineers

Figure A-6

Source(s): Microsoft® Excel® for Microsoft 365 MSO

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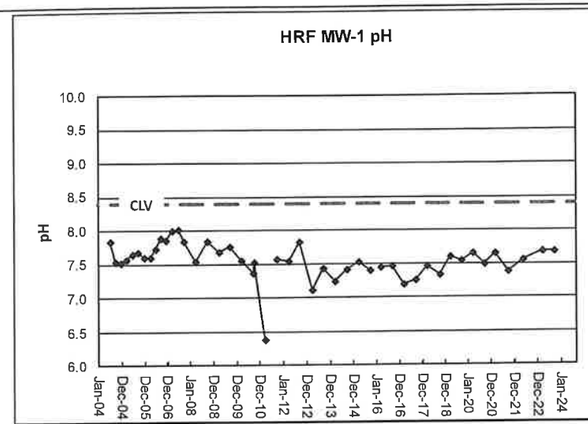

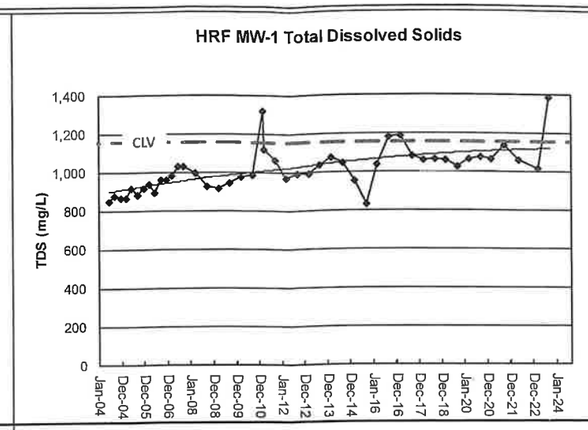

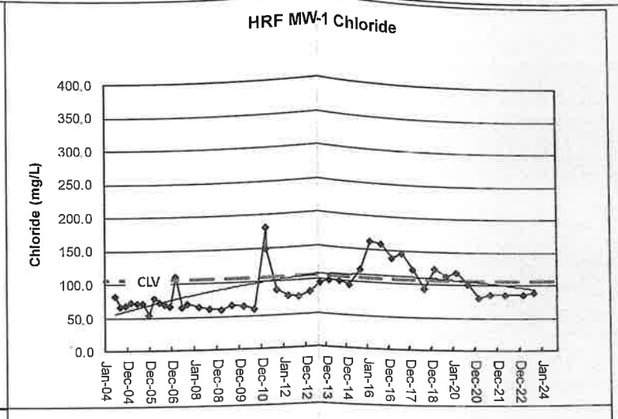

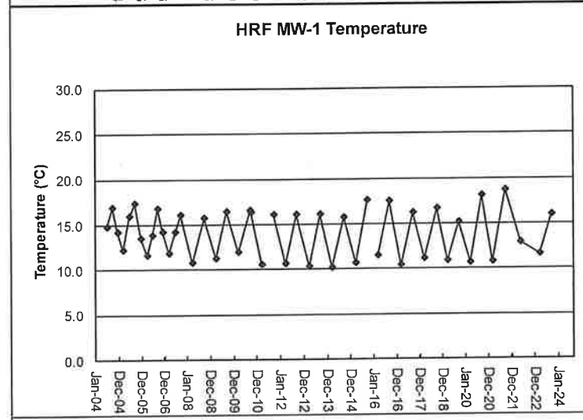

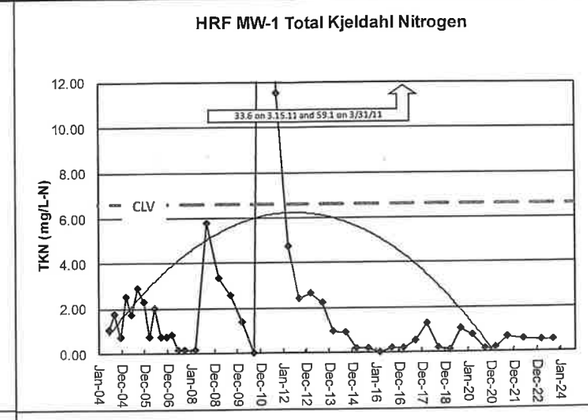

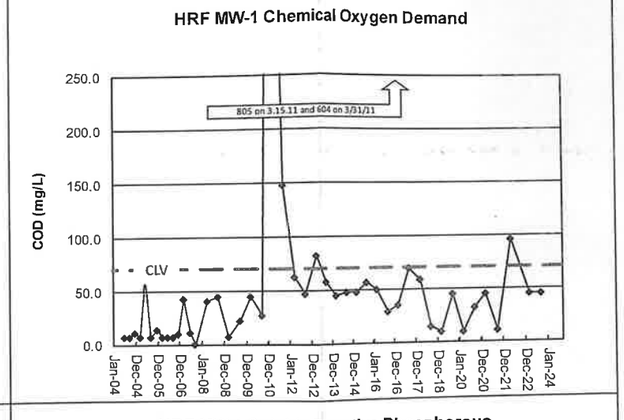

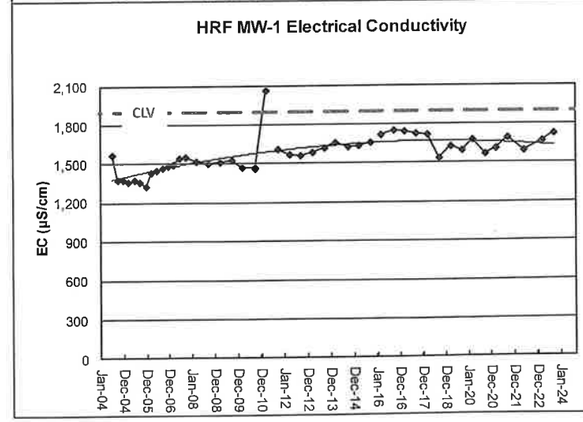

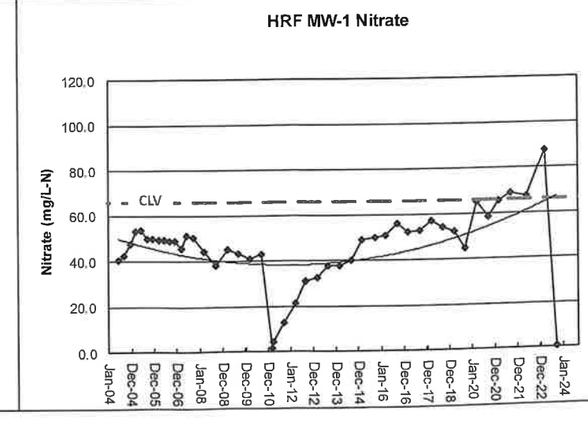

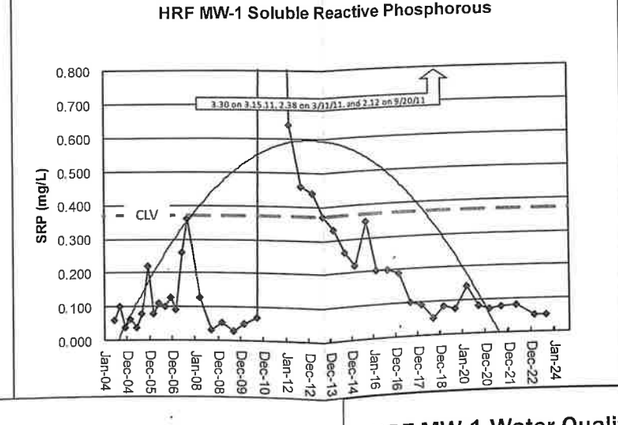

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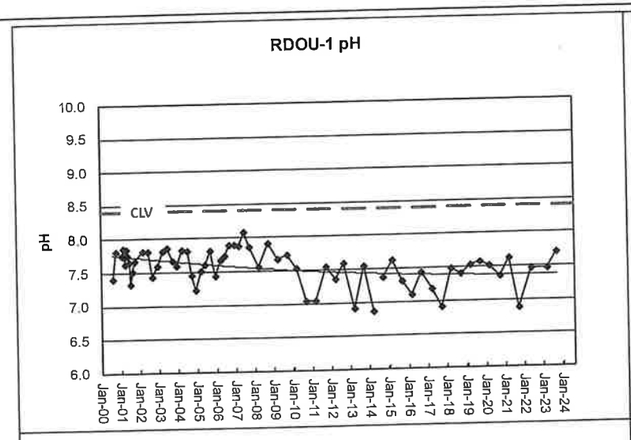
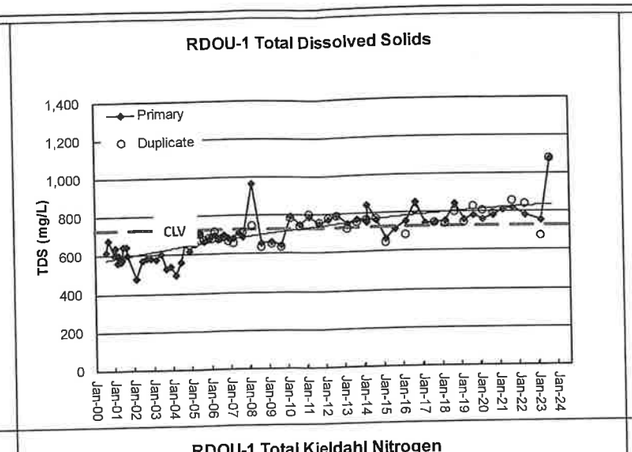
HRF MW-1 Water Quality Monitoring Results

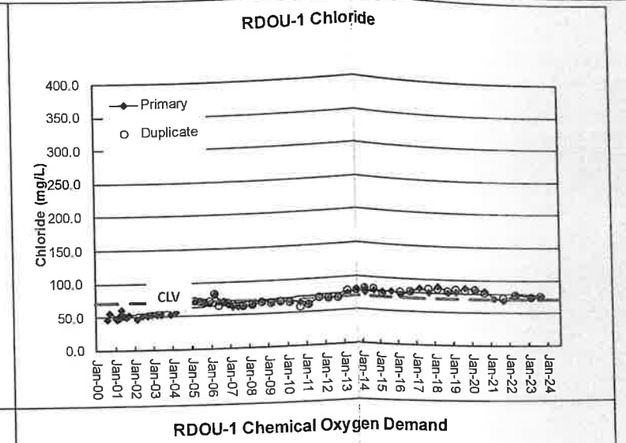
Threemile Canyon Farms
Boardman, Oregon

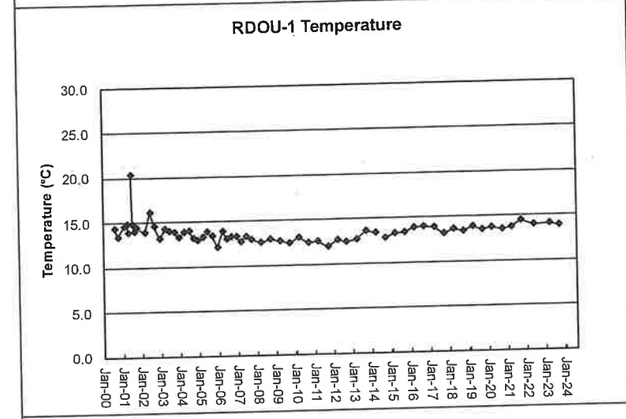
GeoEngineers

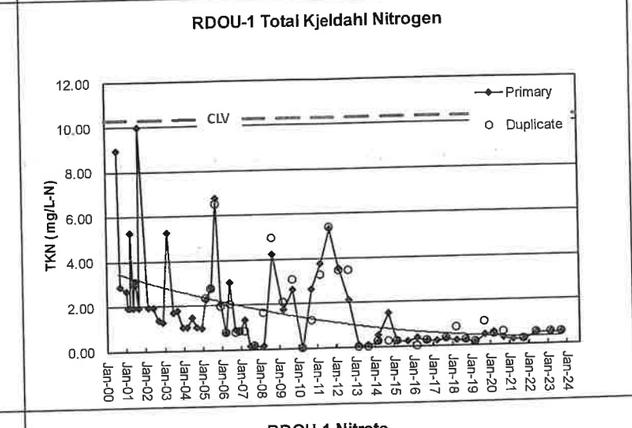
Figure A-7

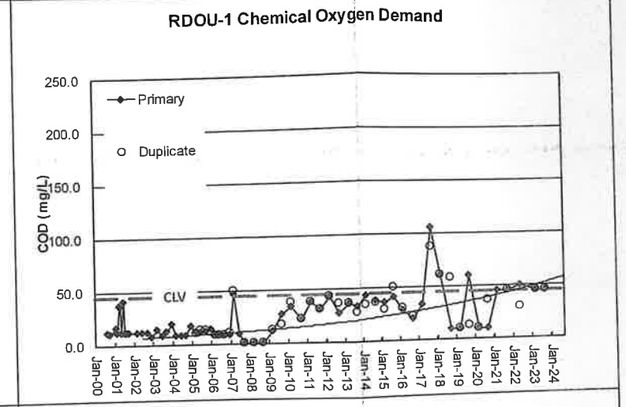


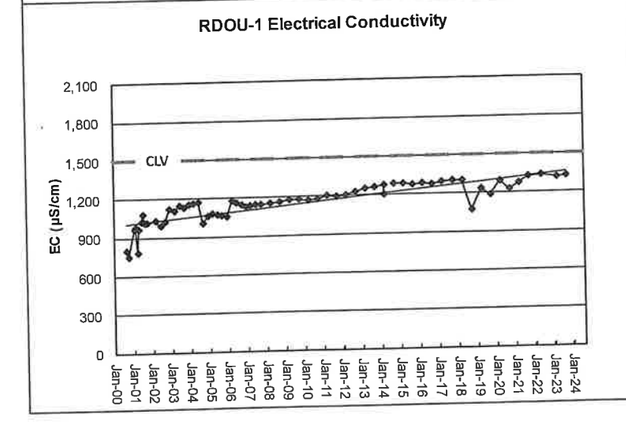


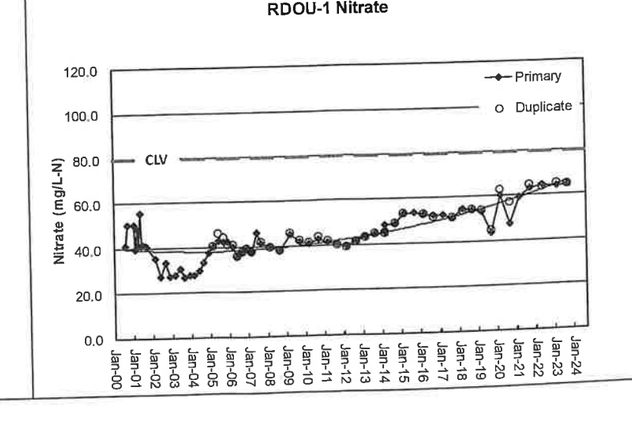


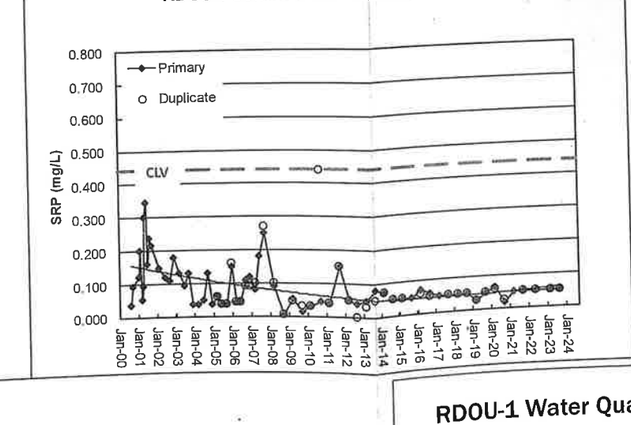












RDOU-1 Water Quality Monitoring Results

Threemile Canyon Farms
Boardman, Oregon

GeoEngineers

Figure A-8

Source(s): Microsoft® Excel® for Microsoft 365 MSO

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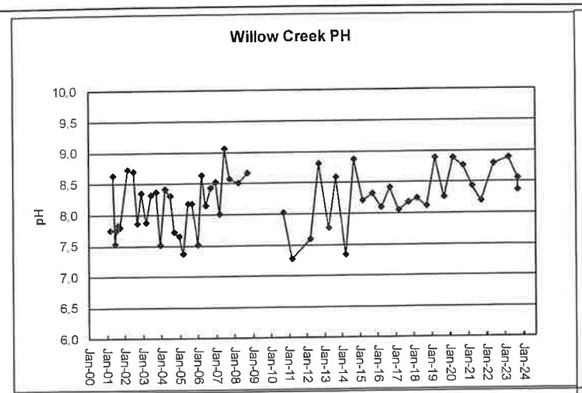

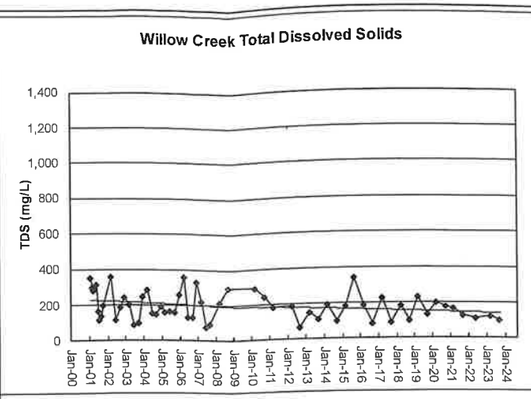

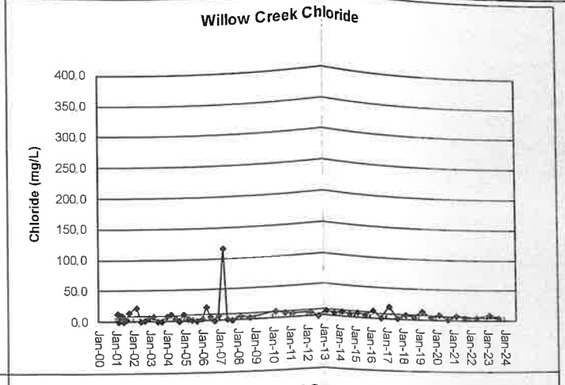

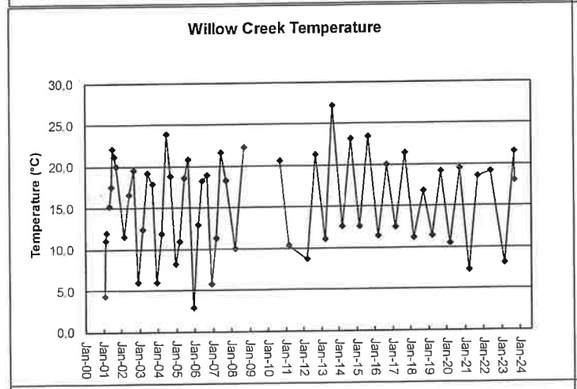

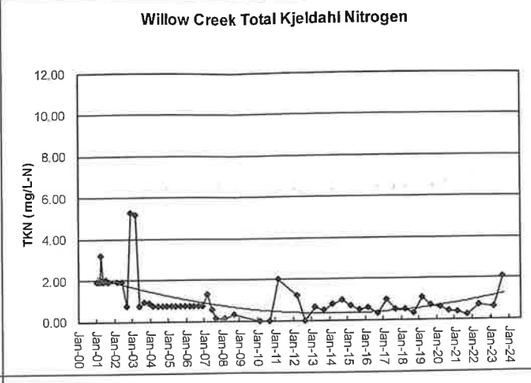

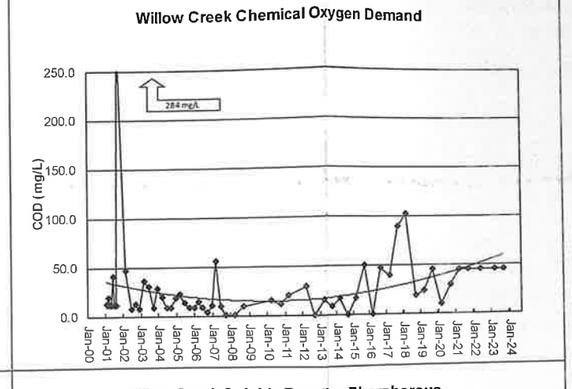

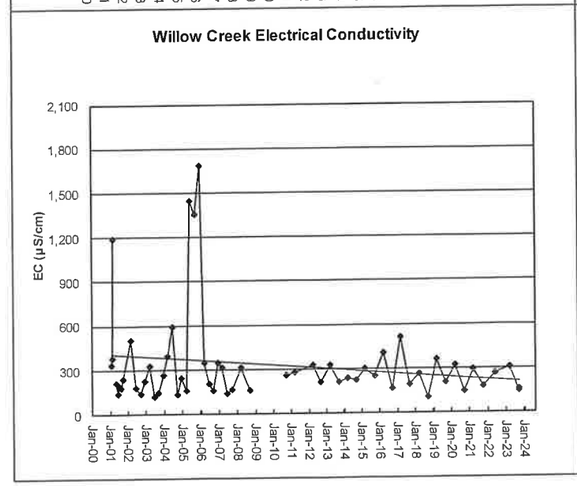

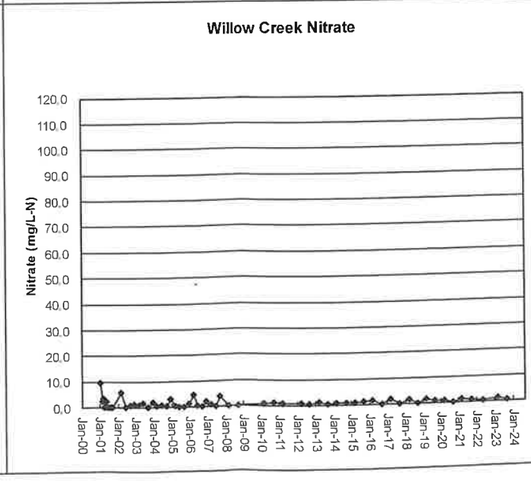

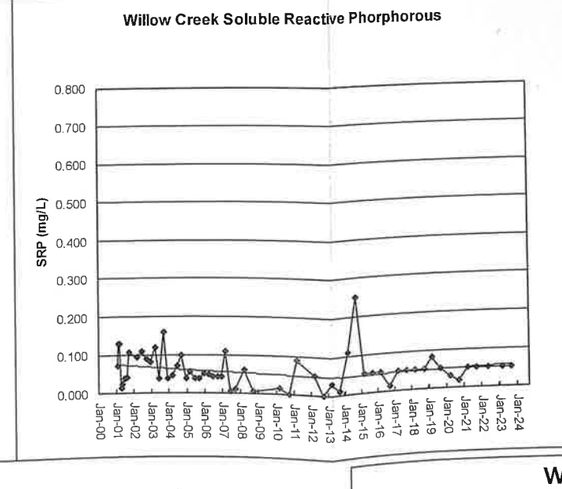

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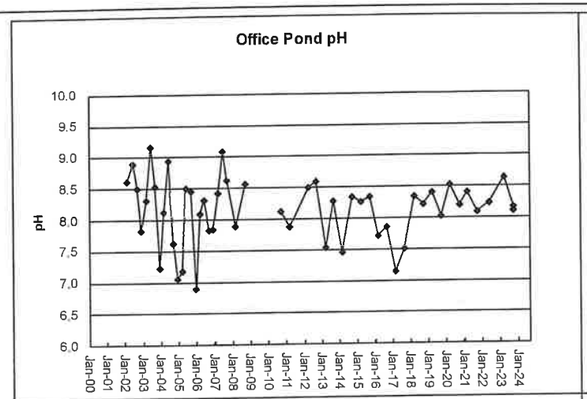
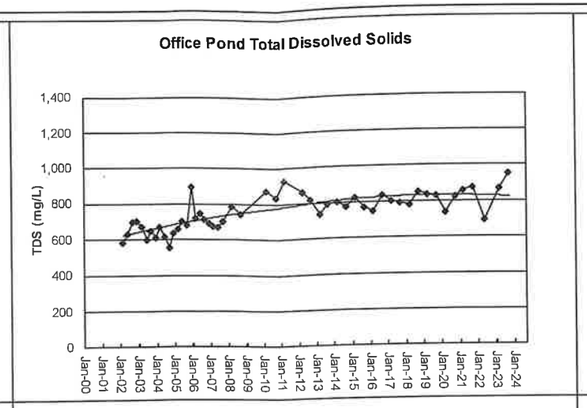
Willow Creek
Water Quality Monitoring Results

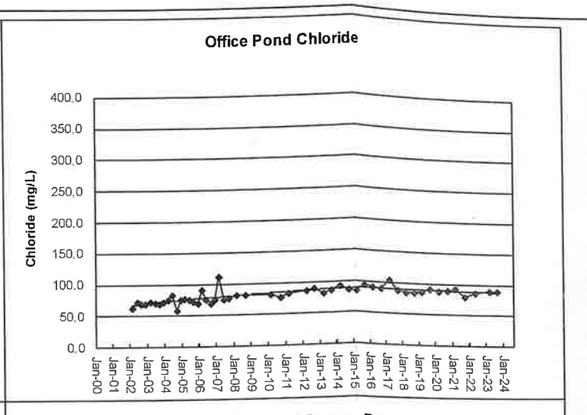
Threemile Canyon Farms
Boardman, Oregon

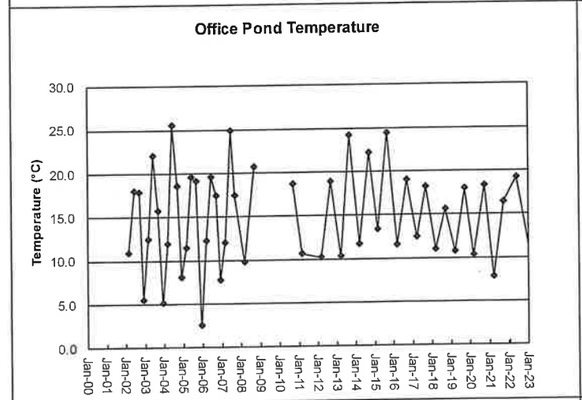
GeoEngineers

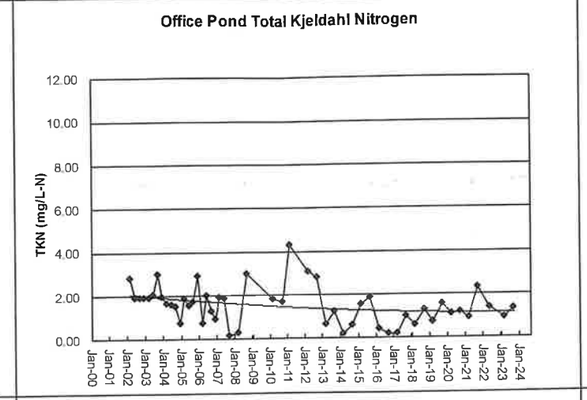
Figure A-10

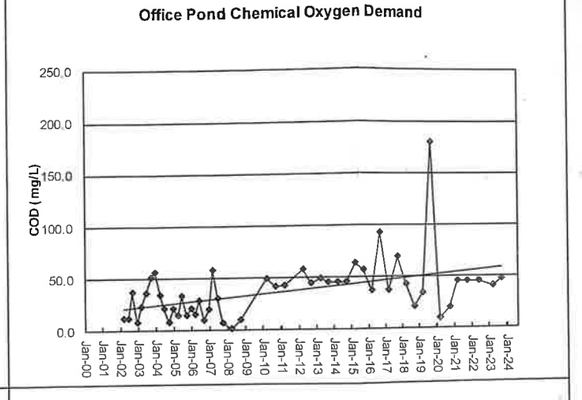


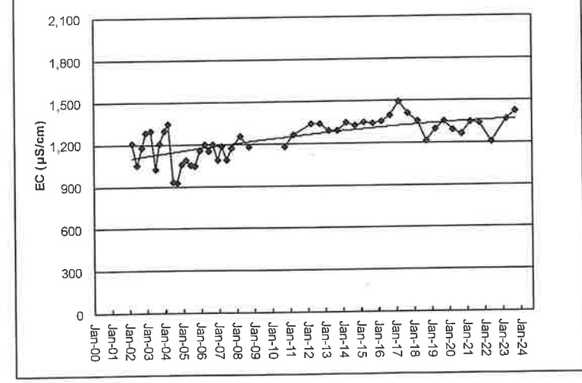


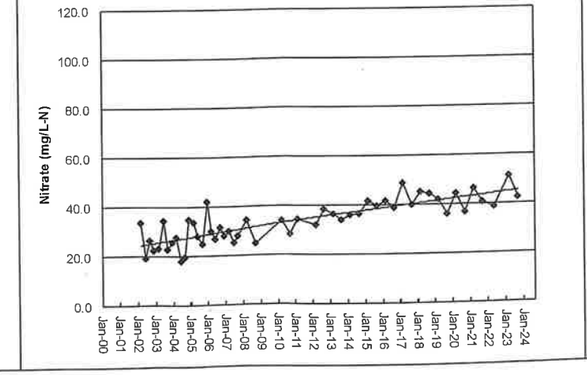


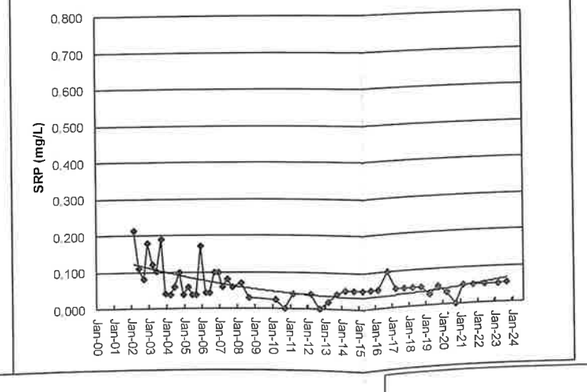












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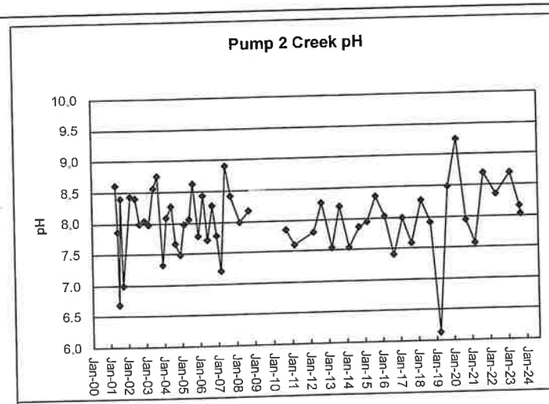
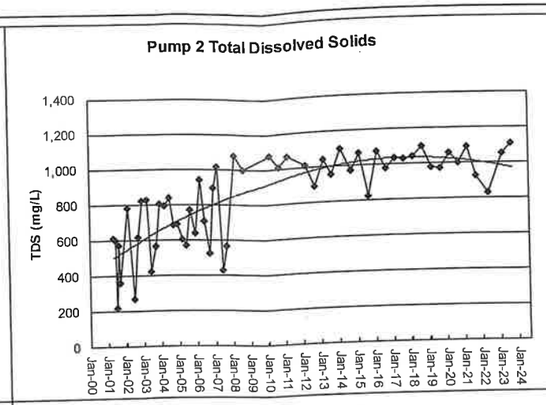
Office Pond Water Quality Monitoring Results

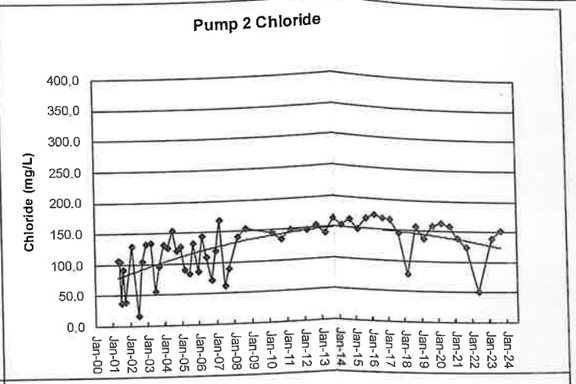
Threemile Canyon Farms
Boardman, Oregon

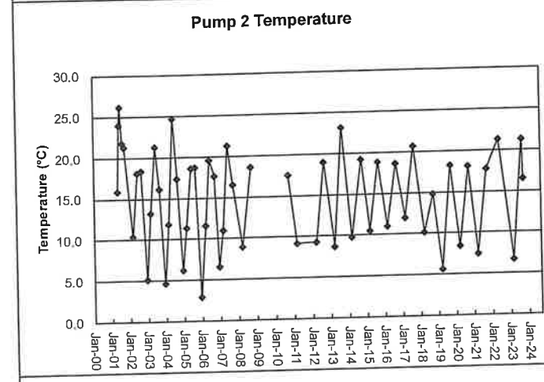
GeoEngineers

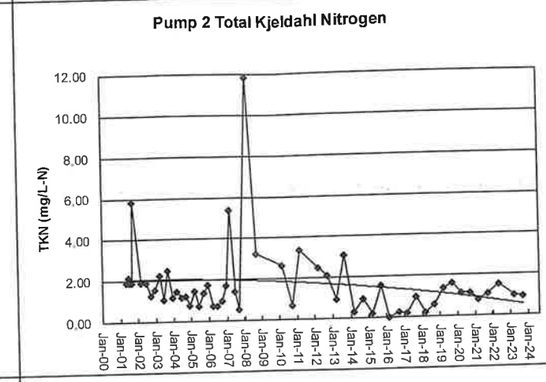
Figure A-11

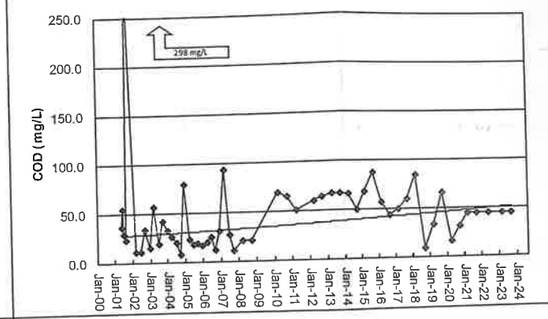


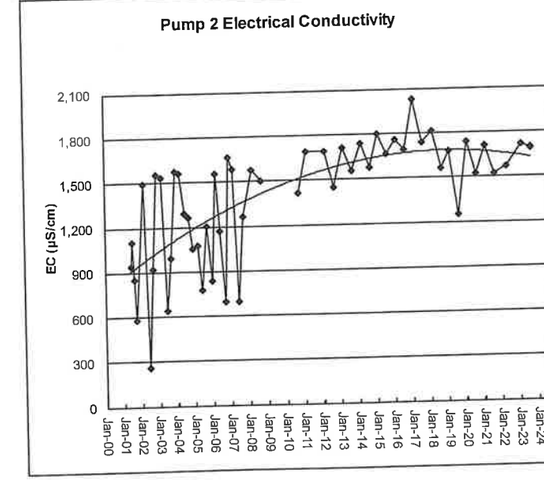


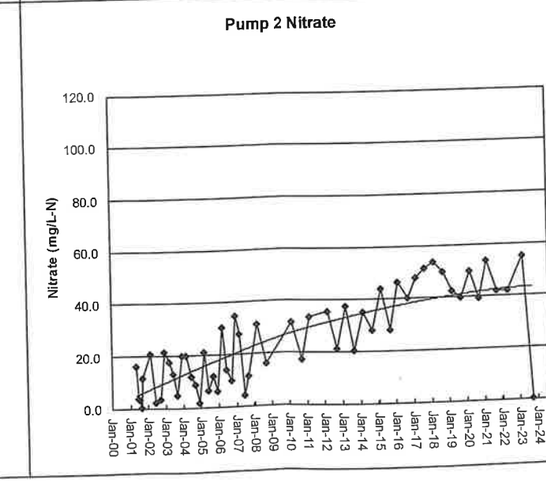


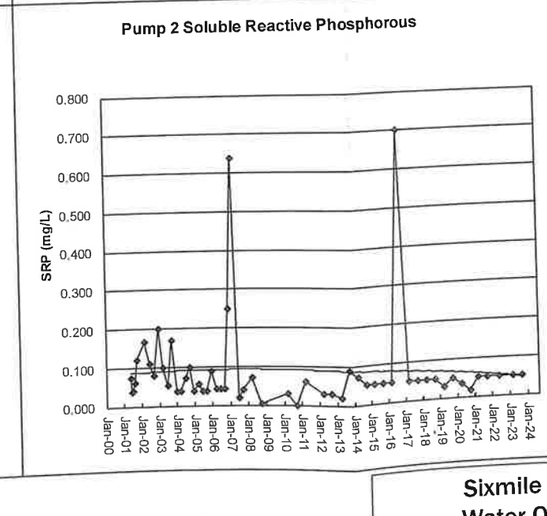












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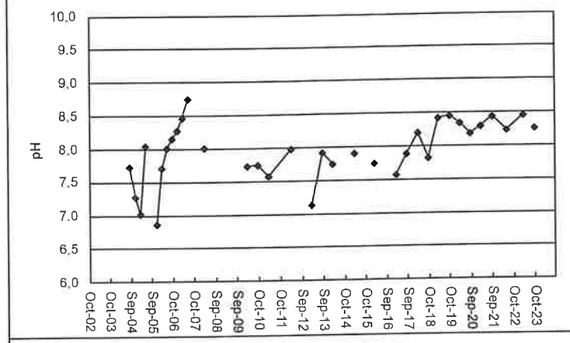
Sixmile Canyon Pump (Pump 2)
Water Quality Monitoring Results

Threemile Canyon Farms
Boardman, Oregon

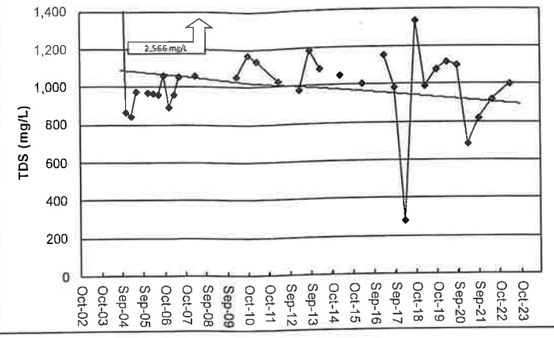
GeoEngineers

Figure A-12

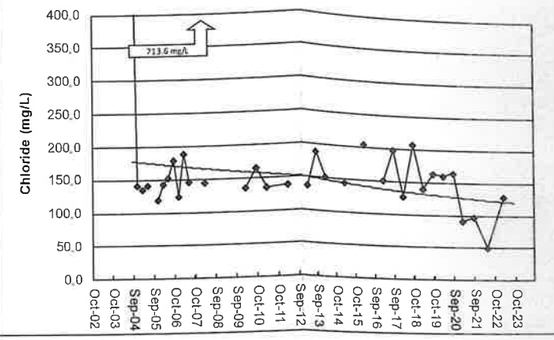
Sixmile Creek pH



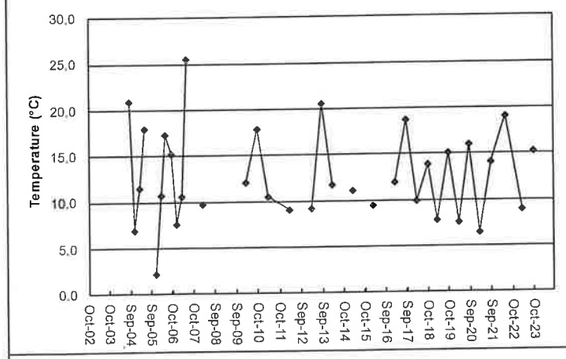
Sixmile Creek Total Dissolved Solids



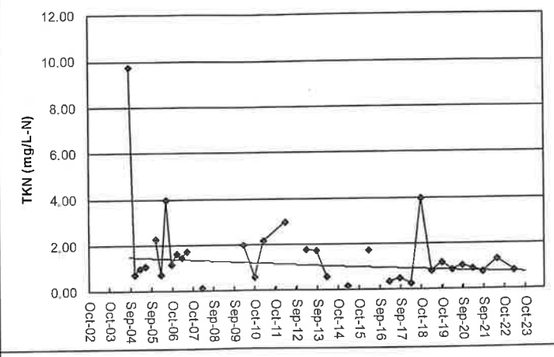
Sixmile Creek Chloride



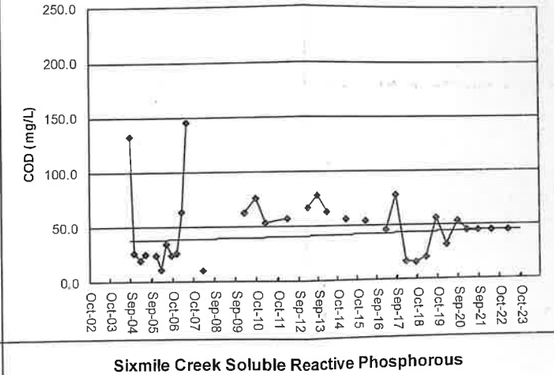
Sixmile Creek Temperature



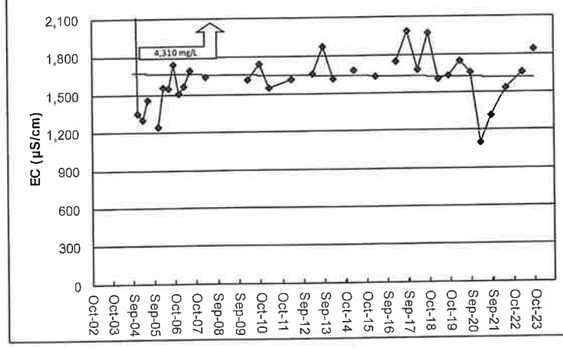
Sixmile Creek Total Kjeldahl Nitrogen



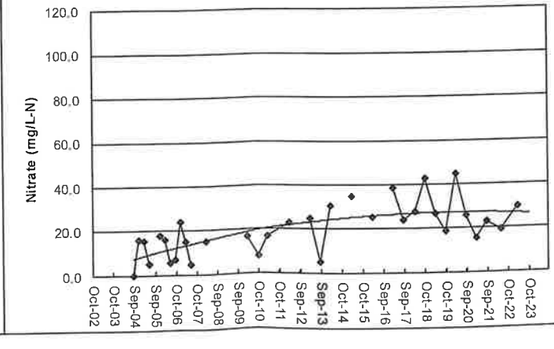
Sixmile Creek Chemical Oxygen Demand



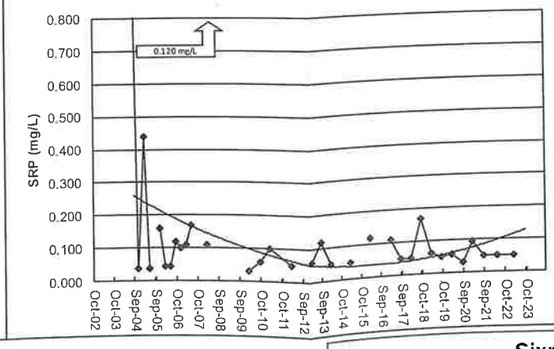
Sixmile Creek Electrical Conductivity



Sixmile Creek Nitrate



Sixmile Creek Soluble Reactive Phosphorous



Sixmile Creek
Water Quality Monitoring Results

Threemile Canyon Farms
Boardman, Oregon

GeoEngineers

Figure A-13

Source(s): Microsoft® Excel® for Microsoft 365 MSO

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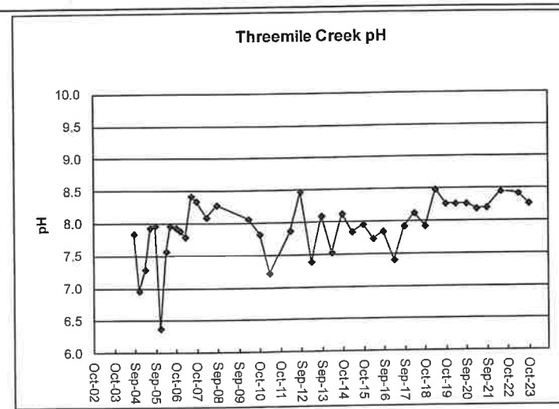

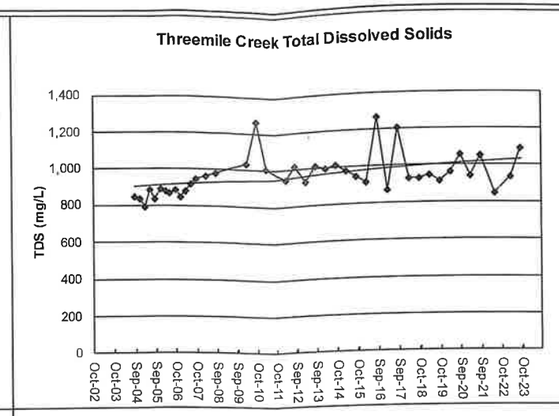

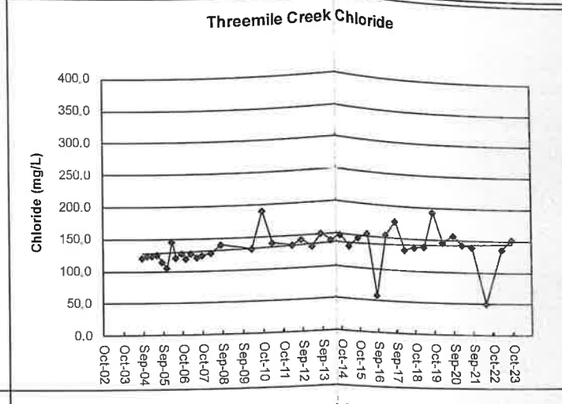

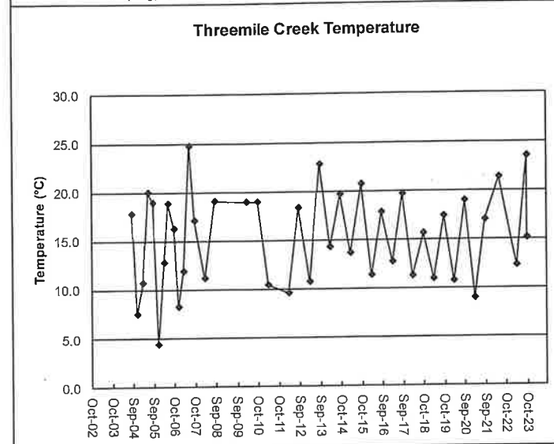

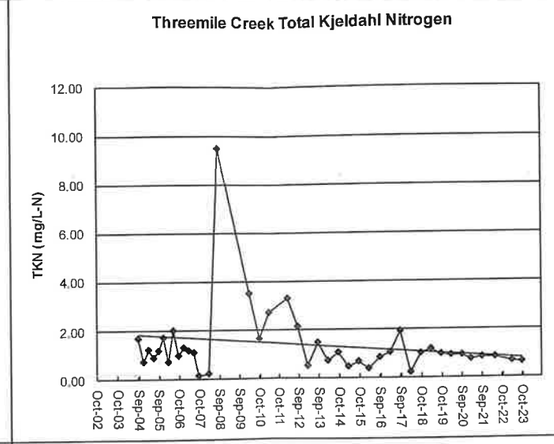

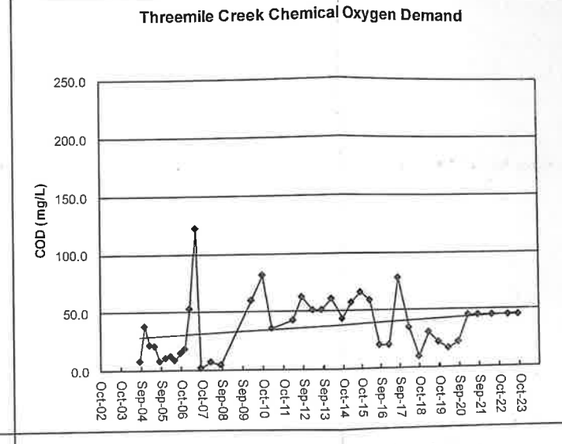

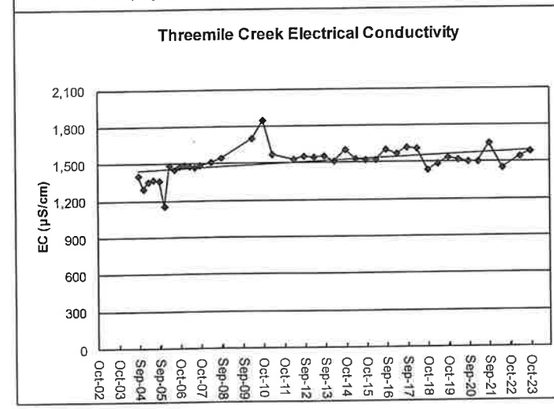

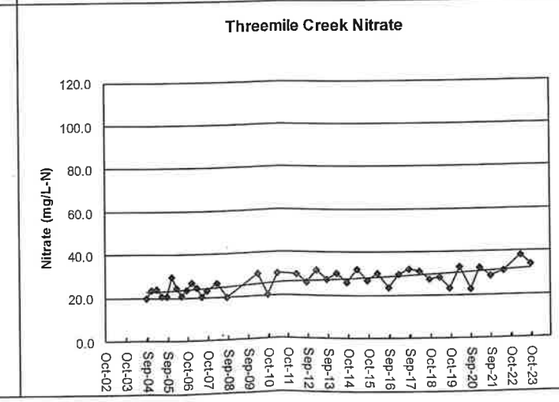

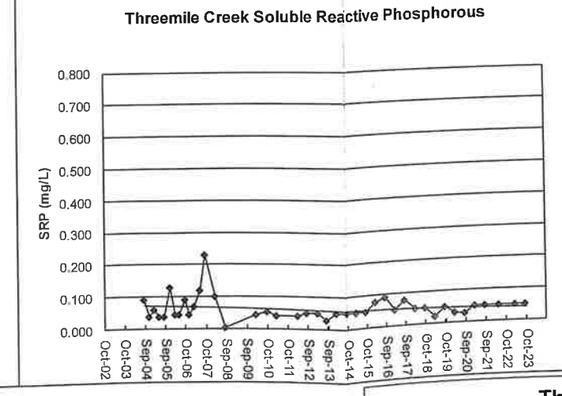

Source(s): Microsoft® Excel® for Microsoft 365 MSO

23415-001-07 Date Exported: 01/11/24

Threemile Creek
Water Quality Monitoring Results

Threemile Canyon Farms
Boardman, Oregon

GeoEngineers

Figure A-14

APPENDIX B
Water Quality Results Summary Table

Table B-1

Water Quality Test Results Summary

Threemile Canyon Farms

Boardman, Oregon

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)	TKN (mg/L)	NO_3-N (mg/L-N)	Cl (mg/L)	COD (mg/L)	Soluble Reactive Phosphorous (mg/L)	Total Coliform	E-Coli
CWU-2	6/19/2000	9864	7.64	14.7	1268	743	7.08	57.30	48.2	< 11.4	< 0.037	absent	
CWU-2	7/19/2000	108	7.29	14.1	1434	883	< 1.90	56.40	52.8	< 11.4	< 0.037	absent	
CWU-2	9/26/2000	49833	7.37	13.2	950	805	3.64	79.80	46.3	19.0	0.076	absent	
CWU-2	1/24/2001	51540	7.82	12.6	1272	811	2.88	90.70	55.5	76.0	0.178	absent	
CWU-2	2/21/2001	51975		12.6	1260	890	< 1.90	61.20	53.0	< 11.4	0.300	absent	
CWU-2	3/27/2001	52423	7.57	12.0	1092	805	< 1.90	28.10	53.2	25.0	0.116	absent	
CWU-2	4/17/2001	52773				844	2.40	65.60	57.5	< 11.4	0.105	absent	
CWU-2	5/15/2001	53294	7.98	16.6	1330	835	2.08	77.80	62.0	240.0	0.106	absent	
CWU-2	6/19/2001	53825	7.59	17.2	1300	838	3.18	66.20	52.2	21.0	0.144	absent	
CWU-2	7/9/2001	54253	7.68	16.9	1320	817	2.42	71.70	50.7	< 11.4	0.139	absent	
CWU-2	8/21/2001	55121	7.53	13.7	1320	948	3.40	62.00	54.0	< 11.4	0.193	absent	
CWU-2	9/24/2001	55635	7.64	13.9	1320	838	2.66	64.00	52.2	< 11.4	0.211	absent	
CWU-2	3/4/2002		7.84	11.5	1350	780	< 1.90	64.80	55.2	< 11.4	0.187	absent	
CWU-2	6/17/2002	59787	7.94	16.5	1330	776	6.52	53.70	51.0	< 11.4	0.022	absent	
CWU-2	9/16/2002	61693	8.39	14.3	1325	814	1.18	48.20	51.0	< 7.7	0.150	absent	
CWU-2	12/9/2002	63028	8.04	12.7	1499	804	1.68	53.90	56.0	50.0	0.440	absent	
CWU-2	3/17/2003	64318	7.86	13.1	1493	814	3.47	48.00	56.5	< 8.0	0.120	absent	
CWU-2	6/17/2003	65625	7.92	14.9	1464	836	0.76	54.50	55.5	< 8.0	0.120	absent	
CWU-2	9/16/2003	67236	7.93	14.2	1247	614	1.18	29.70	29.0	16.0	0.150	present	present
CWU-2	12/15/2003	68664	7.82	13.9	1173	614	< 0.72	25.70	28.5	28.0	0.193	absent	present
CWU-2	3/15/2004	69804	7.56	14.7	1198	632	1.10	26.60	33.0	< 8.0	< 0.037	absent	absent
CWU-2	6/22/2004	71402	7.84	14.4	934	476	0.72	12.50	15.5	15.0	0.060	absent	present
CWU-2	9/14/2004	72800	7.74	14.7	715	454	< 0.72	9.36	12.0	< 8.0	0.100	present	absent
CWU-2	12/13/2004	74166	7.76	14.1	746	444	< 0.72	12.60	15.0	15.0	< 0.037	absent	absent
CWU-2	3/14/2005	75511	7.98	14.9	786	492	< 0.72	15.90	17.5	11.0	0.069	absent	absent
CWU-2	6/13/2005	76773	7.73	14.9	658	422	< 0.72	6.33	9.5	10.0	< 0.037	absent	absent
CWU-2	9/12/2005	78305	7.73	16.5	630	388	0.97	5.36	6.5	13.0	0.050	absent	absent
CWU-2	12/12/2005	80011	7.86	12.3	645	464	< 0.72	7.97	11.7	14.0	0.130	absent	absent
CWU-2	3/21/2006	81312	8.05	15.4	640	444	7.50	6.05	32.0	10.0	0.060	absent	absent
CWU-2	6/12/2006	82843	7.95	16.8	685	420	4.00	7.77	14.0	< 8.0	0.160	absent	absent
CWU-2	9/18/2006	84695	7.73	16.9	637	372	0.86	4.55	8.2	< 8.0	0.150	absent	absent
CWU-2	12/12/2006	86054	8.08	15.0	309	378	< 0.72	5.05	21.1	< 8.0	0.120	absent	absent
CWU-2	3/12/2007	87131	7.90	15.7	650	280	0.66	6.14	8.0	< 8.0	0.100	absent	absent
CWU-2	6/20/2007	89026	8.10	17.3	650	418	1.70	5.87	8.6	< 1.0	< 0.005	absent	absent
CWU-2	9/17/2007	90943	7.83	15.0	592	383	< 0.14	4.42	2.5	< 1.0	0.310	present	absent
CWU-2	3/18/2008	93633	7.79	14.6	572	353	< 0.14	3.39	7.5	< 1.0	0.090	absent	absent
CWU-2	9/15/2008	97267	8.04	15.1	585	365	1.15	2.98	7.5	< 1.0	0.040	present	absent
CWU-2	3/18/2009	99884	7.82	14.5	552	268	0.70	2.58	8.5	7.4	0.045	present	absent
CWU-2	9/15/2009	13920	7.71	14.7	583	276	0.60	3.69	6.5	22.0	0.035	present	absent
CWU-2	3/15/2010	16725/16730	7.37	14.7	566	445	1.33	3.68	7.0	ND	0.020	absent	absent
CWU-2	9/20/2010	20679	7.68	14.5	588	426	0.50	3.73	8.3	24.0	0.058	present	absent
CWU-2	3/14/2011	23045	7.33	14.4	573	415	2.10	2.78	8.4	ND	0.050	present	absent
CWU-2	9/19/2011	26394	7.72	14.4	553	340	6.22	2.59	11.0	ND	0.140	present	absent
CWU-2	3/19/2012	28740/28744	7.61	14.4	548	337	1.90	2.83	8.0	19.8	0.004	absent	absent
CWU-2	9/10/2012	32233/32234	7.67	14.6	586	351	ND	3.97	8.0	ND	0.040	absent	absent
CWU-2	3/18/2013	34916/34917	7.23	14.2	597	373	0.76	3.93	8.4	< 8.0	0.090	absent	absent
CWU-2	9/9/2013	38069/38068	7.42	14.8	625	397	1.27	6.02	10.1	10.0	0.090	absent	absent

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)		TKN (mg/L)		NO_3-N (mg/L-N)	Cl (mg/L)		COD (mg/L)		Soluble Reactive Phosphorous (mg/L)	Total Coliform	E-Coli
CWU-2	3/10/2014	40617/40623	7.40	14.9	629	410		1.16		6.81	11.3	<	50.0		0.060	absent	absent
CWU-2	9/15/2014	44248	7.65	14.8	624	395		1.14		6.32	8.6	<	50.0	<	0.005		
CWU-2	3/9/2015	46846/46853	7.53	13.7	1279	717		1.88		15.10	177.0		68.0		0.060	absent	absent
CWU-2	4/29/2015	47668	7.61	14.2	636	391		0.80		8.49	10.2	<	50.0		0.060		
CWU-2	9/9/2015	50722/50729	7.51	15.2	601	405		0.80		8.26	10.8		111.0		0.150	present	absent
CWU-2	3/7/2016	53439	7.52	15.0	644	395		1.34		8.90	11.8	<	50.0		0.120	present	absent
CWU-2	9/12/2016	57706	7.55	15.6	653	373		1.64		9.3	13.6	<	40		0.06	absent	absent
CWU-2	3/13/2017	60241/60236	7.29	14.8	720	461		1.55		13.4	14.5	<	50	<	0.05	present	absent
CWU-2	9/12/2017	64078/64087	7.48	14.4	770	471		0.3		16.1	18.4		77.9	<	0.05	present	absent
CWU-2	3/14/2018	67113/67122	7.56	14.73	694	490		0.9		15.7	18.8	J	26	<	0.05	absent	absent
CWU-2	9/18/2018	1809181-03	7.52	15.01	649	480		0.261		14.2	13.7	<	9.54	<	0.05	absent	absent
CWU-2	3/18/2019	1903102-03	7.74	15	678	458		0.44		12.8	14.4	U	9.54	U	0.029	absent	absent
CWU-2	9/11/2019	1909158-03	7.75	15.28	671	688		0.434		11.5	12.1		53	U	0.05	present	absent
CWU-2	3/16/2020	203154-03	7.68	14.83	742	496		0.489		13.6	16	U	9.27	U	0.045	present	absent
CWU-2	9/14/2020	2009179-03	7.78	14.73	797	516		0.447	D	16.5	20.1	J	13.0	U	0.052	absent	absent
CWU-2	3/15/2021	2103186-03	7.7	14.8	840	563	<	0.200		22.2	19.7	<	45.0	<	0.0500	absent	absent
CWU-2	9/21/2021	2109400-03	6.82	15.49	736	459		0.504		15	12.7	J	20		0.081	present	absent
CWU-2	3/14/2023	2303228-03				460	<	0.5		14.1	12.8	<	45	<	0.5	present	absent
CWU-2	9/12/2023	2309213-03	7.84	15.9	696	466	<	0.5		13.1	13.4	<	45		0.085	present	absent
CWU-2	9/20/2023	2309400-03														present	absent
CWU-2 dup.	3/18/2013	34920				368		1.06		4.00	8.7	<	8.0		0.060	absent	absent
CWU-2 dup.	3/10/2014	40619/40625				412		1.45		6.85	11.7	<	50.0		0.130	absent	absent
CWU-2 dup.	9/15/2014	44249/44256				387		1.59		6.32	8.6	<	50.0	<	0.050	present	absent
CWU-2 dup.	3/9/2015	46847/46854				721		1.36		15.10	179.0		57.0		0.060	absent	absent
CWU-2 dup.	9/9/2015	50723/50730				404		1.13		8.26	10.5		111.0		0.160	present	absent
CWU-2 dup.	3/7/2016	53440				414		1.53		8.8	10.6	<	50		0.11	present	absent
CWU-2 dup.	9/12/2016	57707	--	--	--	429		1.34		9.4	15	<	40	<	0.05	present	absent
CWU-2 dup.	9/12/2017	64079				459		0.77		15.8	17.8		82.2	<	0.05	present	absent
CWU-2 dup.	3/14/2018	67114				485		0.9		15.9	17		ND	<	0.05	absent	absent
CWU-2 dup.	3/18/2019	19030102-04				445		0.289		13.2	14.2	J	12	U	0.029	absent	absent
CWU-2 dup.	9/11/2019	1909158-04				456		0.344		10.8	12.2		51	U	0.05		
CWU-2 dup.	3/15/2021	2103186-04				553	<	0.200		21	19.6	<	45.0	<	0.200	absent	absent
CWU-2 dup.	9/21/2021	2109400-04				480		0.621		14.4	13	J	18		0.077	present	absent
CWU-2 dup.	3/14/2023	2303228-04	7.64	15	714	372	<	0.5		14.2	12.6	<	45	<	0.05	present	absent
CWU-2 dup.	9/12/2023	2309213-04				402	<	0.5		13.4	13.4	<	45	<	0.05	present	absent
CWU-2 dup.	9/20/2023	2309400														present	absent
CWU-3	3/17/2003	64319	7.92	14.3	1295	598		3.20		7.83	204.4		29.0		0.170	absent	
CWU-3	6/17/2003	65626	8.05	16.2	1269	630	<	0.72		7.08	204.9		9.0		0.121	absent	
CWU-3	9/16/2003	67237	7.94	15.1	1289	526	<	0.72		7.68	198.4		33.0		0.180	absent	present
CWU-3	12/15/2003	68665	7.87	14.5	1265	526	<	0.72		7.97	193.9		10.0		0.301	absent	present
CWU-3	3/15/2004	69805	7.79	14.7	1286	554	<	0.72		0.59	200.0	<	8.0	<	0.037	absent	present
CWU-3	6/22/2004	71379	7.89	16.4	1244	636	<	0.72		9.02	231.4	<	8.0		0.070	absent	present
CWU-3	9/14/2004	72801	7.73	15.2	1091	589	<	0.72		8.62	198.9	<	8.0		0.110	absent	absent
CWU-3	12/13/2004	74167	7.82	14.5	1120	570	<	0.72		9.32	203.9	<	8.0	<	0.037	present	absent
CWU-3	3/14/2005	75512	7.95	15.5	1118	588	<	0.72		9.20	207.0		12.0		0.064	absent	absent
CWU-3	6/13/2005	76774	7.85	15.0	1092	666	<	0.72		9.12	209.0		18.0	<	0.037	absent	absent
CWU-3	9/12/2005	78306	7.83	16.7	1098	608		1.42		9.31	207.0		14.0		0.050	absent	absent
CWU-3	12/12/2005	80012	7.50	14.1	1079	652		0.91		9.36	208.0		11.0		0.080	present	absent
CWU-3	3/21/2006	81313	8.29	14.8	1206	662	<	0.72		9.28	232.0		18.0	<	0.043	absent	absent
CWU-3	6/12/2006	82844	8.09	14.8	1201	606		5.00		9.60	212.0		15.0	<	0.043	absent	absent
CWU-3	9/18/2006	84696	7.89	16.3	1163	662		0.84		9.49	210.0	<	8.0	<	0.043	absent	absent
CWU-3	12/11/2006	86011	7.57	14.9	1137	616	<	0.72		9.61	195.0	<	8.0		0.160	present	absent
CWU-3	3/12/2007	87132	7.97	14.9	1166	560	<	0.50		9.61	164.9		10.0	<	0.043	absent	absent

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)		TKN (mg/L)		NO_3-N (mg/L-N)		Cl (mg/L)		COD (mg/L)		Soluble Reactive Phosphorous (mg/L)		Total Coliform	E-Coli
CWU-3	6/20/2007	89027	8.27	15.1	1184	671		1.51		9.87		200.0		14.0	<	0.005		absent	absent
CWU-3	9/17/2007	90944	7.99	14.8	1177	691		0.66		10.39		202.4	<	1.0		0.270		absent	absent
CWU-3	3/18/2008	93634	7.94	13.8	1192	673	<	0.14		10.43		207.4	<	1.0		0.150		absent	absent
CWU-3	9/15/2008	97268	8.10	14.9	1140	651		1.75		8.50		205.4	<	1.0		0.030		absent	absent
CWU-3	3/18/2009	99886	7.92	14.2	1195	584		1.03		10.59		209.9		8.9		0.042		absent	absent
CWU-3	9/15/2009	13920/13922	7.93	13.9	1189	574		0.84		10.40		202.0		23.0		0.029		absent	absent
CWU-3	3/15/2010	16726/16731	7.55	13.2	1189	803		1.25		12.70		192.0		65.0		0.018		absent	absent
CWU-3	9/20/2010	20680	7.79	13.8	1198	760		ND		11.50		191.0		45.0		0.058		present	absent
CWU-3	3/14/2011	23046	7.52	12.6	1202	810		2.50		13.80		190.0		33.0		0.050		present	absent
CWU-3	9/19/2011	26393	7.87	13.5	1168	612		6.18		14.00		190.0		60.3		0.110		absent	absent
CWU-3	3/19/2012	28742/28746	7.78	12.8	1234	684		3.50		15.20		179.0		55.8		0.040		absent	absent
CWU-3	9/10/2012	32231/32232	7.82	14.5	1190	671	<	2.10		15.00		185.0		49.0		0.060		present	absent
CWU-3	3/18/2013	34918/34919	7.41	13.2	1236	687		1.26		14.10		181.0		64.8		0.050		absent	absent
CWU-3	9/9/2013	38071	7.57	14.3	1212	672		1.05		14.20		196.0		60.0		0.100		absent	absent
CWU-3	3/10/2014	40618/40624	7.38	13.3	1241	706		1.08		13.20		194.0		61.0		0.130		absent	absent
CWU-3	3/12/2014	Analytical			1180	701		0.45		13.20		188.0							
CWU-3	3/12/2014	Anatek				777		0.45		13.30		194.0							
CWU-3	9/15/2014	44250	7.83	13.9	1245	680		1.76		13.70		196.0		52.0	<	0.050			
CWU-3	3/9/2015	46848/46855	7.32	15.0	633	384		1.10		7.92		9.6	<	50.0		0.080		absent	absent
CWU-3	4/29/2015	47669	7.68	13.2	1263	731		0.91		16.10		195.0		70.0	<	0.050			
CWU-3	9/9/2015	50724	7.72	14.1	1263	690		0.81		15.53		193.0	<	50.0		0.130		absent	absent
CWU-3	3/7/2016	53441	7.60	14.0	1272	671		0.42		15.40		202.0		68.0		0.070		present	absent
CWU-3	9/12/2016	57708	7.73	15	1294	727		1.82		16.8		185		53	<	0.05		absent	absent
CWU-3	3/13/2017	60243/60238	7.6	14	1320	757		1.98		15.9		186	<	50		0.17		absent	absent
CWU-3	9/12/2017	64080/64089	7.47	14.2	1360	752		0.55		17		189		64.8	<	0.05		absent	absent
CWU-3	3/14/2018	67115/67124	7.7	13.76	1244	720		0.50		17		154	J	19	<	0.05		absent	absent
CWU-3	9/18/2018	1809181-05	7.6	14.89	1266	815		0.47		17.3		170	J	8.00	<	0.05		absent	absent
CWU-3	3/18/2019	1903102-05	7.8	13.7	1320	807		0.59		17.3		186	J	14	U	0.04		absent	absent
CWU-3	9/11/2019	1909158-05	7.79	14.76	1257	460		0.30		16.6		190	J	33	U	0.05		absent	absent
CWU-3	3/16/2020	2003154-05	7.79	13.8	1322	786		0.887		17.7		184	U	9.27	U	0.038		present	absent
CWU-3	9/14/2020	2009179-05	7.87	15.08	1320	848		0.432	D	19.6		171	J	32	U	0.022		absent	absent
CWU-3	3/15/2021	210318605	7.79	13.7	1347	815		0.468		18.6		165	<	45.0	<	0.0500		absent	absent
CWU-3	9/22/2021	2109451-06	6.86	15.45	1409	890		0.458		22.1		145	J	20.0	<	0.0500		absent	absent
CWU-3	3/14/2023	2303228-05	7.69	13.7	1533	932		0.565		26.1		147	<	45.0	<	0.0500		absent	absent
CWU-3	9/12/2023	239213-05	7.82	15.7	1525	964	<	0.5		23.1	D	125	<	45	<	0.05		absent	absent
CWU-3	9/20/2023	2309400-05																absent	absent
CWU-3 dup.	9/27/2000	49849				586	<	1.90		9.66		13.0		241.0		0.140		absent	
CWU-3 dup.	6/18/2002	59789				608	<	1.90		6.24		11.4		211.0	<	0.037		absent	
CWU-3 dup.	9/16/2002	61695				596	<	0.72		7.57		13.0		199.4		0.130		absent	
CWU-3 dup.	12/9/2002	63030				646		0.78		8.06		9.0		201.9		0.190		absent	
CWU-3 dup.	3/17/2003	64320				688		1.43		7.60		203.9		13.0		0.130		absent	
CWU-3 dup.	3/17/2003	64320				622	<	0.72		7.60		203.9		16.0		0.120		absent	
CWU-3 dup.	4/21/2003	64772				714	<	0.72		8.30		202.4	<	8.0	<	0.100		absent	
CWU-3 dup.	3/14/2011	23047				814		2.80		13.80		189.0		33.0		0.050		present	absent
CWU-3 dup.	9/19/2011	26395				339		6.28		2.60		11.0		ND		0.140		present	absent
CWU-3 dup.	3/20/2012	28745				349		1.80		2.86		7.8		19.8		0.040			
CWU-3 dup.	9/10/2012	32335				351		ND		4.09		8.0		ND		0.060		absent	absent
CWU-3 dup.	9/9/2013	38073/38072				704		1.26		14.10		195.0		56.0		0.090		absent	absent
CWU-3 dup.	3/13/2017	60242/60237				714		1.51		15.90		186.0	<	50.0		0.130		absent	absent
CWU-3 dup.	9/18/2018	1809181-04				831		0.54		17.5		174	J	14	<	0.05		absent	absent
CWU-3 dup.	3/13/2017	60242/60237				714		1.51		15.9		186	<	50.0		0.130		absent	absent
CWU-3 dup.	9/18/2018	1809181-04				831		0.54		17.5		174	J	14	<	0.05		absent	absent
SU-1	6/14/00	9846	7.70	16.1	975	678	<	1.90		3.25		182.3	<	11.4	<	0.037		absent	

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)	TKN (mg/L)	NO_3-N (mg/L-N)	Cl (mg/L)	COD (mg/L)	Soluble Reactive Phosphorous (mg/L)	Total Coliform	E-Coli
SU-1	7/18/00	83	6.80	15.8	996	609	< 3.70	2.74	169.3	< 11.4	< 0.037	absent	
SU-1	8/29/00	525	7.80	15.5	725	628	< 1.90	3.03	79.2	< 11.4	< 0.037	absent	
SU-1	9/25/00	49784	7.70	15.2	700	550	0.82	5.51	166.0	29.0	0.130	absent	
SU-1	1/24/01	51538	7.70	19.9	874	509	< 1.90	7.90	173.0	12.0	0.174	absent	
SU-1	2/21/01	51973		18.6	920	594	< 1.90	3.19	167.2	< 11.4	0.570	absent	
SU-1	3/28/01	52461	7.76	15.7	765	602	< 1.90	5.89	171.5	49.0	0.043	absent	
SU-1	4/17/01	52774	7.75	16.0	1138	614	4.60	3.13	178.0	203.0	0.068	absent	
SU-1	5/15/01	53295	8.14	15.6	960	580	< 1.90	9.93	219.0	240.0	0.193	absent	
SU-1	6/19/01	53828	7.68	18.0	970	479	< 1.90	3.72	174.7	22.0	0.130	absent	
SU-1	7/10/01	54256	7.51	20.1	960	555	< 1.90	5.71	168.7	< 11.4	0.134	absent	
SU-1	8/22/01	55161	7.57	15.6	990	701	< 1.90	3.44	180.9	< 11.4	0.187	absent	
SU-1	9/25/01	55672	7.68	16.6	970	612	< 1.90	3.78	171.4	< 11.4	0.256	absent	
SU-1	10/16/01	62378	7.90	14.0	1022			4.20					
SU-1	3/4/02	58003	7.89	13.5	98	506	< 1.90	4.76	167.7	< 11.4	0.151	absent	
SU-1	6/17/02	59864	7.70	15.6	970	467	< 1.90	3.20	168.9	< 11.4	0.120	absent	
SU-1	9/17/02	61751	7.60	16.5	950	456	< 0.72	31.80	164.9	78.0	0.190	absent	
SU-1	12/10/02	63070	8.02	13.2	1043	518	1.60	3.01	164.4	< 8.0	0.178	absent	
SU-1	3/18/03	64338	7.88	15.0	1022	478	1.46	3.30	161.4	< 8.0	0.120	absent	
SU-1	6/18/2003	65664	7.74	15.2	1024	532	< 0.72	4.50	158.5	< 8.0	0.175	absent	
SU-1	9/17/03	67251	7.79	14.7	1023	496	1.24	3.48	159.5	11.0	0.210	absent	present
SU-1	12/16/03	68708	8.02	13.8	1025	466	< 0.72	3.50	163.0	< 8.0	< 0.037	absent	present
SU-1	3/15/04	69808	7.77	14.9	1029	420	0.84	4.32	161.5	< 8.0	< 0.037	absent	absent
SU-1	6/22/04	71378	7.84	16.6	992	532	0.72	3.08	185.9	< 8.0	< 0.037	absent	absent
SU-1	9/15/2004	72821	7.81	15.1	872	542	< 0.72	3.78	158.0	< 8.0	0.100	present	absent
SU-1	12/14/2004	74218	7.66	14.1	873	474	< 0.72	3.63	171.5	14.0	< 0.037	absent	absent
SU-1	3/14/2005	75515	7.93	15.2	869	464	< 0.72	3.59	168.0	11.0	0.062	absent	absent
SU-1	6/14/2005	76820	7.78	15.1	862	586	< 0.72	3.67	166.0	14.0	< 0.037	absent	absent
SU-1	9/12/2005	78309	7.85	17.1	857	438	0.82	4.00	161.0	26.0	< 0.037	present	absent
SU-1	12/21/2005	80015	7.66	12.4	845	580	1.06	3.55	163.0	< 8.0	< 0.037	absent	absent
SU-1	3/20/2006	81316	8.16	15.8	879	632	< 0.72	4.03	182.0	< 10.0	< 0.043	absent	absent
SU-1	6/13/2006	82847	8.00	15.5	917	480	4.00	3.92	144.0	< 8.0	< 0.043	absent	absent
SU-1	9/18/2006	84699	7.88	16.3	907	486	< 0.72	3.92	172.0	< 8.0	0.100	absent	absent
SU-1	12/12/2006	86057	8.12	15.3	910	528	< 0.72	3.67	164.0	< 8.0	0.110	absent	absent
SU-1	3/12/2007	87135	7.74	15.9	926	440	< 0.50	3.30	134.0	< 8.0	0.050	absent	absent
SU-1	9/17/2007	90947	7.91	14.8	921	551	< 0.14	5.34	164.9	< 1.0	0.240	absent	absent
SU-1	3/18/2008	93637	7.83	14.2	911	500	< 0.14	3.21	164.9		0.090	absent	absent
SU-1	9/15/2008	97270	8.10	15.6	910	531	0.60	2.82	164.9	8.4	< 0.005	absent	absent
SU-1	3/19/2009	89030	7.45	13.0	901	525	1.00	3.29	158.0	10.0	< 0.005	present	absent
SU-1	9/15/2009	13928	7.79	14.6	872	434	0.65	5.48	145.0	29.0	0.018	absent	absent
SU-1	3/16/2010	16829/16821	7.81	14.2	888	528	0.85	3.97	162.0	83.0	0.028	absent	absent
SU-1	9/20/2010	20683	7.62	14.2	865	558	ND	4.86	135.0	49.0	0.060		
SU-1	9/29/2010	20972	7.70	14.3	859							present	present
SU-1	3/14/2011	23048	7.64	14.0	872	636	1.30	4.25	151.0	ND	0.040	absent	absent
SU-1	9/19/2011	26396	7.74	13.8	858	517	4.77	3.47	148.0	33.3	0.120	absent	absent
SU-1	3/19/2012	28743/28747	7.67	13.9	844	475	1.00	3.58	147.0	42.3	0.030	absent	absent
SU-1	9/10/2012	32237/32238	7.75	15.0	845	490	ND	4.55	146.0	53.5	ND	present	absent
SU-1	3/18/2013	34922/34923	7.45	14.5	831	498	1.01	5.27	137.0	44.6	0.060	absent	absent
SU-1	9/9/2013	38075/38074	7.47	15.0	813	466	1.10	6.69	130.0	45.0	0.060	absent	absent
SU-1	3/10/2014	40620/40626	7.43	14.5	836	424	0.96	5.21	139.0	< 50.0	0.060	absent	absent
SU-1	9/15/2014	44251	7.52	14.4	808	516	1.73	7.15	128.0	50.0	< 0.050		
SU-1	3/9/2015	46849/46856	7.47	14.2	822	441	0.88	5.76	124.0	52.0	0.060	absent	absent
SU-1	9/9/2015	50725/50732	7.56	14.4	807	516	0.73	6.13	169.0	< 50.0	0.050	present	absent
SU-1	3/7/2016	53442	7.57	14.2	817	437	1.03	5.30	139.0	< 50.0	< 0.050	present	absent

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)		TKN (mg/L)		NO_3-N (mg/L-N)		Cl (mg/L)		COD (mg/L)		Soluble Reactive Phosphorous (mg/L)	Total Coliform	E-Coli
SU-1	9/12/2016	57709	7.71	16.4	803	455		0.7300		4.40		132.00	<	40.0	<	0.050	present	absent
SU-1	3/13/2017	60285/60282	7.50	14.0	820	442		0.5200		4.40		146.00	<	50.0		0.070	present	absent
SU-1	9/12/2017	64081/64090	7.58	14.1	800	451		0.4100		4.40		139.00		77.9	<	0.050	present	absent
SU-1	3/14/2018	67116/67125	7.55	13.79	730	450		0.3		4.3		120	J	11	<	0.05	absent	absent
SU-1	9/18/2018	1809181-06	7.62	14.2	679	461		0.321		4.42		131	<	9.54	<	0.05	absent	absent
SU-1	3/18/2019	1903102-06	7.79	13.7	754	447		0.277		4.07		136	J	12	U	0.024	absent	absent
SU-1	9/11/2019	1909158-06	7.83	14.45	419	836	U	0.2		4.64		141	J	38	U	0.05	present	absent
SU-1	3/16/2020	2003154-06	7.85	13.81	798	456	U	0.189		4.87		142	U	9.27	U	0.017	present	absent
SU-1	9/14/2020	2009179-06	7.89	13.98	785	488	U	0.178	D	5.00		137	J	25	U	0.019	present	absent
SU-1	3/15/2021	2103186-06	7.81	13.6	765	413	<	0.200		4.35		133	<	45.0	<	0.0500	absent	absent
SU-1	9/21/2021	2109400-04	6.88	14.28	788	470		0.23		60		120	J	31	<	0.05	absent	absent
SU-1	10/27/2021	2110493-05	7.75	14.1	805					5.1								
SU-1	5/23/2022	2205405-06	7.74	14.4	825	392	<	0.5		5.16		137	<	50	<	0.05	absent	absent
SU-1	3/14/2023	233228-06	7.72	14	783	468	<	0.5		5.5	D	125	<	45	<	0.05	present	absent
SU-1	9/20/2023	2309213-06	7.9	15	775	480	<	0.5		6.05	D	125	<	45	<	0.05	present	absent
SU-1	9/20/2023	2309400-06															present	absent
SU-3	9/25/00	49783	7.30	16.1	990	831	<	1.90		17.60		204.0	<	11.4		0.089	absent	
SU-3	1/23/01	51516	7.70	11.9	1300	707	<	1.90		36.80		206.0	<	11.4		0.183	absent	
SU-3	2/21/01	51974		12.8	1310	832	<	1.90		20.80		223.7	<	11.4		0.230	absent	
SU-3	3/27/01	52422	7.46	12.7	1043	752	<	1.90		43.40		224.9		29.0		0.110	absent	
SU-3	4/17/01	52777	7.86	16.9	1598	879		3.54		20.20		218.0		27.0		0.093	absent	
SU-3	5/15/01	53298	8.01	16.7	1440	755	<	1.90		31.90		249.0		38.0		0.244	absent	
SU-3	6/19/01	53830	7.68	17.2	1140	757		2.28		24.30		222.2		39.0		0.145	absent	
SU-3	7/10/01	54258	7.64	14.2	1370	754	<	1.90		25.40		218.2		17.0		0.158	absent	
SU-3	8/22/01	55163	7.45	14.9	1320	743	<	1.90		17.50		209.2	<	11.4		0.138	absent	
SU-3	9/25/01	55674	7.73	15.5	1280	723	<	1.90		17.60		199.4		15.0		0.086	absent	
SU-3	3/4/02	58004	7.87	12.5	133	662		3.56		20.30		209.7	<	11.4		0.124	absent	
SU-3	6/18/02	59866	7.95	16.9	1130	682	<	1.90		14.20		210.4	<	11.4		0.120	absent	
SU-3	9/17/02	61753	7.57	15.4	1288	654	<	0.72		14.00		201.4		42.0		0.100	absent	
SU-3	12/10/02	63072	7.79	14.4	1379	618		1.82		11.60		193.4	<	7.7		0.182	absent	
SU-3	3/18/03	64340	7.70	13.9	1433	672		3.78		13.00		206.4		20.0		0.120	absent	
SU-3	6/18/03	65666	7.85	14.9	1444	744	<	0.72		13.00		203.9		16.0		0.090	absent	
SU-3	9/17/03	67253	7.45	15.7	1386	592		2.22		13.40		197.9		25.0		0.160	absent	present
SU-3	12/16/03	68710	7.46	14.9	1356	574	<	0.72		12.50		190.4		19.0		0.080	absent	present
SU-3	3/15/04	69831	7.63	14.2	1390	606	<	0.72		13.10		195.4		16.0		0.052	absent	present
SU-3	6/22/04	71404	7.61	15.3	1404	646		0.84		14.30		231.9		31.0		0.060	absent	present
SU-3	9/15/2004	72824	7.33	15.3	1197	692		0.76		14.30		191.9	<	8.0		0.110	present	absent
SU-3	12/14/2004	74221	7.32	14.7	1152	608	<	0.72		13.70		191.4		19.0	<	0.037	present	absent
SU-3	3/15/2005	75530	7.40	14.6	1166	610		0.89		14.10		197.0		13.0		0.060	present	absent
SU-3	6/14/2005	76817	7.57	14.6	1141	720		0.79		13.70		201.0		23.0	<	0.037	absent	absent
SU-3	9/12/2005	78350	7.69	16.3	1117	612		1.86		13.50		186.0		10.0	<	0.037	absent	absent
SU-3	12/20/2005	80055	7.75	14.0	1126	650		1.25		13.30		180.0		19.0		0.110	absent	absent
SU-3	3/21/2006	81317	7.98	13.7	1249	708	<	0.72		13.50		208.0		13.0	<	0.043	absent	absent
SU-3	6/13/2006	82887	7.75	13.8	1263	706		4.00		14.50		198.0		13.0	<	0.043	absent	absent
SU-3	9/19/2006	84744	7.79	14.8	1206	648	<	0.72		13.70		190.0	<	8.0	<	0.043	absent	absent
SU-3	12/12/2006	86061	7.67	14.0	1202	660	<	0.72		13.70		184.0	<	8.0		0.130	absent	absent
SU-3	3/13/2007	87170	6.96	13.1	1225	640		0.88		13.64		199.4		47.0		0.050	absent	absent
SU-3	6/20/2007	89054	8.10	14.4	1268	721		0.62		15.50		181.0		18.0		0.140	present	absent
SU-3	9/17/2007	90985	7.92	15.1	1179	646	<	0.14		15.12		182.4	<	1.0		0.170	present	absent
SU-3	3/19/2008	93708	7.39	12.6	1185	617	<	0.14		13.38		177.4	<	1.0		0.120	present	absent
SU-3	9/16/2008	97330	7.60	15.4	1195	609		2.22		11.00		183.0	<	1.0	<	0.005	present	absent
SU-3	3/19/2009	99948	7.45	13.0	1212	604		1.53		14.00		181.9		3.6		0.039	absent	absent
SU-3	9/16/2009	13977/13988	7.82	15.8	1206	564		0.00		12.70		181.0		47.0		0.019	absent	absent

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)		TKN (mg/L)		NO_3-N (mg/L-N)		Cl (mg/L)		COD (mg/L)		Soluble Reactive Phosphorous (mg/L)	Total Coliform	E-Coli
SU-3	3/16/2010	16817/16825	7.51	13.5	1197	679		1.22		12.20		182.0		139.0		0.025	absent	absent
SU-3	9/21/2010	20776	7.37	13.8	1193	733		ND		13.70		168.0		38.0		0.028	absent	absent
SU-3	3/15/2011	23091	7.11	13.0	1220	801		2.95		13.80		184.0		40.0		0.070	present	absent
SU-3	9/20/2011	26468	7.55	13.4	1219	791		5.21		13.80		193.0		55.8		0.180	present	absent
SU-3	3/20/2012	28776/28783	7.39	13.3	1209	692		1.90		14.00		183.0		73.8		0.020	absent	absent
SU-3	9/11/2012	32288/32289	7.19	13.7	1191	727	<	2.10		14.20		181.0		55.8		0.050	present	absent
SU-3	3/19/2013	34941/34942	6.83	13.1	1170	614		1.34		13.50		187.0		53.5		0.050	present	absent
SU-3	9/10/2013	38122/38109	7.55	15.2	1175	639		1.33		14.00		191.0		56.0		0.070	present	absent
SU-3	3/11/2014	40662/40668	7.40	14.1	1158	637		1.01		14.00		182.0		57.0		0.070	absent	absent
SU-3	3/12/2014	Analytical			1100	619	<	0.20		13.50		173.0						
SU-3	3/12/2014	Anatek				668		0.62		13.50		180.0						
SU-3	9/15/2014	44252/44259	7.38	14.6	1140	613		1.45		13.40		178.0		57.0	<	0.050	present	absent
SU-3	3/9/2015	46850/46857	7.22	14.7	1146	617		0.85		14.30		162.0		59.0	<	0.050	absent	absent
SU-3	9/9/2015	50726/50733	7.60	15.3	1139	562		0.58		13.95		169.0		50.0		0.140	present	absent
SU-3	3/7/2016	53443	7.50	14.8	1130	552		1.69		14.40		179.0		62.0		0.100	present	absent
SU-3	9/12/2016	57710	7.64	15.4	1150	572		1.63		14.4		175	<	40	<	0.05	absent	absent
SU-3	3/14/2017	60286/60283	7.1	14.5	1160	547		1.2		14.5		166	<	50		0.07	present	absent
SU-3	9/12/2017	64082/64091	7.1	15.1	1160	590		1.8		14.3		219		51.8	<	0.05	present	present
SU-3	3/14/2018	67117/67126	7.63	14.5	999	561		1.2		15		172	J	19	<	0.05	absent	absent
SU-3	9/18/2018	1809181-07	7.59	15	991	627		0.415		14.2		168	J	8.00	<	0.05	absent	absent
SU-3	3/18/2019	1903102-07	7.9	13.9	1114	610		0.379		13.7		184	U	9.54	U	0.025	absent	absent
SU-3	9/11/2019	19091658-07	7.78	15.47	1019	464		0.242		13.4		188	U	45.00	U	0.05	absent	absent
SU-3	3/16/2020	2003154-07	7.83	14.12	1155	596		0.376		15.2		189	U	9.27	U	0.017	present	absent
SU-3	9/14/2020	2009179-07	7.83	14.81	1123	732		0.274	D	14.6		185	J	18.00	U	0.018	present	present
SU-3	3/15/2021	2103186-07	7.88	14	1107	618		0.287		14.4		180	<	45.0	<	0.0500	absent	absent
SU-3	9/21/2021	2109400-06	8.11	16.1	1139	618		0.275		17		169	J	22.00	<	0.05	absent	absent
SU-3	5/24/2022	2205439-06	7.79	14.4	1192	727	<	0.5		15.7	<	50	J	25.00	<	0.05	absent	absent
SU-3	3/14/2023	2033228-07	7.84	14	1131	476	<	0.5		16.4		173		110.00	<	0.05	absent	absent
SU-3	9/12/2023	2309213-07	7.85	16.2	1150	654	<	0.5		16.4	D	176	<	45.00	<	0.05	present	absent
SU-3	9/20/2023	2309400-07															present	absent
SU-4A	6/18/02	59867				932		3.35		47.00		48.5				0.120	present	
SU-4A	9/17/02	61754	7.03	14.1	1605	994		1.68		69.80		43.5		46.0		0.110	absent	
SU-4A	12/10/02	63073	7.66	12.5	1699	948		1.08		46.60		45.0		14.0		0.214	absent	
SU-4A	3/18/03	64341	7.60	13.7	1638	900		2.13		46.10		44.0		24.0		0.190	absent	
SU-4A	6/18/03	65667	7.74	14.1	1634	944	<	0.72		49.00		43.0		23.0		0.116	absent	
SU-4A	9/17/03	67254	7.16	15.0	1642	878		2.36		48.30		44.0		14.0		0.210	absent	present
SU-4A	12/16/03	68711	6.90	12.9	1669	870		3.30		54.80		43.5		24.0		0.430	absent	present
SU-4A	3/15/04	69832	7.33	14.4	1636	912		1.64		49.40		44.0		16.0		0.040	absent	present
SU-4A	6/22/04	71405	7.36	14.9	1648	924		1.26		60.70		50.5		22.0		0.060	absent	present
SU-4A	9/15/2004	72825	7.26	15.1	1454	968		1.86		55.20		46.0		824.0		0.100	present	absent
SU-4A	12/14/2004	74222	6.93	14.1	1381	894		0.84		61.50		47.0		33.0	<	0.037	present	absent
SU-4A	3/15/2005	75531	7.48	15.4	1409	904		2.78		64.00		47.0		20.0		0.061	absent	absent
SU-4A	6/14/2005	76818	7.49	14.7	1388	932		2.21		61.50		55.0		27.0	<	0.037	present	absent
SU-4A	9/12/2005	78351	7.23	16.4	1328	932		3.06		65.00		45.0		130.0		0.050	present	absent
SU-4A	12/21/2005	80056	7.54	13.9	1380	972		3.12		60.00		45.0		23.0		0.120	present	absent
SU-4A	3/21/2006	81318	7.58	14.6	1484	1028	<	0.72		63.50		56.0		71.0	<	0.043	absent	absent
SU-4A	6/13/2006	82888	7.61	14.5	1479	972		6.00		60.30		52.0		9.0	<	0.043	present	present
SU-4A	9/19/2006	84745	7.55	14.6	1481	950		0.94		30.00		51.2	<	8.0		0.130	absent	absent
SU-4A	12/12/2006	86062	7.75	14.4	1473	936		0.98		56.10		45.3		12.0		0.140	absent	absent
SU-4A	3/13/2007	87171	7.43	14.9	1448	928		1.28		52.20		46.2		51.0		0.060	absent	absent
SU-4A	6/20/2007	89055	7.68	15.5	1452	1006		0.54		55.90		41.0		16.0		0.230	absent	absent
SU-4A	9/17/2007	90986	7.69	14.1	1443	921	<	0.14		51.65		60.0	<	1.0		0.300	absent	absent
SU-4A	3/19/2008	93709	7.44	13.5	1414	923	<	0.14		47.98		47.5		2.0		0.150	present	absent

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)		TKN (mg/L)		NO_3-N (mg/L-N)		Cl (mg/L)		COD (mg/L)		Soluble Reactive Phosphorous (mg/L)	Total Coliform	E-Coli
SU-4A	9/16/2008	97331	7.15	15.2	1405	857		6.86		46.00		46.0		15.8	<	0.005	present	present
SU-4A	3/19/2009	99950	7.67	13.8	1391	848		3.29		49.50		48.0		8.6		0.045	absent	absent
SU-4A	9/16/2009	13989	7.57	15.6	1409	836		3.25		47.60		49.5		7.0		0.025	present	absent
SU-4A	3/16/2010	16818/16826	7.19	14.7	1380	939		1.64		46.10		48.0		36.0		0.028	absent	absent
SU-4A	9/20/2010	20684	7.58	14.4	1410	966		0.10		43.30		49.0		29.0		0.103	absent	absent
SU-4A	3/15/2011	23092	7.39	14.5	1436	1038		1.89		51.50		55.2		33.0		0.050	present	absent
SU-4A	9/20/2011	26469	7.52	14.0	1470	928		4.86		51.70		63.0		33.3		0.220	present	absent
SU-4A	3/20/2012	28777/28784	7.27	13.7	1418	989		5.00		50.10		56.0		35.6		0.040	absent	absent
SU-4A	9/11/2012	32290/32291	7.49	13.6	1433	980		2.10		50.90		61.0		35.6		0.060	absent	absent
SU-4A	3/19/2013	34943/34944	7.07	13.7	1420	896	<	0.06		52.30		64.9		40.1		0.090	present	absent
SU-4A	9/10/2013	38123/38110	7.54	16.3	1427	926	<	0.06		50.20		74.4		36.0		0.060	absent	absent
SU-4A	3/10/2014	40621/40627	7.13	14.7	1429	928	<	0.20		42.30		83.3	<	50.0		0.130	absent	absent
SU-4A	9/15/2014	44253/44260	7.55	14.6	1415	1001		0.21		48.20		80.3	<	50.0	<	0.050	absent	absent
SU-4A	3/9/2015	46851/46858	7.18	15.4	1416	868		0.25		49.70		75.3	<	50.0		0.060	absent	absent
SU-4A	9/9/2015	50727/50734	7.51	15.9	1428	895		ND		47.67		80.0	<	50.0		0.070	present	absent
SU-4A	3/7/2016	53444	7.24	15.1	1423	977		ND		50.20		82.1		55.0		0.100	present	absent
SU-4A	9/12/2016	57711	7.62	15.9	1452	887	<	0.2		49.4		77.9	<	40		0.09	absent	absent
SU-4A	3/13/2017	60244/60239	7.55	15	1410	916		0.21		49.6		79.8	<	50		0.05	absent	absent
SU-4A	9/12/2017	64083/64092	7.22	14.3	1550	906		0.44		47.2		75.6		73.5	<	0.05	absent	absent
SU-4A	3/14/2018	67118/67127	7.48	14.6	1311	942		0.5		41.5		68		ND	<	0.05	absent	absent
SU-4A	9/18/2018	1809181-08	7.36	14.65	1455	1030		0.45		36.8		73.1	J	9.54	<	0.05	absent	absent
SU-4A	3/15/2019	1903102-08	7.53	14.8	1572	1000		0.445		33.7		81	U	9.54	U	0.024	absent	absent
SU-4A	9/11/2019	1909158-08	7.5	15.04	1466	984		0.41		44		68.1	U	45.0	U	0.05	absent	absent
SU-4A	3/16/2020	2003154-08	7.35	14.77	1697	1010		0.616		38.7		79.6	U	9.27	U	0.034	present	absent
SU-4A	9/14/2020	2009179-08	7.41	15.08	1750	1060		0.511	D	27.3		94.6	J	16	U	0.027	present	present
SU-4A	3/15/2021	2103186-08	7.41	14.8	1797	1160		0.449		18.9		100	<	45.00	<	0.0500	present	present
SU-4A	9/21/2021	2109400-07	7.57	17.5	1850	1120		0.532		23.5		97.3	J	11	<	0.05	absent	absent
SU-4A	5/24/2022	2205439-07	7.22	15.1	1756	1150		0.574		27.9	<	50	<	50	<	0.05	absent	absent
SU-4A	3/15/2023	2303255-06	7.25	15.1	1800	1110	<	0.5		20.3	D	115	<	45	<	0.05	absent	absent
SU-4A	9/12/2023	2309213-08	7.37	15.6	1903	1230		0.545		21.7	D	125	<	45	<	0.05	absent	absent
SU-4A	9/20/2023	2309400-08															absent	absent
Simplot MW-7	12/10/02	63074	7.65	14.0	1602	892	<	1.90		60.90		88.0	<	7.7		0.201	absent	
Simplot MW-7	3/18/03	64342	7.64	15.6	1612	864		5.98		66.50		90.0		27.0		0.150	absent	
Simplot MW-7	6/19/03	65704	7.69	16.1	1604	874	<	0.72		88.70		89.0		28.0		0.115	absent	
Simplot MW-7	9/17/03	67256	7.54	15.6	1644	978		3.40		78.50		91.0	<	8.0		0.160	absent	absent
Simplot MW-7	12/16/03	68713	7.43	14.5	1686	842		2.22		91.40		91.0		20.0		0.290	absent	absent
Simplot MW-7	3/15/04	69834	7.78	15.8	1708	850		1.78		91.10		94.5		15.0		0.038	absent	absent
Simplot MW-7	6/22/04	71408	7.63	16.5	1679	1006		1.90		93.60		106.0	<	8.0		0.060	absent	absent
Simplot MW-7	9/15/2004	72827	7.50	16.1	1490	934		2.38		90.80		92.0	<	8.0		0.110	absent	absent
Simplot MW-7	12/14/2004	74224	7.45	15.2	1471	890		1.05		100.50		98.0		13.0	<	0.037	absent	absent
Simplot MW-7	3/15/2005	75533	7.46	15.6	1470	878		3.58		100.00		93.0		13.0		0.061	absent	absent
Simplot MW-7	6/14/2005	76777	7.60	16.5	1420	976		3.06		48.50		93.3		18.0	<	0.037	absent	absent
Simplot MW-7	9/13/2005	78353	7.71	16.3	1381	868		3.98		92.00		90.0	<	8.0	<	0.037	absent	absent
Simplot MW-7	12/21/2005	80058	7.71	14.6	1361	932		4.62		91.00		65.0	<	8.0		0.130	absent	absent
Simplot MW-7	3/23/2006	81373	7.43	15.6	1430	920	<	0.72		82.00		106.0		15.0	<	0.043	absent	absent
Simplot MW-7	6/13/2006	82890	7.64	15.7	1432	898		4.00		83.40		88.0		14.0		0.150	absent	absent
Simplot MW-7	9/19/2006	84747	7.77	15.8	1395	864	<	0.72		81.60		89.8	<	8.0		0.120	absent	absent
Simplot MW-7	12/12/2006	86064	7.82	15.2	1359	860	<	0.72		72.40		85.4		8.0		0.950	absent	absent
Simplot MW-7	3/13/2007	87173	8.26	15.5	1354	804		0.86		63.30		93.5		41.0		0.150	absent	absent
Simplot MW-7	6/20/2007	89057	7.95	16.7	1371	884	<	0.14		80.50		81.0		13.0		0.230	absent	absent
Simplot MW-7	9/18/2007	90988	7.81	15.3	1286	796	<	0.14		55.01		80.0	<	1.0		0.290	absent	absent
Simplot MW-7	3/19/2008	93711	7.60	14.7	1301	870		1.60		56.02		82.5	<	1.0		0.160	absent	absent
Simplot MW-7	9/16/2008	97333	7.85	15.9	1368	793		6.12		66.00		90.0		24.8	<	0.005	absent	absent

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)		TKN (mg/L)		NO_3-N (mg/L-N)		Cl (mg/L)		COD (mg/L)		Soluble Reactive Phosphorous (mg/L)		Total Coliform	E-Coli
Simplot MW-7	3/19/2009	99954	7.78	14.9	1407	816		3.25		77.00		93.0		2.1		0.043		absent	absent
Simplot MW-7	9/16/2009	13991	7.70	15.0	1426	804		3.10		68.40		93.0		1.0		0.016		absent	absent
Simplot MW-7	3/16/2010	16820/16828	7.66	15.0	1397	898		1.07		73.80		91.7		49.0		0.026		absent	absent
Simplot MW-7	9/21/2010	20778	7.36	14.7	1426	941		1.10		79.40		83.7		33.0		0.050		absent	absent
Simplot MW-7	3/15/2011	23094	7.45	15.0	1439	1036		4.40		83.80		90.0		40.0		0.030		absent	absent
Simplot MW-7	9/20/2011	26471	7.56	14.7	1516	935		2.95		86.20		98.0		42.3		0.230		absent	absent
Simplot MW-7	3/20/2012	28779/28786	7.50	14.7	1540	936		0.40		111.00		92.0		40.1		0.020		absent	absent
Simplot MW-7	9/11/2012	32294/32295	7.70	14.8	1553	1151		ND		90.50		90.0		37.8		ND		absent	absent
Simplot MW-7	3/19/2013	34947/34948	7.23	14.7	1543	955	<	0.06		96.60		86.4		42.3		0.040		absent	absent
Simplot MW-7	9/10/2013	38125/38112	7.50	15.0	1543	1003	<	0.06		92.50		91.3		33.0		0.080		absent	absent
Simplot MW-7	3/11/2014	40664/40670	7.39	15.1	1551	980	<	0.20		95.10		92.3	<	50.0		0.090		absent	absent
Simplot MW-7	3/12/2014	Analytical			1480	996	<	0.20		93.70		92.4							
Simplot MW-7	3/12/2014	Anatek				1040		0.43		96.80		87.8							
Simplot MW-7	9/16/2014	44283/44293	7.37	14.8	1561	1770	<	0.00		89.70		91.3	<	50.0		0.060		present	absent
Simplot MW-7	3/10/2015	46894/46899	7.68	15.0	1553	922	<	0.20		97.80		86.8	<	50.0	<	0.050		absent	absent
Simplot MW-7	9/10/2015	50769/50774	7.27	16.0	1559	908	<	2.00		90.35		89.0	<	50.0	<	0.050		absent	absent
Simplot MW-7	3/8/2016	53497	7.46	15.0	1494	871		ND		91.40		94.3	<	50.0		0.100		absent	absent
Simplot MW-7	9/13/2016	57766	7.20	16.1	1494	965	<	0.2		91.3		89.5	<	40		0.05		absent	absent
Simplot MW-7	3/14/2017	60292/60289	7.28	15.2	1400	862	<	0.2		81.2		90	<	50		0.08		absent	absent
Simplot MW-7	9/13/2017	64138/64143	7.24	15	1430	867	<	0.2		80.3		89.3		71	<	0.05		absent	absent
Simplot MW-7	3/21/2018	67256/67261	7.36	15.14	1505	897	<	0.2		86.3		90.5		62.9	<	0.05		absent	absent
Simplot MW-7	9/24/2018	180237-05	7.31	14.96	1349	931	<	0.2		89.5		88.4	J	16.5	<	0.05		absent	absent
Simplot MW-7	3/19/2019	1903118-05	7.5	15.1	1425	935	U	0.113	D	70.7		90.7	J	9.27	U	0.024			
Simplot MW-7	9/17/2019	1909220-05	7.51	15.14	1426	1010		0.541		61.3		94.2	J	14	U	0.05		absent	absent
Simplot MW-7	3/19/2020	2003195-11	7.48	15.02	1541	1020	U	0.113	D	95.5		98.5	U	9.54	U	0.39		present	absent
Simplot MW-7	9/23/2020	2009328-11	7.42	14.9	1516	1080	U	0.095	D	89.4		98.5	U	16	U	0.02		absent	absent
Simplot MW-7	3/16/2021	2103210-05	7.55	14.7	1583	996	<	0.200		101		85.9	<	45.0	<	0.0500		absent	absent
Simplot MW-7	9/22/2021	2109451-05	7.09	15.43	1650	1140	<	0.200		98.2		88.1		13.00	<	0.0500		present	present
Simplot MW-7	5/24/2022	2205439-05	7.39	15.5	1672	1090	<	0.5		101	<	50	<	50	<	0.05		absent	absent
Simplot MW-7	3/15/2023	2303255-05	7.43	15.3	1677	1430	<	0.5		108		95.7		123	<	0.05		present	absent
Simplot MW-7	9/13/2023	2309261-05	7.56	15.3	1719	1360	<	0.5		105		99.3	<	45	<	0.05		present	absent
Simplot MW-7	9/21/2023	2309414-05																present	absent
HRF MW-1	6/22/2004	71407	7.84	14.8	1568	850		1.06		40.50		82.5	<	8.0		0.060		absent	present
HRF MW-1	9/15/2004	72826	7.55	16.9	1376	878		1.76		42.50		67.0	<	8.0		0.100		present	absent
HRF MW-1	12/14/2004	74223	7.53	14.2	1377	870	<	0.72		47.70		69.0		12.0	<	0.037		absent	absent
HRF MW-1	3/15/2005	75532	7.57	12.2	1367	870		2.52		53.40		74.0	<	8.0		0.062		absent	absent
HRF MW-1	6/14/2005	76819	7.65	15.9	1381	918		1.69		53.50		71.2		64.0	<	0.037		absent	absent
HRF MW-1	9/13/2005	78352	7.69	17.4	1362	882		2.86		50.00		72.5	<	8.0		0.080		absent	absent
HRF MW-1	12/21/2005	80057	7.61	13.4	1330	920		2.28		50.00		55.0		15.0		0.220		absent	absent
HRF MW-1	3/23/2006	81372	7.61	11.6	1441	938	<	0.72		49.30		80.0	<	8.0		0.080		absent	absent
HRF MW-1	6/13/2006	82889	7.73	13.8	1457	894		2.00		49.40		74.0	<	8.0		0.110		absent	absent
HRF MW-1	9/19/2006	84746	7.89	16.7	1473	962	<	0.72		49.00		70.4	<	8.0		0.100		absent	absent
HRF MW-1	12/12/2006	86063	7.86	14.2	1485	962	<	0.72		48.90		67.1		11.0		0.130		absent	absent
HRF MW-1	3/13/2007	87172	8.00	11.8	1499	986		0.80		45.70		111.0		43.0		0.090		absent	absent
HRF MW-1	6/20/2007	89056	8.02	14.2	1542	1032	<	0.14		51.30		65.0		12.0		0.260		absent	absent
HRF MW-1	9/18/2007	90987	7.85	16.1	1554	1033	<	0.14		50.32		70.0	<	1.0		0.360		absent	absent
HRF MW-1	3/19/2008	93710	7.54	10.7	1521	1000	<	0.14		44.15		65.0		41.0		0.130		absent	absent
HRF MW-1	9/17/2008	97332	7.85	15.7	1503	931		5.74		38.00		62.0		44.7		0.030		present	present
HRF MW-1	3/19/2009	99952	7.69	11.2	1513	920		3.33		45.10		61.0		8.0		0.053		absent	absent
HRF MW-1	9/16/2009	13990	7.76	16.4	1531	946		2.54		43.50		66.5		22.0		0.028			
HRF MW-1	3/16/2010	16819	7.56	11.9	1471	978		1.37		41.00		65.0		45.0		0.051		absent	absent
HRF MW-1	9/21/2010	20777	7.37	16.5	1467	990		ND		43.00		61.3		27.0		0.068		present	present
HRF MW-1	9/29/2010	20973	7.53	16.3	1464													present	present

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)		TKN (mg/L)		NO_3-N (mg/L-N)		Cl (mg/L)		COD (mg/L)		Soluble Reactive Phosphorous (mg/L)		Total Coliform	E-Coli
HRF MW-1	3/15/2011	23093/23100.	6.39	10.5	2065	1325		33.60		1.26		182.0		805.0		3.300		present	present
HRF MW-1	3/31/2011	23298				1122		59.10		4.05		150.0		604.0		2.380			
HRF MW-1	9/20/2011	26470	7.57	16.0	1609	1067		11.50		12.60		88.0		148.0		2.120		present	absent
HRF MW-1	3/20/2012	28778/28785	7.55	10.6	1566	974		4.70		21.10		78.0		62.5		0.640		absent	absent
HRF MW-1	9/11/2012	32292/32293	7.83	16.0	1558	994		2.40		31.10		76.0		46.8		0.460		present	absent
HRF MW-1	3/19/2013	34945/34946	7.11	10.3	1587	995		2.66		32.70		83.2		82.8		0.440		absent	absent
HRF MW-1	9/10/2013	38124/38111	7.44	16.1	1616	1039		2.21		37.80		95.0		58.0		0.370		absent	absent
HRF MW-1	3/11/2014	40663/40669	7.24	10.2	1656	1076		0.93		37.60		99.8	<	50.0		0.330		absent	absent
HRF MW-1	9/16/2014	44282/44292	7.41	15.7	1624	1048		0.91		40.00		100.0	<	50.0		0.260		present	absent
HRF MW-1	3/10/2015	46893/46898	7.52	10.6	1634	955	<	0.20		49.00		95.7	<	50.0		0.220		absent	absent
HRF MW-1	9/15/2015	50768/50773	7.40	17.6	1661	835	<	0.20		49.76		120.0		57.0		0.350		present	absent
HRF MW-1	3/8/2016	53496	7.45	11.5	1716	1041		ND		50.70		162.0		50.0		0.200		absent	absent
HRF MW-1	9/13/2016	57765	7.47	17.5	1754	1181	<	0.20		56.3		158.7	<	40.0		0.20		absent	absent
HRF MW-1	3/14/2017	60291/60288	7.19	10.4	1740	1190	<	0.20		52.1		138.0	<	50.0		0.19		absent	absent
HRF MW-1	9/13/2017	64137/64142	7.26	16.2	1730	1085		0.50		52.7		147.0		69.2		0.10		absent	absent
HRF MW-1	3/21/2018	67255/67260	7.46	11.0	1718	1061		1.30		57.0		122.0		58.6		0.09		absent	absent
HRF MW-1	9/24/2018	180237-04	7.33	16.6	1539	1070	<	0.20		54.4		94.3	J	14.3	<	0.05		absent	absent
HRF MW-1	3/19/2019	1903118-04	7.61	10.9	1623	1060	U	0.11	D	52.4		124.0	J	10.0		0.09		absent	absent
HRF MW-1	9/17/2019	1909220-04	7.55	15.2	1591	1030		1.03		44.6		113.0	J	45.0		0.08		absent	absent
HRF MW-1	3/19/2020	2003195-10	7.65	10.61	1678	1070		0.77	D	64.9		119	U	9.54		0.141		present	present
HRF MW-1	9/23/2020	2009328-10	7.49	18	1569	1080	U	0.14	D	58.3		102	U	32	U	0.082		absent	absent
HRF MW-1	3/16/2021	2103210-04	7.65	10.8	1612	1070	<	0.200		65.5		82.1	<	45.0		0.0720		absent	absent
HRF MW-1	9/22/2021	210945-04	7.39	18.65	1690	1140		0.681		68.9		85.8	J	11.0		0.0790		present	absent
HRF MW-1	5/24/2022	2205439-04	7.56	12.9	1593	1060		0.568		67.2		86.3		96		0.081		absent	absent
HRF MW-1	3/15/2023	230255-04	7.68	11.6	1672	1020	<	0.5		87.6		85.9	<	45	<	0.05		present	absent
HRF MW-1	9/13/2023	2309261-04	7.69	15.9	1724	1390	<	0.5	<	0.25		88.6	<	45	<	0.05		present	absent
HRF MW-1	9/21/2023	2309414-05																present	absent
RDOU-1	8/16/2000	368	7.41	14.3	800	621		8.93		40.95		47.8	<	11.4	<	0.037		absent	
RDOU-1	9/26/2000	49830	7.81	13.4	750	680		2.86		50.10		56.3		10.0		0.094		absent	
RDOU-1	1/25/2001	51571	7.76	14.6	962	603		2.66		50.30		49.0		16.0		0.123		absent	
RDOU-1	2/20/2001	51962	7.87	14.7	983	640	<	1.90		39.50		46.2	<	11.4		0.200		absent	
RDOU-1	3/29/2001	52498	7.63	14.8	780	564	<	1.90		48.30		48.5		37.0		0.054		absent	
RDOU-1	4/18/2001	52819	7.84	13.9	959	601		5.26		41.50		52.7		36.0		0.093		absent	
RDOU-1	5/14/2001	53224	7.75			571	<	1.90		55.70		62.0	<	11.4		0.301		absent	
RDOU-1	6/18/2001	53785	7.65	20.3	1020	578		2.92		41.10		51.7		41.0		0.345		absent	
RDOU-1	7/9/2001	54159	7.33	14.8	1080	649		3.10		41.40		52.0	<	11.4		0.160		absent	
RDOU-1	8/21/2001	55118	7.51	14.0	1010	644	<	1.90		40.70		49.7	<	11.4		0.238		absent	
RDOU-1	9/24/2001	55632	7.68	14.4	1010	604		9.96		40.60		52.7	<	11.4		0.216		absent	
RDOU-1	3/4/2002	57963	7.81	13.8	1029	478	<	1.90		35.20		47.2	<	11.4		0.148		absent	
RDOU-1	6/17/2002	59861	7.82	16.1	990	572	<	1.90		27.00		51.5	<	11.4		0.120		absent	
RDOU-1	9/17/2002	61748	7.44	14.6	1019	584		1.33		33.30		52.0		11.0		0.110		absent	
RDOU-1	12/10/2002	63067	7.60	13.1	1123	585		1.26		27.30		53.7	<	7.7		0.178		absent	
RDOU-1	3/18/2003	64335	7.82	14.2	1107	581		5.26		27.70		53.5		14.0		0.130		absent	
RDOU-1	6/18/2003	65661	7.86	14.0	1146	610		1.66		30.50		52.7	<	8.0		0.094		absent	
RDOU-1	9/17/2003	67248	7.68	13.9	1124	532		1.76		26.70		64.0		12.0		0.130		absent	present
RDOU-1	12/16/2003	68705	7.59	13.2	1149	540		1.02		27.90		53.0		19.0	<	0.037		absent	Absent
RDOU-1	3/15/2004	69826	7.83	13.8	1158	499		1.02		27.50		56.7	<	8.0	<	0.037		absent	Absent
RDOU-1	6/22/2004	71399	7.81	14.0	1172	566		1.44		29.70		68.5	<	8.0		0.050		absent	present
RDOU-1	9/15/2004	72818	7.45	13.1	1008	656		1.02		33.40		63.7	<	8.0		0.130		absent	absent
RDOU-1	12/14/2004	74215	7.23	12.9	1059	620		0.97		37.40		70.7		17.5	<	0.037		absent	absent
RDOU-1	3/15/2005	75526	7.51	13.3	1078	665		2.22		40.30		72.5		11.0		0.062		absent	absent
RDOU-1	6/14/2005	76813	7.61	13.8	1072	714		2.78		42.70		71.9		11.0	<	0.037		absent	absent
RDOU-1	9/13/2005	78346	7.81	13.4	1058	669		6.78		42.50		70.0		12.5	<	0.037		absent	absent

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)		TKN (mg/L)		NO_3-N (mg/L-N)	Cl (mg/L)		COD (mg/L)		Soluble Reactive Phosphorous (mg/L)	Total Coliform	E-Coli
RDOU-1	12/21/2005	80052	7.43	12.1	1056	688		2.04		42.40	68.7		14.5		0.150	absent	absent
RDOU-1	3/23/2006	81368	7.68	13.8	1175	700	<	0.72		40.00	82.0	<	8.0	<	0.043	absent	absent
RDOU-1	6/13/2006	82884	7.74	13.0	1163	688		3.00		35.70	70.0	<	8.0	<	0.043	absent	absent
RDOU-1	9/19/2006	84741	7.90	13.2	1147	704		0.86		37.50	71.4	<	8.0		0.110	absent	absent
RDOU-1	12/12/2006	86058	7.89	13.3	1127	684		0.80		38.90	66.6	<	8.0		0.120	absent	absent
RDOU-1	3/13/2007	87167	7.88	12.7	1133	684		1.30		37.56	62.4		47.0		0.080	absent	absent
RDOU-1	6/20/2007	89051	8.08	13.2	1143	712	<	0.14		45.90	63.0		9.0		0.180	absent	absent
RDOU-1	9/18/2007	90982	7.86	12.9	1146	692	<	0.14		41.49	62.5	<	1.0		0.250	absent	absent
RDOU-1	3/19/2008	93705	7.57	12.5	1156	967	<	0.14		40.05	63.7	<	1.0		0.090	absent	absent
RDOU-1	9/16/2008	97327	7.91	12.9	1159	659		4.24		38.00	68.5	<	1.0	<	0.005	absent	absent
RDOU-1	3/19/2009	99942	7.67	12.7	1177	662		1.73		45.30	67.0		11.6		0.054	absent	absent
RDOU-1	9/16/2009	13974/13985	7.73	12.4	1181	644		2.61		42.00	67.0		27.0		0.014	absent	absent
RDOU-1	3/16/2010	16814/16822	7.53	13.0	1166	796		ND		41.00	67.5		34.0		0.032	absent	absent
RDOU-1	9/21/2010	20773	7.04	12.4	1176	750		2.60		42.80	65.6		22.0		0.045	absent	absent
RDOU-1	3/15/2011	23088	7.04	12.6	1201	792		3.77		41.30	62.2		38.0		0.040	absent	absent
RDOU-1	9/20/2011	26465	7.55	12.0	1194	751		5.29		40.40	72.0		31.1		0.150	absent	absent
RDOU-1	3/20/2012	28773/28780	7.35	12.7	1204	776		3.50		39.40	69.7		42.3		0.050	absent	absent
RDOU-1	9/11/2012	32282/32283	7.60	12.4	1229	794	<	2.10		41.80	71.0		26.6		0.040	absent	absent
RDOU-1	3/19/2013	34935/34936	6.92	12.7	1248	750	<	0.06		43.60	75.9		35.6		0.050	absent	absent
RDOU-1	9/11/2013	38119/38106	7.54	13.6	1258	774	<	0.06		44.70	79.7		33.0		0.080	absent	absent
RDOU-1	3/11/2014	40659/40665	6.86	13.4	1273	769	<	0.20		44.90	81.4	<	50.0		0.070	absent	absent
RDOU-1	3/12/2014	Analytical			1200	758	<	0.20		46.00	77.1						
RDOU-1	3/12/2014	Anatek				846		0.52		48.50	78.4						
RDOU-1	9/16/2014	44279/44289	7.38	12.8	1281	767		1.50		48.80	81.0	<	50.0	<	0.050	present	absent
RDOU-1	3/10/2015	46890/46895	7.62	13.2	1281	669	>	0.20		53.20	79.4	<	50.0	<	0.050	absent	absent
RDOU-1	9/9/2015	50765/50770	7.31	13.4	1278	717		0.23		53.46	80.1	<	50.0	<	0.050	present	absent
RDOU-1	3/8/2016	53493	7.10	13.9	1284	758		0.36		52.60	75.8	<	50.0		0.070	present	absent
RDOU-1	9/13/2016	57762	7.43	14.0	1278	858	<	0.20		52.3	79.5	<	40.0		0.06	absent	absent
RDOU-1	3/14/2017	60290/60287	7.18	13.8	1290	744	<	0.20		52.2	86.6	<	50.0	<	0.05	absent	absent
RDOU-1	9/13/2017	64134/64135	6.91	13.1	1300	745		0.30		50.9	81.0		106.0	<	0.05	present	absent
RDOU-1	3/21/2018	67252/67257	7.48	13.7	1303	760	<	0.20		54.7	89.0		60.8	<	0.05	absent	absent
RDOU-1	9/24/2018	1809237-01	7.40	13.4	1066	849	<	0.20		54.2	80.8	<	9.54	<	0.05	absent	absent
RDOU-1	3/19/2019	1903118-01	7.53	13.8	1238	761	U	0.135	D	53.3	82.6	U	9.27	U	0.0260	absent	absent
RDOU-1	9/17/2019	1909220-01	7.58	13.5	1182	788		0.44		43.5	87.5		59.0	U	0.05	present	absent
RDOU-1	3/19/2020	2003195-07	7.51	13.8	1289	764		0.56	D	60.4	84.8	U	9.54		0.066	present	absent
RDOU-1	9/23/2020	2009328-01	7.36	13.5	1225	788		0.287	D	47.6	82.9	U	9.54	U	0.017	absent	absent
RDOU-1	3/16/2021	2103210-01	7.63	13.7	1275	811	<	0.200		59.1	71.9	<	45.0	<	0.0500	absent	absent
RDOU-1	9/22/2021	2109451-01	6.88	14.47	1322	826	<	0.200		63.1	69.9	<	45.0	<	0.0500	absent	absent
RDOU-1	5/24/2022	2205439-01	7.46	14	1332	783	<	0.5		64.3	78.3	<	50	<	0.05	present	absent
RDOU-1	3/15/2023	2303255-01	7.47	14.1	1314	758	<	0.5		64.2	73.9	<	45	<	0.05	absent	absent
RDOU-1	9/13/2023	2309261-01	7.71	13.8	1328	1080	<	0.5		64.6	74.2	<	45	<	0.05	present	absent
RDOU-1	9/21/2023	2309414-01														present	absent
RDOU-1 dup.	3/15/2005	75527				660		2.30		40.50	71.9		10.0		0.059	absent	absent
RDOU-1 dup.	6/14/2005	76814				706		2.71		46.20	71.2		13.0		0.037	absent	absent
RDOU-1 dup.	9/13/2005	78347				672		6.46		44.10	69.0		13.0		0.037	absent	absent
RDOU-1 dup.	12/21/2005	80053				688		1.90		41.10	70.0		11.0		0.160	absent	absent
RDOU-1 dup.	3/23/2006	81369				718		0.72		40.90	82.0		8.0		0.043	absent	absent
RDOU-1 dup.	6/13/2006	82885				678		2.00		35.90	64.0		8.0		0.043	present	absent
RDOU-1 dup.	9/19/2006	84742				692		0.72		37.70	69.0		8.0		0.090	absent	absent
RDOU-1 dup.	12/12/2006	86059				670		0.78		38.90	67.3		10.0		0.090	absent	absent
RDOU-1 dup.	3/13/2007	87168				660		0.80		37.62	65.8		50.0		0.100	absent	absent
RDOU-1 dup.	9/18/2007	90983				714		0.14		41.61	62.5		1.0		0.270	absent	absent
RDOU-1 dup.	3/19/2008	93706				747		1.60		39.58	65.0		1.0		0.100	absent	absent

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)	TKN (mg/L)	NO_3-N (mg/L-N)	Cl (mg/L)	COD (mg/L)	Soluble Reactive Phosphorous (mg/L)	Total Coliform	E-Coli
RDOU-1 dup.	9/16/2008	97238				635	4.94	38.00	68.0	1.0	0.005	absent	absent
RDOU-1 dup.	3/19/2009	99944				652	2.03	45.50	66.0	11.9	0.046	absent	absent
RDOU-1 dup.	9/16/2009	13975/13986				636	3.05	42.30	67.0	17.0	0.031	absent	absent
RDOU-1 dup.	3/16/2010	16815				787	ND	41.20	65.7	38.0	0.032	absent	absent
RDOU-1 dup.	9/21/2010	20774				741	1.20	43.80	58.6	22.0	0.440	absent	absent
RDOU-1 dup.	3/15/2011	23089				803	3.23	41.70	62.0	38.0	0.040	absent	absent
RDOU-1 dup.	9/20/2011	26466				755	5.35	39.90	70.0	31.1	0.150	present	absent
RDOU-1 dup.	3/20/2012	28774/28781				781	3.40	38.80	69.0	42.3	0.050	absent	absent
RDOU-1 dup.	9/11/2012	32284/32285				789	3.40	41.40	69.0	35.6	ND	absent	absent
RDOU-1 dup.	3/19/2013	34937/34938				724	ND	43.30	78.6	35.6	0.030	absent	absent
RDOU-1 dup.	9/10/2013	38120/38107				760	ND	44.50	79.3	27.0	0.050	absent	absent
RDOU-1 dup.	3/11/2014	40660/40666				770	< 0.20	44.80	82.1	< 50.0	0.070	absent	absent
RDOU-1 dup.	9/16/2014	44280/44290				776	0.21	49.00	81.2	< 50.0	< 0.050	present	absent
RDOU-1 dup.	3/10/2015	46891/46896				646	> 0.20	53.20	76.2	< 50.0	< 0.050	absent	absent
RDOU-1 dup.	9/10/2015	50771										present	absent
RDOU-1 dup.	3/8/2016	53494				686	ND	52.50	79.4	< 50.0	0.060	present	absent
RDOU-1 dup.	9/13/2016	57763				814	< 0.20	51.3	79.7	< 40.0	0.05	absent	absent
RDOU-1 dup.	9/13/2017	64135				746	0.30	51.0	84.9	86.6	< 0.05	present	absent
RDOU-1 dup.	3/21/2018	67253				739	0.80	53.8	85.8	60.8	< 0.05	absent	absent
RDOU-1 dup.	9/24/2018	1809237-02				804	< 0.20	54.2	81.2	57.7	< 0.05	absent	absent
RDOU-1 dup.	3/19/2019	1903118-02				747	U 0.11	D 53.8	84.6	U 9.27	U 0.0260	absent	absent
RDOU-1 dup.	9/17/2019	1909220-02				828	1.03	44.5	83.8	J 12.0	U 0.05	present	absent
RDOU-1 dup.	3/19/2020	2003195-08				808	0.44	D 62.7	84.4	U 9.54	0.06	present	absent
RDOU-1 dup.	9/23/2020	2009328-08				792	0.552	D 56.9	80.4	U 36	U 0.023	absent	absent
RDOU-1 dup.	9/22/2021	2109451-02				856	0.205	64.3	72.1	< 45.0	< 0.050	absent	absent
RDOU-1 dup.	5/24/2022	2205439-02				840	< 0.5	63.7	77.4	J 29	< 0.05	present	absent
RDOU-1 dup.	3/15/2023	2303255-02				674	< 0.5	65	74.1	< 45	< 0.05	absent	absent
RDOU-1 dup.	9/13/2023	2309261-02				1080	< 0.5	64.6	75.9	< 45	< 0.05	absent	absent
RDOU-1 dup.	9/21/2023	2309414-02										absent	absent
RDOU-3A	6/18/02	59863	8.01	15.0	1030	549	2.42	20.60	80.5	< 11.4	0.130		
RDOU-3A	9/17/02	61750	7.46	15.1	1084	558	< 0.72	25.00	77.7	54.0	0.120		
RDOU-3A	12/10/02	63069	7.54	13.0	1145	542	1.42	24.10	64.0	< 7.7	0.230		
RDOU-3A	3/18/03	64337	7.50	14.3	1118	542	1.82	25.90	59.0	20.0	0.190		
RDOU-3A	6/18/03	65663	7.79	15.6	1094	534	< 0.72	27.80	56.0	20.0	0.098		
RDOU-3A	9/17/03	67250	7.66	14.7	1092	542	2.54	27.60	53.0	< 8.0	0.200		
RDOU-3A	12/16/03	68707	7.68	13.6	1110	518	0.88	29.40	54.0	19.0	0.050		
RDOU-3A	3/15/04	69828	7.76	14.5	1107	516	0.94	30.40	52.5	11.0	< 0.037		
RDOU-3A	6/22/04	71401	7.70	15.0	1100	562	0.86	22.50	65.5	< 8.0	0.070		
RDOU-3A	9/15/2004	72820	7.47	14.9	960	600	1.06	28.00	55.5	< 8.0	0.100	present	absent
RDOU-3A	12/14/2004	74217	7.36	13.6	959	555	< 0.72	25.70	60.5	9.0	< 0.037	present	absent
RDOU-3A	3/15/2005	75529	7.45	14.5	960	546	1.54	27.90	59.9	11.0	0.063	absent	absent
RDOU-3A	6/14/2005	76816	7.64	15.8	940	596	1.55	33.80	58.7	38.0	< 0.037	absent	absent
RDOU-3A	9/13/2005	78349	7.88	15.4	922	548	4.14	33.20	51.2	14.0	0.040	absent	absent
RDOU-3A	12/21/2005	80054	7.76	12.4	921	594	1.92	31.60	62.5	< 8.0	0.140	absent	absent
RDOU-3A	3/23/2006	81371	7.21	15.4	1006	586	< 0.72	32.90	72.0	10.0	0.069	absent	absent
RDOU-3A	6/13/2006	82886	7.79	14.9	1022	602	3.00	28.00	50.0	< 8.0	0.170	absent	absent
RDOU-3A	9/19/2006	84743	7.89	16.0	1001	592	< 0.72	33.50	52.2	< 8.0	0.070	present	absent
RDOU-3A	12/12/2006	86060	7.95	14.0	1032	618	0.72	28.00	55.0	< 8.0	0.100	absent	absent
RDOU-3A	3/13/2007	87169	7.94	14.6	1043	608	0.70	26.16	58.6	45.0	0.090	absent	absent
RDOU-3A	6/20/2007	89053	8.06	16.3	1059	684	1.56	32.00	52.0	11.0	0.190	absent	absent
RDOU-3A	9/18/2007	90984	7.81	14.6	1055	655	< 0.14	29.97	40.0	< 1.0	0.260	present	absent
RDOU-3A	3/18/2008	93707	7.59	13.7	1012	620	1.00	30.34	52.5	< 1.0	0.130	absent	absent
RDOU-3A	9/16/2008	97329	8.06	16.6	1024	543	2.74	24.00	60.5	3.9	< 0.005	present	absent

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)		TKN (mg/L)		NO_3-N (mg/L-N)	Cl (mg/L)		COD (mg/L)		Soluble Reactive Phosphorous (mg/L)	Total Coliform	E-Coli
RDOU-3A	3/19/2009	99946	7.82	14.0	1007	530		2.45		30.80	56.5		11.6		0.045	absent	absent
RDOU-3A	9/16/2009	13987	7.77	15.2	1026	540		2.18		26.20	58.0		28.0		0.021		
RDOU-3A	3/16/2010	16816/16824	7.50	14.0	994	685		1.08		27.30	54.2		29.0		0.038	absent	absent
RDOU-3A	9/21/2010	20775/20781	7.19	13.8	989	662		1.60		29.10	54.4		22.0		0.041	present	present
RDOU-3A	9/21/2010	20971	7.43	13.9	983											present	absent
RDOU-3A	3/15/2011	23090	7.36	14.0	971	706		3.45		29.10	54.0		27.0		0.060	present	absent
RDOU-3A	9/20/2011	26467	7.45	13.7	972	621		6.80		27.30	56.0		33.3		0.280	present	absent
RDOU-3A	3/20/2012	28775/28782	7.28	13.5	989	582		4.50		28.90	55.0		33.3		0.040	absent	absent
RDOU-3A	9/11/2012	32286/32287	7.89	14.0	982	571	<	2.10		32.90	56.0		ND		0.070	absent	absent
RDOU-3A	3/19/2013	34939/34940	7.00	13.8	978	566	<	0.06		29.60	63.3		31.3		0.040	absent	absent
RDOU-3A	9/10/2013	38121/38108	7.51	15.5	971	594		0.30		29.00	59.4		24.0		0.060	present	absent
RDOU-3A	3/11/2014	40661/40667	7.43	14.9	973	590	<	0.20		27.20	61.6	<	50.0		0.080	absent	absent
RDOU-3A	9/16/2014	44281/44291	7.49	14.1	968	542		0.26		27.90	55.7	<	50.0		0.180	present	absent
RDOU-3A	3/10/2015	46892/46897	7.57	13.9	961	417		0.26		31.20	54.6	<	50.0		0.050	absent	absent
RDOU-3A	9/15/2015	50767/50772	7.45	14.6	962	324	<	0.20		28.28	59.1	<	50.0		0.180	present	absent
RDOU-3A	3/8/2016	53495	7.52	14.0	950	564		ND		28.10	57.4	<	50.0		0.100	absent	absent
RDOU-3A	9/13/2016	57764	7.57	14.8	964	573		0.29		27.8	55.9		92		0.05	present	present
RDOU-3A	3/28/2017	60490/60489	7.75	14.2	960	553	<	0.02		28.4	57.3	<	50		0.11	absent	absent
RDOU-3A	9/13/2017	64136/64141	7.39	14.2	970	547		0.2		27.4	55.3		47.4	<	0.05	present	absent
RDOU-3A	3/21/2018	67254/67259	7.52	14.28	980	548		1.3		28.4	58.5	J	28	<	0.05	absent	absent
RDOU-3A	9/24/2018	1809237-03	7.46	14.21	893	594		1.33		57.7	55.6		57.7	<	0.05	absent	absent
RDOU-3A	3/19/2019	1903118-03	7.65	14.1	916	527		0.3		26.1	56.1	U	9.27	U	0.028	absent	absent
RDOU-3A	9/17/2019	1909220-03	7.64	14.4	974	616		0.69		24.5	61.0	J	12	U	0.050	absent	absent
RDOU-3A	3/19/2020	2003195-09	7.65	14.4	977	632		0.37		28.4	62.3	U	9.5	U	0.05	present	absent
RDOU-3A	9/23/2020	2009328-09	7.49	14.3	898	576		0.317	D	24.6	59.1	U	34	U	0.018	absent	absent
RDOU-3A	3/16/2021	2103210-03	7.76	14.0	923	533	<	0.200		27.5	58.1	<	45.0	<	0.0500	present	present
RDOU-3A	9/22/2021	2109451-03	7.29	14.6	956	550		0.352		31.4	53.8	<	45.0	<	0.0500	present	absent
RDOU-3A	5/24/2022	2205439-03	7.56	15.1	997	523	<	0.500		29.4	62.3	<	50.0	<	0.0500	absent	absent
RDOU-3A	3/15/2023	2033255-03	7.62	14.8	947	484	<	0.500		31.4	56.4	<	45.0	<	0.0500	absent	absent
RDOU-3A	9/13/2023	2309261-03	7.77	15.5	958	838	<	0.500		31.3	56.9	<	45.0	<	0.0500	absent	absent
RDOU-3A	9/21/2023	2309414-03														present	absent
Willow Creek	01/24/01	51546	10.20	4.3	334	352	<	1.90		9.34	13.7		12.0		0.070	present	
Willow Creek	02/21/01	51977		11.0	380	300	<	1.90		2.43	13.8	<	11.4		0.130	absent	
Willow Creek	03/20/01	52316	7.75	12.0	1185	280	<	1.90		3.48	1.0		19.0		0.130	absent	
Willow Creek	04/16/01	52711				290		3.18		0.19	7.8	<	11.4		0.013	present	
Willow Creek	05/14/01	53215	8.63	15.1	210	317	<	1.90		2.31	9.5	<	11.4		0.024	present	
Willow Creek	06/18/01	53787	7.52	17.5	140	169	<	1.90		0.13	1.0		41.0	<	0.037	present	
Willow Creek	07/09/01	54157	7.75	22.1	190	116		2.02		0.15	2.3	<	11.4	<	0.037	present	
Willow Creek	08/21/01	55116	7.83	21.1	180	140	<	1.90		0.15	3.2	<	11.4		0.040	present	
Willow Creek	09/24/01	55630	7.79	20.0	240	201	<	1.90		0.15	15.2		284.0		0.107	present	
Willow Creek	03/04/02	57966	8.73	11.5	502	361	<	1.90		5.79	22.7		47.0		0.093	absent	
Willow Creek	06/18/02	59868	8.70	16.5	180	115	<	1.90		0.18	1.0	<	7.7		0.110	present	
Willow Creek	09/17/02	61755	7.85	19.5	137	190	<	0.72		0.93	1.5		12.0		0.090	present	
Willow Creek	12/09/02	63075	8.34	6.0	228	246		5.24		1.31	6.0	<	7.7		0.080	absent	
Willow Creek	03/18/03	64343	7.87	12.3	326	206		5.18		0.90	8.0		36.0		0.120	present	
Willow Creek	06/18/03	65670	8.32	19.2	117	90	<	0.72		1.50	0.3		30.0		0.037	present	
Willow Creek	09/17/03	67257	8.36	17.8	148	98		0.94		0.06	0.3	<	8.0		0.160	present	present
Willow Creek	12/16/03	68714	7.51	5.9	269	248		0.86		2.09	9.0		28.0	<	0.037	absent	present
Willow Creek	03/15/04	69835	8.41	11.8	389	286	<	0.72		0.61	12.0		19.0		0.047	present	present
Willow Creek	06/22/04	71409	8.30	23.9	593	158	<	0.72		0.74	4.5	<	8.0		0.070	absent	absent
Willow Creek	9/15/2004	72828	7.71	18.8	135	150	<	0.72		0.34	0.5	<	8.0		0.100	present	present
Willow Creek	12/14/2004	74225	7.65	8.2	247	194	<	0.72		3.08	11.0		18.0	<	0.037	present	present
Willow Creek	3/15/2005	75534	7.36	10.9	159	160	<	0.72		0.28	3.0		22.0		0.056	present	absent

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)		TKN (mg/L)		NO_3-N (mg/L-N)		Cl (mg/L)		COD (mg/L)		Soluble Reactive Phosphorous (mg/L)	Total Coliform	E-Coli
Willow Creek	6/14/2005	76821	8.18	18.6	1444	168	<	0.72		0.23		1.5		13.0	<	0.037	present	present
Willow Creek	9/13/2005	78354	8.18	20.8	1351	162	<	0.72	<	0.04		0.5	<	8.0	<	0.037	present	present
Willow Creek	12/21/2005	80059	7.51	2.9	1688	262		0.74		1.18		3.3	<	8.0		0.050	present	absent
Willow Creek	3/23/2006	81374	8.63	12.9	345	360	<	0.72		4.57		22.0		14.0		0.048	present	absent
Willow Creek	6/13/2006	82891	8.14	18.2	209	134	<	0.72		0.30		6.0	<	8.0	<	0.043	present	present
Willow Creek	9/19/2006	84735	8.43	18.9	163	134	<	0.72	<	0.21	<	0.3		3.0	<	0.043	present	present
Willow Creek	12/12/2006	86065	8.52	5.7	343	330	<	0.72		1.90		8.7		10.0	<	0.043	present	present
Willow Creek	3/13/2007	87174	8.00	11.2	310	220		1.30		0.84		116.0		56.0		0.110	present	present
Willow Creek	6/20/2007	89058	9.06	21.6	137	76		0.56		0.02		1.6		9.0	<	0.005	absent	absent
Willow Creek	9/18/2007	90989	8.56	18.2	169	93	<	0.14		3.91		1.2	<	1.0		0.010	present	present
Willow Creek	3/19/2008	93717	8.51	10.0	315	217	<	0.14		0.02		7.5	<	1.0		0.060	present	present
Willow Creek	9/16/2008	97318	8.66	22.2	161	299		0.32	<	0.01		3.0		9.3	<	0.005	present	present
Willow Creek	3/16/2010	16803/16809				292		ND		0.86		11.0		15.0		0.015	present	absent
Willow Creek	9/21/2010	20762/20768	8.02	20.6	258	241		ND		1.13		9.0		11.0		ND	present	present
Willow Creek	3/15/2011	23077	7.27	10.3	277	184		2.00		0.77		6.9		19.8		0.090	present	present
Willow Creek	3/22/2012	28787/28792	7.58	8.7	329	190		1.20		0.95		6.5		28.8		0.050	present	present
Willow Creek	9/11/2012	32273/32274	8.80	21.3	213	68		ND		0.37		ND		ND		ND	present	present
Willow Creek	3/19/2013	34949/34950	7.76	11.0	323	148		0.66		1.02		7.6		15.3		0.030	present	absent
Willow Creek	9/10/2013	38113/38126	8.59	27.1	215	112		0.49		0.49		5.6	<	8.0		0.010	present	absent
Willow Creek	3/11/2014	40671/40677	7.33	12.5	238	195		0.79		0.82		8.4	<	50.0		0.110	present	present
Willow Creek	9/16/2014	44284/44294	8.87	23.1	226	98		0.95		0.97		5.3	<	50.0	<	0.250	present	present
Willow Creek	3/10/2015	46879/46885	8.20	12.5	298	182		0.67		0.80		8.9	<	50.0	<	0.050	present	present
Willow Creek	9/10/2015	50780/50775	8.32	23.4	254	340		0.50		1.37		5.9		50.0	<	0.050	present	present
Willow Creek	3/8/2016	53503	8.10	11.4	406	188		0.59		1.50		13.3	<	50.0	<	0.050	present	present
Willow Creek	9/13/2016	57771	8.41	20	165	86		0.3	<	0.11		2.3		47		0.012	present	present
Willow Creek	3/15/2017	60319/60314	8.04	12.4	510	228		0.97		2		21.1	<	50	<	0.05	present	present
Willow Creek	9/13/2017	64144/64150	8.18	21.4	190	87		0.5	<	0.11		2.7		89	<	0.05	present	present
Willow Creek	3/21/2018	67262/67269	8.23	11.19	263	181		0.5		1.5		8.9		102	<	0.05	present	present
Willow Creek	9/24/2018	180238-01	8.11	16.8	105	99		0.288	<	0.1	<	5	J	18.6	<	0.05	present	present
Willow Creek	3/19/2019	1903117-01	8.88	11.4	359.8	230		1.08		1.47		14.1	J	23.000		0.0800	present	absent
Willow Creek	9/17/2019	1909222-01	8.25	19.09	207	132		0.697		0.992	<	5.00	U	45	U	0.05	present	present
Willow Creek	3/19/2020	2003195-01	8.89	10.39	319	200		0.572		0.979		9.71	U	9.27	U	0.031	present	present
Willow Creek	9/23/2020	2009328-01	8.76	19.5	147	180		0.419	U	0.1		2.18	U	29	U	0.017	present	present
Willow Creek	3/16/2021	2103210-06	8.42	7.3	291.2	164		0.372		1.04		8.19	<	45	<	0.05	present	present
Willow Creek	9/22/2021	2109452-01	8.19	18.55	179	126	<	0.200		0.7	<	5.00	<	45.0	<	0.0500	present	present
Willow Creek	5/25/2022	2205476-01	8.79	19.1	265.4	114		0.705		0.296		5.67	<	45.0	<	0.0500	present	present
Willow Creek	3/14/2023	2303255-07	8.88	8.1	303.3	124		0.600		1.3		9.41	<	45.0	<	0.0500	present	present
Willow Creek	9/13/2023	2309259-01	8.55	21.5	147.5	100		2.050	<	0.25	<	5.00	<	45.0	<	0.0500		present
Willow Creek	9/21/2023	2309414-01	8.36	18	158.6												present	present
Office Pond	03/04/02	57967	8.62	10.9	1204	587		2.82		33.70		63.7	<	11.4		0.215	absent	
Office Pond	06/18/02	59869	8.90	18.0	1050	635	<	1.90		19.30		72.0	<	11.4		0.110	present	
Office Pond	09/17/02	61756	8.51	17.9	1178	698	<	1.90		26.30		70.0		37.0		0.080	present	
Office Pond	12/10/02	63076	7.82	5.4	1284	704	<	1.90		22.50		69.0	<	7.7		0.178	absent	
Office Pond	03/18/03	64344	8.31	12.5	1299	672	<	1.90		23.40		72.5		23.0		0.120	present	
Office Pond	06/18/03	65671	9.17	22.0	1024	602		2.04		34.30		71.0		36.0		0.101	present	
Office Pond	09/17/03	67258	8.54	15.7	1207	650		3.00		23.00		69.5		51.0		0.191	present	
Office Pond	12/16/03	68715	7.23	5.1	1294	610		1.94		25.70		73.5		56.0		0.040	present	present
Office Pond	03/15/04	69836	8.13	11.9	1345	670		1.64		27.60		76.0		34.0		0.037	present	present
Office Pond	06/22/04	71410	8.94	25.5	933	620		1.58		18.00		83.0		21.0		0.060	present	present
Office Pond	9/15/2004	72829	7.62	18.5	924	556		1.52		19.80		58.5	<	8.0		0.100	persent	present
Office Pond	12/14/2004	74226	7.06	8.1	1057	642	<	0.72		34.80		76.0		21.0	<	0.037	present	present
Office Pond	3/15/2005	75535	7.19	11.4	1085	660		1.88		33.50		78.0		14.0		0.060	present	present
Office Pond	6/14/2005	76822	8.51	19.6	1055	704		1.55		28.10		76.2		33.0	<	0.037	present	present

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)		TKN (mg/L)		NO_3-N (mg/L-N)		Cl (mg/L)		COD (mg/L)		Soluble Reactive Phosphorous (mg/L)		Total Coliform	E-Coli
Office Pond	9/13/2005	78355	8.45	19.1	1047	682		1.73		24.90		72.5		14.0	<	0.037		present	present
Office Pond	12/21/2005	80060	6.90	2.5	1159	898		2.92		42.20		70.0		21.0		0.170		present	present
Office Pond	3/23/2006	81375	8.10	12.2	1201	720	<	0.72		30.00		92.0		15.0	<	0.043		present	present
Office Pond	6/13/2006	82892	8.32	19.6	1153	750		2.00		26.70		76.0		29.0	<	0.043		present	present
Office Pond	9/19/2006	84736	7.83	17.4	1199	714		1.30		31.70		70.0		10.0		0.100		present	present
Office Pond	12/13/2006	86086	7.84	7.7	1088	694		0.90		28.20		75.7		20.0		0.100		present	present
Office Pond	3/13/2007	87175	8.43	12.0	1184	676		1.92		30.11		112.0		58.0		0.060		present	present
Office Pond	6/20/2007	89059	9.08	24.9	1089	672		1.88		25.30		76.0		30.0		0.080		present	present
Office Pond	9/18/2007	90990	8.63	17.4	1172	705	<	0.14		27.93		77.5		7.0		0.060		present	present
Office Pond	3/19/2008	93718	7.89	9.7	1258	787		0.30		34.30		82.5	<	1.0		0.070		present	absent
Office Pond	9/16/2008	97319	8.57	20.7	1179	743		3.00		25.00		82.0		9.7		0.030		present	present
Office Pond	3/16/2010	16804/16810				876		1.82		33.90		82.0		49.0		0.025		present	present
Office Pond	9/21/2010	20763	8.13	18.7	1176	840		1.70		28.30		76.9		42.0		ND		present	present
Office Pond	3/15/2011	23078	7.88	10.6	1265	930		4.30		34.50		83.2		42.3		0.040		present	present
Office Pond	3/22/2012	28788/28793	8.51	10.2	1339	864		3.10		32.10		87.0		58.0		0.040		present	absent
Office Pond	9/11/2012	32275/32276	8.60	18.9	1339	819		2.80		38.40		90.0		44.6		ND		present	present
Office Pond	3/19/2013	34951/34952	7.54	10.3	1289	739		0.65		36.30		82.5		49.1		0.020		present	absent
Office Pond	9/10/2013	38127/38114	8.28	24.2	1289	794		1.23		34.10		87.1		45.0		0.040		present	present
Office Pond	3/11/2014	40672/40678	7.47	11.7	1345	803	<	0.20		36.20		92.4	<	50.0	<	0.050		present	present
Office Pond	9/16/2014	44285/44295	8.34	22.2	1327	775		0.62		36.60		86.4	<	50.0	<	0.050		present	present
Office Pond	3/10/2015	46880/46886	8.26	13.3	1343	825		1.54		41.50		85.3		63.0	<	0.050		present	present
Office Pond	9/10/2015	50781/50776	8.34	24.4	1337	774		1.86		39.50		94.0		57.0	<	0.050		present	present
Office Pond	3/8/2016	53504	7.71	11.6	1351	750		0.44		41.70		91.7	<	50.0		0.050		present	present
Office Pond	9/13/2016	57772	7.86	19	1397	836	<	0.2		38.7		90.4		92		0.1		present	present
Office Pond	3/15/2017	60320/30315	7.15	12.4	1490	802	<	0.2		48.8		104	<	50	<	0.05		present	present
Office Pond	9/13/2017	64145/64151	7.51	18.2	1410	793		1		39.9		89		69	<	0.05		present	present
Office Pond	3/21/2018	67263/67270	8.35	10.95	1354	785		0.6		45.2		85.8	J	43	<	0.05		present	present
Office Pond	9/24/2018	180238-02	8.22	15.56	1216	856		1.3		44.5		85.2	J	20.8	<	0.05		present	present
Office Pond	3/19/2019	1903117-02	8.41	10.7	1298	838		0.726		42.1		86.4	J	34.0	U	0.0300		present	present
Office Pond	9/17/2019	1909222-02	8.03	17.95	1354	832		1.53		36.2		92.3		180	U	0.05		present	present
Office Pond	3/19/2020	2003195-02	8.54	10.29	1291	736		1.12	D	44.3		88.2	U	9.54	U	0.031		present	present
Office Pond	9/23/2020	2009328-02	8.21	18.3	1262	824		1.2	D	36.8		90.3	U	20	U	0..017		present	present
Office Pond	3/16/2021	2103210-07	8.41	7.8	1343	862		0.913		46.3		92.6	<	45	<	0.05		present	present
Office Pond	09/22/221	2109452-02	8.09	16.4	1342	878		2.30		40.7		80.2	<	45	<	0.0500		present	present
Office Pond	5/25/2022	2205476-02	8.24	19.2	1203	694		1.39		39		86.5	<	45	<	0.0500		present	present
Office Pond	3/15/2023	2303255-08	8.65	9	1370	868		0.92		51.3		90.6	<	40.5	<	0.0500		present	present
Office Pond	9/13/2023	2309259-02	8.17	20.2	1422	952		1.32		42.5		89.4		47		0.0530			
Office Pond	9/21/2023	2309414-02	8.11	16.8	1420													present	present
Sixmile Canyon Pump (Pump 2)	05/14/01	53222	8.62	15.9		615	<	1.90		16.30		107.0		37.0		0.075		present	
Sixmile Canyon Pump (Pump 2)	06/18/01	53792	7.87	24.1	940	598		2.14		3.80		104.2		55.0		0.037		present	
Sixmile Canyon Pump (Pump 2)	07/09/01	54156	6.69	26.2	1100	218	<	1.90		3.16		37.7		30.0		0.041		present	
Sixmile Canyon Pump (Pump 2)	08/21/01	55115	8.40	21.8	850	574	<	1.90		0.35		92.2		24.0		0.061		present	
Sixmile Canyon Pump (Pump 2)	09/24/01	55629	7.00	21.3	580	358		5.86		11.40		39.7		298.0		0.120		present	
Sixmile Canyon Pump (Pump 2)	03/04/02	57969	8.44	10.4	1498	781	<	1.90		20.90		129.2	<	11.4		0.167		present	
Sixmile Canyon Pump (Pump 2)	06/18/02	59871	8.41	18.1	260	271	<	1.90		2.10		16.0	<	11.4		0.110		present	
Sixmile Canyon Pump (Pump 2)	09/17/02	61758	7.99	18.4	920	616		1.28		3.40		104.5		34.0		0.080		present	
Sixmile Canyon Pump (Pump 2)	12/10/02	63078	8.05	5.2	1559	822		1.58		21.40		133.0		15.0		0.201		present	
Sixmile Canyon Pump (Pump 2)	03/18/03	64346	7.98	13.3	1535	828		2.27		17.70		134.0		57.0		0.100		present	
Sixmile Canyon Pump (Pump 2)	06/18/03	65672	8.56	21.3	642	424		1.06		13.10		55.5		19.0		0.052		present	
Sixmile Canyon Pump (Pump 2)	09/17/03	67259	8.76	16.2	997	564		2.48		4.91		97.0		42.0		0.170		present	
Sixmile Canyon Pump (Pump 2)	12/16/03	68716	7.32	4.6	1574	804		1.16		19.80		131.5		33.0	<	0.037		present	present
Sixmile Canyon Pump (Pump 2)	03/15/04	69837	8.09	11.9	1564	798		1.48		20.10		125.5		27.0	<	0.037		present	present
Sixmile Canyon Pump (Pump 2)	06/22/04	71411	8.28	24.8	1292	842		1.16		11.70		153.5		20.0		0.070		present	present

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)		TKN (mg/L)		NO_3-N (mg/L-N)		Cl (mg/L)		COD (mg/L)		Soluble Reactive Phosphorous (mg/L)		Total Coliform	E-Coli
Sixmile Canyon Pump (Pump 2)	9/15/2004	72830	7.66	17.4	1263	684		1.22		8.69		121.0	<	8.0		0.100		present	present
Sixmile Canyon Pump (Pump 2)	12/14/2004	74227	7.48	6.2	1056	690		0.78		1.83		127.0		80.0	<	0.037		present	present
Sixmile Canyon Pump (Pump 2)	3/15/2005	75536	7.98	11.4	1078	608		1.46		21.30		90.0		24.0		0.057		present	present
Sixmile Canyon Pump (Pump 2)	6/14/2005	76823	8.06	18.7	777	570	<	0.72		6.59		83.7		18.0	<	0.037		present	present
Sixmile Canyon Pump (Pump 2)	9/13/2005	78356	8.63	18.8	1205	772		1.39		11.90		133.0		19.0	<	0.037		present	present
Sixmile Canyon Pump (Pump 2)	12/21/2005	80061	7.78	2.9	838	638		1.76		6.10		87.5		17.0		0.090		present	present
Sixmile Canyon Pump (Pump 2)	3/23/2006	81376	8.44	11.7	1553	944	<	0.72		30.60		144.0		20.0	<	0.043		present	present
Sixmile Canyon Pump (Pump 2)	6/13/2006	82893	7.71	19.6	1170	708	<	0.72		14.20		110.0		26.0	<	0.043		present	present
Sixmile Canyon Pump (Pump 2)	9/19/2006	84737	8.27	17.7	697	528		0.96		10.10		72.0		12.0	<	0.043		present	present
Sixmile Canyon Pump (Pump 2)	12/12/2006	86087	7.79	6.6	1664	898		1.72		34.80		120.0		32.0		0.250		present	present
Sixmile Canyon Pump (Pump 2)	3/13/2007	87176	7.21	11.0	1581	1020		5.38		27.90		167.9		94.0		0.640		present	present
Sixmile Canyon Pump (Pump 2)	6/20/2007	89060	8.91	21.3	696	430		1.40		3.97		62.0		28.0		0.020		present	present
Sixmile Canyon Pump (Pump 2)	9/18/2007	90991	8.42	16.6	1268	567		0.52		11.56		90.0		11.0		0.040		present	
Sixmile Canyon Pump (Pump 2)	3/19/2008	93719	7.99	8.9	1574	1083		11.86		31.40		140.0		21.0		0.070		present	absent
Sixmile Canyon Pump (Pump 2)	9/16/2008	97320	8.17	18.7	1502	1003		3.22		16.00		154.0		21.2	<	0.005		present	present
Sixmile Canyon Pump (Pump 2)	3/16/2010	16805/16811				1083		2.65		31.60		145.0		69.0		0.029		present	absent
Sixmile Canyon Pump (Pump 2)	9/21/2010	20764	7.85	17.5	1413	1013		0.70		17.40		134.0		65.0		ND		present	present
Sixmile Canyon Pump (Pump 2)	3/15/2011	23079	7.60	9.2	1694	1068		3.40		33.60		149.0		51.3		0.060		present	absent
Sixmile Canyon Pump (Pump 2)	3/20/2012	28789/28794	7.80	9.3	1690	1011		2.50		35.40		147.0		60.3		0.030		present	present
Sixmile Canyon Pump (Pump 2)	9/11/2012	32277/32278	8.27	19.0	1447	895	<	2.10		21.10		153.0		64.8		0.030		present	present
Sixmile Canyon Pump (Pump 2)	3/19/2013	34953/34954	7.53	8.7	1714	1040		0.93		37.30		140.0		67.0		0.020		present	absent
Sixmile Canyon Pump (Pump 2)	9/10/2013	38115/38128	8.21	23.2	1554	957		3.10		20.40		164.0		67.0		0.090		present	present
Sixmile Canyon Pump (Pump 2)	3/11/2014	40673/40679	7.53	9.8	1740	1096		0.28		35.10		153.0		66.0		0.070		present	absent
Sixmile Canyon Pump (Pump 2)	9/16/2014	44286/44296	7.86	19.3	1575	975		0.94		28.00		163.0		50.0	<	0.050		present	present
Sixmile Canyon Pump (Pump 2)	3/10/2015	46881/46887	7.94	10.6	1800	1070	<	0.20		44.00		149.0		68.0	<	0.050		present	present
Sixmile Canyon Pump (Pump 2)	9/10/2015	50782/50777	8.35	18.9	1665	824		1.59		28.28		166.0		88.0	<	0.050		present	present
Sixmile Canyon Pump (Pump 2)	3/8/2016	53505	8.02	11.0	1761	1074		ND		46.50		173.0		57.0		0.050		present	present
Sixmile Canyon Pump (Pump 2)	9/13/2016	57773	7.41	18.7	1692	980		0.22		40.2		168.2		44		0.7		present	present
Sixmile Canyon Pump (Pump 2)	3/15/2017	60321/60316	7.99	12	2030	1035	<	0.2		47.8		166		50.2	<	0.05		present	present
Sixmile Canyon Pump (Pump 2)	9/13/2017	64146/64152	7.58	20.7	1740	1032		1		51.4		146		60	<	0.05		present	present
Sixmile Canyon Pump (Pump 2)	3/21/2018	67264/67271	8.27	10.24	1817	1043	<	0.2		53.8		79		85	<	0.05		present	absent
Sixmile Canyon Pump (Pump 2)	9/24/2018	180237-03	7.91	14.83	1565	1100		0.586		50		157	<	9.54	<	0.05		present	present
Sixmile Canyon Pump (Pump 2)	3/19/2019	1903117-04	6.13	5.6	1675	978		1.36		42.3		138	J	34.0	U	0.0300		present	present
Sixmile Canyon Pump (Pump 2)	9/17/2019	1909222-03	8.48	18.32	1254	972		1.63		39.6		158		66	U	0.05		present	present
Sixmile Canyon Pump (Pump 2)	3/19/2020	2003195-03	9.25	8.41	1741	1060		1.13	D	49.9		163	J	16	U	0.034		present	present
Sixmile Canyon Pump (Pump 2)	9/23/2020	2009328-03	7.94	18.1	1519	1000		1.13	D	39.5		159	U	32	U	0.017		present	present
Sixmile Canyon Pump (Pump 2)	3/16/2021	2103210-08	7.57	7.5	1713	1090		0.79		53.7		139	<	45	<	0.05		present	absent
Sixmile Canyon Pump (Pump 2)	9/22/2021	2109452-03	8.7	17.78	1521	924		1.09		42.2		125	<	45	<	0.0500		present	present
Sixmile Canyon Pump (Pump 2)	5/25/2022	2205476-03	8.36	21.4	1570	828		1.54		42.1	<	50	<	45	<	0.0500		present	present
Sixmile Canyon Pump (Pump 2)	3/15/2023	2303255-09	8.7	6.8	1722	1050		1		55.4	D	139	<	45	<	0.0500		present	present
Sixmile Canyon Pump (Pump 2)	9/13/2023	2309259-03	8.16	21.3	1690	1110		0.914	<	0.25		152	<	45	<	0.0500		present	present
Sixmile Canyon Pump (Pump 2)	9/21/2023	2309414-03	8.02	16.6	1699													present	present
Sixmile Creek	9/15/2004	72832	7.73	20.9	4310	2566		9.74		0.10		713.6		133.0		0.940		present	present
Sixmile Creek	12/14/2004	74229	7.28	6.9	1352	866	<	0.72		15.90		141.5		27.0	<	0.037		present	present
Sixmile Creek	3/15/2005	75538	7.02	11.5	1306	842		0.99		15.70		135.0		20.0		0.438		present	present
Sixmile Creek	6/14/2005	76825	8.04	18.0	1460	972		1.11		4.96		141.0		26.0	<	0.037		present	present
Sixmile Creek	9/13/2005	s dry no sample collected																	
Sixmile Creek	12/21/2005	80063	6.87	2.2	1243	968		2.28		17.80		120.0		25.0		0.160		present	present
Sixmile Creek	3/23/2006	81378	7.72	10.8	1556	962	<	0.72		16.10		144.0		12.0	<	0.043		present	present
Sixmile Creek	6/13/2006	82895	8.02	17.3	1549	956		4.00		5.48		152.0		35.0	<	0.043		present	present
Sixmile Creek	9/19/2006	84739	8.16	15.3	1736	1060		1.20		6.93		180.0		25.0		0.120		present	present
Sixmile Creek	12/13/2006	86089	8.28	7.6	1509	890		1.62		24.10		124.0		27.0		0.100		present	present
Sixmile Creek	3/13/2007	87178	8.47	10.6	1569	960		1.48		14.90		189.0		64.0		0.110		present	present

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)		TKN (mg/L)		NO_3-N (mg/L-N)		Cl (mg/L)		COD (mg/L)		Soluble Reactive Phosphorous (mg/L)		Total Coliform	E-Coli
Sixmile Creek	6/20/2007	89061	8.75	25.5	1692	1058		1.74		4.74		146.0		146.0		0.170		present	present
Sixmile Creek	9/18/2007	s dry no sample collected																	
Sixmile Creek	3/19/2008	93721	8.01	9.7	1639	1063	<	0.14		15.16		145.0		11.0		0.110		present	present
Sixmile Creek	9/16/2008	s dry no sample collected																	
Sixmile Creek	3/16/2010	16807/16813	7.73	12.1	1618	1059		2.00		16.70		136.0		63.0		0.031		present	present
Sixmile Creek	9/21/2010	20766/20772	7.75	17.8	1742	1173		0.60		8.15		166.0		76.0		0.060		present	present
Sixmile Creek	3/15/2011	23081	7.57	10.5	1546	1137		2.20		16.80		135.0		53.5		0.100		present	present
Sixmile Creek	3/20/2012	28791/28796	7.98	9.1	1615	1031		3.00		23.20		138.0		58.0		0.050		present	present
Sixmile Creek	9/11/2012	s dry no sample collected																	
Sixmile Creek	3/19/2013	34957/34958	7.13	9.2	1656	981		1.76		24.80		137.0		67.0		0.060		present	present
Sixmile Creek	9/10/2013	38117/38130	7.92	20.6	1873	1189		1.73		5.06		189.0		78.0		0.120		present	present
Sixmile Creek	3/11/2014	40675/40681	7.74	11.8	1617	1090		0.59		30.50		151.0		63.0	<	0.050		present	present
Sixmile Creek	9/16/2014	s dry no sample collected																	
Sixmile Creek	3/10/2015	46883/46889	7.90	11.1	1685	1050	<	0.20		34.60		145.0		57.0	<	0.050		present	present
Sixmile Creek	9/9/2015	s dry no sample collected																	
Sixmile Creek	3/8/2016	53507	7.74	9.5	1632	1005		1.75		25.20		204.0		55.0		0.120		present	present
Sixmile Creek	9/13/2016	creek was dry no sample																	
Sixmile Creek	3/15/2017	60323/60318	7.57	12	1,750	1,155		0.37		38.5		151.0	<	50.0		0.110		present	present
Sixmile Creek	9/13/2017	64147/64153	7.89	18.8	1,990	985		0.5		24.0		198.0	<	50.0	<	0.050		present	present
Sixmile Creek	3/21/2018	67266/67273	8.20	10.0	1685	283		0.30		27.7		127.0	J	17.0	<	0.050		present	present
Sixmile Creek	9/24/2018	180238-05	7.82	13.9	1,970	1,340		4.00		42.7		208.0	J	16.5		0.168		present	present
Sixmile Creek	3/19/2019	1903117-05	8.43	7.8	1,610	989		0.82		26.7		140.0	J	21.0		0.0610		present	present
Sixmile Creek	9/17/2019	1909222-05	8.46	15.1	1,631	1,080		1.21		18.9		163.0		57.0	U	0.050		present	present
Sixmile Creek	3/19/2020	2003195-05	8.35	7.6	1,746	1,120		0.88		44.6		161.0	J	32.0		0.056		present	present
Sixmile Creek	9/23/2020	2009328-05	8.19	16.1	1,656	1,100		1.04	D	25.7		165.0		54.0	U	0.030		present	present
Sixmile Creek	3/16/2021	2103210-10	8.30	6.5	1,105	685		0.901		15.7		90.9	<	45.0		0.0940		present	present
Sixmile Creek	9/22/2021	2109452-05	8.44	14.1	1,315	820		0.775		22.8		97.1	<	45.0	<	0.0500		present	present
Sixmile Creek	5/25/2022	2205476-05	8.23	19.1	1,537	922		1.340		19.2	<	50.0	<	45.0	<	0.0500		present	present
Sixmile Creek	3/14/2023	2303255-11	8.45	8.9	1,656	1,000		0.807		29.6	D	129.0	<	45.0	<	0.0500		present	present
Sixmile Creek	9/13/2023	creek dry																	
Sixmile Creek	9/21/2023	2309414-05	8.25	15.3	1,836													present	present
Threemile Creek	9/15/2004	72831	7.85	17.8	1405	850		1.68		19.70		121.5	<	8.0		0.090		present	present
Threemile Creek	12/14/2004	74228	6.96	7.5	1297	836	<	0.72		23.80		125.0		38.0	<	0.037		present	present
Threemile Creek	3/15/2005	75537	7.30	10.7	1351	792		1.22		24.20		124.0		22.0		0.060		present	present
Threemile Creek	6/14/2005	76824	7.93	20.0	1372	888		0.87		20.90		126.0		21.0	<	0.037		present	present
Threemile Creek	9/13/2005	78357	7.97	18.9	1359	838		1.17		20.90		115.0	<	8.0	<	0.037		present	present
Threemile Creek	12/21/2005	80062	6.38	4.4	1159	892		1.70		29.60		105.0		10.0		0.130		present	present
Threemile Creek	3/23/2006	81378	7.58	12.8	1486	882	<	0.72		24.80		146.0		12.0	<	0.043		present	present
Threemile Creek	6/13/2006	82894	7.97	18.8	1453	872		2.00		21.00		122.0		9.0	<	0.043		present	present
Threemile Creek	9/19/2006	84738	7.94	16.2	1474	888		0.96		23.40		127.0		15.0		0.090		present	present
Threemile Creek	12/13/2006	86088	7.89	8.2	1486	850		1.30		26.80		120.0		18.0	<	0.043		present	present
Threemile Creek	3/13/2007	87177	7.79	11.9	1475	880		1.16		24.70		128.0		53.0		0.070		present	present
Threemile Creek	6/20/2007	89062	8.43	24.7	1471	920		1.06		20.40		122.0		122.0		0.120		present	present
Threemile Creek	9/18/2007	90992	8.35	17.1	1485	950	<	0.14		23.37		125.0		2.0		0.230		present	absent
Threemile Creek	3/19/2008	93720	8.10	11.1	1511	963		0.20		26.50		127.5		7.0		0.100		present	present
Threemile Creek	9/16/2008	97321	8.28	19.0	1544	979		9.50		20.00		141.0		3.9	<	0.005		present	present
Threemile Creek	3/16/2010	16806/16812	8.06	19.0	1697	1038		3.48		30.20		132.0		60.0		0.043		present	present
Threemile Creek	9/21/2010	20765/20771	7.83	18.9	1850	1266		1.60		20.50		191.0		81.0		0.054		present	present
Threemile Creek	3/15/2011	23080	7.21	10.4	1568	1008		2.70		30.10		140.0		35.6		0.040		present	present
Threemile Creek	3/20/2012	28790/28795	7.88	9.6	1528	949		3.30		29.60		136.0		42.3		0.040		present	present
Threemile Creek	9/11/2012	32279/32280	8.47	18.3	1548	1021	<	2.10		25.80		144.0		62.5		0.050		present	present
Threemile Creek	3/19/2013	34955/34956	7.39	10.7	1546	931		0.50		31.50		132.0		51.3		0.050		present	present

Sample Site	Sample Date	Lab No.	pH (s.u.)	Water Temp (°C)	Electrical Conductivity (µS/cm)	TDS (mg/L)		TKN (mg/L)		NO_3-N (mg/L-N)		Cl (mg/L)		COD (mg/L)		Soluble Reactive Phosphorous (mg/L)		Total Coliform	E-Coli
Threemile Creek	9/10/2013	38116/38129	8.09	22.8	1549	1014		1.44		27.30		151.0		51.0		0.030		present	present
Threemile Creek	3/11/2014	40674/40680	7.53	14.2	1512	998		0.69		30.00		140.0		61.0	<	0.050		present	present
Threemile Creek	9/16/2014	44287/44297	8.13	19.7	1598	1011		1.05		25.90		148.0	<	50.0	<	0.050		present	present
Threemile Creek	3/10/2015	46882/46888	7.85	13.6	1530	980		0.46		32.30		133.0		57.0	<	0.050		present	present
Threemile Creek	9/10/2015	50783/50778	7.95	20.7	1516	950		0.68		26.73		146.0		66.0	<	0.050		present	present
Threemile Creek	3/8/2016	53506	7.73	11.3	1,522	913		0.37		30.1		154.0		59.0		0.080		present	present
Threemile Creek	9/13/2016	57774	7.84	17.8	1,600	1,264		0.83		23.6		58.0	<	40.0		0.090		present	present
Threemile Creek	3/15/2017	60322/60317	7.4	12.7	1,570	870		1.04		29.8		155.0	<	50.0	<	0.050		present	present
Threemile Creek	42991	64148/64154	7.92	19.6	1620	1206		1.90		32.20		177.0		78.0		0.080		present	present
Threemile Creek	3/21/2018	67265/67272	8.13	11.2	1610.00	930	<	0.20		31.1		133.0	J	35.0	<	0.050		present	present
Threemile Creek	9/24/2018	180238-04	7.92	15.6	1,439	929		0.99		27.4		137.0	J	9.54	<	0.050		present	present
Threemile Creek	3/19/2019	1903117-04	8.48	10.9	1,483	948		1.18		28.3		139.0	J	30.0	U	0.024		present	present
Threemile Creek	9/17/2019	1909222-04	8.26	17.3	1,534	912		0.94		23.2		194.0	J	22.0	U	0.050		present	present
Threemile Creek	3/19/2020	2003195-04	8.27	10.8	1,516	964		0.903		33.2		147.0	J	16.0	U	0.033		present	present
Threemile Creek	9/23/2020	2009328-04	8.26	18.9	1,505	1,060		0.895	D	22.8		157.0	U	22.0	U	0.030		present	present
Threemile Creek	3/16/2021	2103210-09	8.19	8.9	1,500	942		0.749		32.6		144.0	<	45.0	<	0.050		present	present
Threemile Creek	9/22/2021	2109452-04	8.21	16.9	1,648	1,050		0.828		28.7		141.0	<	45.0	<	0.0500		present	present
Threemile Creek	5/25/2022	2205476-04	8.45	21.3	1,451	848		0.822		31.1	<	50.0	<	45.0	<	0.0500		present	present
Threemile Creek	3/15/2023	2303255-10	8.42	12.3	1,546	938		0.650		38.4	D	137.0	<	45.0	<	0.0500		present	present
Threemile Creek	9/13/2023	2309259-04	8.26	23.5	1,586	1,090		0.611		34.1		153.0	<	45.0	<	0.0500		present	present
Threemile Creek	9/21/2023	2309414-04	8.27	15.1	1,585													present	present