

FARO PELLY AQUATICS PROGRAM: 2014/15 REPORT

PREPARED FOR:

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EXECUTIVE SUMMARY

Yukon Government, Assessment and Abandoned Mines (AAM) retained the services of EDI Environmental Dynamics Inc. (EDI) in 2014 to conduct surface water quality sampling for the 2014/15 Faro Pelly River Aquatics Program. This program involved monthly sampling events from May 2014 to March 2015. The sampling program included 23 monitoring stations, including stations on the Pelly River, Anvil Creek, Rose Creek, Faro Creek, Dixon Creek, an unnamed creek draining the Grum ore transfer pad, and Vangorda Creek. At each station, samples were collected and in-situ water quality parameters were measured, including water temperature, dissolved oxygen, specific conductivity, pH and turbidity. All samples were sent to an accredited laboratory (ALS) for analysis of routine, organic carbon, nutrient, total and dissolved metal parameters.

Sample results were compared with both the CCME Guidelines for the protection of freshwater aquatic life as well and the site specific Faro Effluent Standards. Water quality, as compared with these guidelines is generally good, with a couple of notable exceptions;

- Fluoride concentrations were regularly high at a number of sites including NWID, R1, R3, V20A, VGMAIN, VW1, VW2 and X14; concentrations were generally higher in winter months under ice.
- High concentrations of selenium are present at sites located in the area of the Pelly River, notably sites P1, P4, V8 and VW2. It is believed that the selenium is naturally occurring, and not attributable to the Faro Mine Site.
- High concentrations of zinc are present at a number of sites; R3, R4, R5, V17A, VW3, and X14. One source of the zinc in Rose Creek is believed to be seepage water from the North Fork Rose Creek Rock Drain.

Sampling was conducted successfully during the Faro Pelly River Aquatics Program 2014/15. It is recommended that monitoring continue, as many results exceeded guideline and/or standard values and metal concentrations have fluctuated during the course of the 2014/15 program. The program would benefit from a multi-year analysis to determine if there are any trends in the results.



AUTHORSHIP

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1 INTRODUCTION

Yukon Government, Assessment and Abandoned Mines (AAM) retained the services of EDI Environmental Dynamics Inc. (EDI) in 2014 to conduct surface water quality sampling for the 2014/15 Faro Pelly River Aquatics Program. This program involved monthly sampling events from May 2014 to March 2015. The sampling program included 23 monitoring stations, including stations on the Pelly River, Anvil Creek, Rose Creek, Faro Creek, Dixon Creek, an unnamed creek draining the Grum ore transfer pad, and Vangorda¹ Creek (Table 2, Figure 1). Of the 23 sampling locations, 14 are classified as receiving environment stations, seven are reference stations, and two are sampled for other purposes (Table 2). At each station, samples were collected and in-situ water quality parameters were measured, including water temperature, dissolved oxygen (DO), specific conductivity (SPC) and pH. All samples were sent to an accredited laboratory (ALS) for analysis of routine, organic carbon, nutrient, total and dissolved metal parameters.

Compared to the previous year's program in 2013, the 2014/15 monitoring program includes an additional station on Rose Creek, R3 (Table 2, Figure 1). As well, sampling frequency was increased to monthly, compared to the three sampling events conducted in 2013: spring (June 2013), summer (August 2013) and fall (October 2013).

This annual report will bring together sampling methodologies, frequency, and any changes/omissions to the sampling schedule over the 2014/15 season. Further it will describe site conditions, in-situ and lab sampling results, with special attention given to parameters of concern, including those that routinely exceeded CCME Freshwater Aquatic Life (CCME AL guidelines), and finally will make any recommendations for the sampling program going forward into the 2015/16 season. Due to the large amount of water quality data to be presented, the raw results are presented in appendix tables; however, information regarding site conditions, as well as a review of the parameters that routinely exceed applicable standards will be presented and discussed in the results section of the report body (Table 1).

Table 1. Location of data within this report.

Data Description	Data Location
Site conditions	Report, Section 3.1
Review of parameters exceeding applicable guidelines	Report, Section 3.2
Site photographs	Appendix A
In-situ data and laboratory results	Appendix B
QA/QC Data Review	Appendix C
Field Notes	Appendix D

¹ The official geographic name for this creek is actually: Van Gorder Creek (Yukon Government Tourism and Culture 2010). For the purposes of this report, the alternate name, 'Vangorda Creek', will be used as this is the name used by AAM for the Faro Mine Complex and Faro Mine Remediation Project.

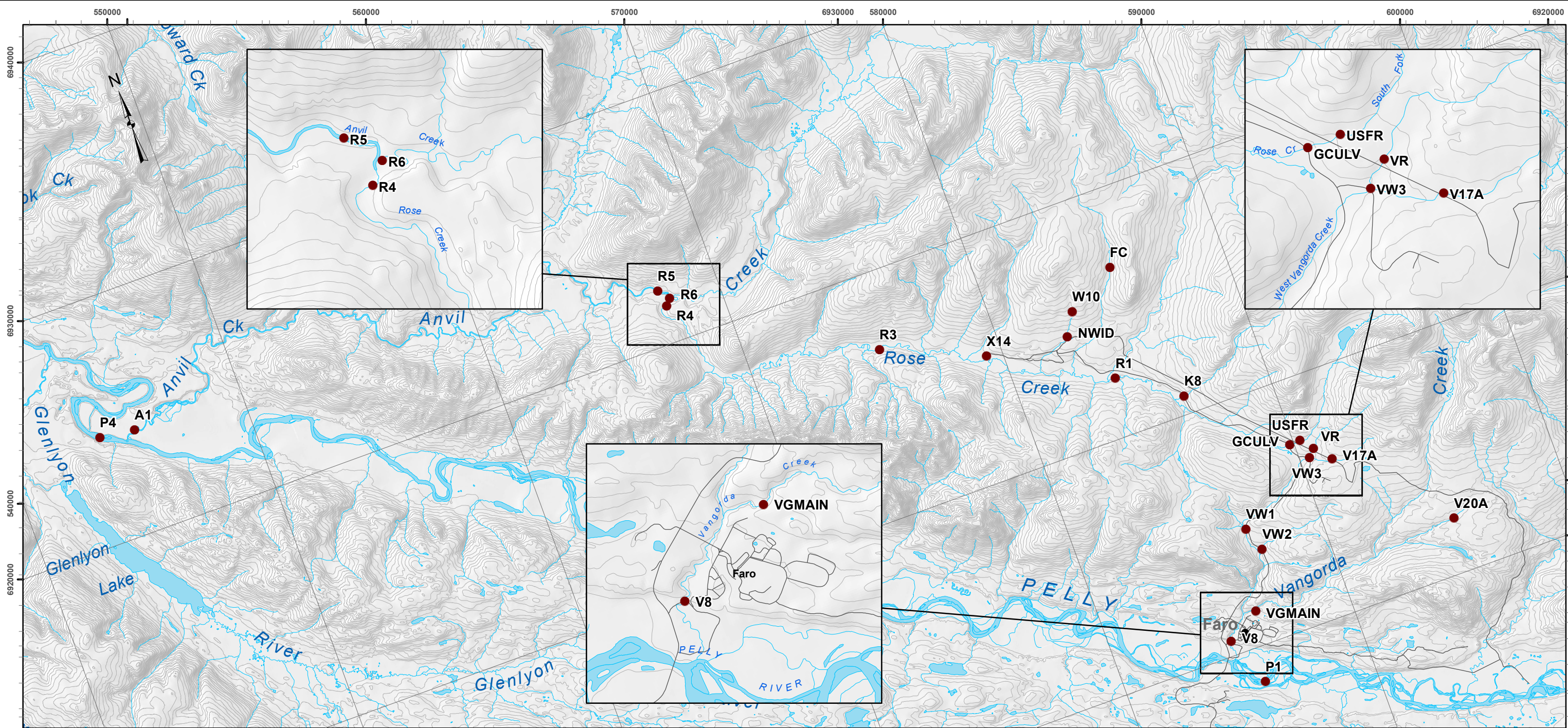


Table 2. Faro Pelly River Aquatics Program surface water quality stations list and locations, 2014/15 program.

Station Name	UTM Coordinates ⁽¹⁾		Location Description	Station Purpose
	Easting	Northing		
A1	545359	6924220	Anvil Creek near the confluence with Pelly River	Receiving
FC	585362	6916780	Faro Creek above diversion channel	Reference
GCULV	589818	6907388	South Fork Rose Creek d/s Haul Road and u/s Mine Access Road	Other
K8	586420	6910759	Reservoir Creek u/s Mine Access Road	Other
NWID ⁽²⁾	582738	6914697	Northwest interceptor ditch u/s of diversion point	Receiving
P1	585548	6898568	Pelly River u/s of Vangorda Creek	Reference
P4	543912	6924417	Pelly River d/s of Anvil Creek	Receiving
R1	584012	6912410	South Fork Rose Creek u/s pump house pond and tailings system	Reference
R3	575295	6916834	Rose Creek d/s of the Faro Mine Complex.	Receiving
R4	567680	6921520	Rose Creek u/s confluence with Anvil Creek	Receiving
R5	567540	6922219	Anvil Creek u/s of Rose Creek after full mixing	Receiving
R6	567908	6921780	Anvil Creek u/s of Rose Creek	Receiving
USFR	590268	6907403	South Fork Rose Creek u/s Haul Road	Reference
V17A	591259	6906240	Creek from Grum ore transfer pad	Receiving
V20A	595137	6902240	Dixon Creek u/s of mine workings, tributary of Vangorda Creek	Reference
V8	584785	6900600	Lower Vangorda Creek at the footbridge	Receiving
VGMAIN	586163	6901427	Main Fork Vangorda Creek d/s of mine but u/s of West Vangorda Creek	Receiving
VR	590688	6906910	West Fork of Vangorda Creek u/s of Haul Road	Reference
VW1	586930	6904733	West Fork of Vangorda Creek d/s of landslide but u/s of VW2	Receiving
VW2	587281	6903723	Tributary to West Vangorda Creek which drains Grum west lobe	Receiving
VW3	590329	6906589	West Fork of Vangorda Creek d/s of AEX Creek	Receiving
W10	583280	6915590	Upper Guardhouse Creek u/s NW Dump	Reference
X14	579340	6915080	Rose Creek d/s of the diversion channel	Receiving

⁽¹⁾ UTM coordinates in NAD 83 datum, Zone 8V.

⁽²⁾ NWID station: EDI was provided with incorrect coordinates for this station; this affected all three trips of 2013 program as well as the 2014/15 program from May to September. The samples instead had been collected from what is actually Lower Guardhouse Creek, not the interceptor ditch. AAM provided the correct UTM coordinates for NWID on Sept 29, 2014 and the station was sampled at the correct location from October 2014 trip onwards.



Faro Pelly River Aquatics Program Surface Water Sampling Locations

Legend

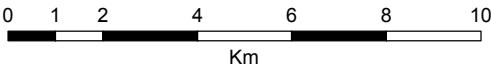
- Water Quality Monitoring Station
- Robert Campbell Highway
- Access Road

1:250,000 topographic spatial data: Canvec and National Topographic Database (NTDB); courtesy of Her Majesty the Queen in Right of Canada, Department of Natural Resources. All Rights Reserved.

Digital Elevation Model provided by Geomatics - Yukon Government via online source (Corporate Spatial Warehouse) www.geomaticsyukon.ca.

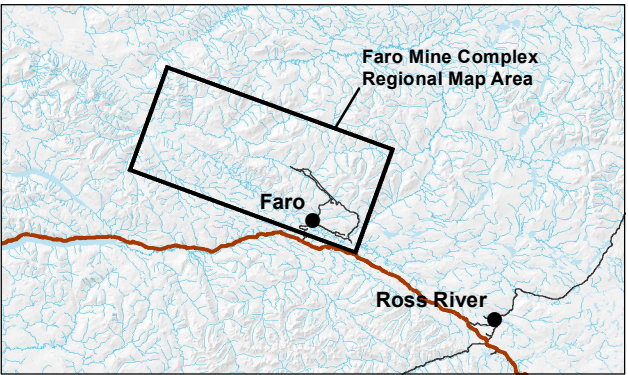
Project data displayed is site specific. Data collected by EDI Environmental Dynamics Inc. (2013) was obtained using Garmin GPS technology.

Van Gorder Creek will be referred to by its alternate name throughout this report, 'Vangorda Creek', as that is the name used by AAM for the Faro Mine Complex and Faro Mine Remediation Project, while Van Gorder Creek remains the official geographic name (Yukon Government Tourism and Culture 2010).



Map Scale = 1:120,000 (printed on 11 x 17)
Map Projection: North American Datum 1983 UTM Zone 8N

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2 METHODOLOGY

2.1 Field Methodology

Stations were accessed via truck, helicopter or on foot. Every effort was made to ensure that samples were collected from the same location during each sampling event. However, alternative locations as close to the regular location as possible were selected on the rare occasion that site conditions (high water, ice conditions, etc.) prevented safe access via helicopter to certain sites. Consideration was given to the necessary criteria of the station (e.g., upstream/downstream of various inputs) when choosing alternate stations. During the winter period when water levels decrease and ice cover and thickness varies from trip to trip, samples were collected from the most suitable and accessible locations as close to the regular location as possible; typically within a couple of metres upstream or downstream of the regular station. Some creeks also froze to substrate during the winter, and as such could not be sampled.

Water samples were collected at each station for laboratory analysis, along with in-situ field data and photo documentation. A YSI ProPlus multi-meter was used collect in-situ field parameters, including water temperature, pH, SPC and DO. Field crews calibrated the meter prior to field sampling and daily as required; a log was kept of all calibration data. An Oakton T100 turbidity meter, calibrated monthly, was used to measure in-situ turbidity. Field data was recorded on standard field datasheets, which included station name, sample date and time, water temperature, SPC, pH, DO, turbidity, photo numbers and a record of site conditions including flow stage (low, moderate, high), turbidity (clear, low, moderate, high), and any other qualitative observations.

Laboratory-provided bottles were filled using standard techniques (i.e., nitrile gloves, appropriate bottle handling) and samples were filtered and preserved, as directed by the lab. Dissolved organic carbon (DOC) and dissolved metals were field-filtered. Filtering was completed on site if air temperatures allowed, otherwise during colder weather (air temperatures approximately below -15°C) samples were filtered at accommodations within eight hours of sample collection. Due to a sampling error, DOC samples collected in May and June 2014 were not field filtered, and as such the lab analysis results for these trips are expressing total organic carbon values versus dissolved values; DOC data collected during these trips has been removed from the dataset.

Samples were kept in coolers with ice packs during the field work and transport, and were stored in a refrigerator overnight. Chain of Custody forms were included in each sample cooler, and samples were delivered to ALS Laboratories upon arrival back in Whitehorse, YT to ensure lab holding times were met.

2.2 Laboratory Analysis

All surface water quality laboratory analyses were conducted by ALS. Parameters analyzed included general routine parameters, nutrients, total and dissolved organic carbon, and total and dissolved metals (Table 3). Analytical data generated by ALS was provided in an electronic data deliverable format specific to the project.



Table 3. List of laboratory analysis parameters, minimum and preferred detection limits for the Faro Pelly River Aquatics Program.

Parameters for Laboratory Analysis	Units	Minimum Detection Limit	Preferred Detection Limit
Miscellaneous Routine Parameters			
Alkalinity	mg/L	1	1
Ammonia – N	mg/L	0.05	0.02
Chloride	mg/L	1	0.05
Dissolved solids, total (TDS)	mg/L	10	10
Nitrate – N	mg/L	0.1	0.03
Organic carbon, dissolved (DOC)	mg/L	1	0.1
Organic carbon, total (TOC)	mg/L	1	0.1
Phosphorus, total	mg/L	0.005	0.002
pH	pH Units	0.01	0.01
Sulphate	mg/L	1	0.2
Suspended solids, total (TSS)	mg/L	2	1
ICP – Metals Scan (Total and Dissolved)			
Aluminum (Al)	mg/L	0.005	0.001
Antimony (Sb)	mg/L	0.005	0.001
Arsenic (As)	mg/L	0.001	0.0005
Barium (Ba)	mg/L	0.01	0.001
Beryllium (Be)	mg/L	0.001	0.001
Bismuth (Bi)	mg/L	0.002	0.001
Boron (B)	mg/L	0.05	0.001
Cadmium (Cd)	mg/L	0.00001	0.000005
Calcium (Ca)	mg/L	0.5	0.05
Chromium (Cr)	mg/L	0.001	0.0002
Cobalt (Co)	mg/L	0.0009	0.00005
Copper (Cu)	mg/L	0.001	0.0001
Iron (Fe)	mg/L	0.05	0.005
Lead (Pb)	mg/L	0.001	0.0002
Magnesium (Mg)	mg/L	0.5	0.05
Manganese (Mn)	mg/L	0.002	0.0005
Molybdenum (Mo)	mg/L	0.001	0.001
Nickel (Ni)	mg/L	0.002	0.001
Potassium (K)	mg/L	0.5	0.05
Selenium (Se)	mg/L	0.001	0.0002
Silver (Ag)	mg/L	0.00005	0.00001
Sodium (Na)	mg/L	0.5	0.05
Strontium (Sr)	mg/L	0.002	0.001
Thallium (Tl)	mg/L	0.0003	0.00005



Parameters for Laboratory Analysis	Units	Minimum Detection Limit	Preferred Detection Limit
Tin (Sn)	mg/L	0.001	0.001
Titanium (Ti)	mg/L	0.005	0.005
Uranium (U)	mg/L	0.005	0.0001
Vanadium (V)	mg/L	0.006	0.001
Zinc (Zn)	mg/L	0.005	0.0005
Zirconium (Zr)	mg/L	0.004	0.001

2.3 QA/QC Program

Several QA/QC measures were employed during 2014/15 program; including the collection of two replicate samples, a field blank sample and a trip blank sample during each sampling event, explained below.

- Replicate samples are collected at the same date, time and location as regular samples; they are collected from 10% of the total number of sample sites. All sampling methodology is the same, as if it is a separate site. Replicates were collected from two sites, randomly selected during each trip. The replicate samples were conducted to check the accuracy and precision of the laboratory analysis as well as identify environmental variability.
- The field blank sample was also collected on site; a set of sample bottles was filled with deionized water at some point during the sampling trip. Sampling methodology was the same as if sampling from a stream, with filtering and preserving as required. The purpose of a field blank is to identify any contamination introduced to the sample from the sampler or the supplies (e.g., filter, syringe, bottle, or preservative).
- The travel blank was a sample set provided by the laboratory to be carried by the field crew to and from site during the field work. The travel blank was not opened at any time during the trip. The purpose of including a travel blank is to identify any contamination of the sample caused during transportation or storage of samples.

Following receipt of the laboratory analysis results, a review of the QA/QC sample results was completed according to the *British Columbia Field Sampling Manual* (Clark 2003). Field and travel blank sample data was reviewed to ensure that concentrations of all potential contaminants were low to below detection limits. Replicate samples were used to calculate relative percent difference (RPD) to express precision of a sample and its replicate; see formula below:

$$\%RPD = \left(\frac{(x_1 - x_2)}{\frac{(x_1 + x_2)}{2}} \right) \times 100\%$$

Where replicate results were less than 5-times the detection limit, the difference between the sample and the duplicate should be no greater than 2-times the detection limit to be considered precise. If the difference between the sample and replicate are greater than 2-times the detection limit, the RPD value must be



reported. For analytical results greater than 5-times the detection limit, RPD values less than 20% are considered precise. RPD values greater than 50% indicate problems or errors that affect precision of the analytical result (Table 4).

Table 4. QA/QC assessment categories and results wording.

Category	QA/QC Result
<DL	Adequately Precise
<2XDL	Adequately Precise
RPD<20%	Adequately Precise
RPD>20%	Imprecise or Intrinsically High Variability
RPD>50%	Error or Problem

DL = detection limit and RPD = relative percent difference

2.4 Data Analysis

For the purpose of this report, data were reviewed and parameters of concern were summarized and compared with the Canadian Council of Ministers of the Environment (CCME) guidelines for the protection of freshwater aquatic life (CCME AL; CCME 2014; 0), and with the Effluent Quality Standards (EQS) for the Faro Mine Site (Table 6).



Table 5. List of applicable CCME guidelines for Aquatic Life.

Water Quality Parameter	CCME AL Guideline	Comments
Aluminum	0.1 mg/L	CCME is 0.1 at pH $\geq$ 6.5, if pH is lower than 6.5, guideline is set at 0.005 mg/L
Ammonia	0.75 mg/L	Guideline is temperature and pH dependent. This represents a highly conservative guideline calculated for a pH of 8.5 and a water temperature of 0°C. Guideline decreases with increasing pH and temperature.
Arsenic	0.005 mg/L	-
Cadmium	0.00009 mg/L	Guideline is hardness dependent; this value is for a sample water hardness of 50 mg/L. A hardness dependent guideline of 0.04 μ g/L is used when water hardness is >0 to <17 mg/L. At hardness >280 mg/L the guideline is 0.37 μ g/L. At hardness ≥ 17 to ≤ 280 mg/L the guideline in μ g/L is calculated using the following equation: Hardness Adjusted Guideline = $10^{[0.83(\log[\text{hardness}]) - 2.46]}$
Chloride	120 mg/L	-
Chromium	0.0089 mg/L	Interim guideline, created 1997 (CCME 2014)
Copper	0.002 mg/L	Guideline is hardness dependent; this value is for an unknown hardness or hardness between 0 to <82 mg/L. At hardness >180 mg/L, the guideline is 4 μ g/L. At hardness ≥ 82 to ≤ 180 mg/L, the guideline in μ g/L is calculated using the following equation: Hardness Adjusted Guideline = $e^{0.8545 (\text{LN}[\text{hardness}] - 1.465)} \times 0.2$
Fluoride	0.120 mg/L	Interim guideline, created 2002 (CCME 2014)
Iron	0.3 mg/L	-
Lead	0.003 mg/L	Guideline is hardness dependent; this value is for a hardness of 100 mg/L. When hardness is 0 to ≤ 60 mg/L the guideline is 1 μ g/L. At hardness >180 mg/L, the guideline is 7 μ g/L. At hardness >60 to ≤ 180 mg/L the guideline in μ g/L is calculated using the following equation: Hardness Adjusted Guideline = $e^{[1.273 (\text{LN}[\text{hardness}] - 4.705)]}$
Molybdenum	0.0073 mg/L	-
Nickel	0.1 mg/L	Guideline is hardness dependent; this value is for a hardness of 100 mg/L. When hardness is 0 to ≤ 60 mg/L the guideline is 25 μ g/L. At hardness >180 mg/L, the guideline is 150 μ g/L. At hardness >60 to ≤ 180 mg/L the guideline in μ g/L is calculated using the following equation: Hardness Adjusted Guideline = $e^{[0.76 (\text{LN}[\text{hardness}] + 1.06)]}$
Nitrate	13 mg/L	-
Nitrite	0.06 mg/L	-
pH	6.5 - 9.0	-
Selenium	0.001 mg/L	-
Silver	0.0001 mg/L	-
Thallium	0.0008 mg/L	-
Uranium	0.015 mg/L	-
Zinc	0.03 mg/L	-

- indicates no applicable guideline



Table 6. Applicable Faro EQS for the Faro Mine Complex.

Water Quality Parameter	Effluent Quality Standard ¹
Total Suspended Solids	≤ 15 mg/L
pH	≥ 6.5 pH units
Ammonia (as N)	≤ 1.4 mg/L
Antimony	≤ 0.1 mg/L
Arsenic	≤ 0.05 mg/L
Barium	≤ 1 mg/L
Cadmium	≤ 0.02 mg/L
Copper	≤ 0.2 mg/L
Lead	≤ 0.2 mg/L
Molybdenum	≤ 0.5 mg/L
Nickel	≤ 0.5 mg/L
Selenium	≤ 0.05 mg/L
Silver	≤ 0.1 mg/L
Zinc	≤ 0.5 mg/L

¹ Effluent quality standards were provided by AAM.



3 RESULTS

3.1 Site Conditions

Site conditions are described in detail in sampling event memos that were completed following each sampling trip. Here we include general descriptions of weather, water level, and associated qualitative observations and seasonal changes including the presence, and if applicable, the amount, of ice and snow (Table 7).

Table 7. Site conditions observed during the 2014/15 season.

Sample Event	Site Conditions
May 26 – 28, 2014	Weather conditions were mild with clear to partly cloudy skies, light winds, with air temperatures ranging from 7°C to 15°C. The Faro area was experiencing smoky conditions from forest fires in Alaska. Discharges for most drainages were descending from peak flows, as determined by inspection of site and channel conditions and comparison to observations from the previous week (from another program). EDI believes that peak discharge associated with snowmelt (“freshet”) occurred within the week prior to the site visit. Water levels during the sampling period were all moderate to high and turbidity was moderate to low, and much clearer compared to the previous week during freshet. A portion of Anvil Creek began flowing through the forest downstream of the confluence with Rose Creek, bypassing the R6 station. This may also have implications for water quality at the downstream station on Anvil Creek – R5.
June 23 – 25, 2014	Weather conditions were mild with clear to partly cloudy skies, light winds, with air temperatures ranging from 10°C to 20°C. Water levels were all moderate and turbidity ranged from clear to high. A landslide was noticed on Anvil Creek between R5 (upstream of landslide) and A1 (downstream of landslide). There was increased turbidity at A1, may have other implications on water quality.
July 21 – 22, 2014	Weather conditions were mainly sunny, with air temperatures ranging from 9°C to 24°C. Water levels were all moderate and turbidity ranged from clear to moderate.
August 19 – 21, 2014	Weather conditions were a mix of sun and cloud, light winds, occasional precipitation, and air temperatures ranging from 8°C to 15°C. Water levels were moderate and turbidity ranged from clear to moderate. There were multiple rainfall events during the course of the program.
September 23 – 23, 2014	Weather conditions were a mix of sun and cloud, light winds, and air temperatures ranging from 2°C to 9°C. Water levels were moderate to high and turbidity ranged from clear to low. There were multiple rainfall events during the course of the program.
October 20 – 21, 2014	Weather conditions were clear with light winds, and air temperatures ranging from -3°C to 6°C. Water levels were low and ice was developing on most creeks and pond margins across the study area (ice thickness ranging from one to 10 cm); however, no ice had yet developed on the Pelly River, or lower Rose, Anvil or Vangorda creeks.
November 18 – 20, 2014	Weather conditions ranged from clear to overcast with light to moderate winds, and air temperatures ranging from -3°C to -18°C. Water levels were low and ice was developing on all watercourses and water bodies across the study area; however, there remained small leads of open water at many of the sites. Ice thickness ranged from less than one centimetre to approaching 75 centimetres.



Sample Event	Site Conditions
December 21 – 23, 2014	Weather conditions ranged from clear to snowing with light to moderate winds, and air temperatures ranging from -7°C to -17°C. Water levels were low and ice cover was present on all watercourses and waterbodies across the study area; however, there remained small leads of open water at some of the stations. Ice thickness ranged from less than one centimetre to over 100 centimetres. Site W10 frozen to bed; no samples collected here for remainder of 2014 /15 program.
January 19 – 21, 2015	Weather conditions ranged from partly sunny to snowing with light winds and air temperatures ranging from -7°C to -14°C. Water levels were low and there was approximately 50 cm of snow in most areas around the mine site. Ice cover was present on all watercourses and waterbodies across the study area; however, there remained small open-water leads at some of the stations. Ice thickness across the sampling stations ranged from five to over 70 cm. No sample was collected from R1 due to difficult ice conditions; sampling to recommence in February.
February 23 – 26, 2015	Weather conditions ranged from partly sunny to snowing with light winds and air temperatures ranging from -3°C to -19°C. Water levels were low and there was approximately 50 cm of snow in most areas around the mine site. Ice cover was present on all watercourses and waterbodies across the study area; however, due to the recent warm period, there were small to large open-water leads at some of the stations. Ice thickness across the sampling stations ranged from 0 cm to over 70 cm. Sites NWID, V20A and VW1 were frozen to bed; no samples collected here for remainder of 2014 /15 program.
March 24 – 25, 2015	Weather conditions ranged from heavy snowfall to clear skies with light to no wind, with air temperatures ranging from -20°C to +1°C. Water levels were low and there was approximately 60 cm of snow in most areas around the mine site. Ice cover was present on all watercourses and waterbodies across the study area; however there remained small open-water leads at some of the stations. Ice thickness across sampling stations ranged from 2cm to over 100 cm. Site VR was frozen to bed; no samples collected here for remainder of 2014/15 program.

3.2 Field and Lab Analysis Results

All field collected in-situ data and lab analysis data have been compiled; due to the large amount of data collected the data is available in appendix form rather than in the text of the report (Appendix B, C and D). All data was reviewed with the context of both the CCME guidelines for the protection of freshwater aquatic life (CCME FAL), as well as the site specific Faro Effluent Quality Standards (EQS). All samples with parameters exceeding either, or both, of these guidelines have been highlighted in the data tables as well as summarized and discussed here (Table 8). Where possible, attempts have been made to provide some rationale, or explanation for all parameters/samples found to exceed applicable guidelines.



Table 8. Site by site summary of parameters that exceeded either CCME freshwater aquatic life guidelines or Faro Effluent Quality Standards.

Station Name	Parameters Exceeding		Explanation
	CCME FAL	Faro EQS	
A1	Total Aluminum, Total Copper, Total Iron	Total Suspended Sediment	TSS was high in May sample which is expected given spring melt, also high in September, which was likely associated with a precipitation event. Aluminum and iron were elevated through open-water season, and likely associated with surface runoff. Copper was high only in May sample.
FC	Total Aluminum, Total Lead	-	Aluminum was elevated through open-water season, and likely associated with surface runoff. Lead was high in July and September, both exceeded the guideline by only a small amount (September sample met, but did not exceed guideline). Should not be considered a concern at this time.
GCULV	Total Copper	-	Copper was generally below detection, however the October sample exceeded the guideline. As one anomalous sample this should not be considered a concern at this time.
K8	Total Aluminum, Total Lead	-	Aluminum and lead concentrations in the May sample exceeded the guideline. These elevated concentrations were likely associated with spring melt and associated runoff.
NWID	Fluoride Total Copper	-	Fluoride exceeded the CCME FAL in all samples collected from October 2014 through January 2015. Copper was elevated in the January sample, and exceeded the CCME FAL. As one anomalous sample this should not be considered a concern at this time.
P1	Fluoride Total Aluminum, Total Cadmium, Total Copper, Total Iron, Total and Dissolved Selenium, Total Zinc	Total Suspended Sediment	TSS was high in May and June, and likely associated with spring melt and runoff. Fluoride exceeded the CCME FAL only in November, and is not considered a concern. Aluminum, cadmium, copper, iron and zinc were elevated early in the open-water season and are likely associated with spring melt and runoff. Selenium was elevated in nearly all samples throughout the 2014/15 sampling period. Review of the data indicates that selenium is present largely in the dissolved form, and appears to be naturally present in the Pelly River at these elevated concentrations as site P1 is upstream of inputs from the Faro Mine Site.
P4	pH Fluoride Total Aluminum, Total Cadmium,	Total Suspended Sediment	pH was slightly below the CCME FAL guideline in one in-situ sample collected in September. Not considered a concern at this time. TSS was high in May and June, and like associated with spring melt and runoff; though concentrations were generally low during other sampling events, elevated concentrations were noted in August and December.



Station Name	Parameters Exceeding		Explanation
	CCME FAL	Faro EQS	
	Total Copper, Total Iron, Total and Dissolved Selenium, Total Zinc		Fluoride exceeded the CCME FAL August, November and December. Aluminum, cadmium, copper, iron and zinc were elevated early in the open-water season and were likely associated with spring melt and runoff. There was another spike in concentrations of these metals in December; a review of field notes indicates unusually thick ice conditions (>1m thickness) that may have resulted in high TSS concentrations associated the hole auguring and insufficient flow to flush debris from a hole that depth, and ultimately high total metals concentrations. Selenium was elevated in nearly all samples throughout the 2014/15 sampling period. Review of the data indicates that selenium is present largely in the dissolved form, and appears to be naturally present in the Pelly River at these elevated concentrations; concentrations are similar in samples from P1 and P4.
R1	Fluoride Total Aluminum Total Iron	-	Aluminum was elevated only in the May sample and likely associated with spring melt and surface runoff. Fluoride was elevated in samples from November through March and iron concentrations were elevated in under ice samples collected in December and February. These elevated concentrations under ice are likely associated with increased contributions from groundwater inputs.
R3	Fluoride Total Aluminum Total Iron Total Zinc	-	Fluoride was elevated in samples from November through March. These elevated concentrations under ice are likely associated with increased contributions from groundwater inputs. Aluminum was elevated only in the May sample and likely associated with spring melt and surface runoff. Iron and zinc are elevated in nearly all samples collected during the 2014/15 sampling season; concentrations of zinc increased during winter sampling and elevated concentrations under ice are likely associated with increased contributions from groundwater inputs, including seepage water from the North Fork Rose Creek Rock Drain.
R4	Total Iron Total Zinc	-	Iron exceeded the CCME FAL in September and October, but was generally elevated from May through October. These concentrations may have been associated with surface runoff. Total zinc was elevated in all samples throughout the 2014/15 sampling period. Zinc is a parameter of concern.
R5	Total Zinc	-	Total zinc was elevated in nearly all samples throughout the 2014/15 sampling period. Zinc is a parameter of concern.
R6	Total Aluminum Total Iron	Total Suspended Sediment	One sample, collected in December, had elevated TSS, total aluminum and total iron. As one anomalous sample this should not be considered a concern at this time; the results were likely associated with abnormal conditions associated with ice-up and sampling protocol.
USFR	Total Copper	-	The September sample exceeded the CCME FAL for copper; this anomalous value is not considered a concern at this time.
V17A	pH Total	pH	pH was slightly below the CCME FAL guideline in one in-situ sample collected in September. Not considered a concern at this time. Total aluminum exceeded the CCME FAL in one sample (July) and total



Station Name	Parameters Exceeding		Explanation
	CCME FAL	Faro EQS	
	Aluminum, Total Iron, Total Zinc		iron in two (July and November). These parameters are not considered a concern at this time. Total zinc was elevated in all samples throughout the 2014/15 sampling period. This is likely associated with the water this site receives from the grum ore transfer pad. Zinc is a parameter of concern.
V20A	Fluoride Total Cadmium Total Zinc	-	Fluoride exceeded the CCME FAL in all samples collected from June 2014 through January 2015. Total cadmium and total zinc were both elevated in only one sample (December); these concentrations are not considered a concern at this time.
V8	Fluoride Total Aluminum Total Iron Total and Dissolved Selenium Total Zinc	Total Suspended Sediment	TSS was elevated in samples collected from May through July; this was likely associated with spring melt and runoff. Fluoride concentrations were elevated above CCME FAL from July through February; fluoride is likely associated with groundwater, and is lower in May/June due to the dilution from spring runoff. Total aluminum and total iron were elevated periodically through the 2014/15 sampling season; namely in the spring/early summer and again in October (Fe) and November (Al and Fe). Total zinc was elevated in only one sample (July), and is not considered a concern. Both total and dissolved selenium were elevated from October through March. Review of the data indicates that selenium is present largely in the dissolved form, and appears to be naturally present in this area at these elevated concentrations (similar concentrations are seen at nearby P1, but not upstream VGMAIN).
VGMAIN	Fluoride Total Aluminum Total Copper Total Iron	-	Fluoride concentrations were elevated above CCME FAL in nearly all samples collected during 2014/15; fluoride is likely associated with groundwater inputs as concentrations are lower in May/June due to the dilution from spring runoff. Total aluminum, copper and iron were elevated in only the May sample, and were likely associated with spring melt and runoff.
VR	Total Aluminum Total Iron Total Lead	Total Suspended Sediment	TSS was elevated above the EQS in only one sample (September), and is not considered a concern. Total aluminum, iron and lead were elevated in only the June sample, and were likely associated with spring melt and runoff.
VW1	Fluoride Total Aluminum Total Copper Total Iron	Total Suspended Sediment	TSS was elevated throughout the open-water season and was likely associated with upstream surface inputs. Fluoride was elevated in all samples collected as part of the 2014/15 program. These concentrations are consistent with data collected at nearby sampling sites including VW2, VGMAIN and V8; however not at upstream sites including VW3 and VR. Total aluminum, copper and iron were elevated during the open-water season. These concentrations were likely associated with the TSS



Station Name	Parameters Exceeding		Explanation
	CCME FAL	Faro EQS	
			concentrations.
VW2	Fluoride Total and Dissolved Selenium	-	Fluoride was elevated in all samples collected as part of the 2014/15 program. These concentrations are consistent with data collected at nearby sampling sites including VW1, VGMAIN and V8; however not at upstream sites including VW3 and VR. Total and dissolved selenium was elevated in all samples collected as part of the 2014/15 program. Selenium is elevated in a number of areas around the Pelly River and is likely associated with the surficial geology of the area.
VW3	Total Aluminum Total Arsenic Total Iron Total Zinc	Total Suspended Sediment	Total suspended sediment, aluminum, arsenic, and iron were elevated in February and March, and were likely associated with sampling difficulties associated with sampling under ice. Total zinc was elevated in a number of samples collected between September and March. This may be associated with increased contributions from groundwater during the fall/winter seasons; similar findings were also noted at the upstream site V17A.
W10	Total Aluminum	-	Total aluminum exceeded the CCME FAL in one sample (May), this concentration was likely associated with spring melt and runoff.
X14	Fluoride Total and Dissolved Iron Total Zinc	-	Fluoride was elevated in samples from November through March. These elevated concentrations under ice are likely associated with increased contributions from groundwater inputs. Iron and zinc are elevated in nearly all samples collected during the 2014/15 sampling season; concentrations of zinc increased during winter sampling and elevated concentrations under ice are likely associated with increased contributions from groundwater inputs including seepage water from the North Fork Rose Creek Rock Drain.



3.3 QA/QC Results

Two replicate samples were collected on each monthly sampling event. Results are either categorized as less than detection limit (<DL), less than twice the detection limit (<2XDL) or relative percent difference (RPD). A review of the average RPD per sample, per total metals and per dissolved metals indicates that generally the data collected at replicate sites was 'adequately precise' (Table 9, Appendix C). Replicate samples collected in June were of higher variability, and this was likely associated with the higher sediment load present in the water courses during spring melt and runoff.

Travel blank and field blank results were all within acceptable levels. Ammonia was detected at low concentrations in the travel blanks for July, August and January; this can occur when travel blanks provided by the lab are dated. There were no indications of contamination due to sample handling or transportation (Appendix C).

Table 9. Summary of QA/QC results for replicate data.

Month	Replicate	Average Sample RPD	Average Total Metals RPD	Average Dissolved Metals RPD
May	1	3%	4%	3%
	2	5%	7%	2%
June	1	11%	23%	5%
	2	7%	9%	4%
July	1	3%	4%	2%
	2	6%	5%	2%
August	1	8%	6%	4%
	2	6%	4%	10%
September	1	3%	2%	4%
	2	6%	10%	5%
October	1	3%	4%	2%
	2	2%	2%	2%
November	1	2%	2%	2%
	2	6%	11%	1%
December	1	5%	6%	1%
	2	3%	3%	3%
January	1	4%	9%	2%
	2	1%	2%	1%
February	1	1%	2%	1%
	2	2%	3%	1%
March	1	4%	2%	6%
	2	5%	8%	3%



4 CONCLUSIONS AND RECOMMENDATIONS

Sample results were compared with both the CCME Guidelines for the protection of freshwater aquatic life as well as the site specific Faro Effluent Standards. Water quality, as compared with these guidelines is generally good, with a couple of notable exceptions;

- Fluoride concentrations were regularly high at a number of sites including NWID, R1, R3, V20A, VGMAIN, VW1, VW2 and X14; concentrations were generally higher in winter months under ice when water quality is more heavily influenced by groundwater contributions in the absence of surface runoff and precipitation.
- High concentrations of selenium are present at sites located in the area of the Pelly River, notably sites P1, P4, V8 and VW2. It is believed that the selenium is naturally occurring, and not attributable to the Faro Mine Site.
- High concentrations of zinc are present at a number of sites; R3, R4, R5, V17A, VW3, and X14. One source of the zinc is believed to be seepage water from the North Fork Rose Creek Rock Drain.

Sampling was conducted successfully during the Faro Pelly River Aquatics Program 2014/15. It is recommended that monitoring continue, as many results exceeded guideline and/or standard values and metal concentrations have fluctuated during the course of the 2014/15 program. The program would benefit from a multi-year analysis to determine if there are any trends in the results.



5 REFERENCE

- Canadian Council Ministers of the Environment (CCME). Canadian Environmental Quality Guidelines Summary Table. <http://st-ts.ccme.ca/>, accessed May 2014.
- Clark, M.J.R. (editor). 2003. British Columbia Field Sampling Manual. Water, Air and Climate Change Branch, Ministry of Water, Land and Air Protection, Victoria, BC, Canada. 312 pp.
- Yukon Government Tourism and Culture. 2010. Gazetteer of Yukon. Geographic Names Program, Heritage Resources Unit, Cultural Services Branch, May 2010. 74 pp.

5.1 Spatial Data

- 1:250,000 CanVec topographic data from Government of Canada, Natural Resources Canada, Earth Sciences Sector, Centre for Topographic Information. Geogratis website <http://geogratis.gc.ca>
- Yukon Government – Geomatics. Digital Elevation Model. Corporate Spatial Warehouse. Accessed from www.geomaticsyukon.ca

Disclaimer:

Maps presented in this document are a geographical representation of known features. Although the data collected and presented herein has been obtained with the utmost attention to quality, this document is not an official land survey and should not be considered for spatial calculation. EDI Environmental Dynamics Inc. does not accept any liability for errors, omissions or inaccuracies in the data.

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APPENDIX A. SITE PHOTOGRAPHS

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Vangorda Creek Watershed Stations



Photo 1. West Fork Vangorda Creek upstream of Haul Road (VR), looking upstream, July 24, 2014.



Photo 2. West Fork Vangorda Creek upstream of Haul Road (VR), looking downstream from sampling location, November 19, 2014.



Photo 3. Vangorda Creek tributary from Grum ore transfer pad (V17A), looking upstream from Haul Road culvert, July 24, 2014.



Photo 4. Photo 2. Vangorda Creek tributary from Grum ore transfer pad (V17A), looking downstream towards sampling location, November 19, 2014.



Vangorda Creek Watershed Stations (continued)



Photo 5. West Fork Vangorda Creek upstream of VW2 Tributary (VW1), looking downstream, July 22, 2014.



Photo 6. West Fork Vangorda Creek upstream of VW2 Tributary (VW1), looking downstream, November 20, 2014.



Photo 7. West Fork Vangorda Creek tributary which drains Grum west lobe (VW2), looking downstream towards Mine Access Road culvert, July 21, 2014.



Photo 8. West Fork Vangorda Creek tributary which drains Grum west lobe (VW2), looking upstream from sampling location, February 26, 2015.



Vangorda Creek Watershed Stations (continued)



Photo 9. West Fork Vangorda Creek downstream of AEX Creek (VW3), looking downstream to auxiliary road culvert, July 22, 2015.



Photo 10. West Fork Vangorda Creek downstream of AEX Creek (VW3), looking upstream at sampling location, February 26, 2015.



Photo 11. Main Fork Vangorda Creek downstream of mine but upstream of West Vangorda Creek confluence (VGMAIN), looking upstream from footbridge, July 22, 2014.



Photo 12. Main Fork Vangorda Creek downstream of mine but upstream of West Vangorda Creek confluence (VGMAIN). Sample was collected from open water area under bridge near normal location, November 20, 2014.



Vangorda Creek Watershed Stations (continued)



Photo 13. Lower Vangorda Creek downstream of confluence of West Vangorda Creek and Main Fork Vangorda Creek (V8), looking upstream from bridge, July 21, 2015.



Photo 14. Lower Vangorda Creek downstream of confluence of West Vangorda Creek and Main Fork Vangorda Creek (V8), looking upstream, November 20, 2014.



Photo 15. Dixon Creek upstream of mine, tributary of Vangorda Creek (V20A) - site had minimal flow across 4x4 road but there was sufficient flow through the willows on right downstream side of creek, July 22, 2014.



Photo 16. Dixon Creek upstream of mine, tributary of Vangorda Creek (V20A), looking at sampling location, November 19, 2014.



Rose Creek Watershed Stations



Photo 17. South Fork Rose Creek upstream of Haul Road (USFR), looking upstream from sampling location, July 22, 2014.



Photo 18. South Fork Rose Creek upstream of Haul Road (USFR), looking downstream at sampling location, November 19, 2014.



Photo 19. South Fork Rose Creek downstream of Haul Road but upstream of Mine Access Road (GCULV), looking upstream from culvert, July 22, 2014.



Photo 20. South Fork Rose Creek downstream of Haul Road but upstream of Mine Access Road (GCULV), looking upstream from sampling location, December 23, 2014.



Rose Creek Watershed Stations (continued)



Photo 21. South Fork of Rose Creek upstream of pumphouse pond and tailings system (R1), looking upstream from sampling location, July 22, 2014.



Photo 22. South Fork of Rose Creek upstream of pumphouse pond and tailings system (R1), looking upstream from sampling location, December 23, 2014.



Photo 23. Rose Creek downstream of diversion channel (X14), looking downstream from sampling location, July 21, 2014.



Photo 24. Rose Creek downstream of diversion channel (X14), looking downstream from sampling location, December 21, 2014.



Rose Creek Watershed Stations (continued)



Photo 25. Rose Creek downstream of Faro Mine Complex (R3), photo looking upstream from sampling location, July 22, 2014.



Photo 26. Rose Creek downstream of Faro Mine Complex (R3), looking downstream at sampling site location, February 14, 2015.



Photo 27. Rose Creek upstream of confluence with Anvil Creek (R4), looking upstream, July 22, 2014.



Photo 28. Rose Creek upstream of confluence with Anvil Creek (R4), looking upstream at sampling location, December 22, 2014.



Anvil Creek Stations



Photo 29. Anvil Creek upstream of confluence with Rose Creek (R6), view looking downstream from sampling location towards mouth of Rose Creek, July 22, 2014.



Photo 30. Anvil Creek upstream of confluence with Rose Creek (R6), view looking downstream at sampling location, December 22, 2014.



Photo 31. Anvil Creek downstream of confluence with Rose Creek (R5), looking downstream from sampling location, July 22, 2014.



Photo 32. Anvil Creek downstream of confluence with Rose Creek (R5), looking downstream from sampling location, January 20, 2015.



Anvil Creek Stations (continued)



Photo 33. Anvil Creek upstream from confluence with Pelly River (A1), looking downstream from sampling location, July 22, 2014.



Photo 34. Anvil Creek upstream from confluence with Pelly River (A1), on the ground view looking downstream from sampling site, December 22, 2014.



Pelly River Stations



Photo 35. View looking downstream from P1 sampling location on Pelly River upstream of the Vangorda Creek confluence, July 22, 2014.



Photo 36. View looking downstream at P1 sampling location on Pelly River, upstream of the Vangorda Creek confluence, December 22, 2014.



Photo 37. Overview of sampling location (P4) on the Pelly River, downstream of the Anvil Creek confluence, July 22, 2014.



Photo 38. Downstream view of Pelly River sampling location downstream of Anvil Creek confluence, showing open water area (P4), January 20, 2015.



Other Stations: FC, K8, W10, NWID



Photo 39. Reservoir Creek upstream of Mine Access Road (K8), view looking upstream of culvert from sampling location, July 22, 2014.



Photo 40. Reservoir Creek upstream of Mine Access Road (K8), view looking upstream at sampling location, February 24, 2015.



Photo 41. Faro Creek above diversion channel (FC), looking downstream from sampling location, July 22, 2014.



Photo 42. Faro Creek above diversion channel (FC), looking upstream, December 22, 2014.



Other Stations: FC, K8, W10, NWID



Photo 43. Upper Guardhouse Creek upstream of NW Dump (W10), looking upstream from sampling location, July 22, 2014.



Photo 44. Upper Guardhouse Creek upstream of NW Dump (W10), looking downstream from sampling location, December 22, 2014.



Photo 45. Northwest interceptor ditch upstream of diversion point (NWID), looking downstream from sampling location, October 20, 2014.



Photo 46 Northwest interceptor ditch upstream of diversion point (NWID), looking downstream from sampling location, December 22, 2014.



APPENDIX B. IN-SITU DATA AND LAB RESULTS

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Table B-1. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site A1.

Analyte	Units	CCME-WATER-FAL	Faro Effluent Quality Standards	Station ID	A1	A1	A1	A1	A1	A1	A1	A1	A1	A1	A1	A1	A1
				Date Sampled Time	27-May-14 9:40	24-Jun-14 10:00	22-Jul-14 9:07	19-Aug-14 09:30	23-Sep-14 9:10	21-Oct-14 9:45	19-Nov-14 10:15	22-Dec-14 10:55	20-Jan-15 13:35	24-Feb-15 9:50:00 AM	24-Mar-15 09:40		
Temperature (in-situ)	°C	-	-	-	5.2	8.3	8.9	7.9	3.3	0.5	0.0	-0.1	-0.2	0.0	0.0		
Specific Conductivity (in-situ)	µS/cm	-	-	-	161.9	205.3	295.7	211.8	237.6	351.0	316.7	321.9	286.5	397.5	418.9		
pH (in-situ)	pH	6.5 - 9.0	6.5	-	8.09	8.17	8.29	8.12	7.69	7.92	7.72	7.52	7.88	7.89	8.07		
Turbidity (in-situ)	NTU	-	-	-	-	8.48	10.46	12.98	19.03	4.61	1.02	1.31	1.19	2.45	0.87		
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	11.60	10.99	12.37	15.25	10.37	14.62	11.42	11.32	-		
Conductivity (lab)	µS/cm	-	-	2	192.00	51.20	288.00	263.00	254.00	352.00	359.00	335.00	370.00	398.00	372.00		
Hardness (as CaCO3)	mg/L	-	-	0.5	92.6	103	145	119	118	171	171	173	179	195	212		
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.81	7.88	7.95	8.01	7.9	8.01	8.12	8.21	8	7.97	8.34		
Total Suspended Solids	mg/L	-	15	1.0	21.6	9.8	9.4	12.2	20.4	3.8	2	1.2	2.4	3	2.6		
Total Dissolved Solids	mg/L	-	-	3.0	117	120	175	144	144	212	201	204	217	232	252		
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	78.4	85.9	118	106	99	121	139	140	146	148	161		
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0067	0.0056	0.0071	<0.0050		
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Fluoride (F)	mg/L	0.12	-	0.02	0.075	0.074	0.086	0.082	0.08	0.087	0.105	0.103	0.103	0.099	0.096		
Nitrate (as N)	mg/L	13.0	-	0.005	0.0663	0.0274	0.0204	0.0271	0.0654	0.14	0.168	0.224	0.251	0.268	0.268		
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	0.0013	0.001		
Phosphorous (P), Total	mg/L	-	-	0.002	0.0179	0.0139	<0.0020	0.0102	0.0109	<0.0020	0.0032	0.0024	0.0024	0.0081	0.0057		
Sulfate (SO4)	mg/L	-	-	0.5	27.2	24.8	45.7	30.8	33	70.1	48.7	50.4	57.3	65.8	71.4		
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	2.62	3.35	4.72	2.96	2.69	1.62	1.67	1.66	1.38		
Total Organic Carbon	mg/L	-	-	0.5	6.04	3.61	2.7	3.61	5.17	3.06	2.69	1.65	1.89	1.7	1.55		
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.452	0.29	0.211	0.262	0.568	0.106	0.0362	0.0367	0.0186	0.0568	0.0464		
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	0.00014	0.00016	0.00018	0.00014	0.00016	0.00012	0.00013	0.00011	0.00011	0.00011	0.00017		
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00102	0.00077	0.00087	0.00078	0.00104	0.00067	0.00064	0.00054	0.00058	0.00069	0.00068		
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0554	0.0549	0.0705	0.0582	0.0748	0.0667	0.0739	0.0766	0.0757	0.0867	0.0868		
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000055	0.000037	0.000044	0.000038	0.000059	0.000045	0.000022	0.000013	0.00001	0.000015	0.000013		
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000149	0.000162	0.000216	0.000183	0.000182	0.000247	0.000247	0.000250	0.000257	0.000276	0.000296		
Calcium (Ca)-Total	mg/L	-	-	0.02	27.5	28.9	43	33.3	35.5	51.5	51.9	51.8	53.3	59.8	63.7		
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00116	0.0007	0.00054	0.00067	0.00133	0.00037	0.00022	0.00022	0.00017	0.00025	0.00023		
Cobalt (Co)-Total	mg/L	-	-	0.0001	0.00042	0.00023	0.00027	0.00023	0.00047	0.00087	0.00087	<0.00010	<0.00010	<0.00010	<0.00010		
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00262	0.00153	0.00113	0.0014	0.00214	0.00092	0.00088	0.00063	0.00062	0.00063	0.0006		
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00221	0.00243	0.00325	0.00274	0.00272	0.00374	0.00374	0.00374	0.00389	0.00400	0.00400		
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.745	0.442	0.358	0.465	0.851	0.273	0.07	0.062	0.04	0.16	0.098		
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.000789	0.000426	0.000338	0.000398	0.000739	0.000216	0.000109	<0.00010	0.000083	0.000165	0.000124		
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.002885	0.003304	0.005106	0.003970	0.003928	0.006299	0.006299	0.006393	0.006676	0.007000	0.007000		
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00205	0.00204	0.00283	0.00242	0.00334	0.00303	0.00294	0.00303	0.00358	0.0038	0.00415		
Magnesium (Mg)-Total	mg/L	-	-	0.005	6.29	6.9	9.65	7.41	8.14	11.7	11.2	11.2	12.1	13	14		
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.0964	0.058	0.134	0.0593	0.154	0.576	0.0248	0.00684	0.00466	0.0244	0.0171		
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000649	0.000736	0.000869	0.000754	0.000813	0.000845	0.00096	0.000991	0.00102	0.0012	0.00114		
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	0.00259	0.00152	0.00133	0.00148	0.00245	0.00175	0.00086	0.00061	0.00055	0.00072	0.00072		
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.09015	0.09775	0.12676	0.10909	0.10839	0.14369	0.14369	0.14497	0.14877	0.15000	0.15000		
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30		
Potassium (K)-Total	mg/L	-	-	0.05	1.12	1	1.21	1.06	1.22	1.33	1.54	1.48	1.49	1.62	1.7		
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.00037	0.00047	0.00055	0.00049	0.00048	0.00056	0.00076	0.00082	0.00084	0.00083	0.00083		
Silicon (Si)-Total	mg/L	-	-	0.05	4.55	4.2	4.68	4.81	5.95	5.04	5.6	5.2	5.37	5.47	5.72		
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	0.000013	<0.000010	<0.000010	<0.000010	<0.000012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		
Sodium (Na)-Total	mg/L	-	-	0.05	1.63	1.75	2.51	1.91	2.12	2.88	2.88	2.83	3.15	3.34	3.69		
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.0919	0.101	0.147	0.119	0.125	0.164	0.172	0.173	0.175	0.2	0.21		
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	0.000012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		
Titanium (Ti)-Total	mg/L	-	-	0.01	0.017	0.01	<0.010	<0.010	0.019	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.00114	0.00114	0.00156	0.00133	0.00143	0.00181	0.00205	0.00231	0.00246	0.00275	0.00288		
Vanadium (V)-Total	mg/L	-	-	0.001	0.0017	0.0013	0.0011	0.0011	0.0023	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.0107	0.0113	0.0106	0.013	0.0229	0.0218	0.0081	0.0043	0.0044	0.0064	0.0072		
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080		
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.025	0.0127	0.0058	0.0131	0.0061	0.0027	0.0019	<0.0010	<0.0010	<0.0010	<0.0010		
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	0.0001	0.00012	0.00012	0.00011	0.00011	<0.00010	0.00012	0.00011	0.00011	0.00011	<0.00010		
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00055	0.00046	0.00056	0.00051	0.00045	0.00055	0.00055	0.00052	0.00055	0.00056	0.00061		
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0418	0.0451	0.0607	0.0494	0.0555	0.062	0.0722	0.0751	0.076	0.0802	0.0841		
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000027	0.000017	0.000027	0.000017	0.000026	0.000032	0.000017	<0.000010	<0.000010	<0.000010	<0.000010		
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000149	0.000162	0.000216	0.000183	0.000182	0.000247	0.000247	0.000250	0.000257	0.000276	0.000296		
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	26.9	29.5	42.3	35.2	34.6	49.8	49.9	51	52.3	56.8	62.3		
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	0.00012	0.00011	<0.00010	0.00011	0.00016	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		
Cobalt (Co)-Dissolved	mg/L																

Table B-2. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site FC.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
				Date Sampled Time	28-May-14 16:00	24-Jun-14 13:05	22-Jul-14 11:36	19-Aug-14 11:15	23-Sep-14 10:55	21-Oct-14 11:45	19-Nov-14 13:10	22-Dec-14 12:35	20-Jan-15 11:10	24-Feb-15 12:50	24-Mar-15 12:15	
				Detection Limit												
Temperature (in-situ)	°C	-	-	-	2.5	6.7	7.9	6.8	1.9	0.0	0.0	-0.1	-0.1	0.0	0.0	
Specific Conductivity (in-situ)	µS/cm	-	-	-	12.3	23.5	36.4	35.4	31.7	34.0	34.5	38.2	44.3	47.9	56.1	
pH (in-situ)	pH	6.5 - 9.0	6.5	-	6.90	7.22	7.55	7.60	7.56	7.74	7.49	7.20	8.06	7.79	7.36	
Turbidity (in-situ)	NTU	-	-	-	-	1.39	1.12	0.19	0.84	0.01	0.24	0.56	0.49	0.26	0.20	
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	10.94	10.35	12.04	14.33	9.58	13.96	11.70	9.87	-	
Conductivity (lab)	µS/cm	-	-	2	15.9	51.2	36.2	38.8	33.0	34.4	42.5	41.9	44.1	49.6	50.7	
Hardness (as CaCO3)	mg/L	-	-	0.5	5.91	8.71	14.6	13.8	12.1	13.5	14.5	16.2	16.7	18.3	19.9	
pH (lab)	pH	6.5 - 9.0	6.5	0.1	6.84	7.16	7.33	7.45	7.41	7.32	7.64	7.50	7.26	7.26	7.74	
Total Suspended Solids	mg/L	-	15	1.0	1.2	<1.0	<1.0	<1.0	3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Total Dissolved Solids	mg/L	-	-	3.0	12.9	16.1	22	21.4	21	20.5	21.8	22.7	24.1	25.8	28.5	
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	6.2	9.9	17	16	12.2	14.7	17.4	18.2	20.5	21.9	25.3	
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.012	<0.0050	
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Fluoride (F)	mg/L	0.12	-	0.02	0.047	0.064	0.074	0.077	0.059	0.066	0.077	0.093	0.102	0.107	0.111	
Nitrate (as N)	mg/L	13.0	-	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0062	0.0308	0.0522	0.0733	0.0848	0.0975	
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorous (P), Total	mg/L	-	-	0.002	0.0087	0.0034	<0.0020	<0.0020	0.0209	<0.0020	<0.0020	<0.0020	<0.0020	0.003	<0.0020	
Sulfate (SO4)	mg/L	-	-	0.5	0.81	1.26	1.44	1.43	1.9	1.92	1.88	1.92	1.91	1.77	1.82	
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	2.96	2.43	4.37	2.83	1.88	1.45	1.08	1.15	1.12	
Total Organic Carbon	mg/L	-	-	0.5	5.00	4.09	2.92	3.27	5.52	2.92	2.00	1.42	1.14	1.24	1.04	
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.11	0.0748	0.051	0.0497	0.111	0.072	0.0422	0.0376	0.0257	0.0259	0.025	
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00012	0.00015	0.00029	0.00013	0.00014	0.00011	0.00013	<0.00010	<0.00010	<0.00010	<0.00010	
Barium (Ba)-Total	mg/L	-	1	0.00005	0.00939	0.0124	0.0181	0.0163	0.0154	0.0161	0.0166	0.0176	0.0181	0.0196	0.0204	
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.00001	<0.000010	0.000011	<0.000010	0.000011	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000040	0.000040	0.000040	0.000040	0.000040	0.000040	0.000040	0.000040	0.000040	0.000039	0.000041	
Calcium (Ca)-Total	mg/L	-	-	0.02	1.77	2.73	4.43	4.13	3.76	4.11	4.42	4.85	5.2	5.56	6.14	
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00016	0.00018	0.00017	0.00018	0.00028	0.00021	0.00016	0.00019	0.00013	0.00017	0.00013	
Cobalt (Co)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00093	0.00084	0.00059	0.00068	0.00085	0.00063	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.085	0.055	0.047	0.048	0.093	0.065	0.04	0.028	0.023	0.029	0.029	
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.000197	0.000125	0.00117	0.000491	0.001	0.000641	0.000087	0.000058	0.000055	0.000195	0.000181	
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	
Lithium (Li)-Total	mg/L	-	-	0.0005	<0.00050	0.00137	0.00185	0.00174	0.00111	0.00166	0.00153	0.0018	0.00224	0.00283	0.00301	
Magnesium (Mg)-Total	mg/L	-	-	0.005	0.351	0.543	0.876	0.784	0.75	0.807	0.895	0.942	1.02	1.09	1.23	
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.00262	0.00135	0.00214	0.00171	0.0023	0.00175	0.00131	0.00122	0.0011	0.0015	0.00113	
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	<0.000050	<0.000050	0.000061	<0.000050	<0.000050	<0.000050	0.000076	0.00008	0.000116	0.000102	0.000168	
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
Potassium (K)-Total	mg/L	-	-	0.05	0.232	0.153	0.138	0.127	0.152	0.128	0.126	0.156	0.18	0.191	0.225	
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Silicon (Si)-Total	mg/L	-	-	0.05	3.28	6.33	6.8	6.5	6.93	7.03	7.12	7.07	7.4	7.7	7.84	
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Sodium (Na)-Total	mg/L	-	-	0.05	0.878	1.4	1.91	1.75	1.67	1.76	1.9	1.99	2.17	2.32	2.48	
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.0122	0.0196	0.0284	0.0264	0.0243	0.0258	0.0279	0.0301	0.032	0.0337	0.0366	
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000186	0.000187	0.00014	0.000122	0.000177	0.000144	0.000109	0.000092	0.000073	0.000069	0.000105	
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	<0.0030	<0.0030	<0.0030	<0.0030	0.0031	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0762	0.0508	0.027	0.0259	0.0524	0.0263	0.017	0.0129	0.0093	0.0068	0.0075	
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	<0.00010	0.00012	0.00015	0.00011	0.00011	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.00884	0.0121	0.0177	0.0168	0.0145	0.0155	0.0164	0.0176	0.0179	0.0188	0.0203	
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.00001	<0.000010	0.00001	<0.000010	0.000014	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000040	0.000040	0.000040	0.000040	0.000040	0.000040	0.000040	0.000040	0.000040	0.000039	0.000041	
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	1.81	2.64	4.42	4.2	3.72	4.07	4.38	4.92	5.05	5.53	6	
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	0.0001	0.00012	0.0001	0.0001	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Cobalt (Co)-Dissolved	mg/L	-	-</													

Table B-3. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site GCULV.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	GCULV	GCULV	GCULV	GCULV	GCULV	GCULV	GCULV	GCULV	GCULV	GCULV	GCULV	GCULV
				Date Sampled Time	28-May-14 17:45	24-Jun-14 18:20	22-Jul-14 14:54	19-Aug-14 17:25	23-Sep-14 14:00	20-Oct-14 16:00	19-Nov-14 18:00	23-Dec-14 10:25	19-Jan-15 17:48	24-Feb-15 16:55	25-Mar-15 08:40	
				Detection Limit												
Temperature (in-situ)	°C	-	-	-	6.8	10.1	13.2	9.4	4.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Specific Conductivity (in-situ)	µS/cm	-	-	-	30.0	37.6	57.4	100.2	55.8	65.1	74.8	95.4	93.9	112.5	118.0	118.0
pH (in-situ)	pH	6.5 - 9.0	6.5	-	7.63	7.54	7.79	7.17	7.93	7.93	7.53	7.70	7.69	7.74	7.80	7.80
Turbidity (in-situ)	NTU	-	-	-	-	2.61	0.46	1.96	0.59	1.61	0.57	0.37	0.15	0.19	0.87	0.87
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	9.60	12.32	11.93	14.25	9.59	16.96	14.22	10.67	-	-
Conductivity (lab)	µS/cm	-	-	2	36.3	51.2	57.5	65.4	58.0	65.5	95.0	91.1	102.0	121.0	112.0	112.0
Hardness (as CaCO3)	mg/L	-	-	0.5	14.9	15.8	24.6	25.7	23	27.1	34.8	39.5	46	51	50.4	50.4
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.39	7.20	7.44	7.67	7.67	7.66	7.77	7.81	7.64	7.60	8.02	8.02
Total Suspended Solids	mg/L	-	15	1.0	2.2	7	<1.0	2.6	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Dissolved Solids	mg/L	-	-	3.0	22.8	22.5	32.9	34.3	31.9	36.9	45.5	49.2	56.7	62.5	64.3	64.3
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	13.7	13.7	23.7	24.3	19.2	24.5	33.3	36.9	45.9	53.1	56.5	56.5
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	0.048	0.047	0.063	0.06	0.057	0.06	0.076	0.088	0.096	0.107	0.104	0.104
Nitrate (as N)	mg/L	13.0	-	0.005	<0.0050	<0.0050	0.005	<0.0050	0.0092	0.0353	0.0704	0.0815	0.123	0.139	0.144	0.144
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorous (P), Total	mg/L	-	-	0.002	0.0065	0.0072	0.0039	0.0048	<0.0020	<0.0020	0.0028	<0.0020	<0.0020	0.0028	0.0054	0.0054
Sulfate (SO4)	mg/L	-	-	0.5	3.86	4.25	5.24	5.34	6.56	7.5	7.87	7.95	7.49	6.81	6.97	6.97
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	2.38	2.86	3.34	2.39	2.01	1.47	1.47	1.39	1.48	1.48
Total Organic Carbon	mg/L	-	-	0.5	3.52	2.63	2.47	2.95	3.43	2.54	2.18	1.75	1.54	1.58	1.34	1.34
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.0632	0.0858	0.0254	0.0489	0.0385	0.0194	0.0176	0.0117	0.0079	0.0073	0.0076	0.0076
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00024	0.00026	0.00037	0.00041	0.00024	0.00024	0.00026	0.00019	0.00017	0.0002	0.00021	0.00021
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0162	0.0176	0.0266	0.0297	0.0229	0.0245	0.0332	0.0377	0.0405	0.0435	0.0456	0.0456
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000040	0.000040	0.000049	0.000051	0.000047	0.000054	0.000066	0.000073	0.000083	0.000091	0.000090	0.000090
Calcium (Ca)-Total	mg/L	-	-	0.02	5.02	5.36	8.07	8.22	7.48	8.52	11.1	12.5	14.7	16	15.9	15.9
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00013	0.00019	<0.00010	0.00016	0.00014	0.00013	0.00012	0.00013	<0.00010	<0.00010	0.00011	0.00011
Cobalt (Co)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00061	0.00054	<0.00050	<0.00050	<0.00050	0.00203	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.152	0.178	0.102	0.209	0.108	0.078	0.103	0.058	0.03	0.04	0.048	0.048
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.000086	0.000238	0.000061	0.000118	0.000059	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000
Lithium (Li)-Total	mg/L	-	-	0.0005	<0.00050	0.00071	0.00083	0.00079	<0.00050	0.00083	0.00074	0.00095	0.00127	0.00126	0.0016	0.0016
Magnesium (Mg)-Total	mg/L	-	-	0.005	0.699	0.741	1.24	1.31	1.14	1.34	1.8	2.05	2.49	2.78	2.67	2.67
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.00701	0.0131	0.00526	0.0162	0.00823	0.00501	0.0046	0.00185	0.00103	0.00147	0.000984	0.000984
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000151	0.000142	0.000241	0.000211	0.000199	0.000223	0.000318	0.000419	0.00049	0.000621	0.000701	0.000701
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	mg/L	-	-	0.05	0.465	0.342	0.286	0.3	0.282	0.288	0.338	0.409	0.432	0.489	0.508	0.508
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)-Total	mg/L	-	-	0.05	2.85	2.87	3.21	3.66	3.76	3.87	4.64	4.66	4.75	4.89	4.87	4.87
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	1.13	1.14	1.54	1.59	1.52	1.64	1.89	2	2.19	2.35	2.37	2.37
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.0339	0.0377	0.052	0.0513	0.0494	0.0529	0.068	0.0727	0.0832	0.0909	0.089	0.089
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000471	0.000377	0.000445	0.000488	0.000449	0.000612	0.000821	0.000885	0.00131	0.00165	0.0016	0.0016
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	<0.0030	0.0031	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.027	0.0158	0.0093	0.0111	0.0166	0.0099	0.0074	0.006	0.004	0.0032	0.0035	0.0035
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00019	0.00017	0.00029	0.00036	0.00021	0.00023	0.00021	0.00017	0.00018	0.0002	0.00019	0.00019
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0163	0.0158	0.0253	0.0285	0.0219	0.024	0.0342	0.0378	0.0399	0.0433	0.0463	0.0463
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved (Lab Result)	mg/L															

Table B-4. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site K8.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	K8	K8	K8	K8	K8	K8	K8	K8	K8	K8	K8
				Date Sampled Time	28-May-14 17:30	24-Jun-14 18:00	22-Jul-14 15:12	19-Aug-14 17:10	23-Sep-14 14:15	20-Oct-14 15:40	19-Nov-14 17:35	22-Dec-14 16:10	19-Jan-15 17:15	24-Feb-15 16:20	25-Mar-15 08:20
				Detection Limit											
Temperature (in-situ)	°C	-	-	-	4.1	8.2	8.8	7.8	2.5	0.9	0.0	-0.1	-0.1	0.0	0.0
Specific Conductivity (in-situ)	µS/cm	-	-	-	34.1	52.2	112.7	94.9	86.7	108.2	126.4	139.9	153.5	165.7	171.2
pH (in-situ)	pH	6.5 - 9.0	6.5	-	7.77	7.70	7.99	7.72	7.68	8.02	7.50	7.24	7.86	7.96	8.03
Turbidity (in-situ)	NTU	-	-	-	-	0.64	0.31	1.14	0.00	0.01	0.00	0.22	0.12	0.64	0.22
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	11.04	13.09	12.33	14.47	10.06	14.76	14.26	18.61	-
Conductivity (lab)	µS/cm	-	-	2	41.3	51.2	110.0	100.0	98.8	105.0	148.0	158.0	160.0	176.0	168.0
Hardness (as CaCO3)	mg/L	-	-	0.5	18	24.1	51	41.2	36.6	48.9	62.9	72.1	72.7	77.7	79.4
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.32	7.28	7.79	7.83	7.65	7.86	7.83	8.04	7.78	7.74	8.18
Total Suspended Solids	mg/L	-	15	1.0	1.2	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Dissolved Solids	mg/L	-	-	3.0	27.7	31.2	63.3	52.1	46.5	60.8	77.1	87.5	90	92.4	96.8
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	18.3	22.3	48.9	39.4	33	44.9	58.1	66.8	70.3	70.5	78.4
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	0.052	0.057	0.08	0.076	0.065	0.074	0.098	0.115	0.115	0.117	0.113
Nitrate (as N)	mg/L	13.0	-	0.005	0.0131	0.0069	0.0181	0.0192	0.0122	0.0423	0.0944	0.131	0.154	0.162	0.178
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorous (P), Total	mg/L	-	-	0.002	0.0085	0.0033	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.002	<0.0020
Sulfate (SO4)	mg/L	-	-	0.5	3.18	4.11	10.3	8.13	8.41	11.2	14.1	15.8	15.6	15	14.6
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	2.04	2.66	2.35	1.88	1.57	1.55	1.29	1.28	1.21
Total Organic Carbon	mg/L	-	-	0.5	5.27	2.76	2.03	2.51	2.37	1.81	1.65	1.29	1.50	2.33	1.48
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.101	0.0417	0.0114	0.0152	0.0181	0.0094	0.0066	0.0068	0.0051	0.0049	0.0055
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00025	0.00021	0.00027	0.00024	0.00016	0.00017	0.00023	0.00018	0.00022	0.00025	0.00023
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0134	0.015	0.0263	0.0232	0.0212	0.024	0.0296	0.0326	0.0317	0.0323	0.0341
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000038	0.000049	0.000091	0.000076	0.000069	0.000088	0.000108	0.000121	0.000122	0.000129	0.000131
Calcium (Ca)-Total	mg/L	-	-	0.02	6.01	7.72	16.4	13.2	12.5	16.1	20.8	24.4	24.7	25.7	26.8
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.0002	0.00013	<0.00010	0.00012	<0.00010	0.00012	0.0001	0.00014	<0.00010	0.0001	0.0001
Cobalt (Co)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00089	0.00059	<0.00050	0.00056	<0.00050	<0.00050	0.00051	<0.00050	<0.00050	<0.00050	<0.00050
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.177	0.048	0.011	0.022	0.021	0.01	<0.010	<0.010	<0.010	<0.010	<0.010
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.00131	0.000341	0.000063	0.000114	0.000107	0.000067	0.000056	<0.000050	<0.000050	<0.000050	<0.000050
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001763	0.002098	0.002120	0.002308	0.002372
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00116	0.0013	0.00178	0.00177	0.00123	0.00165	0.00159	0.00189	0.00264	0.00246	0.00243
Magnesium (Mg)-Total	mg/L	-	-	0.005	0.815	0.994	2.18	1.77	1.56	2.02	2.86	3.2	3.28	3.33	3.47
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.00423	0.00142	0.00049	0.000824	0.000623	0.000434	0.000377	0.00024	0.000266	0.000445	0.00035
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000056	0.000063	0.000087	0.000055	0.000067	0.000088	0.000202	0.00019	0.000162	0.000171	0.000188
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	Nickel (Ni)-Total (Lab Result)	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.06719	0.07454	0.07501	0.07890	0.08021
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	mg/L	-	-	0.05	0.574	0.383	0.473	0.415	0.367	0.409	0.515	0.57	0.589	0.629	0.652
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	0.0001	<0.00010	0.00012	<0.00010
Silicon (Si)-Total	mg/L	-	-	0.05	2.57	3.54	4.51	4.83	4.67	4.73	5.07	5.13	5.16	5.42	5.42
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	0.881	1.38	1.94	1.88	1.79	1.92	2.16	2.26	2.34	2.44	2.58
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.0365	0.052	0.113	0.0854	0.0797	0.103	0.138	0.162	0.159	0.168	0.174
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000695	0.0005	0.00124	0.000839	0.000933	0.00163	0.00284	0.00381	0.00429	0.0048	0.00538
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.0038	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0459	0.017	0.0071	0.0075	0.0109	0.006	0.0038	0.0035	0.0026	0.0025	0.0046
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00018	0.00017	0.0002	0.00021	0.00013	0.00014	0.00019	0.00017	0.00022	0.00023	0.00023
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0127	0.0142	0.0271	0.0237	0.0208	0.0245	0.0288	0.0325	0.031	0.0311	0.0338
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000038	0.000049	0.000091	0.000076	0.000069	0.000088	0.000108	0.000121	0.000122	0.000129	0.000131
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	5.88	8.08	16.8	13.6	12.1	16.2	20.6	23.7	23.9	25.5	26.3
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002													

Applied Guidelines: Federal CCME Canadian Environmental Quality Guidelines - CCME - Freshwater Aquatic Life
Faro Effluent Quality Standards

Color Key:	Exceeds CCME Guideline
	Exceeds Faro Effluent Quality Standards
	Exceeds both CCME and Faro Standards
	Exceeds Hardness Dependent Calculated Guideline (CCME)

Table B-5. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site NWID.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID Date Sampled Time	NWID *** 20-Oct-14 14:30	NWID *** 20-Nov-14 9:30	NWID *** 22-Dec-14 16:40	NWID *** 19-Jan-15 16:40
				Detection Limit				
Temperature (in-situ)	°C	-	-	-	1.5	0.0	-0.1	-0.2
Specific Conductivity (in-situ)	µS/cm	-	-	-	240.5	254.1	294.4	312.4
pH (in-situ)	pH	6.5 - 9.0	6.5	-	8.04	7.98	7.36	7.52
Turbidity (in-situ)	NTU	-	-	-	0.02	0.01	1.19	0.13
Dissolved Oxygen (in-situ)	mg/L	-	-	-	13.70	15.08	14.50	12.34
Conductivity (lab)	µS/cm	-	-	2	241.0	317.0	324.0	352.0
Hardness (as CaCO3)	mg/L	-	-	0.5	119	144	162	172
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.98	8.14	8.23	8.08
Total Suspended Solids	mg/L	-	15	1.0	1	<1.0	<1.0	1.4
Total Dissolved Solids	mg/L	-	-	3.0	137	169	187	203
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	112	139	150	160
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	<0.0050	<0.0050	<0.0050
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	0.154	0.175	0.185	0.18
Nitrate (as N)	mg/L	13.0	-	0.005	0.0243	0.0475	0.0644	0.0808
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorous (P), Total	mg/L	-	-	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Sulfate (SO4)	mg/L	-	-	0.5	19.1	25.6	30.3	35.3
Dissolved Organic Carbon	mg/L	-	-	0.5	2.67	2.06	1.87	1.98
Total Organic Carbon	mg/L	-	-	0.5	2.65	1.87	1.84	2.26
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.0126	0.006	0.0139	0.0156
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00017	0.00022	0.00015	0.0002
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0405	0.0485	0.0529	0.0542
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000037	0.000045	0.000051	0.000053
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000183	0.000215	0.000237	0.000249
Calcium (Ca)-Total	mg/L	-	-	0.02	38	47.3	53.5	57.5
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00013	0.00011	0.00016	0.00013
Cobalt (Co)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00094	0.00082	0.00077	0.00429
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00274	0.00323	0.00357	0.00376
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.01	<0.010	0.015	0.021
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.000128	0.000072	0.000124	0.000194
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.003970	0.005061	0.005880	0.006346
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00434	0.00502	0.00556	0.00589
Magnesium (Mg)-Total	mg/L	-	-	0.005	4.98	6.35	6.89	7.48
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.000461	0.000195	0.000261	0.000392
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000282	0.000317	0.000313	0.00038
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.10909	0.12610	0.13791	0.14433
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	mg/L	-	-	0.05	1.2	1.43	1.57	1.64
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.00013	0.00022	0.00026	0.00029
Silicon (Si)-Total	mg/L	-	-	0.05	5.41	6.47	6.43	6.56
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	2.36	2.73	2.87	2.92
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.146	0.192	0.217	0.229
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000652	0.000961	0.00114	0.00127
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.0089	0.0104	0.0112	0.0135
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.003	0.0024	0.0023	0.0021
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00017	0.00017	0.00013	0.00018
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0426	0.0497	0.0546	0.0553
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000039	0.000045	0.000049	0.000051
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000183	0.000215	0.000237	0.000249
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	39	47.3	53.5	56.8
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005	0.00089	0.00071	0.00067	0.00059
Copper (Cu)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00274	0.00323	0.00357	0.00376
Iron (Fe)-Dissolved	mg/L	0.3	-	0.01	<0.010	<0.010	<0.010	<0.010
Lead (Pb)-Dissolved (Lab Result)	mg/L	0.003	0.2	0.00005	<0.000050	<0.000050	<0.000050	<0.000050
Lead (Pb)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.003970	0.005061	0.005880	0.006346
Lithium (Li)-Dissolved	mg/L	-	-	0.0005	0.00465	0.00556	0.00578	0.00577
Magnesium (Mg)-Dissolved	mg/L	-	-	0.005	5.16	6.28	6.96	7.41
Manganese (Mn)-Dissolved	mg/L	-	-	0.00005	0.000231	0.000122	<0.000050	<0.000050
Molybdenum (Mo)-Dissolved	mg/L	0.0073	0.5	0.00005	0.000274	0.000276	0.000276	0.000268
Nickel (Ni)-Dissolved (Lab Result)	mg/L	0.1	0.5	0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Nickel (Ni)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.10909	0.12610	0.13791	0.14433
Phosphorus (P)-Dissolved	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Dissolved	mg/L	-	-	0.05	1.23	1.43	1.59	1.65
Selenium (Se)-Dissolved	mg/L	0.001	0.05	0.0001	0.00017	0.00023	0.00025	0.00028
Silicon (Si)-Dissolved	mg/L	-	-	0.05	6.55	6.52	6.49	6.57
Silver (Ag)-Dissolved	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved	mg/L	-	-	0.05	2.42	2.68	2.9	2.9
Strontium (Sr)-Dissolved	mg/L	-	-	0.0002	0.15	0.195	0.214	0.224
Thallium (Tl)-Dissolved	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Dissolved	mg/L	0.015	-	0.00001	0.000645	0.000902	0.00106	0.00121
Vanadium (V)-Dissolved	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Dissolved	mg/L	0.03	0.5	0.003	0.0088	0.0103	0.0105	0.0107
Zirconium (Zr) - Dissolved	mg/L	0.03	0.5	0.0008	<0.00080	<0.00080	<0.00080	<0.00080

Applied Guidelines: Federal CCME Canadian Environmental Quality Guidelines - CCME - Freshwater Aquatic Life
Faro Effluent Quality Standards

Color Key:	Exceeds CCME Guideline
	Exceeds Faro Effluent Quality Standards
	Exceeds both CCME and Faro Standards
	Exceeds Hardness Dependent Calculated Guideline (CCME)

Note: *** EDI was provided with incorrect coordinates for this station; this affected all three trips of 2013 program as well as the 2014/15 program from May to September. The samples instead had been collected from what is actually Lower Guardhouse Creek, not the interceptor ditch. AAM provided the correct UTM coordinates for NWID on Sept 29, 2014 and the station was sampled at the correct location from October 2014 trip onwards.

Table B-6. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standardsat site P1.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	P1	P1	P1	P1	P1	P1	P1	P1	P1	P1	P1	P1
				Date Sampled Time	27-May-14 12:05	24-Jun-14 14:10	22-Jul-14 12:30	19-Aug-14 11:55	23-Sep-14 23:35	21-Oct-14 12:25	19-Nov-14 14:10	22-Dec-14 13:35	20-Jan-15 14:40	24-Feb-15 14:05	24-Mar-15 13:10	
				Detection Limit												
Temperature (in-situ)	°C	-	-	-	7.6	12.9	16.3	13.1	6.3	1.6	0.0	-0.1	-0.2	0.0	0.0	
Specific Conductivity (in-situ)	µS/cm	-	-	-	163.8	270.3	323.7	315.7	354.5	338.8	407.7	380.9	272.8	426.4	437.0	
pH (in-situ)	pH	6.5 - 9.0	6.5	-	8.08	8.21	8.33	8.35	8.27	8.23	7.89	7.44	7.52	7.46	7.40	
Turbidity (in-situ)	NTU	-	-	-	-	9.85	7.72	3.62	2.48	2.30	1.28	0.99	0.25	0.28	0.68	
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	8.99	9.34	10.92	14.42	10.00	11.80	8.43	8.39	-	
Conductivity (lab)	µS/cm	-	-	2	197.0	51.2	307.0	334.0	345.0	354.0	478.0	413.0	416.0	419.0	399.0	
Hardness (as CaCO3)	mg/L	-	-	0.5	98	136	163	161	176	171	230	208	210	219	226	
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.73	7.73	8.10	8.10	8.05	8.15	8.05	8.16	7.81	7.84	8.23	
Total Suspended Solids	mg/L	-	15	1.0	57.8	18.6	6.8	3.8	3.4	3.6	3.2	<1.0	<1.0	<1.0	<1.0	
Total Dissolved Solids	mg/L	-	-	3.0	122	162	189	188	207	203	269	247	251	253	266	
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	72.4	91.3	107	103	117	118	160	148	153	153	168	
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0094	0.0071	0.0072	<0.0050	
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Fluoride (F)	mg/L	0.12	-	0.02	0.083	0.106	0.118	0.12	0.115	0.109	0.13	0.117	0.11	0.11	0.101	
Nitrate (as N)	mg/L	13.0	-	0.005	0.021	0.0087	0.0055	<0.0050	0.0053	0.0153	0.0658	0.102	0.113	0.276	0.121	
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorous (P), Total	mg/L	-	-	0.002	0.09	0.0306	0.0144	0.0043	0.0052	0.0042	0.0052	0.0021	<0.0020	0.0034	0.0021	
Sulfate (SO4)	mg/L	-	-	0.5	34.7	54.7	62.7	65.9	70	66.8	86.9	81.2	81.1	79.2	81.6	
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	3.11	2.36	3.32	4.24	3.71	2.48	2.19	2.19	2.06	
Total Organic Carbon	mg/L	-	-	0.5	7.58	3.71	3.27	2.63	3.40	4.25	3.67	2.22	2.45	2.26	2.01	
Aluminum (Al)-Total	mg/L	0.1	-	0.003	1.01	0.437	0.132	0.0609	0.0873	0.0945	0.0397	0.0191	0.0105	0.01	0.0167	
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	0.00041	0.00026	0.00023	0.00023	0.00019	0.00017	0.00021	0.00017	0.00015	0.00015	0.0002	
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00187	0.00095	0.00076	0.0005	0.00058	0.00052	0.00052	0.0003	0.00031	0.00032	0.00037	
Barium (Ba)-Total	mg/L	-	1	0.00005	0.122	0.0832	0.0809	0.0774	0.0746	0.0694	0.0846	0.0876	0.0829	0.0828	0.0874	
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000393	0.000196	0.000137	0.000111	0.000157	0.000234	0.00015	0.00019	0.000152	0.000138	0.000108	
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000156	0.000205	0.000238	0.000235	0.000253	0.000247	0.000316	0.000291	0.000293	0.000304	0.000312	
Calcium (Ca)-Total	mg/L	-	-	0.02	27.5	35	43.1	42.5	46.2	44.9	62.6	54.5	55.1	57	59	
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00198	0.00083	0.0003	0.00018	0.00022	0.00017	0.00015	0.00012	<0.00010	<0.00010	0.00035	
Cobalt (Co)-Total	mg/L	-	-	0.0001	0.00098	0.0004	0.00015	<0.00010	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00511	0.00215	0.00126	0.001	0.00098	0.00123	0.00101	0.00068	0.00062	0.00056	0.00056	
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00232	0.00308	0.00359	0.00355	0.00383	0.00374	0.00400	0.00400	0.00400	0.00400	0.00400	
Iron (Fe)-Total	mg/L	0.3	-	0.01	1.95	0.73	0.242	0.117	0.172	0.197	0.105	0.05	0.039	0.038	0.057	
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.00215	0.000539	0.000174	0.000084	0.000086	0.000088	0.000071	<0.000050	0.000051	<0.000050	<0.000050	
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.003101	0.004706	0.005926	0.005834	0.006534	0.006299	0.007000	0.007000	0.007000	0.007000	0.007000	
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00264	0.00292	0.00317	0.00343	0.00343	0.00322	0.00382	0.00327	0.00368	0.0036	0.0043	
Magnesium (Mg)-Total	mg/L	-	-	0.005	8.85	12	14.7	14.7	15.9	15.4	20.4	18.3	18.7	19.2	20.7	
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.076	0.033	0.0174	0.0119	0.0131	0.0185	0.0146	0.014	0.0119	0.0142	0.0147	
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.00103	0.00107	0.00121	0.00124	0.00119	0.00112	0.00145	0.00114	0.00106	0.00117	0.00112	
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	0.0089	0.00516	0.0034	0.00351	0.00424	0.00593	0.00468	0.00478	0.00368	0.00321	0.00316	
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.09412	0.12074	0.13855	0.13726	0.14687	0.14369	0.15000	0.15000	0.15000	0.15000	0.15000	
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
Potassium (K)-Total	mg/L	-	-	0.05	0.923	0.736	0.682	0.705	0.719	0.645	0.874	0.812	0.813	0.842	0.886	
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.00082	0.00105	0.00108	0.00106	0.00109	0.00104	0.00133	0.00131	0.00138	0.00136	0.00138	
Silicon (Si)-Total	mg/L	-	-	0.05	4.26	3.41	3.22	3.07	3.23	3.25	3.89	3.52	3.57	3.54	3.74	
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	0.000045	0.000014	<0.000010	<0.000010	<0.000010	0.000012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Sodium (Na)-Total	mg/L	-	-	0.05	1.11	1.21	1.7	1.65	1.81	1.8	2.47	2.25	2.43	2.49	2.67	
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.121	0.163	0.193	0.196	0.212	0.194	0.27	0.24	0.237	0.248	0.257	
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	0.00003	0.000012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium (Ti)-Total	mg/L	-	-	0.01	0.029	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000875	0.00124	0.00157	0.00161	0.00184	0.00171	0.00256	0.00212	0.00224	0.00222	0.00234	
Vanadium (V)-Total	mg/L	-	-	0.001	0.0053	0.0023	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.033	0.0194	0.009	0.0081	0.0118	0.0214	0.0142	0.0267	0.0208	0.0243	0.0187	
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	0.00399	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0274	0.0289	0.0174	0.0166	0.0162	0.0164	0.0058	0.0038	0.0029	0.0016	0.0022	
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	0.0002	0.00019	0.00019	0.00021	0.00015	0.00015	0.00018	0.00015	0.00014	0.00013	0.00013	
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00046	0.00044	0.00051	0.00043	0.00045	0.00039	0.00043	0.00028	0.0003	0.00028	0.00028	
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0462	0.0587	0.0703	0.0724	0.0734	0.0654	0.0876	0.0861	0.0824	0.0832	0.0848	
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000111	0.000096	0.000086	0.00009	0.000128	0.00019	0.000133	0.000181	0.000143	0.000131	0.000112	
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000156	0.000205	0.000238	0.000235	0.000253	0.000247	0.000316	0.000291	0.000293	0.000304	0.000312	
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	26	34.6	41.9	41.3	44.4	43.8	58.5	54	53.3	56.3	57.7	
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005	0.0017	0.00103	0.00076	0.00076	0.00076	0.00078	0.00075	0				

Table B-7. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site P4.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	P4	P4	P4	P4	P4	P4	P4	P4	P4	P4	P4	P4
				Date Sampled Time	27-May-14 9:20	24-Jun-14 9:05	22-Jul-14 8:50	19-Aug-14 09:00	23-Sep-14 8:45:00 AM	21-Oct-14 9:20	19-Nov-14 9:55	22-Dec-14 10:45	20-Jan-15 13:58	24-Feb-15 9:10	24-Mar-15 08:55	
				Detection Limit												
Temperature (in-situ)	°C	-	-	-	7.6	13.0	15.8	13.0	6.2	1.5	0.0	0.2	-0.1	0.0	0.0	
Specific Conductivity (in-situ)	µS/cm	-	-	-	163.1	274.7	327.5	306.4	349.1	340.0	410.9	395.6	335.0	435.4	444.9	
pH (in-situ)	pH	6.5 - 9.0	6.5	-	7.78	8.16	8.21	8.22	6.45	7.45	6.87	7.52	7.62	7.14	7.06	
Turbidity (in-situ)	NTU	-	-	-	-	10.14	6.88	4.22	5.16	4.80	1.01	2.66	0.51	0.44	0.63	
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	9.06	9.38	11.18	14.45	10.06	11.47	8.01	7.66	-	
Conductivity (lab)	µS/cm	-	-	2	185.0	51.2	314.0	342.0	359.0	347.0	462.0	434.0	416.0	434.0	434.0	
Hardness (as CaCO3)	mg/L	-	-	0.5	97.6	142	163	151	175	173	229	221	213	222	230	
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.68	7.83	8.02	8.07	8.00	7.98	8.24	8.16	7.79	7.72	8.24	
Total Suspended Solids	mg/L	-	15	1.0	81.8	17.4	11	26.2	2.8	5.4	2	49	1.6	<1.0	1.4	
Total Dissolved Solids	mg/L	-	-	3.0	123	166	194	186	206	204	270	261	252	257	270	
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	75.2	95.1	117	105	119	119	163	156	156	158	174	
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	0.0053	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.006	0.0126	0.0075	0.0066	<0.0050	
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Fluoride (F)	mg/L	0.12	-	0.02	0.083	0.104	0.117	0.123	0.118	0.111	0.136	0.127	0.113	0.11	0.111	
Nitrate (as N)	mg/L	13.0	-	0.005	0.0206	0.0059	<0.0050	<0.0050	0.0063	0.0159	0.0614	0.126	0.116	0.119	0.12	
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorous (P), Total	mg/L	-	-	0.002	0.0882	0.0286	0.0123	0.006	0.0047	0.0049	<0.0020	0.0301	<0.0020	0.004	0.0021	
Sulfate (SO4)	mg/L	-	-	0.5	34.5	54.3	62.6	66.2	69.4	66.3	85.9	79.2	78.8	80.7		
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	3.25	2.71	3.24	3.96	3.71	2.62	2.19	2.21	1.94	
Total Organic Carbon	mg/L	-	-	0.5	7.92	3.74	3.18	2.77	3.29	4.09	3.87	3.08	2.24	2.26	2.08	
Aluminum (Al)-Total	mg/L	0.1	-	0.003	1.39	0.329	0.159	0.0624	0.0836	0.0996	0.0229	0.533	0.0088	0.0112	0.0206	
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	0.00044	0.00024	0.00026	0.00022	0.00018	0.00018	0.0002	0.00032	0.00016	0.00015	0.00017	
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00235	0.00086	0.00084	0.00057	0.00054	0.00053	0.00052	0.00118	0.00033	0.0003	0.00039	
Barium (Ba)-Total	mg/L	-	1	0.00005	0.153	0.0757	0.0822	0.0757	0.0753	0.0716	0.0849	0.124	0.0833	0.0867	0.0889	
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000408	0.00014	0.000143	0.000093	0.000126	0.000208	0.00012	0.000338	0.000122	0.00012	0.000104	
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000155	0.000212	0.000238	0.000223	0.000252	0.000250	0.000315	0.000306	0.000297	0.000307	0.000316	
Calcium (Ca)-Total	mg/L	-	-	0.02	27.6	35.4	42.8	42.1	47.4	44.7	58.6	57.8	55.6	56.6	60.2	
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00287	0.00066	0.00041	0.00019	0.00026	0.00023	0.00014	0.00132	<0.00010	<0.00010	0.0001	
Cobalt (Co)-Total	mg/L	-	-	0.0001	0.00125	0.0003	0.00018	<0.00010	<0.00010	0.00013	<0.00010	0.00054	<0.00010	<0.00010	<0.00010	
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00631	0.00183	0.00133	0.00103	0.00102	0.00108	0.00103	0.00274	0.00061	0.00058	0.00059	
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00232	0.00319	0.00359	0.00336	0.00381	0.00378	0.00400	0.00400	0.00400	0.00400	0.00400	
Iron (Fe)-Total	mg/L	0.3	-	0.01	2.7	0.596	0.299	0.127	0.173	0.221	0.073	1.17	0.032	0.046	0.066	
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.00177	0.000404	0.000257	0.000096	0.000104	0.000121	0.000055	0.000872	<0.000050	<0.000050	0.000055	
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.003085	0.004972	0.005926	0.005376	0.006487	0.006393	0.007000	0.007000	0.007000	0.007000	0.007000	
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00304	0.00286	0.00315	0.00345	0.003	0.00307	0.00377	0.00396	0.00378	0.00362	0.00428	
Magnesium (Mg)-Total	mg/L	-	-	0.005	8.79	12	14.8	14.4	16.1	15.1	19.9	19.3	19.1	19.1	21	
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.095	0.028	0.0219	0.0136	0.0164	0.0208	0.0157	0.0646	0.0203	0.02	0.0219	
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.00112	0.00101	0.00124	0.0013	0.00125	0.00113	0.00147	0.00126	0.00111	0.00119	0.00114	
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	0.01	0.00407	0.00309	0.00293	0.00391	0.00551	0.00435	0.00715	0.00311	0.00299	0.00293	
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.09383	0.12476	0.13855	0.13073	0.14624	0.14497	0.15000	0.15000	0.15000	0.15000	0.15000	
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
Potassium (K)-Total	mg/L	-	-	0.05	1.04	0.696	0.701	0.705	0.737	0.641	0.891	1.03	0.86	0.846	0.915	
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.00078	0.00102	0.00102	0.00107	0.00102	0.00103	0.00129	0.00145	0.00127	0.00135	0.00146	
Silicon (Si)-Total	mg/L	-	-	0.05	5.19	3.27	3.26	3.03	3.21	3.29	3.86	4.45	3.68	3.57	3.84	
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	0.000058	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000023	<0.000010	<0.000010	<0.000010	
Sodium (Na)-Total	mg/L	-	-	0.05	1.14	1.29	1.71	1.62	1.88	1.78	2.58	2.43	2.62	2.62	2.78	
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.12	0.165	0.193	0.196	0.209	0.192	0.254	0.253	0.233	0.246	0.261	
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	0.000034	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000017	<0.000010	<0.000010	<0.000010	
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium (Ti)-Total	mg/L	-	-	0.01	0.032	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.014	<0.010	<0.010	<0.010	
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000914	0.00125	0.00155	0.00151	0.00189	0.00169	0.00232	0.00226	0.0022	0.00221	0.00235	
Vanadium (V)-Total	mg/L	-	-	0.001	0.0073	0.0017	0.001	<0.0010	<0.0010	<0.0010	<0.0010	0.0025	<0.0010	<0.0010	<0.0010	
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.0361	0.0126	0.009	0.0064	0.0097	0.0181	0.0111	0.0416	0.0163	0.0163	0.017	
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0262	0.0224	0.0173	0.0156	0.0143	0.0165	0.0057	0.0033	0.0021	0.0018	0.002	
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	0.00019	0.00019	0.00019	0.00019	0.00015	0.00015	0.0002	0.00018	0.00014	0.00014	0.00014	
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00048	0.00047	0.00054	0.00042	0.00045	0.00041	0.00043	0.00028	0.0003	0.0003	0.00029	
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0471	0.0584	0.0712	0.0663	0.0772	0.0667	0.0896	0.0924	0.0833	0.0855	0.0873	
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000088	0.000069	0.000074	0.000065	0.000099	0.000154	0.000113	0.000167	0.000124	0.000119	0.000103	
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000155	0.000212	0.000238	0.000223	0.000252	0.000250	0.000315	0.000306	0.000297	0.000307	0.000316	
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	25.5	37	41.6	38.7	43.2	43.8	57.9	57.3	54.9	56.8	58.8	
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010									

Table B-8. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site R1.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID Date Sampled Time	R1 28-May-14 17:15	R1 24-Jun-14 17:40	R1 22-Jul-14 15:32	R1 19-Aug-14 14:00	R1 23-Sep-14 14:30	R1 20-Oct-14 15:30	R1 20-Nov-14 8:40	R1 23-Dec-14 10:25	R1 26-Feb-15 9:10	R1 24-Mar-15 17:10
				Detection Limit										
Temperature (in-situ)	°C	-	-	-	7.2	10.4	12.5	8.4	3.8	1.1	0.0	-0.1	0.0	0.0
Specific Conductivity (in-situ)	µS/cm	-	-	-	102.3	114.4	202.5	180.3	183.3	218.2	231.8	266.3	250.1	291.1
pH (in-situ)	pH	6.5 - 9.0	6.5	-	8.04	7.66	8.20	8.14	7.92	8.00	7.40	7.73	7.51	7.33
Turbidity (in-situ)	NTU	-	-	-	-	1.25	1.06	0.62	1.26	1.51	0.94	2.32	2.02	2.63
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	10.39	10.73	12.21	14.26	14.48	16.16	18.68	-
Conductivity (lab)	µS/cm	-	-	2	124.0	51.2	198.0	190.0	187.0	217.0	275.0	251.0	293.0	286.0
Hardness (as CaCO3)	mg/L	-	-	0.5	57.8	56.9	98.9	83.7	83.3	106	121	130	144	142
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.51	7.54	8.16	7.78	7.82	8.03	7.90	8.14	7.80	8.22
Total Suspended Solids	mg/L	-	15	1.0	5	2	<1.0	<1.0	2.4	<1.0	1.2	<1.0	<1.0	1.6
Total Dissolved Solids	mg/L	-	-	3.0	68.3	65.7	116	101	96.8	124	140	145	165	171
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	50.4	49.4	95.6	82.5	73.7	97.2	108	109	127	138
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	0.005	<0.0050	0.0051	<0.0050	0.0055	0.0096	0.0233	0.0322	0.0433	0.0504
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	0.08	0.074	0.11	0.099	0.094	0.109	0.122	0.134	0.142	0.134
Nitrate (as N)	mg/L	13.0	-	0.005	0.0243	0.0121	0.0152	0.0126	0.0289	0.076	0.125	0.144	0.172	0.19
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	0.0016
Phosphorous (P), Total	mg/L	-	-	0.002	0.0065	0.0038	0.0029	<0.0020	<0.0020	<0.0020	<0.0020	0.0031	0.0057	0.0084
Sulfate (SO4)	mg/L	-	-	0.5	10.8	10.2	17	15	16.3	21.1	24.7	26.1	28.9	28.9
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	2.88	2.94	3.39	2.61	2.01	1.70	1.86	1.86
Total Organic Carbon	mg/L	-	-	0.5	4.13	2.86	2.82	3.05	3.43	2.65	2.11	1.69	2.16	1.86
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.108	0.048	0.0179	0.0163	0.0519	0.0225	0.0149	0.0142	0.0037	0.0148
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00039	0.00032	0.00047	0.00042	0.00041	0.0004	0.00033	0.00031	0.00035	0.00044
Barium (Ba)-Total	mg/L	-	1	0.00005	0.03	0.029	0.0461	0.0439	0.0406	0.0519	0.0531	0.0627	0.0679	0.0719
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000101	0.000099	0.000157	0.000137	0.000136	0.000166	0.000186	0.000197	0.000215	0.000212
Calcium (Ca)-Total	mg/L	-	-	0.02	17.9	18.2	29.9	26.6	26.2	32	37.3	39.7	45.7	46.5
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.0003	0.00016	0.00011	0.00018	0.00023	0.00018	0.00014	0.00014	<0.00010	0.00017
Cobalt (Co)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00099	0.00069	<0.00050	0.00053	0.00058	0.00139	<0.00050	<0.00050	0.00085	<0.00050
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00200	0.00200	0.00234	0.00203	0.00202	0.00249	0.00278	0.00296	0.00323	0.00319
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.293	0.173	0.215	0.224	0.252	0.269	0.185	0.332	0.358	0.633
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.00023	0.00014	0.00005	0.000055	0.000116	<0.000050	<0.000050	<0.00010	<0.000050	0.000074
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.001000	0.001000	0.003137	0.002537	0.002521	0.003427	0.004055	0.004443	0.005061	0.004972
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00102	0.00125	0.00172	0.00156	0.00108	0.00182	0.00168	0.00176	0.00214	0.00264
Magnesium (Mg)-Total	mg/L	-	-	0.005	3.66	3.23	5.77	5.21	5.43	6.94	6.96	6.79	7.45	7.59
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.0161	0.0179	0.021	0.0241	0.024	0.0374	0.0409	0.0488	0.0513	0.0652
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000193	0.000176	0.000244	0.000207	0.000213	0.000224	0.000237	0.000269	0.00029	0.000307
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	0.00056	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.02500	0.02500	0.09478	0.08349	0.08318	0.09990	0.11048	0.11667	0.12610	0.12476
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	mg/L	-	-	0.05	0.757	0.599	0.777	0.779	0.79	0.984	1.02	1.11	1.27	1.3
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.00011	0.0001	0.00015	0.00011	0.00015	0.00018	0.00021	0.00018	0.0002	0.00023
Silicon (Si)-Total	mg/L	-	-	0.05	3.22	3.3	3.9	4.19	4.41	4.48	4.88	4.85	4.99	5.39
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000382	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	1.31	1.48	2.05	2.02	1.96	2.44	2.44	2.5	2.84	3.02
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.0939	0.102	0.161	0.146	0.138	0.166	0.198	0.213	0.24	0.25
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000944	0.000806	0.00151	0.00128	0.00135	0.00191	0.00224	0.00241	0.00302	0.00304
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0203	0.0106	0.0052	0.0163	0.0103	0.0044	0.0029	0.0035	0.0027	0.0017
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00027	0.00024	0.0004	0.00038	0.00029	0.00031	0.00025	0.00027	0.00027	0.00022
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0285	0.0277	0.0465	0.0396	0.0376	0.0449	0.0555	0.0629	0.0658	0.0683
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000101	0.000099	0.000157	0.000137	0.000136	0.000166	0.000186	0.000197	0.000215	0.000212
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	17.1	17.5	30.2	25.6	24.6	32.4	37.2	40.6	45.6	44.8
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005	0.00068	0.00056	0.00043	0.00043	0.00046	0.00037	0.00035	0.00036	0.00029	0.00024
Copper (Cu)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00200	0.00200	0.00234	0.00203	0.00202	0.00249	0.00278	0.00296	0.00323	0.00319
Iron (Fe)-Dissolved	mg/L	0.3	-	0.01	0.101	0.078	0.134	0.129	0.127	0.169	0.074	0.128	0.084	0.083
Lead (Pb)-Dissolved (Lab Result)	mg/L	0.003	0.2	0.00005	<0.000050	<0.000050	<0.000050	0.000064	<0.000050	<0.000050	<0.000050	<0.000050	0.00005	<0.000050
Lead (Pb)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.001000	0.001000	0.003137	0.002537	0.002521					

Table B-10. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site R4.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	R4	R4	R4	R4	R4	R4	R4	R4	R4	R4	R4	R4
				Date Sampled Time	27-May-14 10:45	24-Jun-14 11:25	22-Jul-14 10:17	19-Aug-14 10:15	23-Sep-14 10:00	21-Oct-14 10:35	19-Nov-14 11:00	22-Dec-14 11:35	20-Jan-15 12:00	24-Feb-15 11:20	24-Mar-15 10:50	
				Detection Limit												
Temperature (in-situ)	°C	-	-	-	4.0	7.4	7.8	6.5	2.7	0.0	0.0	-0.1	-0.2	0.0	0.0	
Specific Conductivity (in-situ)	µS/cm	-	-	-	183.6	200.9	378.5	284.0	289.5	510.9	363.8	409.8	504.8	600.4	637.9	
pH (in-situ)	pH	6.5 - 9.0	6.5	-	8.02	8.11	8.14	8.11	7.94	7.98	7.26	7.09	7.49	7.63	7.56	
Turbidity (in-situ)	NTU	-	-	-	-	2.60	0.87	0.84	2.38	1.37	0.41	0.43	1.31	0.73	0.41	
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	11.57	11.28	12.11	14.57	8.82	13.94	10.93	10.57	-	
Conductivity (lab)	µS/cm	-	-	2	212.0	51.2	363.0	303.0	297.0	503.0	423.0	442.0	510.0	577.0	627.0	
Hardness (as CaCO3)	mg/L	-	-	0.5	105	100	183	136	133	250	194	220	255	301	327	
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.77	7.77	7.92	7.99	7.88	7.95	7.85	8.14	7.88	7.70	8.26	
Total Suspended Solids	mg/L	-	15	1.0	2.6	<1.0	<1.0	1	3.4	<1.0	<1.0	<1.0	1	<1.0	<1.0	
Total Dissolved Solids	mg/L	-	-	3.0	131	118	229	165	167	325	228	270	324	378	417	
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	70.9	73.8	112	104	90.5	120	121	140	156	162	178	
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	0.0072	<0.0050	0.0124	<0.0050	<0.0050	0.0543	0.0121	0.0195	0.0193	0.0227	0.0216	
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Fluoride (F)	mg/L	0.12	-	0.02	0.08	0.081	0.1	0.099	0.09	0.102	0.113	0.115	0.117	0.106	0.108	
Nitrate (as N)	mg/L	13.0	-	0.005	0.0582	0.0286	0.0663	0.0537	0.0575	0.122	0.185	0.224	0.257	0.272	0.28	
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	0.0014	0.0016	0.002	
Phosphorous (P), Total	mg/L	-	-	0.002	0.0027	0.0028	<0.0020	<0.0020	<0.0020	<0.020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
Sulfate (SO4)	mg/L	-	-	0.5	41.9	31.7	89	47	56.3	152	77.8	98.8	130	163	182	
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	2.43	2.41	3.59	2.43	2.00	1.53	1.50	1.50	1.55	
Total Organic Carbon	mg/L	-	-	0.5	5.08	3.25	2.44	2.94	3.99	2.54	1.92	1.44	1.71	1.64	1.51	
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.0739	0.0297	0.0121	0.0118	0.0683	0.0125	0.0057	0.0077	<0.0030	0.0041	<0.0030	
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	<0.00010	0.00013	0.00011	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00039	0.00034	0.00046	0.00039	0.00043	0.0003	0.00023	0.00016	0.00017	0.00018	0.00017	
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0385	0.0414	0.0603	0.0575	0.0585	0.0623	0.0727	0.0714	0.0744	0.0815	0.0798	
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000038	0.000035	0.000048	0.000049	0.000053	0.000063	0.000054	0.000039	0.000035	0.000028	0.000033	
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000165	0.000158	0.000262	0.000205	0.000201	0.000339	0.000275	0.000305	0.000345	0.000370	0.000370	
Calcium (Ca)-Total	mg/L	-	-	0.02	30.1	31.2	55.9	42.3	41.7	73.7	59.7	65.9	75.5	91.7	101	
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00026	0.00017	0.00015	0.00016	0.00031	0.00015	0.00015	0.0002	0.00014	0.00013	0.00018	
Cobalt (Co)-Total	mg/L	-	-	0.0001	0.00048	0.00022	0.00084	0.00025	0.00096	0.00348	0.00024	0.00017	0.00018	0.00023	0.00032	
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00159	0.00088	0.00057	0.00072	0.00101	0.00056	0.00067	0.00059	<0.00050	<0.00050	<0.00050	
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00247	0.00236	0.00400	0.00308	0.00302	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.22	0.162	0.216	0.237	0.301	0.306	0.082	0.084	0.054	0.056	0.068	
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.000812	0.000372	0.000207	0.000192	0.000436	0.000166	0.000155	<0.00010	<0.00050	0.000062	<0.00050	
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.003385	0.003182	0.007000	0.004706	0.004574	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00162	0.00211	0.00308	0.00265	0.00227	0.00433	0.00033	0.00362	0.00442	0.00445	0.00538	
Magnesium (Mg)-Total	mg/L	-	-	0.005	6.6	6.45	11.7	9.33	8.63	16.7	12.9	13.8	16.8	19.2	21.2	
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.374	0.204	0.735	0.292	0.637	2.07	0.353	0.206	0.243	0.282	0.371	
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000395	0.000462	0.000582	0.000548	0.000542	0.00053	0.000542	0.00051	0.000445	0.000706	0.000443	
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	0.00176	0.00115	0.00178	0.00145	0.00197	0.00349	0.00174	0.00177	0.00197	0.0022	0.00239	
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.09919	0.09558	0.15000	0.12074	0.11871	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
Potassium (K)-Total	mg/L	-	-	0.05	0.886	0.739	1.11	0.991	0.928	1.44	1.29	1.42	1.55	1.78	1.8	
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.0003	0.00038	0.00045	0.00044	0.0004	0.00052	0.0006	0.00063	0.00069	0.0007	0.00075	
Silicon (Si)-Total	mg/L	-	-	0.05	4.12	4.26	4.62	4.73	5.02	4.88	5.32	5.22	5.33	5.47	5.88	
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Sodium (Na)-Total	mg/L	-	-	0.05	1.86	1.83	3.26	2.43	2.43	4.26	3.16	3.52	4.2	4.88	5.35	
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.112	0.124	0.198	0.159	0.159	0.237	0.214	0.233	0.252	0.3	0.329	
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000938	0.00089	0.00134	0.00131	0.00124	0.00167	0.00197	0.00208	0.00232	0.00262	0.00277	
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.0303	0.0312	0.0495	0.0636	0.0639	0.0748	0.0792	0.0717	0.0755	0.0533	0.0679	
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0183	0.0106	0.0044	0.005	0.0111	0.0043	0.002	0.0015	0.0013	<0.0010	<0.0010	
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.0003	0.00028	0.00032	0.00032	0.00032	0.0002	0.00015	0.00012	0.00016	0.00014	0.00015	
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0358	0.0425	0.0587	0.054	0.0542	0.0626	0.0701	0.0702	0.0745	0.0794	0.0807	
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000028	0.000028	0.000045	0.00004	0.00005	0.000058	0.000053	0.000031	0.000033	0.000031	0.000027	
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000165	0.000158	0.000262	0.000205	0.000201	0.000339	0.000275	0.000305	0.000345	0.000370	0.000370	
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	30.9	29.5	53.8	40.6	39.6	72.7	56.7	65.3	75	89.1	97.1	
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	0.0001	<0.00010	0.00012	<0.00010	<0.00010	<0.00010	0.0001	<0.00010	0.00012	0.00012	
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	0.00039	0.00017	0.00075	0.00019	0.00075	0.00336	0.00022	0.00013	0.00017	0.00021	0.00027	
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005	0.00112	0.00081	0.00053	0.00056	0.0008	0.0						

Table B-11. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site R5.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	R5	R5	R5	R5	R5	R5	R5	R5	R5	R5	R5	R5
				Date Sampled Time	27-May-14 10:00	24-Jun-14 10:25	22-Jul-14 9:40	19-Aug-14 09:55	23-Sep-14 9:35	21-Oct-14 10:15	19-Nov-14 11:45	22-Dec-14 11:15	20-Jan-15 12:58	24-Feb-15 10:35	24-Mar-15 10:35	
				Detection Limit												
Temperature (in-situ)	°C	-	-	-	3.9	7.1	7.3	6.3	2.7	0.1	0.0	-0.1	-0.1	0.0	0.0	
Specific Conductivity (in-situ)	µS/cm	-	-	-	182.5	206.3	322.4	277.6	284.5	400.6	330.4	357.5	338.7	450.7	470.6	
pH (in-situ)	pH	6.5 - 9.0	6.5	-	8.06	8.13	8.22	8.15	7.89	8.04	7.34	7.22	7.68	7.68	7.75	
Turbidity (in-situ)	NTU	-	-	-	-	3.39	0.79	0.57	2.97	0.92	0.59	0.95	0.52	0.84	0.54	
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	11.90	11.11	12.35	15.05	9.36	14.29	11.11	11.03	-	
Conductivity (lab)	µS/cm	-	-	2	206.0	51.2	306.0	299.0	286.0	420.0	376.0	388.0	373.0	448.0	459.0	
Hardness (as CaCO3)	mg/L	-	-	0.5	112	104	161	141	135	199	179	196	187	223	238	
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.87	7.81	8.16	8.04	7.93	8.02	8.02	8.10	8.00	7.83	8.31	
Total Suspended Solids	mg/L	-	15	1.0	3.2	1.6	1.2	1	3	1	1	2.4	1.2	<1.0	<1.0	
Total Dissolved Solids	mg/L	-	-	3.0	140	122	192	161	164	245	210	230	218	267	290	
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	86.8	83.2	130	120	96.4	133	147	149	156	159	178	
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	0.0067	<0.0050	0.007	<0.0050	<0.0050	0.029	0.0073	0.0133	0.0091	0.0136	0.0134	
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Fluoride (F)	mg/L	0.12	-	0.02	0.078	0.076	0.078	0.078	0.084	0.082	0.108	0.095	0.087	0.081	0.087	
Nitrate (as N)	mg/L	13.0	-	0.005	0.0624	0.0321	0.0514	0.0512	0.0629	0.142	0.175	0.23	0.264	0.251	0.254	
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	0.001	0.0012	0.001	
Phosphorous (P), Total	mg/L	-	-	0.002	0.0037	0.005	<0.0020	<0.0020	<0.0020	<0.020	<0.0020	0.0026	<0.0020	0.0044	0.0028	
Sulfate (SO4)	mg/L	-	-	0.5	38.7	29.3	49.9	32.5	49.8	85.7	51.2	63.6	50.8	84.2	90.6	
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	2.23	2.31	3.79	2.25	1.88	1.49	1.49	1.32	1.13	
Total Organic Carbon	mg/L	-	-	0.5	5.15	3.11	2.38	2.52	3.94	2.45	2.02	1.52	1.66	1.35	1.34	
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.0212	0.0366	0.0229	0.0183	0.065	0.0286	0.0101	0.0501	0.0053	0.011	0.0087	
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	0.00011	0.00013	0.00011	0.00013	<0.00010	0.00013	0.0001	0.00011	<0.00010	0.00014	
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00034	0.00038	0.00048	0.00043	0.00046	0.00042	0.00032	0.00039	0.00038	0.00041	0.00039	
Barium (Ba)-Total	mg/L	-	1	0.00005	0.038	0.0453	0.0627	0.0625	0.0607	0.0667	0.0768	0.0799	0.0843	0.0873	0.0898	
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000032	0.000038	0.00003	0.000026	0.000053	0.000043	0.000037	0.000027	0.00002	0.000016	0.000017	
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000174	0.000164	0.000235	0.000211	0.000203	0.000281	0.000257	0.000277	0.000266	0.000308	0.000326	
Calcium (Ca)-Total	mg/L	-	-	0.02	31.6	29.1	45.4	40.6	40.5	58	54.7	58.1	54	66.6	71.2	
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00018	0.00023	0.00016	0.00016	0.0004	0.00021	0.00014	0.00027	0.00011	0.00014	0.00016	
Cobalt (Co)-Total	mg/L	-	-	0.0001	0.00034	0.00019	0.00035	0.00013	0.00083	0.00174	0.00012	0.00016	<0.00010	0.00012	0.00013	
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.0013	0.00096	0.00056	0.00062	0.00105	0.00063	0.00057	0.00055	<0.00050	<0.00050	<0.00050	
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00261	0.00245	0.00355	0.00317	0.00306	0.00400	0.00389	0.00400	0.00400	0.00400	0.00400	
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.093	0.166	0.164	0.191	0.298	0.258	0.058	0.23	0.103	0.128	0.123	
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.00024	0.000519	0.000101	0.000102	0.000413	0.000121	0.000085	0.000219	<0.00050	0.000062	<0.00050	
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.003675	0.003344	0.005834	0.004927	0.004662	0.007000	0.006676	0.007000	0.007000	0.007000	0.007000	
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00155	0.00188	0.00214	0.00211	0.00189	0.00309	0.00276	0.00313	0.00292	0.00321	0.00382	
Magnesium (Mg)-Total	mg/L	-	-	0.005	7.12	6.99	11.1	9.74	9.11	13.8	12.7	13.3	13.1	15	16.3	
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.282	0.172	0.314	0.133	0.53	1.03	0.174	0.136	0.0701	0.115	0.141	
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000483	0.000569	0.000853	0.000812	0.000655	0.000836	0.000888	0.000886	0.00108	0.000945	0.000957	
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	0.00133	0.00111	0.00098	0.00085	0.00176	0.00194	0.00105	0.00124	0.0007	0.00097	0.00115	
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.10417	0.09847	0.13726	0.12410	0.12006	0.15000	0.14877	0.15000	0.15000	0.15000	0.15000	
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
Potassium (K)-Total	mg/L	-	-	0.05	0.92	0.741	0.995	0.979	0.973	1.24	1.28	1.36	1.39	1.5	1.58	
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.00031	0.00042	0.00059	0.00052	0.00043	0.00064	0.00067	0.00075	0.00082	0.00077	0.00085	
Silicon (Si)-Total	mg/L	-	-	0.05	3.8	3.84	4.16	4.5	4.95	4.85	5.27	5.22	5.22	5.28	5.59	
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Sodium (Na)-Total	mg/L	-	-	0.05	1.83	1.78	2.33	2.02	2.34	3.02	2.62	2.87	2.65	3.24	3.59	
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.109	0.106	0.152	0.14	0.147	0.182	0.188	0.195	0.173	0.218	0.227	
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000952	0.000933	0.00147	0.00157	0.00126	0.00181	0.00214	0.00221	0.00235	0.00253	0.00272	
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.0243	0.0313	0.0223	0.0274	0.0535	0.0366	0.0411	0.041	0.0187	0.0216	0.0272	
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.07	0.0101	0.0051	0.0054	0.0105	0.0045	0.0022	0.002	0.0015	<0.0010	0.0017	
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	0.0001	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00038	0.00031	0.00039	0.00038	0.00035	0.00031	0.00024	0.00022	0.0003	0.0003	0.00026	
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0425	0.0448	0.0626	0.0631	0.0561	0.0642	0.0757	0.0793	0.0838	0.0846	0.0885	
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000041	0.000025	0.000028	0.00003	0.000044	0.000038	0.000032	0.000019	0.000017	0.000014	0.000015	
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000174	0.000164	0.000235	0.000211	0.000203	0.000281	0.000257	0.000277	0.000266	0.000308	0.000326	
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	32.7	30	46.2	41.2	39.4	57.4	51.5	57	53.7	65.1	69.2	
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	0.00022	<0.00010	<0.00010	0.00011	0.00018	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	0.00044	0.00016	0.00034	0.0001	0.00065	0.0016	0.00011	<0.00010	<0.00010	<0.00010	0.00011	
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005	0.00135	0.00078	0.00049	0.0005	0.0008	0.00049	0.00043	0.00037	0.			

Table B-12. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site R6.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	R6	R6	R6	R6	R6	R6	R6	R6	R6	R6	R6	R6
				Date Sampled Time	27-May-14 10:25	24-Jun-14 10:55	22-Jul-14 10:05	19-Aug-14 10:10	23-Sep-14 9:50	21-Oct-14 10:45	19-Nov-14 11:20	22-Dec-14 11:25	20-Jan-15 12:25	24-Feb-15 11:45	24-Mar-15 11:15	
				Detection Limit												
Temperature (in-situ)	°C	-	-	-	4.6	7.0	7.2	6.2	2.5	0.0	0.0	-0.1	-0.2	0.0	0.0	
Specific Conductivity (in-situ)	µS/cm	-	-	-	172.4	230.5	280.5	275.4	262.3	291.6	296.4	300.2	318.2	329.8	340.7	
pH (in-situ)	pH	6.5 - 9.0	6.5	-	8.20	8.23	8.24	8.22	8.05	8.16	7.35	7.43	7.63	7.84	7.95	
Turbidity (in-situ)	NTU	-	-	-	-	2.97	0.55	0.94	1.90	1.04	0.81	1.43	1.03	0.80	0.42	
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	11.75	11.18	12.31	15.03	9.52	14.02	11.63	10.72	-	
Conductivity (lab)	µS/cm	-	-	2	209.0	51.2	275.0	288.0	253.0	305.0	326.0	326.0	326.0	331.0	322.0	
Hardness (as CaCO3)	mg/L	-	-	0.5	105	119	142	142	131	149	163	167	166	165	176	
pH (lab)	pH	6.5 - 9.0	6.5	0.1	8.12	7.97	8.01	8.01	8.02	8.03	7.88	8.23	8.00	7.91	8.35	
Total Suspended Solids	mg/L	-	15	1.0	3.4	1.8	2.6	1.8	3.2	1.4	<1.0	20.8	1.6	<1.0	<1.0	
Total Dissolved Solids	mg/L	-	-	3.0	123	132	163	158	144	169	176	185	186	182	198	
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	103	111	145	135	119	146	145	157	160	157	174	
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0069	0.0056	0.0063	<0.0050	
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Fluoride (F)	mg/L	0.12	-	0.02	0.053	0.055	0.064	0.063	0.059	0.067	0.073	0.084	0.076	0.072	0.072	
Nitrate (as N)	mg/L	13.0	-	0.005	0.0831	0.0489	0.041	0.0491	0.0835	0.163	0.165	0.239	0.266	0.244	0.247	
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorous (P), Total	mg/L	-	-	0.002	0.0071	0.004	0.0031	<0.0020	0.0028	0.002	0.0036	0.0087	<0.0020	0.0041	0.0033	
Sulfate (SO4)	mg/L	-	-	0.5	16.6	18.1	21.3	21.1	19.7	22.7	24.9	25.3	25.1	24	24.7	
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	2.24	2.52	3.58	2.22	1.81	1.45	1.28	1.10	1.05	
Total Organic Carbon	mg/L	-	-	0.5	5.16	2.66	2.14	2.60	3.64	2.28	1.89	1.44	1.59	1.18	1.06	
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.096	0.0462	0.0197	0.0228	0.0607	0.0298	0.0245	0.173	0.0127	0.0124	0.0109	
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	0.00011	0.00013	0.00015	0.00014	0.00013	0.00018	0.00012	0.00012	0.00013	0.00012	0.00016	
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00048	0.00038	0.00051	0.0005	0.0005	0.00048	0.00038	0.00074	0.00044	0.00044	0.00045	
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0491	0.0461	0.0668	0.0697	0.0615	0.0679	0.0822	0.0895	0.0829	0.0874	0.0915	
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000024	0.000015	0.000014	0.000014	0.000023	0.000015	0.000017	0.000037	0.000016	0.000012	<0.000010	
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000165	0.000183	0.000212	0.000212	0.000198	0.000221	0.000238	0.000243	0.000241	0.000240	0.000253	
Calcium (Ca)-Total	mg/L	-	-	0.02	29.1	33.8	39.8	40.7	36.8	41.9	48.3	47.5	47.5	48.9	51	
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.0003	0.00018	0.00014	0.00019	0.00034	0.00018	0.00015	0.00052	0.00101	0.0001	0.00014	
Cobalt (Co)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00021	<0.00010	<0.00010	<0.00010	
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00144	0.00069	0.00053	0.00058	0.00085	0.00052	0.00056	0.00144	<0.00050	<0.00050	<0.00050	
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00247	0.00274	0.00319	0.00319	0.00298	0.00332	0.00359	0.00367	0.00365	0.00363	0.00383	
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.244	0.114	0.118	0.156	0.212	0.189	0.064	0.513	0.115	0.125	0.122	
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.000099	0.000057	<0.000050	<0.000050	0.000051	0.000056	<0.000050	<0.00025	0.000056	<0.000050	<0.000050	
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.003385	0.003970	0.004972	0.004972	0.004487	0.005286	0.005926	0.006112	0.006065	0.006019	0.006534	
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00109	0.00152	0.00169	0.00167	0.00137	0.00176	0.00209	0.00227	0.00224	0.00228	0.00268	
Magnesium (Mg)-Total	mg/L	-	-	0.005	7.56	8.32	10.9	10.6	9.58	11	11.8	11.4	11.5	11.4	12.3	
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.0148	0.00978	0.0126	0.0161	0.0185	0.0203	0.0133	0.0568	0.0131	0.0117	0.0102	
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000846	0.000982	0.0011	0.00112	0.000993	0.00119	0.00115	0.00121	0.00126	0.00132	0.00145	
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	0.00076	<0.00050	<0.00050	<0.00050	0.00067	<0.00050	<0.00050	0.00071	0.00085	<0.00050	<0.00050	
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.09919	0.10909	0.12476	0.12476	0.11735	0.12941	0.13855	0.14113	0.14049	0.13984	0.14687	
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
Potassium (K)-Total	mg/L	-	-	0.05	0.962	0.808	0.916	1.04	0.997	1.04	1.23	1.23	1.21	1.28	1.36	
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.0005	0.00066	0.0007	0.00061	0.00061	0.00074	0.00086	0.00084	0.00087	0.0008	0.00088	
Silicon (Si)-Total	mg/L	-	-	0.05	3.74	3.68	4	4.56	4.79	4.67	5.23	5.12	4.89	5.1	5.28	
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Sodium (Na)-Total	mg/L	-	-	0.05	1.26	1.29	1.7	1.77	1.65	1.77	2.02	1.98	2.05	2.09	2.28	
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.0842	0.107	0.122	0.121	0.112	0.125	0.151	0.146	0.143	0.154	0.159	
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.0012	0.00133	0.00165	0.00177	0.0016	0.00192	0.00225	0.00236	0.00243	0.00253	0.00278	
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0054	<0.0030	<0.0030	<0.0030	<0.0030	
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0226	0.0115	0.0059	0.0058	0.0127	0.0048	0.0024	0.0019	0.0018	0.0012	0.0066	
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	0.00011	0.00012	0.00011	0.00011	0.00011	0.00011	0.00011	<0.00010	0.00011	0.0001	0.00011	
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00039	0.00035	0.00045	0.00042	0.00039	0.00041	0.0003	0.00033	0.00032	0.00037	0.00033	
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0493	0.0524	0.0661	0.0689	0.0612	0.0675	0.082	0.0862	0.0844	0.0862	0.0916	
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000012	0.000015	0.000014	0.000012	0.000014	0.000011	0.000015	0.000012	<0.000010	<0.000010	<0.000010	
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000165	0.000183	0.000212	0.000212	0.000198	0.000221	0.000238	0.000243	0.000241	0.000240	0.000253	
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	28.6	33.2	39.4	40	36.9	41.6	46.1	47.8	47.5	46.9	50.3	
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0												

Table B-13. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site USFR.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	USFR	USFR	USFR	USFR	USFR	USFR	USFR	USFR	USFR	USFR	USFR	USFR
				Date Sampled Time	28-May-14 15:15	24-Jun-14 16:55	22-Jul-14 17:02	19-Aug-14 16:05	23-Sep-14 15:40	20-Oct-14 14:00	19-Nov-14 16:55	22-Dec-14 15:15	19-Jan-15 15:50	26-Feb-15 8:00	24-Mar-15 14:15	
				Detection Limit												
Temperature (in-situ)	°C	-	-	-	6.4	10.2	14.0	9.6	4.7	0.8	0.0	0.1	-0.1	0.0	0.0	
Specific Conductivity (in-situ)	µS/cm	-	-	-	28.4	36.6	55.0	57.0	54.3	62.1	71.0	78.0	100.8	106.4	113.3	
pH (in-situ)	pH	6.5 - 9.0	6.5	-	7.58	7.51	7.85	7.84	7.78	7.23	7.48	6.78	6.74	7.64	7.69	
Turbidity (in-situ)	NTU	-	-	-	-	1.12	0.52	0.67	0.04	0.35	0.47	1.15	0.25	0.64	0.50	
Dissolved Oxygen (in-situ)	mg/L			-			9.25	9.87	11.37	14.37	9.80	14.32	14.86	18.61	-	
Conductivity (lab)	µS/cm	-	-	2	38.4	51.2	52.5	61.1	58.6	63.6	91.7	85.9	104.0	114.0	108.0	
Hardness (as CaCO3)	mg/L	-	-	0.5	13.7	14.8	23.4	24.3	22	25.7	32.7	36.9	44.3	49.4	47.9	
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.22	7.15	7.35	7.18	7.46	7.69	7.63	7.75	7.56	7.52	8.00	
Total Suspended Solids	mg/L	-	15	1.0	2.4	2.6	2	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Total Dissolved Solids	mg/L	-	-	3.0	22	22	31.4	32.9	31	35.3	42.7	46.7	54.4	58.4	60.3	
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	13.1	13.6	22.1	22.8	18.7	23.3	30.7	34.7	44.4	48.5	52.6	
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Fluoride (F)	mg/L	0.12	-	0.02	0.044	0.046	0.061	0.059	0.057	0.057	0.072	0.082	0.089	0.094	0.091	
Nitrate (as N)	mg/L	13.0	-	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.0059	0.0309	0.0637	0.0703	0.108	0.122	0.118	
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorous (P), Total	mg/L	-	-	0.002	0.0065	0.0052	0.0035	0.002	0.0029	0.0020	<0.0020	<0.0020	<0.0020	0.0029	<0.0020	
Sulfate (SO4)	mg/L	-	-	0.5	3.73	4.2	5.12	5.21	6.49	7.24	7.48	7.54	6.94	6.31	6.51	
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	2.44	2.87	3.16	2.43	1.70	1.80	1.53	1.44	1.37	
Total Organic Carbon	mg/L	-	-	0.5	3.64	2.67	2.47	3.05	3.27	2.47	2.11	1.88	1.43	1.51	1.21	
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.0737	0.0661	0.0208	0.0317	0.0336	0.0208	0.0213	0.0126	0.01	0.0093	0.0083	
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00024	0.00025	0.00039	0.00036	0.00027	0.00021	0.00028	0.00022	0.00019	0.00022	0.00026	
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0171	0.0174	0.0258	0.0268	0.0222	0.0247	0.0338	0.0374	0.0412	0.044	0.0483	
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000040	0.000040	0.000047	0.000049	0.000045	0.000051	0.000063	0.000069	0.000081	0.000088	0.000086	
Calcium (Ca)-Total	mg/L	-	-	0.02	4.67	4.96	7.7	7.99	8.79	8.26	10.6	11.8	13.9	14.9	15.2	
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00016	0.00013	0.00027	0.00016	0.00017	<0.00020	0.00024	0.00012	0.00016	<0.00010	0.00011	
Cobalt (Co)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00056	<0.00050	<0.00050	<0.00050	0.0023	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.171	0.148	0.102	0.156	0.116	0.081	0.116	0.074	0.043	0.061	0.065	
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.000101	0.000092	<0.000050	0.000151	0.000056	<0.000050	<0.000050	<0.000050	0.000372	<0.000050	<0.000050	
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00075	0.00071	0.00083	0.00075	0.00076	0.00093	0.00073	0.00079	0.00106	0.00129	0.00158	
Magnesium (Mg)-Total	mg/L	-	-	0.005	0.67	0.721	1.18	1.18	1.09	1.25	1.7	1.93	2.41	2.61	2.68	
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.00753	0.0103	0.0051	0.0104	0.00855	0.00568	0.00556	0.00277	0.00151	0.00209	0.00147	
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000146	0.000133	0.000264	0.000204	0.000234	0.000231	0.000318	0.000409	0.000517	0.000637	0.00068	
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	0.00298	<0.00050	<0.00050	<0.00050	0.00051	<0.00050	<0.00050	
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
Potassium (K)-Total	mg/L	-	-	0.05	0.475	0.348	0.279	0.273	0.283	0.302	0.34	0.392	0.413	0.479	0.523	
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Silicon (Si)-Total	mg/L	-	-	0.05	2.91	2.85	3.25	3.46	4.11	3.99	4.69	4.78	4.8	4.84	4.99	
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Sodium (Na)-Total	mg/L	-	-	0.05	1.07	1.2	1.54	1.51	1.52	1.64	1.9	1.99	2.2	2.24	2.42	
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.0306	0.0356	0.0493	0.0499	0.058	0.0504	0.063	0.0677	0.0759	0.082	0.0837	
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000437	0.000319	0.000373	0.000395	0.000481	0.00049	0.000607	0.000662	0.000974	0.00116	0.00122	
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0295	0.0149	0.0108	0.0116	0.0153	0.0098	0.0082	0.0063	0.005	0.0037	0.0041	
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00018	0.00018	0.00029	0.00031	0.00022	0.00021	0.00022	0.00018	0.00018	0.0002	0.00023	
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0155	0.0155	0.0254	0.026	0.0215	0.0243	0.0331	0.0371	0.0409	0.0452	0.0478	
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000040	0.000040	0.000047	0.000049	0.000045	0.000051	0.000063	0.000069	0.000081	0.000088	0.000086	
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	4.43	4.84	7.54	7.79	7.09	8.25	10.3	11.				

Table B-14. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site V17A.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	V17A	V17A	V17A	V17A	V17A	V17A	V17A
				Date Sampled Time	27-May-14 14:15	24-Jun-14 16:25	22-Jul-14 16:20	19-Aug-14 15:25	23-Sep-14 15:10	20-Oct-14 13:20	19-Nov-14 16:15
				Detection Limit							
Temperature (in-situ)	°C	-	-	-	6.4	8.9	13.2	8.0	4.3	0.6	0.0
Specific Conductivity (in-situ)	µS/cm	-	-	-	112.3	114.1	163.5	191.2	191.0	204.6	281.2
pH (in-situ)	pH	6.5 - 9.0	6.5	-	7.54	7.65	7.95	8.02	7.95	6.43	7.48
Turbidity (in-situ)	NTU	-	-	-	-	0.83	0.72	0.47	0.81	0.44	3.10
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	9.94	10.46	11.62	13.99	8.73
Conductivity (lab)	µS/cm	-	-	2	136.0	51.2	155.0	191.0	204.0	192.0	327.0
Hardness (as CaCO3)	mg/L	-	-	0.5	60.7	51.3	76.6	84.6	84.3	94.8	144
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.40	7.22	7.67	7.83	7.71	7.87	7.77
Total Suspended Solids	mg/L	-	15	1.0	2.8	<1.0	<1.0	3.4	<1.0	<1.0	1.2
Total Dissolved Solids	mg/L	-	-	3.0	83.8	66.8	95.2	108	108	122	182
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	35.6	33.9	49.5	55.4	48.9	59.5	77.1
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	0.0057	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.024
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	0.074	0.076	0.077	0.073	0.077	0.076	0.074
Nitrate (as N)	mg/L	13.0	-	0.005	0.115	0.0421	0.0533	0.0863	0.142	0.235	0.406
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013
Phosphorous (P), Total	mg/L	-	-	0.002	0.0063	0.0058	0.0026	<0.0020	<0.0020	<0.0020	0.003
Sulfate (SO4)	mg/L	-	-	0.5	32.9	20.9	32.3	38.1	41.7	47	78.5
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	3.80	3.11	3.92	3.08	2.54
Total Organic Carbon	mg/L	-	-	0.5	5.91	5.25	3.48	3.41	3.92	3.19	2.72
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.0949	0.0623	0.211	0.0364	0.0481	0.0301	0.0473
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00104	0.00092	0.00169	0.00111	0.00088	0.00089	0.0014
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0175	0.018	0.0261	0.0245	0.022	0.0211	0.0311
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000024	0.000017	0.000039	0.000018	0.000019	0.000016	0.000023
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000105	0.000091	0.000127	0.000138	0.000138	0.000152	0.000215
Calcium (Ca)-Total	mg/L	-	-	0.02	16	14.4	21.8	24.6	23.4	25.6	39.4
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00016	0.00015	0.00033	0.00013	0.00014	0.00066	0.00013
Cobalt (Co)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	0.00016	<0.00010	<0.00010	<0.00010	0.00019
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00114	0.00087	0.00091	0.00109	0.00071	0.0005	0.00054
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00200	0.00200	0.00200	0.00205	0.00204	0.00226	0.00323
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.171	0.09	0.415	0.213	0.151	0.166	0.375
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.000269	0.00021	0.00114	0.000167	0.000272	0.000072	0.000275
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.001000	0.001000	0.002266	0.002572	0.002560	0.002972	0.005061
Lithium (Li)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	0.00076	0.00064	0.00068	0.00083	0.00087
Magnesium (Mg)-Total	mg/L	-	-	0.005	4.75	3.59	5.28	6.19	6.49	7.34	12.6
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.016	0.00803	0.0202	0.0188	0.0129	0.0262	0.139
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000073	0.000076	0.000066	<0.000050	0.00007	0.000081	0.000121
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	0.00071	<0.00050	0.00075	<0.00050	0.00053	<0.00050	0.00074
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.02500	0.02500	0.07805	0.08417	0.08394	0.09178	0.12610
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	mg/L	-	-	0.05	0.366	0.268	0.273	0.324	0.366	0.313	0.431
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)-Total	mg/L	-	-	0.05	4.3	3.98	5.48	5.52	5.41	5.3	5.8
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	1.34	1.56	1.78	1.87	1.73	1.7	1.99
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.0658	0.0639	0.0969	0.104	0.101	0.104	0.159
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.00099	0.000792	0.00115	0.00122	0.00117	0.00123	0.00201
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.0482	0.0242	0.037	0.0369	0.0372	0.0492	0.0901
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0521	0.0445	0.0268	0.0205	0.0325	0.0201	0.0112
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00089	0.00085	0.00108	0.00102	0.00079	0.00078	0.00085
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0168	0.0185	0.0232	0.024	0.0226	0.0209	0.0302
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000018	0.000017	0.000016	0.000012	0.000014	0.000016	0.000017
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000105	0.000091	0.000127	0.000138	0.000138	0.000152	0.000215
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	16.3	14.3	21.9	24	23.1	25.9	37.7
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00016
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005	0.0008	0.00082	0.00054	0.0005	0.00062	0.00049	0.00034
Copper (Cu)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00200	0.00200	0.00200	0.00205	0.00204	0.00226	0.00323
Iron (Fe)-Dissolved	mg/L	0.3	-	0.01	0.091	0.065	0.126	0.16	0.114	0.117	0.143
Lead (Pb)-Dissolved (Lab Result)	mg/L	0.003	0.2	0.00005	0.000074	0.000089	0.000071	0.000076	0.000078	<0.000050	<0.000050
Lead (Pb)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.001000	0.001000	0.002266	0.002572	0.002560	0.002972	0.005061
Lithium (Li)-Dissolved	mg/L	-	-	0.0005	<0.00050	0.00059	<0.00050	0.00066	0.00067	0.00093	0.00091
Magnesium (Mg)-Dissolved	mg/L	-	-	0.005	4.84	3.78	5.32	5.97	6.45	7.29	12.2
Manganese (Mn)-Dissolved	mg/L	-	-	0.00005	0.015	0.00774	0.015	0.0176	0.0124	0.0242	0.131
Molybdenum (Mo)-Dissolved	mg/L	0.0073	0.5	0.00005	0.000066	0.000061	0.000062	<0.000050	0.000065	0.000078	0.000098
Nickel (Ni)-Dissolved (Lab Result)	mg/L	0.1	0.5	0.0005	0.00063	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00063
Nickel (Ni)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.02500	0.02500	0.07805	0.08417	0.08394	0.09178	0.12610
Phosphorus (P)-Dissolved	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Dissolved	mg/L	-	-	0.05	0.364	0.278	0.259	0.308	0.367	0.321	0.419
Selenium (Se)-Dissolved	mg/L	0.001	0.05	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)-Dissolved	mg/L	-	-	0.05	4.37	4.52	5.22	5.31	5.23	5.46	5.55
Silver (Ag)-Dissolved	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved	mg/L	-	-	0.05	1.36	1.57	1.75	1.79	1.72	1.73	1.96
Strontium (Sr)-Dissolved	mg/L	-	-	0.0002	0.0698	0.0605	0.0959	0.103	0.098	0.106	0.153
Thallium (Tl)-Dissolved	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Dissolved	mg/L	0.015	-	0.00001	0.000912	0.000743	0.001	0.00115	0.0011	0.00121	0.00185
Vanadium (V)-Dissolved	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Dissolved	mg/L	0.03	0.5	0.003	0.0475	0.023	0.0275	0.0356	0.0372	0.0514	0.0852
Zirconium (Zr) - Dissolved	mg/L	0.03	0.5								

Table B-15. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site V20A.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	V20A	V20A	V20A	V20A	V20A	V20A	V20A	V20A	V20A
				Date Sampled Time	27-May-14 11:45	24-Jun-14 15:45	22-Jul-14 12:05	19-Aug-14 11:40	23-Sep-14 23:20	21-Oct-14 12:05	19-Nov-14 13:45	22-Dec-14 13:15	20-Jan-15 10:34
				Detection Limit									
Temperature (in-situ)	°C	-	-	-	5.2	9.6	9.8	8.0	3.7	0.2	2.4	0.0	-0.1
Specific Conductivity (in-situ)	µS/cm	-	-	-	258.3	359.2	404.3	408.6	391.2	385.7	251.9	440.2	494.6
pH (in-situ)	pH	6.5 - 9.0	6.5	-	7.75	7.74	7.62	7.69	7.67	7.61	7.06	7.18	7.69
Turbidity (in-situ)	NTU	-	-	-	-	1.37	0.04	0.55	0.00	0.00	3.57	0.83	0.66
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	6.57	6.83	10.18	12.88	5.02	8.96	7.67
Conductivity (lab)	µS/cm	-	-	2	306.0	51.2	390.0	428.0	380.0	394.0	299.0	490.0	481.0
Hardness (as CaCO3)	mg/L	-	-	0.5	154	194	217	213	210	211	138	268	263
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.92	8.13	8.19	8.06	8.04	8.09	7.72	8.20	7.82
Total Suspended Solids	mg/L	-	15	1.0	<1.0	<1.0	<1.0	2	<1.0	<1.0	11.6	<1.0	2.4
Total Dissolved Solids	mg/L	-	-	3.0	178	203	232	230	215	224	182	278	288
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	178	197	235	234	208	218	124	269	287
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0156	<0.0050	<0.0050
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	0.116	0.129	0.147	0.148	0.133	0.124	0.158	0.151	0.165
Nitrate (as N)	mg/L	13.0	-	0.005	0.0105	<0.0050	0.0106	0.0087	0.0067	0.0164	<0.0050	0.0285	0.0155
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorous (P), Total	mg/L	-	-	0.002	<0.0020	0.0025	<0.0020	<0.0020	<0.0020	<0.0020	0.211	<0.0020	<0.0020
Sulfate (SO4)	mg/L	-	-	0.5	10.9	10	7.62	7.29	10.5	13.6	16	16.4	15.9
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	4.02	3.85	3.99	3.66	1.47	3.34	3.54
Total Organic Carbon	mg/L	-	-	0.5	4.62	4.29	4.03	3.90	3.80	3.50	39.50	3.45	4.04
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.003	<0.0030	0.0038	0.0037	<0.0030	<0.0030	0.0152	0.0067	0.0038
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00031	0.00039	0.00057	0.0005	0.00043	0.00035	0.00062	0.00032	0.00046
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0628	0.0745	0.0903	0.0828	0.0736	0.0673	0.0776	0.11	0.103
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	<0.010	<0.010
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.00047	<0.000010	<0.000010
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000227	0.000275	0.000301	0.000297	0.000293	0.000295	0.000207	0.000359	0.000354
Calcium (Ca)-Total	mg/L	-	-	0.02	42.9	51.3	59.9	56.8	56.4	55.7	39.3	71.7	71.4
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	<0.00010	0.00019	<0.00010	0.00011	0.00012	<0.00010	0.00037	0.00013	<0.00010
Cobalt (Co)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00236	<0.00050	<0.00050
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00342	0.00400	0.00400	0.00400	0.00400	0.00400	0.00311	0.00400	0.00400
Iron (Fe)-Total	mg/L	0.3	-	0.01	<0.010	0.012	0.016	0.017	0.024	<0.010	0.123	0.04	0.059
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000112	<0.000050	<0.000050
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.005513	0.007000	0.007000	0.007000	0.007000	0.007000	0.004794	0.007000	0.007000
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00195	0.00265	0.00335	0.00342	0.00343	0.00311	0.00238	0.004	0.00448
Magnesium (Mg)-Total	mg/L	-	-	0.005	12.6	15.3	17.5	16.4	17.6	16.4	10	21.5	22.3
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.00241	0.00323	0.0078	0.00854	0.0138	0.00528	0.012	0.0349	0.0621
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000196	0.000188	0.00019	0.000143	0.000161	0.000202	0.000111	0.000215	0.000163
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0009	<0.00050	<0.00050
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.13270	0.15000	0.15000	0.15000	0.15000	0.15000	0.12208	0.15000	0.15000
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	mg/L	-	-	0.05	0.542	0.444	0.418	0.731	0.911	0.485	0.582	0.563	0.613
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.00027	0.0003	0.0004	0.00033	0.0003	0.00036	0.00018	0.00048	0.00022
Silicon (Si)-Total	mg/L	-	-	0.05	4.31	4.69	5.41	5.18	5.1	4.81	5.4	6.18	6.89
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	1.6	2.01	2.4	2.36	2.29	2.11	2.43	3.11	3.68
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.218	0.263	0.319	0.301	0.283	0.265	0.197	0.363	0.365
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000687	0.00075	0.000932	0.00092	0.000874	0.00106	0.000303	0.00119	0.000875
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.0031	0.0047	0.0046	0.0047	0.0047	0.0049	0.12	0.0135	0.015
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.002	0.0021	0.0017	0.0018	0.0014	0.0012	0.0014	0.0023	0.002
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00033	0.00038	0.00049	0.00054	0.00039	0.00037	0.00043	0.00032	0.00041
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.063	0.0771	0.0901	0.0823	0.0709	0.0681	0.0772	0.109	0.1
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.0002	<0.000010	<0.000010
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000227	0.000275	0.000301	0.000297	0.000293	0.000295	0.000207	0.000359	0.000354
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	39.8	52.5	59.1	58	56.2	55.8	38.8	71.6	70.5
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00022	<0.00010	<0.00010
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005	0.00029	0.00037	0.0002	0.00023	0.00027	0.00026	0.00095	<0.00020	<0.00020
Copper (Cu)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00342	0.00400	0.00400	0.00400	0.00400	0.00400	0.00311	0.00400	0.00400
Iron (Fe)-Dissolved	mg/L	0.3	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.016	0.025
Lead (Pb)-Dissolved (Lab Result)	mg/L	0.003	0.2	0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lead (Pb)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.005513	0.007000	0.007000	0.007000	0.007000	0.007000	0.004794	0.007000	0.007000
Lithium (Li)-Dissolved	mg/L	-	-	0.0005	0.00207	0.00311	0.00342	0.00356	0.00337	0.00315	0.00249	0.00426	0.00446
Magnesium (Mg)-Dissolved	mg/L	-	-	0.005	13.3	15.3	16.9	16.7	17	17.3	9.94	21.6	21.3
Manganese (Mn)-Dissolved	mg/L	-	-	0.00005	0.00116	0.00126	0.00492	0.00559	0.00257	0.00364	0.000677	0.0287	0.0576
Molybdenum (Mo)-Dissolved	mg/L	0.0073	0.5	0.00005	0.000156	0.000159	0.000175	0.000123	0.000154	0.000214	0.000091	0.000198	0.000136
Nickel (Ni)-Dissolved (Lab Result)	mg/L	0.1	0.5	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00082	<0.00050	<0.00050
Nickel (Ni)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.13270	0.15000	0.15000	0.15000	0.15000	0.15000	0.12208	0.15	

Applied Guidelines: Federal CCME Canadian Environmental Quality Guidelines - CCME - Freshwater Aquatic Life
Faro Effluent Quality Standards

Color Key:	<i>Exceeds CCME Guideline</i> <i>Exceeds Faro Effluent Quality Standards</i> <i>Exceeds both CCME and Faro Standards</i> <i>Exceeds Hardness Dependent Calculated Guideline (CCME)</i>
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Table B-16. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site V8.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	V8	V8	V8	V8	V8	V8	V8	V8	V8	V8	V8	V8
				Date Sampled Time	28-May-14 8:05	25-Jun-14 8:45	21-Jul-14 18:45	19-Aug-14 18:20	23-Sep-14 12:10	21-Oct-14 13:00	20-Nov-14 13:00	22-Dec-14 9:35	20-Jan-15 9:15	24-Feb-15 17:35	24-Mar-15 18:20	
				Detection Limit												
Temperature (in-situ)	°C	-	-	-	2.3	6.3	11.0	9.6	3.1	1.0	0.0	0.1	-0.1	0.0	0.1	
Specific Conductivity (in-situ)	µS/cm	-	-	-	168.7	313.4	609.2	695.6	517.1	472.9	55.7	570.1	685.9	722.2	756.9	
pH (in-situ)	pH	6.5 - 9.0	6.5	-	8.01	8.12	8.45	8.35	8.23	7.54	7.96	7.82	7.64	8.03	7.85	
Turbidity (in-situ)	NTU	-	-	-	-	7.03	7.13	1.80	0.21	1.68	7.43	1.43	2.46	2.14	1.78	
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	10.07	12.80	12.52	15.07	19.15	15.35	-	11.56	-	
Conductivity (lab)	µS/cm	-	-	2	201.0	51.2	604.0	719.0	477.0	505.0	603.0	641.0	682.0	688.0	707.0	
Hardness (as CaCO3)	mg/L	-	-	0.5	97.3	160	323	361	257	243	303	342	354	386	430	
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.68	7.94	8.17	8.17	7.96	8.15	8.13	8.29	8.12	8.03	8.41	
Total Suspended Solids	mg/L	-	15	1.0	19.6	9.2	17.8	3	4.4	3.4	14.2	1.4	3	2.8	2	
Total Dissolved Solids	mg/L	-	-	3.0	121	194	404	460	322	287	357	403	430	454	498	
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	75	91.6	143	125	120	168	204	216	238	246	271	
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	<0.0050	0.006	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	0.57	0.64	0.75	0.9	0.93	1.03	1.12	
Fluoride (F)	mg/L	0.12	-	0.02	0.079	0.1	0.148	0.15	0.135	0.139	0.148	0.152	0.156	0.154	0.152	
Nitrate (as N)	mg/L	13.0	-	0.005	0.0512	0.0503	0.0999	0.0997	0.0899	0.12	0.196	0.255	0.272	0.286	0.308	
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorous (P), Total	mg/L	-	-	0.002	0.018	0.0121	0.0148	0.0034	0.0031	0.0022	0.011	0.0024	<0.0020	0.0053	0.0021	
Sulfate (SO4)	mg/L	-	-	0.5	35.9	77.6	200	253	153	95.4	124	149	158	167	181	
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	2.94	2.39	3.72	3.23	2.54	2.32	2.22	2.14	1.94	
Total Organic Carbon	mg/L	-	-	0.5	4.95	3.81	3.03	2.48	3.88	3.41	2.62	2.33	2.45	2.27	2.03	
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.458	0.218	0.309	0.0501	0.091	0.0947	0.237	0.0314	0.0233	0.0495	0.0449	
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	0.00011	0.00011	0.00015	0.00013	0.0001	0.00013	0.00012	0.00013	0.00015	0.00014	0.00019	
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00094	0.0007	0.00099	0.00051	0.00052	0.00057	0.00071	0.00043	0.00044	0.0005	0.00046	
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0358	0.0413	0.0735	0.0755	0.0515	0.0543	0.0622	0.0665	0.0698	0.0728	0.0775	
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000054	0.000072	0.000181	0.000103	0.000105	0.000039	0.000054	0.000043	0.000052	0.000064	0.00007	
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000155	0.000234	0.000370	0.000370	0.000347	0.000331	0.000370	0.000370	0.000370	0.000370	0.000370	
Calcium (Ca)-Total	mg/L	-	-	0.02	24.6	43.6	86.2	91.9	68.4	59.8	70.5	80.6	85.9	91.7	100	
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00132	0.00067	0.0012	0.00023	0.00042	0.00033	0.00072	0.00022	0.00015	0.00032	0.00027	
Cobalt (Co)-Total	mg/L	-	-	0.0001	0.00048	0.00022	0.00046	<0.00010	0.00014	0.00015	0.00025	<0.00010	<0.00010	0.00011	<0.00010	
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00224	0.00156	0.00367	0.00092	0.00099	0.00094	0.00125	0.00069	0.00064	0.00072	0.00073	
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00231	0.00353	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.793	0.386	0.549	0.112	0.177	0.34	0.4	0.069	0.048	0.097	0.076	
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.00199	0.000848	0.00181	0.000244	0.000242	0.000285	0.000729	0.000103	0.000081	0.000176	0.000119	
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.003073	0.005787	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00187	0.00341	0.00683	0.00726	0.00599	0.00375	0.00426	0.0046	0.00604	0.00564	0.00683	
Magnesium (Mg)-Total	mg/L	-	-	0.005	9.13	15	28.9	33.4	23.6	24.2	28.9	34	37.3	39.4	45.3	
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.031	0.0282	0.0268	0.0304	0.121	0.015	0.0238	0.00939	0.00768	0.0118	0.00893	
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000456	0.000554	0.000781	0.000663	0.000706	0.000935	0.000957	0.00115	0.00126	0.0014	0.00146	
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	0.00215	0.00147	0.00553	0.00112	0.00124	0.00145	0.00184	0.00148	0.00154	0.00189	0.00224	
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.09361	0.13661	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
Potassium (K)-Total	mg/L	-	-	0.05	0.677	0.722	1.1	1.23	0.945	0.881	1.01	1.14	1.23	1.33	1.41	
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.00039	0.00048	0.00085	0.00079	0.00069	0.00099	0.00111	0.00146	0.00164	0.00171	0.00201	
Silicon (Si)-Total	mg/L	-	-	0.05	3.78	4.29	4.55	4.45	4.73	4.85	4.94	4.9	5.12	5.13	5.5	
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	0.000011	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Sodium (Na)-Total	mg/L	-	-	0.05	1.48	2.09	3.49	3.68	2.98	3.05	3.41	3.95	4.3	4.66	5.14	
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.102	0.179	0.346	0.373	0.271	0.238	0.281	0.335	0.348	0.371	0.414	
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	0.000013	0.000021	0.00004	0.000048	0.000036	0.000017	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium (Ti)-Total	mg/L	-	-	0.01	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.00171	0.00212	0.00321	0.00313	0.00282	0.00455	0.00597	0.00717	0.00809	0.0086	0.00981	
Vanadium (V)-Total	mg/L	-	-	0.001	0.0012	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.0138	0.0164	0.034	0.0163	0.0146	0.0093	0.0118	0.0088	0.009	0.0109	0.0131	
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0228	0.0125	0.0069	0.0039	0.0099	0.0045	0.0028	0.0018	0.0022	<0.0010	0.0016	
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	0.0001	<0.00010	<0.00010	<0.00010	0.00011	0.00012	0.00013	0.00013	0.00015	
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00035	0.00038	0.00051	0.00039	0.0004	0.00043	0.00038	0.00039	0.0004	0.00037	0.0004	
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0259	0.0362	0.0682	0.0696	0.0511	0.0519	0.0604	0.067	0.0679	0.0714	0.0776	
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000023	0.00005	0.000052	0.000086	0.000092	0.000031	0.000038	0.000039	0.000048	0.000054	0.000067	
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000155	0.000234	0.000370	0.000370	0.000347	0.000331	0.000370	0.000370	0.000370	0.000370	0.000370	
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	24.1	41.1	81.5	93.3	64.2	58.4	72	80.5	82.3	89.3	98.7	
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005	0.00108	0.00094	0.00067	0.00066	0.0008	0.00067	0.00064	0.0006	0.00058	0.0005	0.00051	

Table B-17. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site VGMAIN

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	VGMAIN	VGMAIN	VGMAIN	VGMAIN	VGMAIN	VGMAIN	VGMAIN	VGMAIN	VGMAIN	VGMAIN	VGMAIN	VGMAIN
				Date Sampled Time	28-May-14 9:30	25-Jun-14 10:00	22-Jul-14 18:24	19-Aug-14 08:25	23-Sep-14 17:00	20-Oct-14 17:10	20-Nov-14 14:30	23-Dec-14 11:55	20-Jan-15 8:28	26-Feb-15 7:00	25-Mar-15 12:15	
				Detection Limit												
Temperature (in-situ)	°C	-	-	-	2.3	6.4	12.0	6.6	4.8	2.1	0.0	0.2	-0.1	0.1	0.1	
Specific Conductivity (in-situ)	µS/cm	-	-	-	131.7	294.0	698.0	780.0	595.3	437.0	497.0	608.9	633.3	658.9	683.8	
pH (in-situ)	pH	6.5 - 9.0	6.5	-	7.96	8.11	8.26	7.93	8.18	8.36	7.96	7.84	7.40	7.96	8.02	
Turbidity (in-situ)	NTU	-	-	-	-	3.99	0.56	0.57	0.17	0.69	0.38	0.27	0.72	0.16	0.27	
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	10.44	15.00	11.84	14.39	18.92	n/a	15.40	20.20	-	
Conductivity (lab)	µS/cm	-	-	2	154.0	51.2	670.0	819.0	557.0	443.0	562.0	601.0	616.0	637.0	678.0	
Hardness (as CaCO3)	mg/L	-	-	0.5	76.8	148	365	410	291	221	266	316	372	355	362	
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.65	7.78	8.01	7.98	7.91	8.17	8.14	8.29	8.09	8.04	8.40	
Total Suspended Solids	mg/L	-	15	1.0	7.8	4.2	1.4	<1.0	1.4	1	1	<1.0	<1.0	1.2	<1.0	
Total Dissolved Solids	mg/L	-	-	3.0	96.9	184	474	538	382	269	333	379	413	415	444	
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	55.8	73.6	110	101	92.1	141	168	180	197	198	223	
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Fluoride (F)	mg/L	0.12	-	0.02	0.063	0.089	0.134	0.135	0.119	0.108	0.123	0.125	0.125	0.125	0.128	
Nitrate (as N)	mg/L	13.0	-	0.005	0.0402	0.0543	0.165	0.163	0.118	0.142	0.222	0.293	0.306	0.344	0.393	
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorous (P), Total	mg/L	-	-	0.002	0.0129	0.0052	0.0023	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0022	<0.0020	
Sulfate (SO4)	mg/L	-	-	0.5	30.5	82.7	274	328	219	102	134	157	160	168	179	
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	2.20	1.88	2.77	3.24	2.09	1.76	2.34	1.81	1.71	
Total Organic Carbon	mg/L	-	-	0.5	4.45	3.17	2.18	2.18	2.74	2.96	2.42	1.80	2.42	1.93	1.65	
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.167	0.093	0.0162	0.0137	0.026	0.0106	0.0101	0.0039	0.005	<0.0030	0.0049	
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	0.00012	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00013	0.00012	0.00014	
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00064	0.00052	0.00046	0.00034	0.00036	0.00041	0.00038	0.00039	0.00048	0.0004	0.00041	
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0233	0.0332	0.0685	0.0652	0.0472	0.0415	0.0513	0.058	0.0711	0.0658	0.067	
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000039	0.000079	0.000088	0.000152	0.000155	0.00003	0.00003	0.000031	0.000037	0.000034	0.000038	
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000127	0.000219	0.000370	0.000370	0.000370	0.000306	0.000357	0.000370	0.000370	0.000370	0.000370	
Calcium (Ca)-Total	mg/L	-	-	0.02	18.8	40.5	93.5	115	75.2	54.8	64.4	75	92.7	85.4	88.3	
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00045	0.00029	0.00011	0.00018	0.00016	0.00012	0.00011	0.00014	0.00017	0.00012	0.00012	
Cobalt (Co)-Total	mg/L	-	-	0.0001	0.0002	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00261	0.00139	0.00066	0.00073	0.00076	0.00071	0.00071	0.00063	0.00065	0.00051	0.0007	
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00200	0.00331	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.339	0.166	0.04	0.04	0.064	0.049	0.035	0.011	0.015	<0.010	<0.010	
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.0013	0.00181	0.000154	0.000225	0.000158	0.000107	0.00014	<0.000050	0.00007	<0.000050	<0.000050	
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.002274	0.005241	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00106	0.00298	0.00724	0.00839	0.00576	0.00332	0.00329	0.00337	0.00519	0.00413	0.00444	
Magnesium (Mg)-Total	mg/L	-	-	0.005	6.54	12.8	31.1	34.4	26.3	20.9	25.4	29.5	37.7	34.6	35.6	
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.0272	0.0237	0.0121	0.0597	0.216	0.00897	0.00946	0.00338	0.00403	0.0028	0.00401	
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000263	0.00038	0.00049	0.000405	0.000441	0.000637	0.000684	0.000785	0.00101	0.0009	0.000915	
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	0.00103	0.00087	0.00067	0.0007	0.0007	0.00061	0.0006	0.00051	0.0007	0.00062	0.00092	
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.07820	0.12875	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
Potassium (K)-Total	mg/L	-	-	0.05	0.565	0.64	1.09	1.17	0.996	0.768	0.886	0.958	1.21	1.08	1.11	
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.00019	0.00026	0.00045	0.00037	0.00037	0.00048	0.00065	0.00074	0.00095	0.00086	0.00088	
Silicon (Si)-Total	mg/L	-	-	0.05	3.25	3.66	3.86	3.93	3.9	4.56	4.61	4.59	5.72	4.97	4.93	
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Sodium (Na)-Total	mg/L	-	-	0.05	1.2	1.9	3.4	3.58	3.13	2.79	3.2	3.47	4.44	4.02	4.28	
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.0762	0.168	0.384	0.414	0.303	0.21	0.252	0.295	0.362	0.332	0.343	
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	0.00001	0.000022	0.000057	0.000066	0.000061	0.000013	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.00145	0.00196	0.003	0.00299	0.00263	0.00456	0.00598	0.00743	0.00969	0.00888	0.00978	
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.0128	0.0219	0.0184	0.0234	0.0189	0.0107	0.0115	0.0094	0.011	0.0103	0.0116	
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0272	0.0142	0.0048	0.0039	0.0084	0.0054	0.002	0.0026	0.002	0.0015	0.0018	
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	0.0001	0.0001	
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00029	0.0003	0.00037	0.00034	0.0003	0.00036	0.00034	0.00035	0.00044	0.00038	0.0004	
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0208	0.03	0.0677	0.0692	0.0462	0.0421	0.0517	0.0598	0.0699	0.0652	0.0673	
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000019	0.000057	0.000072	0.000148	0.00015	0.000031	0.000027	0.000025	0.000032	0.000033	0.000033	
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000127	0.000219	0.000370	0.000370	0.000370	0.000306	0.000357	0.000370	0.000370	0.000370	0.000370	
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	19.7	38.6	95.2	109	75.1	54.2	65.6	76.6	89.2	84.7	87.3	
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005	0.00103	0.00084	0.00									

Table B-18. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site VR.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	VR	VR	VR	VR	VR	VR	VR	VR	VR	VR
				Date Sampled Time	27-May-14 14:35	24-Jun-14 16:40	22-Jul-14 16:42	19-Aug-14 15:45	23-Sep-14 15:20	20-Oct-14 13:45	19-Nov-14 16:30	21-Dec-14 16:50	19-Jan-15 15:00	25-Feb-15 18:50
				Detection Limit										
Temperature (in-situ)	°C	-	-	-	2.7	4.0	6.2	5.6	3.2	0.7	0.0	-0.1	-0.1	0.0
Specific Conductivity (in-situ)	µS/cm	-	-	-	39.2	44.8	62.9	71.8	64.9	67.1	71.6	75.2	92.9	89.8
pH (in-situ)	pH	6.5 - 9.0	6.5	-	7.47	7.33	7.70	7.70	7.83	7.04	7.83	7.81	-	8.09
Turbidity (in-situ)	NTU	-	-	-	-	0.75	4.80	0.07	0.00	0.26	1.11	0.39	0.30	0.22
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	11.53	11.33	11.82	14.02	9.44	11.98	-	15.57
Conductivity (lab)	µS/cm	-	-	2	48.8	51.2	62.0	76.5	68.7	68.0	42.6	87.2	107.0	94.3
Hardness (as CaCO3)	mg/L	-	-	0.5	20.4	19.1	28	32.5	27.5	32.4	35.1	38.4	41.8	40.2
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.23	7.48	7.41	7.73	7.62	7.68	7.67	7.72	7.50	7.40
Total Suspended Solids	mg/L	-	15	1.0	<1.0	5.4	<1.0	<1.0	20.8	<1.0	5	<1.0	1.2	<1.0
Total Dissolved Solids	mg/L	-	-	3.0	30.6	28.1	36.7	41.1	36.4	39.5	44.7	47.1	56.6	49.5
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	19.5	18.7	27.6	31.3	25.5	27.7	32.8	35.3	45.1	38.5
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	0.0053	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0168	<0.0050	<0.0050
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	0.063	0.064	0.064	0.064	0.065	0.061	0.068	0.079	0.08	0.068
Nitrate (as N)	mg/L	13.0	-	0.005	0.0057	<0.0050	<0.0050	<0.0050	<0.0050	0.0106	0.0926	0.091	0.137	0.126
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorous (P), Total	mg/L	-	-	0.002	0.0037	0.0124	<0.0020	<0.0020	<0.0020	0.0039	<0.0020	<0.0020	<0.0020	0.0023
Sulfate (SO4)	mg/L	-	-	0.5	4.15	3.49	4.94	5.34	5.7	6.13	6.83	7.23	8.87	6.67
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	3.10	3.02	3.47	2.82	2.39	2.15	2.40	2.01
Total Organic Carbon	mg/L	-	-	0.5	5.45	4.71	3.10	3.07	3.41	2.79	2.91	2.12	2.38	2.11
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.0525	0.276	0.0319	0.0245	0.0654	0.0214	0.0997	0.0298	0.0286	0.02
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	<0.00010	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00024	0.00059	0.0003	0.00023	0.00024	0.00018	0.0003	0.00018	0.00024	0.00026
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0193	0.0192	0.0275	0.0313	0.0258	0.0248	0.0317	0.0333	0.0407	0.0343
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.00001	0.000026	0.000012	0.00001	0.000014	0.000011	0.000023	0.000012	0.000016	0.000021
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000042	0.000040	0.000055	0.000062	0.000054	0.000062	0.000066	0.000072	0.000077	0.000074
Calcium (Ca)-Total	mg/L	-	-	0.02	5.99	6.16	8.85	10.1	8.87	9.2	11.2	12.3	14.5	12.3
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00012	0.00041	<0.00010	0.00011	0.00016	0.00012	0.00036	0.00012	0.00013	0.0005
Cobalt (Co)-Total	mg/L	-	-	0.0001	<0.00010	0.00017	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.0012	0.00103	0.00061	0.00059	0.00065	0.00132	0.00065	<0.00050	0.00142	0.00063
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.035	0.323	0.019	0.017	0.062	0.014	0.106	0.03	0.034	0.024
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.000095	0.00127	0.000063	<0.000050	0.000227	0.000069	0.000369	0.000068	0.000131	0.000082
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000
Lithium (Li)-Total	mg/L	-	-	0.0005	<0.00050	0.00083	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium (Mg)-Total	mg/L	-	-	0.005	1.08	1.08	1.64	1.76	1.5	1.6	2.04	2.17	2.62	2.24
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.00079	0.0113	0.000826	0.000772	0.00261	0.000698	0.00458	0.00157	0.00179	0.00112
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000098	0.000102	0.000135	0.000075	0.000115	0.000105	0.000144	0.000157	0.000168	0.000147
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500	0.02500
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	mg/L	-	-	0.05	0.376	0.305	0.306	0.358	0.369	0.323	0.41	0.413	0.557	0.551
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)-Total	mg/L	-	-	0.05	3.83	4.69	4.68	4.92	4.68	4.63	5.07	4.89	5.89	5.04
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	0.000011	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	1.2	1.2	1.64	1.62	1.53	1.55	1.7	1.72	2.07	1.78
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.0328	0.0355	0.0488	0.0547	0.049	0.0486	0.0588	0.0644	0.0748	0.067
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000451	0.000575	0.000341	0.000357	0.000387	0.000353	0.000474	0.00045	0.000462	0.000316
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	<0.0030	0.0043	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0061
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.04	0.0317	0.0199	0.0182	0.0213	0.0162	0.0128	0.0102	0.0092	0.0089
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00024	0.00019	0.00021	0.00022	0.00018	0.00018	0.00017	0.00014	0.00018	0.00021
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0199	0.0185	0.0268	0.0315	0.0251	0.025	0.0303	0.0329	0.0358	0.0344
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	<0.000010	<0.000010	0.000011	<0.000010	0.00001	<0.000010	0.000013	0.000011	0.000012	0.000016
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000042	0.000040	0.000055	0.000062	0.000054	0.000062	0.000066	0.000072	0.000077	0.000074
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	6.31	5.94	8.6	10.1	8.55	10.3	10.8	11.9	13	12.4
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00018
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005	0.0008	0.00068	0.00049	0.00052	0.00057	0.00044	0.00041	0.00036	0.00035	0.00042
Copper (Cu)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200
Iron (Fe)-Dissolved	mg/L	0.3	-	0.01	0.017	0.012	<0.010	<0.010	0.017	<0.010	<0.010	<0.010	<0.010	<0.010
Lead (Pb)-Dissolved (Lab Result)	mg/L	0.003	0.2	0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lead (Pb)-Diss. (Hardness Adjusted Guideline)	mg/L													

Table B-19. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site VW1.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID Date Sampled Time	VW1 28-May-14 18:20	VW1 24-Jun-14 18:50	VW1 22-Jul-14 14:17	VW1 19-Aug-14 17:50	VW1 23-Sep-14 16:25	VW1 20-Oct-14 16:30	VW1 20-Nov-14 12:00	VW1 22-Dec-14 9:00	VW1 20-Jan-15 17:55
				Detection Limit									
Temperature (in-situ)	°C	-	-	-	5.8	7.3	8.6	8.2	3.4	1.2	0.0	-0.1	-0.1
Specific Conductivity (in-situ)	µS/cm	-	-	-	208.9	256.3	336.8	355.5	331.7	357.3	66.5	428.7	481.5
pH (in-situ)	pH	6.5 - 9.0	6.5	-	8.19	8.11	8.23	8.12	8.14	8.18	7.76	7.25	7.51
Turbidity (in-situ)	NTU	-	-	-	-	23.40	22.00	1.76	3.04	32.90	2.40	2.43	3.10
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	11.46	12.96	12.25	14.37	4.66	14.79	13.20
Conductivity (lab)	µS/cm	-	-	2	247.0	51.2	317.0	361.0	321.0	367.0	439.0	461.0	508.0
Hardness (as CaCO3)	mg/L	-	-	0.5	120	130	174	176	164	180	215	237	256
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.92	7.84	8.02	8.19	8.02	8.07	8.16	8.24	7.85
Total Suspended Solids	mg/L	-	15	1.0	33.6	67.6	30.8	12.8	5.2	35	6	3.6	7.8
Total Dissolved Solids	mg/L	-	-	3.0	147	147	196	203	187	209	246	274	311
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	106	103	149	153	136	156	179	193	211
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	0.0054	<0.0050	<0.0050	<0.0050	0.0058	0.0075	0.0081	0.0075
Chloride (Cl)	mg/L	120	-	0.5	0.52	0.67	0.71	0.78	1.01	1.13	1.3	1.36	1.41
Fluoride (F)	mg/L	0.12	-	0.02	0.126	0.141	0.17	0.18	0.152	0.162	0.168	0.175	0.19
Nitrate (as N)	mg/L	13.0	-	0.005	0.0662	0.0193	0.0241	0.015	0.0525	0.108	0.155	0.185	0.197
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorous (P), Total	mg/L	-	-	0.002	0.0161	0.0624	0.0466	0.025	0.0067	0.0223	0.0044	0.0038	<0.0020
Sulfate (SO4)	mg/L	-	-	0.5	32.9	30.6	37.7	41.3	39.4	43.8	55.1	66	85.9
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	4.03	3.53	4.61	4.07	3.15	2.88	2.49
Total Organic Carbon	mg/L	-	-	0.5	5.43	5.56	4.15	3.74	4.64	4.37	3.09	2.91	2.65
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.787	1.48	0.234	0.208	0.117	0.998	0.0878	0.0681	0.0335
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	0.00011	0.00016	0.0001	<0.00010	<0.00010	0.00012	<0.00010	0.00012	<0.00010
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00143	0.00205	0.00104	0.00106	0.00077	0.00139	0.00068	0.00073	0.00055
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0555	0.0713	0.0673	0.0711	0.0546	0.0718	0.0765	0.0845	0.0884
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000036	0.000057	0.000029	0.000026	0.000018	0.000038	0.000018	0.000021	0.000023
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000184	0.000197	0.000251	0.000253	0.000239	0.000258	0.000299	0.000324	0.000346
Calcium (Ca)-Total	mg/L	-	-	0.02	27.5	34.7	44.6	46.9	42.7	46	55.1	62.6	67.9
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00171	0.00337	0.00055	0.0006	0.00036	0.00235	0.00033	0.00024	0.00016
Cobalt (Co)-Total	mg/L	-	-	0.0001	0.00062	0.00112	0.00027	0.00025	0.00014	0.00067	0.00014	0.00014	<0.00010
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00277	0.0037	0.00186	0.00115	0.00163	0.0024	0.0007	0.00067	0.0006
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00276	0.00296	0.00380	0.00383	0.00361	0.00391	0.00400	0.00400	0.00400
Iron (Fe)-Total	mg/L	0.3	-	0.01	1.23	2.33	0.434	0.442	0.257	1.49	0.217	0.242	0.123
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.00151	0.00248	0.000832	0.000631	0.000254	0.00116	0.000295	<0.00030	0.000094
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.004013	0.004443	0.006440	0.006534	0.005972	0.006724	0.007000	0.007000	0.007000
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00251	0.00413	0.00044	0.00343	0.00284	0.00431	0.00342	0.00285	0.00353
Magnesium (Mg)-Total	mg/L	-	-	0.005	10.2	11.7	14.8	15.3	13.9	15.8	17.6	19.9	22.5
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.0433	0.0598	0.0422	0.0579	0.0345	0.0555	0.0572	0.101	0.121
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000331	0.000511	0.000549	0.00066	0.000614	0.000668	0.000534	0.000586	0.000529
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	0.00244	0.00396	0.0012	0.00111	0.00082	0.0027	0.00071	0.00071	0.00069
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.10978	0.11667	0.14560	0.14687	0.13920	0.14940	0.15000	0.15000	0.15000
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	mg/L	-	-	0.05	0.787	0.875	0.706	0.832	0.757	0.933	0.821	0.894	0.96
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.00028	0.00026	0.00026	0.00022	0.00027	0.00035	0.0003	0.00034	0.00034
Silicon (Si)-Total	mg/L	-	-	0.05	5.19	6.48	5.14	5.24	5.01	6.23	5.13	5.23	5.38
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	0.000019	<0.000010	<0.000010	<0.000010	0.000011	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	2.06	2.37	2.97	3.29	2.78	3.02	3.33	3.64	4.1
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.135	0.181	0.222	0.232	0.208	0.222	0.261	0.296	0.314
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	0.000012	0.000022	<0.000010	<0.000010	<0.000010	0.000013	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.01	0.017	0.036	<0.010	<0.010	<0.010	0.025	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.00157	0.00158	0.0022	0.00235	0.00223	0.00266	0.0033	0.00379	0.00435
Vanadium (V)-Total	mg/L	-	-	0.001	0.002	0.0036	<0.0010	<0.0010	<0.0010	0.0025	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.0106	0.0153	0.0073	0.0063	0.0077	0.0101	0.0074	0.0059	0.0053
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0137	0.0116	0.0069	0.0068	0.0107	0.0068	0.0028	0.0032	0.0023
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00066	0.00066	0.00071	0.00084	0.00063	0.00056	0.00058	0.00052	0.00045
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0438	0.0444	0.0593	0.0668	0.0534	0.0547	0.0725	0.0826	0.0875
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000012	<0.000010	0.000013	0.000011	0.000014	0.000012	0.000015	0.000017	0.000017
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000184	0.000197	0.000251	0.000253	0.000239	0.000258	0.000299	0.000324	0.000346
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	30.7	33.8	44.6	45.7	42.5	46.3	55.2	62.1	67.1
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005	0.00096	0.00096	0.0007	0.00064	0.00077	0.0006	0.0005	0.00051	0.00043
Copper (Cu)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00276	0.00296	0.00380	0.00383	0.00361	0.00391	0.00400	0.00400	0.00400
Iron (Fe)-Dissolved	mg/L	0.3	-	0.01	0.054	0.047	0.064	0.078	0.073	0.04	0.049	0.062	0.048
Lead (Pb)-Dissolved (Lab Result)	mg/L	0.003	0.2	0.00005	0.000067	0.000101	<0.000050	<0.000050	0.000131	<0.000050	<0.000050	<0.000050	<0.000050
Lead (Pb)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.004013	0.004443	0.006440	0.006534	0.005972	0.006724	0.007000	0.007000	0.007000
Lithium (Li)-Dissolved	mg/L	-	-	0.0005	0.00201	0.00232	0.00316	0.0033	0.0029	0.00316	0.00346	0.00308	0.0034
Magnesium (Mg)-Dissolved	mg/L	-	-	0.005	10.5	11.2	15.3	15.1	14.1	15.6	18.6	19.8	21.6
Manganese (Mn)-Dissolved	mg/L	-	-	0.00005	0.0206	0.0182	0.0302	0.0433	0.0302	0.0343	0.0519	0.0935	0.113
Molybdenum (Mo)-Dissolved	mg/L	0.0073	0.5	0.00005	0.000344	0.000449	0.000563	0.000653	0.000588	0.000617	0.000507	0.000457	0.000478
Nickel (Ni)-Dissolved (Lab Result)	mg/L	0.1	0.5	0.0005	0.00064	0.00057	0.00051	0.00058	0.00057	<0.00050	<0.00050	0.00055	0.00051
Nickel (Ni)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.10978	0.11667	0.14560	0.14687	0.13920	0.14940	0.15000	0.15000	0.15000
Phosphorus (P)-Dissolved	mg/L	-	-	0.3	<0.30	<0.30							

Table B-20. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site VW2.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	VW2	VW2	VW2	VW2	VW2	VW2	VW2	VW2	VW2	VW2	VW2
				Date Sampled Time	28-May-14 18:40	25-Jun-14 8:15	21-Jul-14 18:25	19-Aug-14 18:05	23-Sep-14 13:30	20-Oct-14 16:45	19-Nov-14 19:10	22-Dec-14 8:30	20-Jan-15 18:20	26-Feb-15 11:30	24-Mar-15 17:45
				Detection Limit											
Temperature (in-situ)	°C	-	-	-	3.2	2.1	3.4	3.6	2.0	1.0	0.5	0.1	0.0	0.0	0.0
Specific Conductivity (in-situ)	µS/cm	-	-	-	480.3	621.8	645.5	676.6	665.6	168.2	638.2	668.4	752.7	674.1	779.4
pH (in-situ)	pH	6.5 - 9.0	6.5	-	8.44	8.17	8.40	8.30	8.37	7.75	8.12	7.16	7.93	8.06	8.09
Turbidity (in-situ)	NTU	-	-	-	-	1.21	0.31	0.00	0.00	0.06	0.08	0.25	0.17	0.40	0.06
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	12.44	14.97	12.83	14.18	9.93	14.93	13.10	16.10	-
Conductivity (lab)	µS/cm	-	-	2	550.0	51.2	619.0	691.0	617.0	644.0	717.0	692.0	727.0	745.0	754.0
Hardness (as CaCO3)	mg/L	-	-	0.5	316	356	367	364	367	374	402	411	409	435	446
pH (lab)	pH	6.5 - 9.0	6.5	0.1	8.28	8.35	8.24	8.47	8.31	8.42	8.29	8.37	8.18	8.05	8.40
Total Suspended Solids	mg/L	-	15	1.0	1	<1.0	<1.0	<1.0	1.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Dissolved Solids	mg/L	-	-	3.0	339	385	398	400	401	409	406	448	459	476	493
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	236	282	295	293	299	304	272	318	330	334	352
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	0.0051	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	0.154	0.16	0.157	0.153	0.154	0.151	0.158	0.175	0.18	0.184	0.191
Nitrate (as N)	mg/L	13.0	-	0.005	0.209	0.154	0.143	0.12	0.115	0.149	0.192	0.215	0.233	0.233	0.241
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorous (P), Total	mg/L	-	-	0.002	0.0107	0.0105	0.0091	0.0074	0.03	0.0061	0.0134	0.0072	0.0102	0.0189	0.0159
Sulfate (SO4)	mg/L	-	-	0.5	82.4	87.9	89.8	94.3	90	92.8	99.1	110	115	120	123
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	2.52	2.14	2.49	2.43	2.14	2.18	1.98	1.84	1.81
Total Organic Carbon	mg/L	-	-	0.5	3.42	2.89	2.41	2.24	2.56	2.64	2.06	2.10	1.95	2.04	1.74
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.008	0.0097	0.005	0.0157	0.0111	0.0077	0.0084	0.0061	0.0034	0.0056	0.0052
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	0.00018	0.00022	0.00023	0.00026	0.00021	0.0002	0.0002	0.00022	0.00026	0.00028	0.00036
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00043	0.00041	0.00055	0.00039	0.00037	0.00037	0.00041	0.00033	0.00037	0.00034	0.00033
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0911	0.117	0.116	0.119	0.12	0.12	0.122	0.128	0.12	0.118	0.128
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000065	0.00009	0.000095	0.000104	0.000097	0.000093	0.000107	0.000115	0.00012	0.000127	0.000157
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370
Calcium (Ca)-Total	mg/L	-	-	0.02	68	88.7	90.5	90.2	92.2	91.9	95.1	102	104	108	116
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00015	0.00018	0.00019	0.00024	0.00021	0.00022	0.00023	0.00024	0.00017	0.00017	0.00019
Cobalt (Co)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00094	0.00063	0.0005	0.00074	0.00055	0.00056	0.00067	0.0006	<0.00050	<0.00050	<0.00050
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.015	<0.010	<0.010	0.021	0.013	0.011	0.012	<0.010	<0.010	<0.010	<0.010
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	<0.000050	<0.000050	<0.000050	0.000073	<0.000050	0.000069	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00247	0.00316	0.00305	0.00332	0.00302	0.00339	0.00302	0.00332	0.00405	0.00363	0.00445
Magnesium (Mg)-Total	mg/L	-	-	0.005	27.3	35.4	34.4	33.9	35.7	34.3	35.2	37.1	38.3	37.5	42.1
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.000248	0.000125	0.000315	0.000418	0.000356	0.000258	0.000337	0.000162	0.000111	0.000443	0.000325
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.00213	0.00272	0.00252	0.00248	0.00251	0.00238	0.00259	0.00311	0.00333	0.0036	0.00412
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	0.00095	0.00105	0.00097	0.00108	0.00094	0.00091	0.00105	0.0012	0.00129	0.0014	0.00184
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	mg/L	-	-	0.05	0.913	0.947	0.891	0.949	0.966	0.967	0.969	1.05	1.04	1.11	1.19
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.00218	0.00281	0.00331	0.00347	0.00311	0.00314	0.00347	0.0038	0.00411	0.0041	0.00438
Silicon (Si)-Total	mg/L	-	-	0.05	4	4.36	4.26	4.49	4.46	4.39	4.42	4.45	4.67	4.61	5.07
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	2.06	2.36	2.44	2.38	2.45	2.43	2.42	2.51	2.59	2.55	2.82
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.265	0.338	0.343	0.335	0.356	0.343	0.358	0.37	0.363	0.363	0.398
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.00464	0.00614	0.00614	0.00664	0.00629	0.00646	0.00707	0.00768	0.00793	0.00836	0.00913
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	0.0011	<0.0010	0.001	<0.0010	<0.0010	0.001	<0.0010	0.001	0.0011	0.0014
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.0032	0.0048	0.0043	0.0102	0.0048	0.0038	0.0054	0.0058	0.0062	0.0084	0.0112
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0024	0.0018	0.0017	0.0016	0.0034	0.0015	0.0012	0.0015	0.0011	<0.0010	0.0017
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	0.00021	0.00022	0.0002	0.00022	0.00019	0.00019	0.00021	0.00021	0.00025	0.00028	0.0003
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00046	0.0004	0.00042	0.00039	0.00034	0.00038	0.00036	0.00035	0.00035	0.00037	0.00037
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.1	0.117	0.116	0.126	0.12	0.121	0.125	0.13	0.119	0.119	0.126
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000072	0.000088	0.000093	0.000097	0.000096	0.000087	0.000104	0.000114	0.000116	0.000131	0.000166
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	77.7	86.9	89.3	88.9	91.6	91.3	99.9	103	101	109	111
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	0.00013	0.00014	<0.00010	0.00014	<0.00010	0.00015	0.00016	0.00014	0.00017
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005	0.00073	0.00063	0.00044	0.00057	0.0004						

Table B-22. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site W10.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	W10	W10	W10	W10	W10	W10	W10
				Date Sampled Time	28-May-14 16:30	24-Jun-14 12:30	22-Jul-14 11:15	19-Aug-14 10:55	23-Sep-14 10:40	21-Oct-14 11:30	19-Nov-14 12:45
				Detection Limit							
Temperature (in-situ)	°C	-	-	-	2.8	4.7	5.5	5.3	2.3	0.2	0.0
Specific Conductivity (in-situ)	µS/cm	-	-	-	56.7	87.2	120.5	131.5	111.6	110.1	112.1
pH (in-situ)	pH	6.5 - 9.0	6.5	-	7.74	7.92	7.90	7.80	7.92	7.89	7.67
Turbidity (in-situ)	NTU	-	-	-	-	1.19	0.28	0.00	0.21	2.39	0.22
Dissolved Oxygen (in-situ)	mg/L			-			11.77	10.62	12.04	14.20	9.31
Conductivity (lab)	µS/cm	-	-	2	69.3	51.2	119.0	139.0	117.0	115.0	137.0
Hardness (as CaCO3)	mg/L	-	-	0.5	28	40.6	58.2	62.9	52.7	51.8	58.1
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.45	7.54	7.86	7.94	7.76	7.59	7.89
Total Suspended Solids	mg/L	-	15	1.0	5.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Dissolved Solids	mg/L	-	-	3.0	40.1	50.7	70.8	73.6	63.4	64	69.6
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	32.4	43.2	66.8	69.4	56	58.8	64.5
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	0.08	0.086	0.089	0.086	0.096	0.089	0.091
Nitrate (as N)	mg/L	13.0	-	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorous (P), Total	mg/L	-	-	0.002	0.0064	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Sulfate (SO4)	mg/L	-	-	0.5	3.15	3.18	3.12	2.87	3.78	3.94	4.19
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	3.37	2.88	4.20	3.35	2.71
Total Organic Carbon	mg/L	-	-	0.5	5.29	4.34	3.39	3.06	3.91	3.20	2.71
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.128	0.0317	0.0235	0.0141	0.0273	0.0148	0.0445
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00024	0.00018	0.0002	0.00014	0.00015	0.00013	0.00017
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0116	0.0126	0.018	0.0212	0.0152	0.0137	0.0186
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000027	0.000017	0.000023	0.000023	0.000019	0.000015	0.000023
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000055	0.000075	0.000101	0.000108	0.000093	0.000092	0.000101
Calcium (Ca)-Total	mg/L	-	-	0.02	9.62	13.9	19.7	21.1	17.8	17.4	20
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00032	0.00012	0.00012	0.00013	0.00017	0.00011	0.00018
Cobalt (Co)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.00192	0.00147	0.00098	0.001	0.00117	0.00089	0.00095
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.134	0.024	0.021	0.011	0.028	0.014	0.045
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.000795	0.000109	0.000104	0.000054	0.000128	0.00007	0.000206
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.001000	0.001000	0.001000	0.001763	0.001000	0.001000	0.001000
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00069	0.00098	0.00109	0.00092	0.00085	0.00089	0.00065
Magnesium (Mg)-Total	mg/L	-	-	0.005	1.35	1.73	2.44	2.64	2.14	2.11	2.57
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.00345	0.000446	0.000434	0.0002	0.000572	0.000217	0.00108
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000187	0.000217	0.000202	0.000162	0.000215	0.000217	0.000221
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	0.00067	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.02500	0.02500	0.02500	0.06719	0.02500	0.02500	0.02500
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	mg/L	-	-	0.05	0.465	0.452	0.437	0.535	0.495	0.401	0.455
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)-Total	mg/L	-	-	0.05	5.75	6.42	6.8	6.96	6.72	6.25	6.55
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	1.35	1.62	1.93	1.99	1.82	1.69	1.81
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.0348	0.05	0.0688	0.0746	0.0623	0.0583	0.0704
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000114	0.000124	0.00016	0.000184	0.000153	0.000155	0.00017
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.0044	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0033
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0222	0.0147	0.0089	0.0097	0.0106	0.0082	0.006
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00016	0.00015	0.00016	0.00013	0.00012	0.00013	0.00011
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.00963	0.012	0.0176	0.0212	0.0147	0.0136	0.0177
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000014	0.000018	0.00002	0.000019	0.00002	0.000015	0.000018
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000055	0.000075	0.000101	0.000108	0.000093	0.000092	0.000101
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	9.06	13.6	19.3	20.9	17.8		19
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00013
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005	0.00151	0.00127	0.00088	0.00086	0.00107	0.00085	0.00082
Copper (Cu)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200
Iron (Fe)-Dissolved	mg/L	0.3	-	0.01	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead (Pb)-Dissolved (Lab Result)	mg/L	0.003	0.2	0.00005	0.000074	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lead (Pb)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.001000	0.001000	0.001000	0.001763	0.001000	0.001000	0.001000
Lithium (Li)-Dissolved	mg/L	-	-	0.0005	0.00055	0.00106	0.00097	0.00091	0.00086	0.00095	0.00063
Magnesium (Mg)-Dissolved	mg/L	-	-	0.005	1.3	1.6	2.41	2.57	2.04	2.12	2.58
Manganese (Mn)-Dissolved	mg/L	-	-	0.00005	0.000217	0.000146	0.000122	<0.000050	0.000271	<0.000050	0.00019
Molybdenum (Mo)-Dissolved	mg/L	0.0073	0.5	0.00005	0.000163	0.0002	0.000185	0.000138	0.000187	0.000194	0.00021
Nickel (Ni)-Dissolved (Lab Result)	mg/L	0.1	0.5	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Nickel (Ni)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.02500	0.02500	0.02500	0.06719	0.02500	0.02500	0.02500
Phosphorus (P)-Dissolved	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Dissolved	mg/L	-	-	0.05	0.414	0.414	0.434	0.515	0.482	0.402	0.472
Selenium (Se)-Dissolved	mg/L	0.001	0.05	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)-Dissolved	mg/L	-	-	0.05	5.41	6.76	6.72	6.84	6.83	6.31	6.38
Silver (Ag)-Dissolved	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved	mg/L	-	-	0.05	1.33	1.48	1.89	1.93	1.72	1.69	1.82
Strontium (Sr)-Dissolved	mg/L	-	-	0.0002	0.0316	0.05	0.0675	0.0727	0.0601	0.0572	0.0661
Thallium (Tl)-Dissolved	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Dissolved	mg/L	0.015	-	0.00001	0.000105	0.000117	0.000144	0.000175	0.000142	0.000144	0.000139
Vanadium (V)-Dissolved	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Dissolved	mg/L	0.03	0.5	0.003	0.0016	0.0015	0.0011	0.0011	0.0012	0.0011	0.0

Table B-23. Summary of 2014/15 Water Quality Parameter Results Compared to Guidelines and Standards at site X14

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	X14	X14	X14	X14	X14	X14	X14	X14	X14	X14	X14	X14
				Date Sampled Time	26-May-14 13:55	23-Jun-14 14:45	21-Jul-14 14:14	19-Aug-14 14:15	22-Sep-14 15:35	20-Oct-14 14:55	18-Nov-14 14:00	21-Dec-14 13:50	21-Jan-15 9:50	25-Feb-15 9:30	24-Mar-15 15:15	
				Detection Limit												
Temperature (in-situ)	°C	-	-	-	5.2	8.3	10.7	8.5	4.1	1.2	0.0	0.0	0.0	0.0	0.6	
Specific Conductivity (in-situ)	µS/cm	-	-	-	220.9	194.0	442.4	317.5	322.6	631.0	155.9	518.0	710.0	868.5	899.4	
pH (in-situ)	pH	6.5 - 9.0	6.5	-	7.97	7.39	7.52	7.34	7.89	7.67	6.80	6.79	7.11	6.96	7.11	
Turbidity (in-situ)	NTU	-	-	-	4.61	2.46	1.85	1.20	2.72	2.56	1.66	3.03	2.11	12.24	5.06	
Dissolved Oxygen (in-situ)	mg/L	-	-	-	-	-	9.27	13.92	14.31	14.10	15.50	14.93	13.98	17.89	-	
Conductivity (lab)	µS/cm	-	-	2	251.0	51.2	429.0	330.0	306.0	648.0	483.0	562.0	701.0	883.0	887.0	
Hardness (as CaCO3)	mg/L	-	-	0.5	117	93.2	216	151	149	312	210	279	348	466	471	
pH (lab)	pH	6.5 - 9.0	6.5	0.1	7.75	7.78	8.03	8.06	7.77	7.89	7.86	8.09	7.69	7.44	8.15	
Total Suspended Solids	mg/L	-	15	1.0	3	1.6	1.2	1.4	3.6	1.2	1.2	1	2.2	7.2	2.6	
Total Dissolved Solids	mg/L	-	-	3.0	153	117	281	185	189	418	261	360	464	613	625	
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	77.8	72.5	118	110	91.5	124	119	154	176	196	207	
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	0.0257	0.0104	0.0415	0.0155	0.027	0.115	0.0377	0.0565	0.0698	0.113	0.103	
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	
Fluoride (F)	mg/L	0.12	-	0.02	0.086	0.079	0.106	0.109	0.095	0.115	0.129	0.142	0.151	0.19	0.139	
Nitrate (as N)	mg/L	13.0	-	0.005	0.0575	0.0248	0.0255	0.0307	0.0537	0.0931	0.16	0.195	0.221	0.288	0.204	
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	
Phosphorous (P), Total	mg/L	-	-	0.002	0.0027	0.0033	<0.0020	<0.0020	<0.0020	<0.020	<0.020	<0.020	<0.0020	<0.0020	<0.0020	
Sulfate (SO4)	mg/L	-	-	0.5	54.3	33.6	123	57.3	71.8	218	104	155	219	308	312	
Dissolved Organic Carbon	mg/L	-	-	0.5	-	-	2.47	2.35	3.24	2.26	1.70	1.40	1.74	1.52	1.22	
Total Organic Carbon	mg/L	-	-	0.5	5.52	3.57	2.57	2.48	3.28	2.37	1.73	1.48	1.79	1.72	1.33	
Aluminum (Al)-Total	mg/L	0.1	-	0.003	0.0961	0.0945	0.0173	0.0184	0.066	0.0178	0.0225	0.0129	0.0128	0.0302	0.0088	
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	<0.00010	0.00011	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	0.00054	0.0005	0.00057	0.00056	0.00057	0.0004	0.00025	0.00032	0.00037	0.00053	0.00035	
Barium (Ba)-Total	mg/L	-	1	0.00005	0.0369	0.0358	0.0496	0.0564	0.0455	0.0469	0.0607	0.0666	0.0669	0.0703	0.0696	
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000056	0.000055	0.000085	0.000115	0.000077	0.000099	0.000141	0.0002	0.000225	0.00031	0.000285	
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000181	0.000149	0.000300	0.000223	0.000221	0.000370	0.000293	0.000371	0.000370	0.000370	0.000370	
Calcium (Ca)-Total	mg/L	-	-	0.02	35.2	26.6	65.5	45.4	45.6	94.8	59.9	81.2	103	141	140	
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	0.00032	0.00033	0.00011	0.00015	0.00027	0.00014	0.00012	0.00014	0.00011	0.00017	0.00011	
Cobalt (Co)-Total	mg/L	-	-	0.0001	0.00131	0.00061	0.00305	0.00093	0.00201	0.00686	0.00164	0.00272	0.00361	0.00546	0.00552	
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	0.0013	0.00094	0.00054	0.00066	0.00083	<0.00050	0.00058	<0.00050	<0.00050	<0.00050	<0.00050	
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00270	0.00223	0.00400	0.00336	0.00332	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	
Iron (Fe)-Total	mg/L	0.3	-	0.01	0.318	0.405	0.52	0.477	0.462	0.647	0.42	0.7	0.919	1.64	1.26	
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	0.00104	0.00134	0.000445	0.000292	0.000893	0.00025	0.00046	0.000242	0.000215	0.000569	0.000137	
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.003885	0.002909	0.007000	0.005376	0.005286	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	
Lithium (Li)-Total	mg/L	-	-	0.0005	0.00232	0.0021	0.00393	0.00336	0.00291	0.00657	0.00458	0.006	0.00793	0.00935	0.00984	
Magnesium (Mg)-Total	mg/L	-	-	0.005	8.01	6.38	13.9	10.3	10.1	21.1	13.1	18	23.6	30.8	32.2	
Manganese (Mn)-Total	mg/L	-	-	0.00005	0.852	0.489	1.88	0.824	1.17	3.71	1.51	2.72	3.99	6.45	6.69	
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	0.000381	0.000351	0.000495	0.000494	0.000475	0.000456	0.000522	0.000642	0.000688	0.000747	0.000754	
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	0.00238	0.00156	0.00347	0.00247	0.00248	0.00551	0.00383	0.0059	0.00771	0.0116	0.012	
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.10769	0.09060	0.15000	0.13073	0.12941	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
Potassium (K)-Total	mg/L	-	-	0.05	0.962	0.688	1.1	0.952	0.987	1.69	1.22	1.48	1.79	2.26	2.26	
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	0.00021	0.00019	0.00025	0.00023	0.00026	0.0003	0.00033	0.00036	0.0004	0.0004	0.00042	
Silicon (Si)-Total	mg/L	-	-	0.05	3.88	3.97	4.48	4.86	4.91	5.03	5.29	5.53	6.08	6.62	6.54	
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	0.000027	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Sodium (Na)-Total	mg/L	-	-	0.05	2.11	1.9	3.92	2.9	2.96	5.67	3.69	4.8	6.3	8.4	8.44	
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.141	0.106	0.232	0.177	0.171	0.291	0.223	0.288	0.34	0.445	0.441	
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	0.000011	0.000018	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.00117	0.000901	0.00158	0.00164	0.00128	0.00197	0.00216	0.0026	0.00311	0.00351	0.00367	
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	0.0571	0.0622	0.112	0.156	0.095	0.122	0.237	0.34	0.354	0.492	0.463	
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	0.0218	0.0148	0.0056	0.0061	0.0091	0.0058	0.0018	0.002	0.0021	<0.0010	0.001	
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	0.00035	0.00037	0.00044	0.00042	0.00038	0.00031	0.0002	0.00014	0.00021	0.0002	0.00023	
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.0349	0.0336	0.0488	0.0562	0.0435	0.0455	0.0616	0.0662	0.0666	0.0679	0.0652	
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	0.000052	0.000048	0.000083	0.000101	0.000066	0.000095	0.000132	0.000203	0.00021	0.000248	0.000247	
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000181	0.000149	0.000300	0.000223	0.000221	0.000370	0.000293	0.000371	0.000370	0.000370	0.000370	
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	34	26.9	63.4	44	43.4	90.7	62.1	81.4	101	136	137	
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	0.00121	0.00052	0.00297	0.00088	0.00184	0.00658	0.00163	0.00276	0.00357	0.00507	0.00531	
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005												

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APPENDIX C. QUALITY ASSURANCE/ QUALITY CONTROL (QA/QC)

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Table C-1. Summary of 2014/15 Field Blank Data.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID	FIELD BLANK	FIELD BLANK	FIELD BLANK	FIELD BLANK	FIELD BLANK	FIELD BLANK	FIELD BLANK	FIELD BLANK	FIELD BLANK	FIELD BLANK	FIELD BLANK
				Date Sampled Time	28-May-14	23-Jun-14 18:51	22-Jul-14 17:24	19-Aug-14 14:45	23-Sep-14 16:35	20-Oct-14 14:00	20-Nov-14 13:35	22-Dec-14 8:10	20-Jan-15 19:45	24-Feb-15 17:45	24-Mar-15 18:00
				Detection Limit											
Temperature (in-situ)	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductivity (in-situ)	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH (in-situ)	-	6.5 - 9.0	6.5	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity (in-situ)	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen (in-situ)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conductivity (lab)	µS/cm	-	-	2	<2.0	51.20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Hardness (as CaCO3)	mg/L	-	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
pH (lab)	pH	6.5 - 9.0	6.5	0.1	5.52	5.69	5.67	5.85	5.37	6.51	5.98	5.39	5.54	5.57	5.46
Total Suspended Solids	mg/L	-	15	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Dissolved Solids	mg/L	-	-	3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Nitrate (as N)	mg/L	13.0	-	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorous (P), Total	mg/L	-	-	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Sulfate (SO4)	mg/L	-	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30
Dissolved Organic Carbon	mg/L	-	-	0.5	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Total Organic Carbon	mg/L	-	-	0.5	<0.50	<0.0030	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aluminum (Al)-Total	mg/L	0.1	-	0.003	<0.0030	<0.00010	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	<0.00010	<0.000050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium (Ba)-Total	mg/L	-	1	0.00005	<0.000050	<0.00010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.000010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	<0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000370	0.000040	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370
Calcium (Ca)-Total	mg/L	-	-	0.02	<0.020	<0.00010	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.022	<0.020
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	mg/L	-	-	0.0001	<0.00010	<0.00050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400
Iron (Fe)-Total	mg/L	0.3	-	0.01	<0.010	<0.000050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	<0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000
Lithium (Li)-Total	mg/L	-	-	0.0005	<0.00050	<0.0050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium (Mg)-Total	mg/L	-	-	0.005	<0.0050	<0.000050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Manganese (Mn)-Total	mg/L	-	-	0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	<0.000050	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.15000	0.02500	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.050	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	mg/L	-	-	0.05	<0.050	<0.00010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	<0.00010	<0.050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)-Total	mg/L	-	-	0.05	<0.050	<0.000010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.050	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	<0.050	<0.00020	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Strontium (Sr)-Total	mg/L	-	-	0.0002	<0.00020	<0.000010	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.00010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.000010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.015	-	0.00001	<0.000010	<0.0010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0030	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	<0.0030	<0.00080	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	<0.0010	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	<0.0010	<0.00010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	<0.00010	<0.000050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	0.000073	<0.00010	<0.000050	0.000422	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.00050	<0.010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.000010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	<0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000370	0.000040	0.00								

Table C-2. Summary of 2014/15 Trip Blank Data.

Analyte	Units	CCME- WATER-FAL	Faro Effluent Quality Standards	Station ID Date Sampled Detection Limit	TRAVEL BLANK May	TRAVEL BLANK June	TRAVEL BLANK July	TRAVEL August	TRAVEL BLANK September	TRAVEL BLANK October	TRAVEL BLANK ** November	TRAVEL BLANK December	TRAVEL BLANK ** January	TRAVEL BLANK February	TRAVEL BLANK March
Temperature (in-situ)	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductivity (in-situ)	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH (in-situ)	-	6.5 - 9.0	6.5	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity (in-situ)	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen (in-situ)						<2.0									
Conductivity (lab)	µS/cm	-	-	2	<2.0	<0.50	<2.0	51.20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Hardness (as CaCO3)	mg/L	-	-	0.5	<0.50	5.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
pH (lab)	pH	6.5 - 9.0	6.5	0.1	5.66	<1.0	5.67	5.81	5.54	5.97	5.84	5.44	5.59	5.59	5.52
Total Suspended Solids	mg/L	-	15	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Dissolved Solids	mg/L	-	-	3.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	-	-	2.0	<2.0	<0.0050	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ammonia, Total (as N)	mg/L	0.75	1.4	0.005	<0.0050	<0.50	0.0414	0.0161	<0.0050	<0.0050	0.0206	<0.0050	0.007	<0.0050	<0.0050
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.020	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	<0.020	<0.0050	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Nitrate (as N)	mg/L	13.0	-	0.005	<0.0050	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorous (P), Total	mg/L	-	-	0.002	<0.0020	<0.50	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Sulfate (SO4)	mg/L	-	-	0.5	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30
Dissolved Organic Carbon	mg/L	-	-	0.5	-	<0.50	-	-	-	-	-	-	-	<0.10	-
Total Organic Carbon	mg/L	-	-	0.5	0.51	<0.0030	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aluminum (Al)-Total	mg/L	0.1	-	0.003	<0.0030	<0.00010	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Antimony (Sb)-Total	mg/L	-	0.1	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.005	0.05	0.0001	<0.00010	<0.000050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium (Ba)-Total	mg/L	-	1	0.00005	<0.000050	<0.00010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Beryllium (Be)-Total	mg/L	-	-	0.0001	<0.00010	<0.00050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.00050	<0.010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.000010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total (Lab Result)	mg/L	0.00009	0.02	0.00001	<0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000370	0.000040	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370
Calcium (Ca)-Total	mg/L	-	-	0.02	<0.020	<0.00010	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chromium (Cr)-Total	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	mg/L	-	-	0.0001	<0.00010	<0.00050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Total (Lab Result)	mg/L	0.002	0.2	0.0005	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper (Cu)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00400	0.00200	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400
Iron (Fe)-Total	mg/L	0.3	-	0.01	<0.010	<0.000050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead (Pb)-Total (Lab Result)	mg/L	0.003	0.2	0.00005	<0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lead (Pb)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.007000	0.001000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000
Lithium (Li)-Total	mg/L	-	-	0.0005	<0.00050	<0.0050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium (Mg)-Total	mg/L	-	-	0.005	<0.0050	<0.000050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Manganese (Mn)-Total	mg/L	-	-	0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Molybdenum (Mo)-Total	mg/L	0.0073	0.5	0.00005	<0.000050	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel (Ni)-Total (Lab Result)	mg/L	0.1	0.5	0.0005	<0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Nickel (Ni)-Total (Hardness Adjusted Guideline)	mg/L	-	-	-	0.15000	0.02500	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000
Phosphorus (P)-Total	mg/L	-	-	0.3	<0.30	<0.050	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium (K)-Total	mg/L	-	-	0.05	<0.050	<0.00010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Selenium (Se)-Total	mg/L	0.001	0.05	0.0001	<0.00010	<0.050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silicon (Si)-Total	mg/L	-	-	0.05	<0.050	<0.000010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<0.000010	<0.050	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	<0.050	<0.00020	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Strontium (Sr)-Total	mg/L	-	-	0.0002	<0.00020	<0.000010	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	<0.00010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.01	<0.010	<0.000010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	0.015	-	0.00001	<0.000010	<0.0010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Vanadium (V)-Total	mg/L	-	-	0.001	<0.0010	<0.0030	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.03	0.5	0.003	<0.0030	<0.00080	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium (Zr) - Total	mg/L	-	-	0.0008	<0.00080	-	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.003	-	-	-	-	-	-	-	-	-	-	-
Antimony (Sb)-Dissolved	mg/L	-	0.1	0.0001	-	-	-	-	-	-	-	-	-	-	-
Arsenic (As)-Dissolved	mg/L	0.005	0.05	0.0001	-	-	-	-	-	-	-	-	-	-	-
Barium (Ba)-Dissolved	mg/L	-	1	0.00005	-	-	-	-	-	-	-	-	-	-	-
Beryllium (Be)-Dissolved	mg/L	-	-	0.0001	-	-	-	-	-	-	-	-	-	-	-
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	-	-	-	-	-	-	-	-	-	-	-
Boron (B)-Dissolved	mg/L	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	0.00009	0.02	0.00001	-	-	-	-	-	-	-	-	-	-	-
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.000370	0.000040	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370	0.000370
Calcium (Ca)-Dissolved	mg/L	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	-	-	-	-	-	-	-	-	-	-	-
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	-	-	-	-	-	-	-	-	-	-	-
Copper (Cu)-Dissolved (Lab Result)	mg/L	0.002	0.2	0.0005	-	-	-	-	-	-	-	-	-	-	-
Copper (Cu)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.00400	0.00200	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400	0.00400
Iron (Fe)-Dissolved	mg/L	0.3	-	0.01	-	-	-	-	-	-	-	-	-	-	-
Lead (Pb)-Dissolved (Lab Result)	mg/L	0.003	0.2	0.00005	-	-	-	-	-	-	-	-	-	-	-
Lead (Pb)-Diss. (Hardness Adjusted Guideline)	mg/L	-	-	-	0.007000	0.001000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000	0.007000
Lithium (Li)-Dissolved	mg/L														



Table C-3. 2014/15 QA/QC Replicate Relative Percent Difference (RPD) Data

Analyte	Units	Station ID	R6	Replicate#1	% RPD	V8	Replicate#2	% RPD	VW2	Replicate#1	% RPD	P4	Replicate#2	% RPD	R5	Replicate#1	% RPD	USFR	Replicate#2	% RPD	P4	Replicate#1	% RPD	R1	Replicate#2	% RPD	P4	Replicate#1	% RPD	VW3	Replicate#2
		Date Sampled	27-May-14	27-May-14		28-May-14	28-May-14		25-Jun-14	25-Jun-14		22-Jul-14	22-Jul-14		22-Aug-14	22-Aug-14		20-Aug-14	20-Aug-14		23-Sep-14	23-Sep-14		23-Sep-14	23-Sep-14						
		Time	10:25	10:30		8:05	8:05		8:15	8:20		9:05	9:10		17:02	17:10		09:00	09:20		14:00	14:05		8:45:00 AM	8:50		13:45	13:50			
		Detection Limit	10:30	(R6)			(V8)			(VW2)		(P4)		(R5)					(USFR)												
Average Sample RPD	-	-	-	-	3%	-	-	5%	-	-	11%	-	-	7%	-	-	3%	-	-	6%	-	-	8%	-	-	6%	-	-	3%	-	-
Average Total Metals RPD	-	-	-	-	4%	-	-	7%	-	-	23%	-	-	9%	-	-	4%	-	-	5%	-	-	6%	-	-	4%	-	-	2%	-	-
Average Dissolved Metals RPD	-	-	-	-	3%	-	-	2%	-	-	5%	-	-	4%	-	-	2%	-	-	2%	-	-	4%	-	-	10%	-	-	4%	-	-
Conductivity (lab)	µS/cm	2	209	206	1%	201	201	0%	595	602	1%	252	263	4%	306	309	1%	52.5	54.8	4%	342	334	2%	190	194	2%	359.00	335.00	7%	197.00	208.00
Hardness (as CaCO3)	mg/L	0.5	105	103	2%	97.3	97.3	0%	356	369	4%	142	144	1%	161	160	1%	23.4	23.3	0%	151	158	5%	83.7	84.1	0%	175	184	5%	86.6	86.1
pH (lab)	pH	0.1	8.12	7.94	2%	7.68	7.86	2%	8.35	8.32	0%	7.83	8.12	4%	8.16	8.05	1%	7.35	7.41	1%	8.07	7.98	1%	7.78	8.06	4%	8.00	8.00	0%	7.92	7.98
Total Suspended Solids	mg/L	1.0	3.4	3.6	< 2xDL	19.6	21	7%	<1.0	<1.0	<DL	17.4	14.2	20%	1.2	1	< 2xDL	2	6	100%	26.2	4.8	138%	<1.0	<1.0	<DL	2.8	3.6	< 2xDL	2.8	<1.0
Total Dissolved Solids	mg/L	3.0	123	122	1%	121	122	1%	385	390	1%	166	167	1%	192	191	1%	31.4	31.6	1%	186	188	1%	101	99.7	1%	206	209	1%	111	111
Alkalinity, Total (as CaCO3)	mg/L	2.0	103	103	0%	75	75.6	1%	282	284	1%	95.1	96.4	1%	130	129	1%	22.1	22.5	2%	105	104	1%	82.5	80.6	2%	119	117	2%	63.2	60.9
Ammonia, Total (as N)	mg/L	0.005	<0.0050	<0.0050	<DL	<0.0050	<0.0050	<DL	0.0051	<0.0050	<DL	<0.0050	<0.0050	<DL	0.007	0.0063	< 2xDL	<0.0050	<0.0050	<DL	<0.0050	<0.0050	<DL	<0.0050	<0.0050	<DL	<0.0050	<0.0050	<DL	<0.0050	<0.0050
Chloride (Cl)	mg/L	0.5	<0.50	<0.50	<DL	<0.50	<0.50	<DL	<0.50	<0.50	<DL	<0.50	<0.50	<DL	<0.50	<0.50	<DL	<0.50	<0.50	<DL	<0.50	<0.50	<DL	<0.50	<0.50	<DL	<0.50	<0.50	<DL	<0.50	<0.50
Fluoride (F)	mg/L	0.02	0.053	0.053	< 2xDL	0.079	0.079	< 2xDL	0.16	0.158	1%	0.104	0.102	2%	0.078	0.078	< 2xDL	0.061	0.06	< 2xDL	0.123	0.122	1%	0.099	0.1	1%	0.118	0.116	2%	0.077	0.079
Nitrate (as N)	mg/L	0.005	0.0831	0.0831	0%	0.0512	0.0521	2%	0.154	0.155	1%	0.0059	<0.0050	<DL	0.0514	0.0514	0%	<0.0050	<0.0050	<DL	<0.0050	<0.0050	<DL	0.0126	0.0133	< 2xDL	0.0063	0.0051	< 2xDL	0.11	0.114
Nitrite (as N)	mg/L	0.001	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010
Phosphorous (P), Total	mg/L	0.002	0.0071	0.0085	< 2xDL	0.018	0.025	33%	0.0105	0.0109	4%	0.0286	0.0221	26%	<0.0020	0.0024	<DL	0.0035	0.0031	< 2xDL	0.006	0.0059	< 2xDL	<0.0020	0.0021	<DL	0.0047	0.0036	< 2xDL	<0.0020	<0.0020
Sulfate (SO4)	mg/L	0.5	16.6	16.5	1%	35.9	36	0%	87.9	87.8	0%	54.3	54.2	0%	49.9	50.4	1%	5.12	5.15	1%	66.2	66.2	0%	15	15	0%	69.4	69.3	0%	35.9	37.1
Dissolved Organic Carbon	mg/L	0.5	-	-	<DL	-	-	<DL	-	-	<DL	-	-	<DL	2.23	2.18	< 2xDL	2.44	2.45	< 2xDL	2.71	2.78	3%	2.94	2.89	2%	3.24	3.29	2%	3.62	3.63
Total Organic Carbon	mg/L	0.5	5.16	5.01	3%	4.95	5.15	4%	2.89	2.84	2%	3.74	3.51	6%	2.38	2.27	< 2xDL	2.47	2.45	< 2xDL	2.77	2.76	0%	3.05	2.92	4%	3.29	3.3	0%	3.84	4.12
Aluminum (Al)-Total	mg/L	0.003	0.096	0.11	14%	0.458	0.426	7%	0.0097	0.0076	< 2xDL	0.329	0.311	6%	0.0229	0.027	16%	0.0208	0.021	1%	0.0624	0.0921	38%	0.0163	0.017	4%	0.0836	0.0823	2%	0.0372	0.0381
Antimony (Sb)-Total	mg/L	0.0001	0.00011	0.00013	< 2xDL	0.00011	0.00011	< 2xDL	0.00022	0.00024	< 2xDL	0.00024	0.00022	< 2xDL	0.00013	0.00014	< 2xDL	<0.00010	<0.00010	<DL	0.00022	0.00023	< 2xDL	<0.00010	<0.00010	<DL	0.00018	0.00018	< 2xDL	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.0001	0.00048	0.00052	8%	0.00094	0.00091	3%	0.00041	0.00045	< 2xDL	0.00086	0.00088	2%	0.00048	0.00053	10%	0.00039	0.00036	< 2xDL	0.00057	0.00054	5%	0.00042	0.00043	< 2xDL	0.00054	0.00057	5%	0.00068	0.00077
Barium (Ba)-Total	mg/L	0.00005	0.0491	0.0513	4%	0.0358	0.0332	8%	0.117	0.117	0%	0.0757	0.0818	8%	0.0627	0.0644	3%	0.0258	0.0251	3%	0.0757	0.077	2%	0.0439	0.042	4%	0.0753	0.0771	2%	0.0287	0.0288
Beryllium (Be)-Total	mg/L	0.0001	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	0.0005	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050
Boron (B)-Total	mg/L	0.01	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<										



Table C-3. 2014/15 QA/QC Replicate Relative Percent Difference

Analyte	Units	Station ID	% RPD	X14	Replicate#1	% RPD	P4	Replicate#2	% RPD	R4	Replicate#1	% RPD	V8	Replicate#2	% RPD	R6	Replicate#1	% RPD	VW2	Replicate#2	% RPD	A1	Replicate#1	% RPD	X14	Replicate#2	% RPD	R3	Replicate#1	% RPD	V8
		Date Sampled		20-Oct-14	20-Oct-14		21-Oct-14	21-Oct-14		19-Nov-14	20-Nov-14		22-Dec-14	22-Dec-14		20-Jan-15	20-Jan-15		21-Jan-15	24-Feb-15		24-Feb-15									
		Time		14:55	14:55		9:20	9:25		11:00	13:00		13:10	11:25		12:00	8:30		8:35	13:35		13:55	9:50		9:50	12:15:00 PM		12:15:00 PM	5:35:00 PM		
Detection Limit				(X14)	(P4)			(R4)			(V8)			(R6)			(VW2)			(A1)			(X14)			(R3)					
Average Sample RPD	-	-	6%	-	-	3%	-	-	2%	-	-	2%	-	-	6%	-	-	5%	-	-	3%	-	-	4%	-	-	1%	-	-	1%	
Average Total Metals RPD	-	-	10%	-	-	4%	-	-	2%	-	-	2%	-	-	11%	-	-	6%	-	-	3%	-	-	9%	-	-	2%	-	-	2%	
Average Dissolved Metals RPD	-	-	5%	-	-	2%	-	-	2%	-	-	2%	-	-	1%	-	-	1%	-	-	3%	-	-	2%	-	-	1%	-	-	1%	
Conductivity (lab)	µS/cm	2	5%	648.00	646.00	0%	347.00	361.00	4%	423.00	415.00	2%	603.00	620.00	3%	326.00	326.00	0%	692.00	726.00	5%	370.00	365.00	1%	701.00	705.00	1%	699.00	697.00	0%	688.00
Hardness (as CaCO3)	mg/L	0.5	1%	312	311	0%	173	173	0%	194	195	1%	303	300	1%	167	167	0%	411	414	1%	179	181	1%	348	346	1%	357	357	0%	386
pH (lab)	pH	0.1	1%	7.89	7.88	0%	7.98	8.05	1%	7.85	7.94	1%	8.13	8.22	1%	8.23	8.22	0%	8.37	8.39	0%	8.00	8.01	0%	7.69	7.63	1%	7.75	7.69	1%	8.03
Total Suspended Solids	mg/L	1.0	<DL	1.2	<1.0	<DL	5.4	5.2	4%	<1.0	<1.0	<DL	14.2	14.4	1%	20.8	10.6	65%	<1.0	<1.0	<DL	2.4	2.6	< 2xDL	2.2	2.6	< 2xDL	1	<1.0	<DL	2.8
Total Dissolved Solids	mg/L	3.0	0%	418	420	0%	204	204	0%	228	229	0%	357	355	1%	185	184	1%	448	451	1%	217	216	0%	464	464	0%	459	461	0%	454
Alkalinity, Total (as CaCO3)	mg/L	2.0	4%	124	126	2%	119	120	1%	121	123	2%	204	203	0%	157	155	1%	318	322	1%	146	144	1%	176	177	1%	174	176	1%	246
Ammonia, Total (as N)	mg/L	0.005	<DL	0.115	0.115	0%	<0.0050	<0.0050	<DL	0.0121	0.0123	< 2xDL	<0.0050	0.0066	<DL	0.0069	0.0067	< 2xDL	<0.0050	<0.0050	<DL	0.0056	0.006	< 2xDL	0.0698	0.068	3%	0.0604	0.0599	1%	<0.0050
Chloride (Cl)	mg/L	0.5	<DL	<0.50	<0.50	<DL	<0.50	<0.50	<DL	<0.50	<0.50	<DL	0.75	0.76	< 2xDL	<0.50	<0.50	<DL	<0.50	<0.50	<DL	<0.50	<0.50	<DL	<0.50	<0.50	<DL	<0.50	<0.50	<DL	1.03
Fluoride (F)	mg/L	0.02	< 2xDL	0.115	0.115	0%	0.111	0.115	4%	0.113	0.108	5%	0.148	0.146	1%	0.084	0.075	< 2xDL	0.175	0.171	2%	0.103	0.104	1%	0.151	0.148	2%	0.123	0.12	2%	0.154
Nitrate (as N)	mg/L	0.005	4%	0.0931	0.0909	2%	0.0159	0.0155	< 2xDL	0.185	0.185	0%	0.196	0.196	0%	0.239	0.238	0%	0.215	0.215	0%	0.251	0.256	2%	0.221	0.222	0%	0.234	0.234	0%	0.286
Nitrite (as N)	mg/L	0.001	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	0.0013	0.0017	< 2xDL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010
Phosphorous (P), Total	mg/L	0.002	<DL	<0.020	<0.020	<DL	0.0049	0.0058	< 2xDL	<0.0020	<0.0020	<DL	0.011	0.0116	5%	0.0087	0.0104	18%	0.0072	0.009	< 2xDL	0.0024	0.0023	< 2xDL	<0.0020	<0.0020	<DL	<0.020	<0.020	<DL	0.0053
Sulfate (SO4)	mg/L	0.5	3%	218	218	0%	66.3	66.4	0%	77.8	77.9	0%	124	124	0%	25.3	25.4	0%	110	110	0%	57.3	57.3	0%	219	218	0%	213	213	0%	167
Dissolved Organic Carbon	mg/L	0.5	0%	2.26	2.12	11%	3.96	3.9	2%	2	2	< 2xDL	2.54	2.58	2%	1.45	1.80	< 2xDL	2.18	2.06	< 2xDL	1.67	1.98	< 2xDL	1.74	1.64	< 2xDL	1.41	1.40	< 2xDL	2.14
Total Organic Carbon	mg/L	0.5	7%	2.37	2.74	14%	4.09	3.95	3%	1.92	1.93	< 2xDL	2.62	2.79	6%	1.44	1.54	< 2xDL	2.10	2.06	< 2xDL	1.89	2.05	< 2xDL	1.79	1.94	< 2xDL	1.44	1.47	< 2xDL	2.27
Aluminum (Al)-Total	mg/L	0.003	2%	0.0178	0.0214	18%	0.0996	0.106	6%	0.0057	0.0048	< 2xDL	0.237	0.28	17%	0.173	0.141	20%	0.0061	0.0073	< 2xDL	0.0186	0.0234	23%	0.0128	0.0147	< 2xDL	0.0041	0.0051	< 2xDL	0.0495
Antimony (Sb)-Total	mg/L	0.0001	<DL	<0.00010	<0.00010	<DL	0.00018	0.00018	< 2xDL	<0.00010	<0.00010	<DL	0.00012	0.00013	< 2xDL	0.00012	0.00015	< 2xDL	0.00022	0.00024	< 2xDL	0.00011	0.00012	< 2xDL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	0.00014
Arsenic (As)-Total	mg/L	0.0001	12%	0.0004	0.00039	< 2xDL	0.00053	0.00052	2%	0.00023	0.00023	< 2xDL	0.00071	0.00078	9%	0.00074	0.00069	7%	0.00033	0.00038	< 2xDL	0.00058	0.00061	5%	0.00037	0.00033	< 2xDL	0.00022	0.00025	< 2xDL	0.0005
Barium (Ba)-Total	mg/L	0.00005	0%	0.0469	0.0457	3%	0.0716	0.0708	1%	0.0727	0.0711	2%	0.0622	0.0699	12%	0.0895	0.0891	0%	0.128	0.122	5%	0.0757	0.0756	0%	0.0669	0.0677	1%	0.0723	0.0699	3%	0.0728
Beryllium (Be)-Total	mg/L	0.0001	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010
Bismuth (Bi)-Total	mg/L	0.0005	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050
Boron (B)-Total	mg/L	0.01	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<0.010
Cadmium (Cd)-Total	mg/L	0.00001	< 2xDL	0.000099	0.000099	0%	0.000208	0.000198	5%	0.000054	0.000056	4%	0.000054	0.000064	17%	0.000037	0.00003	< 2xDL	0.000115	0.000123	7%	0.00									



Table C-3. 2014/15 QA/QC Replicate Relative Percent Difference

Analyte	Units	Station ID	Replicate#2	% RPD	P4	Replicate#1	% RPD	V8	Replicate#2	% RPD
		Date Sampled Time Detection Limit	24-Feb-15 5:40:00 PM (V8)		24-Mar-15 08:55	24-Mar-15 09:00 (P4)		24-Mar-15 18:20	24-Mar-15 18:25 (V8)	
Average Sample RPD	-	-	-	2%	-	-	4%	-	-	5%
Average Total Metals RPD	-	-	-	3%	-	-	2%	-	-	8%
Average Dissolved Metals RPD	-	-	-	1%	-	-	6%	-	-	3%
Conductivity (lab)	µS/cm	2	697.00	1%	434.00	436.00	0%	707.00	693.00	2%
Hardness (as CaCO3)	mg/L	0.5	385	0%	230	221	4%	430	418	3%
pH (lab)	pH	0.1	8.02	0%	8.24	8.24	0%	8.41	8.42	0%
Total Suspended Solids	mg/L	1.0	2.4	< 2xDL	1.4	1	< 2xDL	2	2	< 2xDL
Total Dissolved Solids	mg/L	3.0	453	0%	270	268	1%	498	493	1%
Alkalinity, Total (as CaCO3)	mg/L	2.0	245	0%	174	175	1%	271	268	1%
Ammonia, Total (as N)	mg/L	0.005	<0.0050	<DL	<0.0050	0.0052	<DL	<0.0050	<0.0050	<DL
Chloride (Cl)	mg/L	0.5	1.03	< 2xDL	<0.50	<0.50	<DL	1.12	1.13	< 2xDL
Fluoride (F)	mg/L	0.02	0.155	1%	0.111	0.109	2%	0.152	0.152	0%
Nitrate (as N)	mg/L	0.005	0.285	0%	0.12	0.137	13%	0.308	0.308	0%
Nitrite (as N)	mg/L	0.001	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL
Phosphorous (P), Total	mg/L	0.002	0.0053	< 2xDL	0.0021	0.0028	< 2xDL	0.0021	0.0033	< 2xDL
Sulfate (SO4)	mg/L	0.5	167	0%	80.7	80.7	0%	181	181	0%
Dissolved Organic Carbon	mg/L	0.5	2.09	< 2xDL	1.94	2.05	< 2xDL	1.94	2.09	< 2xDL
Total Organic Carbon	mg/L	0.5	2.13	< 2xDL	2.08	2.15	< 2xDL	2.03	2.00	< 2xDL
Aluminum (Al)-Total	mg/L	0.003	0.0536	8%	0.0206	0.0208	1%	0.0449	0.0333	30%
Antimony (Sb)-Total	mg/L	0.0001	0.00015	< 2xDL	0.00017	0.00016	< 2xDL	0.00019	0.00015	< 2xDL
Arsenic (As)-Total	mg/L	0.0001	0.00047	6%	0.00039	0.00034	< 2xDL	0.00046	0.00046	< 2xDL
Barium (Ba)-Total	mg/L	0.00005	0.0749	3%	0.0889	0.0878	1%	0.0775	0.0744	4%
Beryllium (Be)-Total	mg/L	0.0001	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL
Bismuth (Bi)-Total	mg/L	0.0005	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL
Boron (B)-Total	mg/L	0.01	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL
Cadmium (Cd)-Total	mg/L	0.00001	0.000066	3%	0.000104	0.000101	3%	0.00007	0.000065	7%
Calcium (Ca)-Total	mg/L	0.02	91	1%	60.2	60.1	0%	100	96.7	3%
Chromium (Cr)-Total	mg/L	0.0001	0.00024	< 2xDL	0.0001	<0.00010	<DL	0.00027	0.00021	< 2xDL
Cobalt (Co)-Total	mg/L	0.0001	0.00011	< 2xDL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL
Copper (Cu)-Total	mg/L	0.0005	0.00074	< 2xDL	0.00059	0.0006	< 2xDL	0.00073	0.00064	< 2xDL
Iron (Fe)-Total	mg/L	0.01	0.099	2%	0.066	0.065	2%	0.076	0.06	24%
Lead (Pb)-Total	mg/L	0.00005	0.000172	< 2xDL	0.000055	<0.000050	<DL	0.000119	0.000105	< 2xDL
Lithium (Li)-Total	mg/L	0.0005	0.00546	3%	0.00428	0.00425	1%	0.00683	0.00638	7%
Magnesium (Mg)-Total	mg/L	0.005	40.3	2%	21	19.9	5%	45.3	42.1	7%
Manganese (Mn)-Total	mg/L	0.00005	0.0131	10%	0.0219	0.0212	3%	0.00893	0.00883	1%
Molybdenum (Mo)-Total	mg/L	0.00005	0.00136	3%	0.00114	0.00112	2%	0.00146	0.00147	1%
Nickel (Ni)-Total	mg/L	0.0005	0.00188	< 2xDL	0.00293	0.00291	1%	0.00224	0.00214	< 2xDL
Phosphorus (P)-Total	mg/L	0.3	<0.30	<DL	<0.30	<0.30	<DL	<0.30	<0.30	<DL
Potassium (K)-Total	mg/L	0.05	1.34	1%	0.915	0.877	4%	1.41	1.34	5%
Selenium (Se)-Total	mg/L	0.0001	0.00176	3%	0.00146	0.00148	1%	0.00201	0.00186	8%
Silicon (Si)-Total	mg/L	0.05	5.16	1%	3.84	3.78	2%	5.5	5.36	3%
Silver (Ag)-Total	mg/L	0.00001	<0.000010	<DL	<0.000010	<0.000010	<DL	<0.000010	<0.000010	<DL
Sodium (Na)-Total	mg/L	0.05	4.67	0%	2.78	2.68	4%	5.14	4.89	5%
Strontium (Sr)-Total	mg/L	0.0002	0.382	3%	0.261	0.259	1%	0.414	0.395	5%
Thallium (Tl)-Total	mg/L	0.00001	<0.000010	<DL	<0.000010	<0.000010	<DL	<0.000010	<0.000010	<DL
Tin (Sn)-Total	mg/L	0.0001	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL
Titanium (Ti)-Total	mg/L	0.01	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL
Uranium (U)-Total	mg/L	0.00001	0.0088	2%	0.00235	0.00232	1%	0.00981	0.00897	9%
Vanadium (V)-Total	mg/L	0.001	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL
Zinc (Zn)-Total	mg/L	0.003	0.0112	< 2xDL	0.017	0.0159	7%	0.0131	0.0121	< 2xDL
Zirconium (Zr) - Total	mg/L	0.0008	<0.00080	<DL	<0.00080	<0.00080	<DL	<0.00080	<0.00080	<DL
Aluminum (Al)-Dissolved	mg/L	0.003	0.0012	<DL	0.002	0.0016	< 2xDL	0.0016	0.0018	< 2xDL
Antimony (Sb)-Dissolved	mg/L	0.0001	0.00013	< 2xDL	0.00014	0.00012	< 2xDL	0.00015	0.00014	< 2xDL
Arsenic (As)-Dissolved	mg/L	0.0001	0.0004	< 2xDL	0.00029	0.00027	< 2xDL	0.0004	0.00044	< 2xDL
Barium (Ba)-Dissolved	mg/L	0.00005	0.0717	0%	0.0873	0.0809	8%	0.0776	0.0741	5%
Beryllium (Be)-Dissolved	mg/L	0.0001	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL
Bismuth (Bi)-Dissolved	mg/L	0.0005	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL
Boron (B)-Dissolved	mg/L	0.01	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL
Cadmium (Cd)-Dissolved	mg/L	0.00001	0.000057	5%	0.000103	0.00009	13%	0.000067	0.000058	14%
Calcium (Ca)-Dissolved	mg/L	0.02	89.2	0%	58.8	57.4	2%	98.7	96.4	2%
Chromium (Cr)-Dissolved	mg/L	0.0001	<0.00010	<DL	<0.00010	<0.00010	<DL	0.00011	0.00011	< 2xDL
Cobalt (Co)-Dissolved	mg/L	0.0001	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL
Copper (Cu)-Dissolved	mg/L	0.0005	0.0005	< 2xDL	0.00046	0.00042	< 2xDL	0.00051	0.00051	< 2xDL
Iron (Fe)-Dissolved	mg/L	0.01	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL
Lead (Pb)-Dissolved	mg/L	0.00005	<0.000050	<DL	<0.000050	<0.000050	<DL	<0.000050	<0.000050	<DL
Lithium (Li)-Dissolved	mg/L	0.0005	0.00555	2%	0.00417	0.00393	6%	0.00667	0.00636	5%
Magnesium (Mg)-Dissolved	mg/L	0.005	39.4	1%	20.2	18.8	7%	44.5	43.2	3%
Manganese (Mn)-Dissolved	mg/L	0.00005	0.00723	4%	0.0198	0.0187	6%	0.00609	0.00606	0%
Molybdenum (Mo)-Dissolved	mg/L	0.00005	0.00123	0%	0.00102	0.000987	3%	0.00127	0.00128	1%
Nickel (Ni)-Dissolved	mg/L	0.0005	0.00163	< 2xDL	0.00283	0.00263	7%	0.00195	0.00192	< 2xDL
Phosphorus (P)-Dissolved	mg/L	0.3	<0.30	<DL	<0.30	<0.30	<DL	<0.30	<0.30	<DL
Potassium (K)-Dissolved	mg/L	0.05	1.29	1%	0.883	0.815	8%	1.4	1.36	3%
Selenium (Se)-Dissolved	mg/L	0.0001	0.00175	3%	0.00135	0.00138	2%	0.00181	0.00187	3%
Silicon (Si)-Dissolved	mg/L	0.05	4.96	0%	3.71	3.55	4%	5.2	5.23	1%
Silver (Ag)-Dissolved	mg/L	0.00001	<0.000010	<DL	<0.000010	<0.000010	<DL	<0.000010	<0.000010	<DL
Sodium (Na)-Dissolved	mg/L	0.05	4.51	1%	2.68	2.53	6%	5.02	5.03	0%
Strontium (Sr)-Dissolved	mg/L	0.0002	0.372	2%	0.251	0.245	2%	0.402	0.39	3%
Thallium (Tl)-Dissolved	mg/L	0.00001	0.000014	<DL	<0.000010	<0.000010	<DL	<0.000010	<0.000010	<DL
Tin (Sn)-Dissolved	mg/L	0.0001	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL
Titanium (Ti)-Dissolved	mg/L	0.01	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<DL
Uranium (U)-Dissolved	mg/L	0.00001	0.00817	0%	0.0022	0.00202	9%	0.00925	0.00885	4%
Vanadium (V)-Dissolved	mg/L	0.001	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL
Zinc (Zn)-Dissolved	mg/L	0.003	0.0094	< 2xDL	0.0148	0.0147	< 2xDL	0.0111	0.0108	< 2xDL
Zirconium (Zr) - Dissolved	mg/L	0.0008	<0.00080	<DL	<0.00080	<0.00080	<DL	<0.00080	<0.00080	<DL

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APPENDIX D. FIELD NOTES

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Table D-1 Summary of 2014/15 Water Quality Field Notes.

Trip No.	Site Name	Date	Time	QA/QC Rep. ID	T (°C)	SPC (µS/cm)	pH	Turbidity (NTU)	DO (%)	DO (mg/L)	Flow Level	Site condition/ notes:
May	P4	27-May-14	9:20	-	7.6	163.1	7.28	-	-	-	moderate-high	Ice thickness n/a, Canada goose nest with 5 eggs near site, water is lower than last year, moderate turbidity, Photos: datasheet 115, u/s 116, d/s 117, overview 118-119.
May	A1	27-May-14	9:40	-	5.2	161.9	8.09	-	-	-	moderate	Ice thickness n/a, flow level normal for time of year, turbidity moderate, Photos: datasheet 120, u/s 121, d/s 122, overview 123.
May	R5	27-May-14	10:00	-	3.9	182.5	8.06	-	-	-	moderate-high	Ice thickness n/a, normal conditions for time of year, turbidity low to moderate, at LDB, Photos: datasheet 124, u/s 125, d/s 126, overview 127.
May	R6	27-May-14	10:30	R6-r	4.6	172.4	8.20	-	-	-	moderate	Ice thickness n/a, normal conditions for time of year, branch of ANVIL upstream of Rose has branched its banks and is creating overland flow, Photos: datasheet 128, u/s 129, d/s 130, overview 131.
May	R4	27-May-14	10:45	-	4.0	183.6	8.02	-	-	-	moderate	Ice thickness n/a, sample taken at tidbit on Rose Creek upstream of ANVIL RDB, Photos: datasheet 132, u/s 133, d/s 134, overview 135.
May	R3	27-May-14	11:10	-	4.3	177.3	7.90	-	-	-	moderate	Ice thickness n/a, regular sampling site on LDB, Photos: datasheet n/a, u/s n/a, d/s n/a, overview 2326.
May	V20A	27-May-14	11:45	-	5.2	258.3	7.75	-	-	-	moderate	Ice thickness n/a, sample taken at small stream, goes to ground (subsurface) just u/s of sampling site, Photos: datasheet 139, u/s 138, d/s 137, overview 136.
May	P1	27-May-14	12:05	-	7.6	163.8	8.08	-	-	-	moderate	Ice thickness n/a, on gravel bar mid-main channel, Photos: datasheet 140, u/s 141, d/s 142, overview 143.
May	V17A	27-May-14	14:15	-	6.4	112.3	7.54	-	-	-	moderate	Ice thickness n/a, upstream of culvert, Photos: datasheet 144, u/s 145, d/s 146, overview 147.
May	VR	27-May-14	14:35	-	2.7	39.2	7.47	-	-	-	moderate	Ice thickness n/a, upstream of culvert, Photos: datasheet 148, u/s 149, d/s 150, overview 151.
May	X14	26-May-14	13:55	-	5.2	220.9	7.97	4.61	-	-	moderate-high	Ice thickness n/a, water tea coloured, Photos: datasheet 2254, u/s 2255, d/s 2256, overview 2257.
May	V8	28-May-14	8:05	V8-r	2.3	168.7	8.01	-	-	-	moderate-high	Ice thickness n/a, water green-brown colour, turbidity moderate, Photos: datasheet 154, u/s 152, d/s 153, overview 155.
May	VGMAIN	28-May-14	9:30	-	2.3	131.7	7.96	-	-	-	moderate	Ice thickness n/a, water green-brown colour, some small black particulates, Photos: datasheet 155, u/s 156, d/s 158, overview 159.
May	USFR	28-May-14	15:15	-	6.4	28.4	7.58	-	-	-	moderate	Ice thickness n/a, Photos: datasheet 2362, u/s 2363, d/s 2364, overview 2365.
May	FC	28-May-14	16:00	-	2.5	12.3	6.90	-	-	-	moderate-high	Ice thickness n/a, moderate flow from diversion channel, water light tea colour, Photos: datasheet 2366, u/s 2367, d/s 2368, overview 2369.
May	W10	28-May-14	16:30	-	2.8	56.7	7.74	-	-	-	moderate	Ice thickness n/a, metal waste (Al) in creek (i.e., steel cable, pipe etc.), Photos: datasheet 2370, u/s 2371, d/s 2372, overview 2373.
May	NWID	28-May-14	16:50	-	7.7	2402.0	7.36	-	-	-	moderate	Ice thickness n/a, sampled ~14m upstream to avoid channel braiding, lots of braiding around sample site, Photos: datasheet 2374, u/s 2375, d/s 2376, overview 2377.
May	R1	28-May-14	17:15	-	7.2	102.3	8.04	-	-	-	moderate-high	Ice thickness n/a, approximately 10cm below high water mark (staff gauge 0.39m), Photos: 2378, u/s 2379, d/s 2380, overview 2381.
May	K8	28-May-14	17:30	-	4.1	34.1	7.77	-	-	-	moderate	Ice thickness n/a, water weak green tea colour, Photos: datasheet 2382, u/s 2385, d/s 2384, overview 2385.
May	GCULV	28-May-14	17:45	-	6.8	30.0	7.63	-	-	-	moderate	Ice thickness n/a, Photos: datasheet 2385, u/s 2386, d/s 2387, overview 2388.
May	VW3	28-May-14	18:00	-	5.0	108.2	7.86	-	-	-	moderate	Ice thickness n/a, sampled upstream of the culvert, regular sample site is not far enough d/s of culvert as per EDI SOP, Photos: datasheet 2389, u/s 2390, d/s 2391, overview 2392.
May	VW1	28-May-14	18:20	-	5.8	208.9	8.19	-	-	-	moderate	Ice thickness n/a, Photos: datasheet 2393, u/s 2394, d/s 2395, overview 2396.
May	VW2	28-May-14	18:40	-	3.2	480.3	8.44	-	-	-	moderate	Ice thickness n/a, Photos: datasheet 2397, u/s 2398, d/s 2399, overview 2400.
June	VW2	25-Jun-14	8:15	VW2-r	2.1	621.8	8.17	1.21	123.4	16.96	moderate	Ice thickness n/a, Photos: datasheet 3189, u/s 3190, d/s 3191, overview 3192.
June	V8	25-Jun-14	10:48	-	6.3	313.4	8.12	7.03	126.4	15.59	moderate	Ice thickness n/a, water green tea colour, Photos: datasheet 3193, u/s 3194, d/s 3195, overview 3196.
June	VGMAIN	25-Jun-14	10:00	-	6.4	294.0	8.11	3.99	125.9	15.52	moderate	Ice thickness n/a, Photos: datasheet 3204, u/s 3205, d/s 3206, overview 3207.
June	X14	23-Jun-14	14:45	X14-r	8.3	194.0	7.39	2.46	86.9	10.20	moderate	Ice thickness n/a, Photos: datasheet 3014, u/s 3015, d/s 3016, overview 3017.
June	K8	24-Jun-14	18:00	-	8.2	52.2	7.70	0.64	119.3	14.60	moderate	Ice thickness n/a, Photos: datasheet 3176, u/s 3174, d/s 3175, overview 3173.
June	GCULV	24-Jun-14	18:20	-	10.1	37.6	7.54	2.61	116.8	13.17	moderate	Ice thickness n/a, Photos: datasheet 3180, u/s 3178, d/s 3179, overview 3177.
June	VW3	24-Jun-14	18:30	-	5.9	105.3	7.57	0.80	113.8	14.02	moderate	Ice thickness n/a, Photos: datasheet 3184, u/s 3182, d/s 3183, overview 3181.
June	VW1	24-Jun-14	18:50	-	7.3	256.3	8.11	23.40	120.5	14.50	moderate	Ice thickness n/a, Photos: datasheet 3188, u/s 3186, d/s 3187, overview 3185.
June	P4	24-Jun-14	9:05	P4-r	13.0	274.7	8.16	10.14	121.9	12.74	moderate	Ice thickness n/a, geese have fledged, water levels down ~1-2m from last visit, Photos: datasheet 3057, u/s 3054, d/s 3055, overview 3056.
June	A1	24-Jun-14	10:00	-	8.3	205.3	8.17	8.48	127.2	14.93	moderate	Ice thickness n/a, water ~1-2m down from last visit, Photos: datasheet 3063, u/s 3061, d/s 3060, overview 3062.
June	R5	24-Jun-14	10:25	-	7.1	206.3	8.13	3.39	123.1	14.90	moderate	Ice thickness n/a, Photos: datasheet 3078, u/s 3076, d/s 3075, overview 3077.
June	R6	24-Jun-14	10:55	-	7.0	230.5	8.23	2.97	122.3	14.84	moderate	Ice thickness n/a, Photos: datasheet 3088, u/s 3086, d/s 3085, overview 3087.
June	R4	24-Jun-14	11:25	-	7.4	200.9	8.11	2.60	122.2	14.72	moderate	Ice thickness n/a, Photos: datasheet 3092, u/s 3090, d/s 3089, overview 3091.
June	R3	24-Jun-14	-	-	8.1	189.5	7.93	2.50	121.5	14.36	moderate	Ice thickness n/a, Photos: datasheet 3113, u/s 3111, d/s 3110, overview 3112.
June	W10	24-Jun-14	12:30	-	4.7	87.2	7.92	1.19	117.8	15.14	moderate	Ice thickness n/a, metal wire and piping submerged in creek, larger pool downstream at confluence with other small creek, Photos: datasheet 3120, u/s 3118, d/s 3117, overview 3119.
June	FC	24-Jun-14	13:05	-	6.7	23.5	7.22	1.39	116.2	14.20	moderate	Ice thickness n/a, Photos: datasheet 3134, u/s 3132, d/s 3131, overview 3133.
June	V20A	24-Jun-14	13:45	-	9.6	359.2	7.74	1.37	87.3	9.90	moderate	Ice thickness n/a, Photos: datasheet 3139, u/s 3137, d/s 3136, overview 3138.
June	P1	24-Jun-14	-	-	12.9	270.3	8.21	9.85	119.9	12.57	moderate	Ice thickness n/a, Photos: datasheet 3150,u/s 3148, d/s 3147, overview 3149.
June	V17A	24-Jun-14	16:25	-	8.9	114.1	7.65	0.83	119.3	13.73	moderate	Ice thickness n/a, Photos: datasheet 3156, u/s 3154, d/s 3153, overview 3155.
June	VR	24-Jun-14	16:40	-	4.0	44.8	7.33	0.75	117.7	15.43	moderate	Ice thickness n/a, Photos: datasheet 3160, u/s 3158, d/s 3157, overview 3159.
June	USFR	24-Jun-14	16:55	-	10.2	36.6	7.51	1.12	116.1	13.06	moderate	Ice thickness n/a, Photos: datasheet 3164, u/s 3162, d/s 3163 overview 3161.
June	NWID	24-Jun-14	17:20	-	8.8	2702.0	5.75	438.0	111.5	12.83	moderate	Ice thickness n/a, Photos: datasheet 3168, u/s 3166, d/s 3167, overview 3165.
June	R1	24-Jun-14	17:40	-	10.4	114.4	7.66	1.25	117.4	13.13	moderate	Ice thickness n/a, staff gauge at 4005, Photos: datasheet 3172, u/s 3170, d/s 3171, overview 3169.
July	X-14	21-Jul-14	14:14	-	10.7	442.4	7.52	1.85	83.5	9.25	moderate	Ice thickness n/a, Photos: datasheet 108-8621, u/s 108-8619, d/s 108-8620, overview 108-8618.
July	X-10	21-Jul-14	14:32	-	10.7	211.3	8.24	1.25	87.5	9.70	moderate	Ice thickness n/a, Photos: datasheet 8625, u/s 8623, d/s 8624, overview 108-8622.
July	X3A	21-Jul-14	14:51	-	10.3	201.4	8.05	1.32	89.7	10.04	moderate	Ice thickness n/a, Photos: datasheet 8629, u/s 8627, d/s 8628, overview 8626.
July	X2	21-Jul-14	15:11	X2-r	8.9	185.5	7.81	1.44	89.4	10.34	moderate	Ice thickness n/a, Photos: datasheet 8633, u/s 8631, d/s 8632, overview 8630.
July	NF2A	21-Jul-14	15:45	-	8.8	180.4	7.61	1.78	85.6	9.94	moderate	Ice thickness n/a, Photos: datasheet 8637, u/s 8635, d/s 8636, overview 8634.
July	NF2B	21-Jul-14	16:00	-	9.0	175.1	7.64	1.62	86.6	10.01	moderate	Ice thickness n/a, Photos: datasheet 8641, u/s 8639, d/s 8640, overview 8638.
July	NF2	21-Jul-14	16:14	-	9.1	193.1	7.58	2.01	86.4	9.96	moderate	Ice thickness n/a, Photos: datasheet 8645, u/s 8643, d/s 8644, overview 8642.
July	NF1	21-Jul-14	16:57	-	11.0	184.0	7.29	1.84	83.4	9.18	low	Ice thickness n/a, Photos: datasheet n/a, u/s 8649, d/s 8650, overview 8646-8648.
July	R10	21-Jul-14	17:18	-	10.7	172.8	7.94	0.99	88.2	9.78	moderate	Ice thickness n/a, Photos: datasheet 108-8654, u/s 8652, d/s 8653, overview 8651.
July	VW2	21-Jul-14	18:25	-	3.4	645.5	8.40	0.31	93.7	12.44	moderate	Ice thickness n/a, Photos: datasheet 8658, u/s 8656, d/s 8657, overview 8655.
July	V8	21-Jul-14	18:45	-	11.0	609.2	8.45	7.13	91.5	10.07	moderate	Ice thickness n/a, Photos: datasheet 8662, u/s 8660, d/s 8661, overview 8659.

Table D-1 Summary of 2014/15 Water Quality Field Notes.

Trip No.	Site Name	Date	Time	QA/QC Rep. ID	T (°C)	SPC (µS/cm)	pH	Turbidity (NTU)	DO (%)	DO (mg/L)	Flow Level	Site condition/ notes:
July	P4	22-Jul-14	8:50	-	15.8	327.5	8.21	6.88	91.3	9.06	moderate	Ice thickness n/a, Photos: datasheet 102-0728, u/s 102-0726, d/s 102-0727, overview 102-0729.
July	A1	22-Jul-14	9:07	-	8.9	295.7	8.29	10.46	100.3	11.60	moderate	Ice thickness n/a, Photos: datasheet 102-0732, u/s 102-0730, d/s 102-0731, overview 102-0733.
July	R5	22-Jul-14	9:40	R5-r	7.3	322.4	8.22	0.79	98.8	11.90	moderate	Ice thickness n/a, Photos: datasheet 102-0737, u/s 102-0734, d/s 102-0735, overview 102-0738.
July	R6	22-Jul-14	10:05	-	7.2	280.5	8.24	0.55	97.5	11.75	moderate	Ice thickness n/a, Photos: datasheet 102-0742, u/s 102-0739, d/s 102-0740, overview 102-0741.
July	R4	22-Jul-14	10:17	-	7.8	378.5	8.14	0.87	96.9	11.57	-	Ice thickness n/a, Photos: datasheet 102-0746, u/s 0744, d/s 0745, overview 0743.
July	R3	22-Jul-14	10:48	-	9.2	411.4	8.04	1.11	94.6	10.87	moderate	Ice thickness n/a, Photos: datasheet 102-0750, u/s 0748, d/s 0749, overview 0747.
July	W10	22-Jul-14	11:15	-	5.5	120.5	7.90	0.28	93.4	11.77	moderate	Ice thickness n/a, Photos: datasheet 102-0754, u/s 0752, d/s 0753, overview 0751.
July	FC	22-Jul-14	11:36	-	7.9	36.4	7.55	1.12	92.1	10.94	moderate	Ice thickness n/a, Photos: datasheet 0758, u/s 0756, d/s 0757, overview 0755.
July	V20A	22-Jul-14	12:05	-	9.8	404.3	7.62	0.04	58.6	6.57	low	Ice thickness n/a, Photos: datasheet 102-0764, u/s 0762, d/s 0763, overview 102-0761.
July	P1	22-Jul-14	12:30	-	16.3	323.7	8.33	7.72	91.7	8.99	moderate	Ice thickness n/a, Photos: datasheet 102-0768, u/s 0766, d/s 0767, overview 0765.
July	VW1	22-Jul-14	14:17	-	8.6	336.8	8.23	22.00	98.5	11.46	moderate	Ice thickness n/a, Photos: datasheet 102-0773, u/s 0771, d/s 0772, overview 0770.
July	VW3	22-Jul-14	14:37	-	8.3	150.4	7.84	0.97	94.5	11.09	moderate	Ice thickness n/a, Photos: datasheet 102-0779, u/s 0777, d/s 0778, overview 0776.
July	GCULV	22-Jul-14	14:54	-	13.2	57.4	7.79	0.46	91.6	9.60	moderate	Ice thickness n/a, Photos: datasheet 102-0788, u/s 0786, d/s 0787, overview 0785.
July	K8	22-Jul-14	15:12	-	8.8	112.7	7.99	0.31	95.0	11.04	moderate	Ice thicnkess n/a, Photos: datasheet 102-0792, u/s 0790, d/s 0791, overview 0789.
July	R1	22-Jul-14	15:32	-	12.5	202.5	8.20	1.06	97.60	10.4	moderate	Ice thickness n/a, Photos: datasheet 102-0796,u/s 0794, d/s 0795, overview 0793.
July	NWID	22-Jul-14	15:52	-	9.5	2223.0	7.61	20.60	88.5	10.03	moderate	Ice thickness n/a, Photos: datasheet 102-0818, u/s 0816, d/s 0817, overview 0815.
July	V17A	22-Jul-14	16:20	-	13.2	163.5	7.95	0.72	94.8	9.94	moderate	Ice thickness n/a, Photos: datasheet 102-0822, u/s 0820, d/s 0821, overview 0819.
July	VR	22-Jul-14	16:42	-	6.2	62.9	7.70	4.80	93.2	11.53	moderate	Ice thickness n/a, Photos: datasheet 102-0826, u/s 0824, d/s 0825, overview 0823.
July	USFR	22-Jul-14	17:02	USFR-r	14.0	55.0	7.85	0.52	90.0	9.25	moderate	Ice thickness n/a, Photos: datasheet 102-0830, u/s 0828, d/s 0829, overview 0827.
July	VGMAIN	22-Jul-14	18:24	-	12.0	698.0	8.26	0.56	97.1	10.44	moderate	Ice thickness n/a, Photos: datasheet 102-0841, u/s 0839, d/s 0840, overview 0838.
August	K8	19-Aug-14	17:10	-	7.8	94.9	7.72	1.14	109.8	13.09	moderate	Ice thickness n/a, water clear and moderate flow, Photos: datasheet 8739, u/s 8737, d/s 8738, overview n/a.
August	X14	19-Aug-14	14:15	-	8.5	317.5	7.34	1.20	112.1	13.92	moderate	Ice thickness n/a, water clear and moderate flow, Photos: datasheet 8701, u/s 8699, d/s 8700, overview n/a.
August	GCULV	19-Aug-14	17:25	-	9.4	100.2	7.17	1.96	107.3	12.32	moderate	Ice thickness n/a, conditions normal, clear and moderate, Photos: datasheet 8742, u/s 8740, d/s 8741, overview n/a.
August	VW3	19-Aug-14	14:35	-	7.2	171.9	7.64	0.61	106.7	12.80	moderate	Ice thickness n/a, pump at site with hose in creek (Photo 8743-8744), Photos: datasheet 8746, u/s 8744, d/s 8745, overview 8743.
August	VW2	19-Aug-14	18:05	-	3.6	676.6	8.30	0.60	113.1	14.97	moderate	Ice thickness n/a, water level moderate and clear, Photos: datasheet 8752, u/s 8751, d/s 8750, overview n/a.
August	VW1	19-Aug-14	17:50	-	8.2	355.5	8.12	1.76	109.9	12.96	moderate	Ice thickness n/a, low turbidity, moderate flow levels, Photos: datasheet 8747, u/s 8748, d/s 8749, overview n/a.
August	V8	19-Aug-14	18:20	-	9.6	695.6	8.35	1.80	112.9	12.80	moderate	Ice thickness n/a, low turbidity, moderate flow levels, Photos: datasheet 8755, u/s 8453, d/s 8754, overview n/a.
August	P4	20-Aug-14	9:00	PŞ-r	13.0	306.4	8.22	4.22	-	9.38	low-moderate	Ice thickness n/a, water levels low-moderate, noticed higher turbidity coming in from ANVIL, Photos: datasheet 8759, u/s 8757, d/s 8758, overview 8756.
August	A1	20-Aug-14	9:38	-	7.9	211.8	8.12	12.98	92.5	10.99	moderate	Ice thickness n/a, moderate turbidity and moderate water levels, sediment deposition or substrate, evidence of previous high flows (rain event), Photos: datasheet 8764, u/s 8763, d/s 8761, overview 8760.
August	R5	20-Aug-14	9:55	-	6.3	277.6	8.15	0.57	90.1	11.11	moderate	Ice thickness n/a, water clear u/s of landslide area, Photos: datasheet 8773, u/s 8766, d/s 8767, overview 8765.
August	R6	20-Aug-14	10:10	-	6.2	275.4	8.22	0.94	90.30	11.8	moderate	Ice thickness n/a, water levels low-moderate, clear water, Photos: datasheet 8774, u/s 8772, d/s 8771, overview 8770.
August	R4	20-Aug-14	10:15	-	6.5	284.0	8.11	0.84	92.1	1.28	moderate	Ice thickness n/a, moderate flow, clear water, Photos: datasheet 8779, u/s 8775, d/s 8776, overview 8777.
August	R3	20-Aug-14	10:40	-	7.1	284.1	8.04	1.66	-	10.06	low-moderate	Ice thickness n/a, low to moderate flows, clear, noticed slumping of bank on RDB, Photos: datasheet 8783, u/s 8780, d/s 8781-8782, overview 8779.
August	W10	20-Aug-14	10:55	-	5.3	131.5	7.80	0.00	83.8	10.62	low	Ice thickness n/a, water level low, clear, Photos: datasheet 8787, u/s 8784, d/s 8785, overview 8786.
August	FC	20-Aug-14	11:15	-	6.8	35.4	7.60	0.19	84.8	10.35	moderate	Ice thickness n/a, water clear and moderate levels, Photos: datasheet 8790, u/s 8788, d/s 8789, overview n/a.
August	V17A	20-Aug-14	15:25	-	8.0	191.2	8.02	0.47	88.3	10.46	low-moderate	Ice thickness n/a, Photos: datasheet 103-0143, u/s 103-0140, d/s 103-0142, overview 103-0139.
August	VR	20-Aug-14	15:45	-	5.6	71.8	7.70	0.07	89.3	11.33	low-moderate	Ice thickness n/a, Photos: datasheet 103-0147, u/s 103-0145, d/s 103-0146, overview 103-0144.
August	USFR	20-Aug-14	16:05	-	9.6	57.0	7.84	0.67	87.0	9.87	moderate	Ice thickness n/a, Photos: datasheet 103-0151, u/s 103-0149, d/s 103-0150, overview 103-0148.
August	VGMAIN	21-Aug-14	8:25	-	6.6	780.0	7.93	0.57	122.6	15.00	low-moderate	Ice thickness n/a, Do higher however, site shallow, fast flowing and water temperature fairly cold, Photos: datasheet 103-261, u/s 103-0259, d/s 103-260, overview 103-0258.
August	V20A	20-Aug-14	11:40	-	8.0	408.6	7.69	0.55	57.6	6.83	low	Ice thickness n/a, water level low, sampled where there was flow, some standing water around area, Photos: datasheet 8793, u/s 8791, d/s 8792, overview 8794.
August	P1	20-Aug-14	11:55	-	13.1	315.7	8.35	3.62	89.0	9.34	low	Ice thickness n/a, water level low, clear, Photos: datasheet 8799, u/s 8798, d/s 8797, overview 8795-8796.
August	R1	20-Aug-14	14:00	R1-r	8.4	180.3	8.14	0.62	91.8	10.73	low-moderate	Ice thickness n/a, Photos: datasheet 103-0134, u/s 103-0132, d/s 103-0133, overview 103-0131.
August	NWID	20-Aug-14	14:25	-	8.3	1959.0	7.63	16.04	82.3	9.60	low	Ice thickness n/a, water clear than usual, Photos: datasheet 103-0138, u/s 103-0136, d/s 103-0137, overview 103-0135.
September	P4	23-Sep-14	8:45	PŞ-r	6.2	349.1	6.45	5.16	90.6	11.18	moderate-high	Ice thickness n/a, Photos: datasheet 0876, u/s 0874, d/s 0875, overview 0873.
September	A1	23-Sep-14	9:10	-	3.3	237.6	7.69	19.03	92.8	12.37	moderate-high	Ice thickness n/a, Photos: datasheet 0990, u/s 0878, d/s 0879, overview 0877.
September	R5	23-Sep-14	9:35	-	2.7	284.5	7.89	2.97	91.1	12.35	high	Ice thickness n/a, Photos: datasheet 0892, u/s 0890, d/s 0891, overview 0889
September	R6	23-Sep-14	9:50	-	2.5	262.3	8.05	1.90	90.3	12.31	high	Ice thickness n/a, Photos: datasheet 0896, u/s 0894, d/s 0895, overview 0893.
September	R4	23-Sep-14	10:00	-	2.7	289.5	7.94	2.38	89.3	12.11	high	Ice thickness n/a, Photos: datasheet 0900, u/s 0898, d/s 0899, overview 0897.
September	R3	23-Sep-14	10:25	-	2.8	303.9	7.88	1.91	89.9	12.15	high	Ice thickness n/a, Photos: datasheet 0905, u/s 0903, d/s 0904, overview 0902.
September	W10	23-Sep-14	10:40	-	2.3	111.6	7.92	0.21	87.7	12.04	moderate-high	Ice thickness n/a, Photos: datasheet 0909, u/s 0907, d/s 0908, overview 0906.
September	FC	23-Sep-14	10:55	-	1.9	31.7	7.56	0.84	86.7	12.04	high	Ice thickness n/a, Photos: datasheet 0913, u/s 0911, d/s 0912, overview 0910.
September	V20A	23-Sep-14	11:20	-	3.7	391.2	7.67	0.00	77.5	10.18	moderate-high	Ice thickness n/a, Photos: datasheet 0919mu/s 0918, d/s 0916-0917, overview 0915.
September	P1	23-Sep-14	11:35	-	6.3	354.5	8.27	2.48	88.6	10.92	moderate	Ice thickness n/a, Photos: datasheet n/a, u/s 0928, d/s 0929, overview 0926.
September	V8	23-Sep-14	12:10	-	3.1	517.1	8.23	-	93.7	12.52	moderate-high	Ice thickness n/a, Photos: datasheet 0933, u/s 0931, d/s 0932, overview 0930.
September	VW2	23-Sep-14	13:30	-	2.0	665.6	8.37	0.00	93.0	12.83	moderate-high	Ice thickness n/a, Photos: datasheet 0937, u/s 0935, d/s 0936, overview 0934.
September	VW3	23-Sep-14	13:45	VW3-r	3.3	155.8	8.11	0.65	88.2	11.76	moderate-high	Ice thickness n/a, Photos: datasheet 0941, u/s 0939, d/s 0940, overview 0938.
September	GCULV	23-Sep-14	14:00	-	4.0	55.8	7.93	0.59	91.2	11.93	moderate-high	Ice thickness n/a, Photos: datasheet 0945, u/s 0943, d/s 0944, opoverview 0942.
September	K8	23-Sep-14	14:15	-	2.5	86.7	7.68	0.00	90.7	12.30	moderate-high	Ice thickness n/a, Photos: datasheet 0949, u/s 0948, d/s 0947, overview 0946.
September	R1	23-Sep-14	14:30	-	3.8	183.3	7.92	1.26	93.1	12.21	high	Ice thickness n/a, Photos: datasheet n/a, u/s 0951, d/s 0952, overview 0950.

Table D-1 Summary of 2014/15 Water Quality Field Notes.

Trip No.	Site Name	Date	Time	QA/QC Rep. ID	T (°C)	SPC (µS/cm)	pH	Turbidity (NTU)	DO (%)	DO (mg/L)	Flow Level	Site condition/ notes:
September	NWID	23-Sep-14	14:45	-	5.8	2213.0	7.24	9.27	84.0	10.42	moderate-high	Ice thickness n/a, Photos: datasheet 0956, u/s 0954, d.s 0955, overview 0953.
September	V17A	23-Sep-14	15:10	-	4.3	191.0	7.95	0.81	89.6	11.62	moderate	Ice thickness n/a, Photos: datasheet 0960, u/s 0958, d/s 0959, overview 0957.
September	VR	23-Sep-14	15:20	-	3.2	64.9	7.83	0.00	88.2	11.82	moderate	Ice thickness n/a, Photos: datasheet 0964, u/s 0962, d/s 0963, overview 0961.
September	USFR	23-Sep-14	15:40	-	4.7	54.3	7.78	0.04	88.4	11.37	high	Ice thickness n/a, Photos: datasheet 0968, u/s 0966, d/s 0967, overview 0965.
September	VW1	23-Sep-14	16:25	-	3.4	331.7	8.14	3.04	92.1	12.25	high	Ice thickness n/a, Photos: datasheet 0974, u/s 0972, d/s 0973, overview 0971.
September	VGMAIN	23-Sep-14	17:00	-	4.8	595.3	8.18	0.17	92.4	11.84	moderate-high	Ice thickness n/a, Photos: datasheet 0978, u/s 0976, d/s 0977, overview 0975,
September	X14	22-Sep-14	15:35	-	4.1	322.6	7.89	2.72	109.8	14.31	high	Ice thickness n/a, Photos: datasheet 0842, u/s 0840, d/s 0841, overview 0839.
October	V17A	20-Oct-14	13:20	-	0.6	204.6	6.43	0.44	97.6	13.99	low	Ice thickness n/a, some ice forming on margins <1cm, thin layer of ice cover at some sections, Photos: datasheet 1198, u/s 1199, d/s 1200, overview 1201.
October	VR	20-Oct-14	13:45	-	0.7	67.1	7.0	0.26	98.00	14.0	low	Ice thickness n/a, very thin ice forming on margins, some snow on margines otherwise open water, Photos: datasheet 1205, u/s 1203, d/s 1204, overview 1202.\
October	USFR	20-Oct-14	14:00	-	0.8	62.1	7.23	0.35	100.4	14.37	low	Ice thickness n/a, mostly open, ice forming on margins and on boulders, 5-10cm in some areas, Photos: datasheet 1209, u/s 1207, d/s 1208, overview 1206.
October	NWID	20-Oct-14	14:30	-	1.5	240.5	8.04	0.02	97.9	13.70	-	Ice thickness n/a, min ice and snow on margins, new site coordinates for location, need to update .shp at office, Photos: datasheet 1213, u/s 1211, d/s 1210, overview 1212-1214.
October	X14	20-Oct-14	14:55	X14-r	1.2	631.0	7.67	2.56	99.7	14.10	normal	Ice thickness n/a, no ide or snow on margins, Photos: datasheet 1218, u/s 1217, d/s 1216, overview 1215.
October	R1	20-Oct-14	15:30	-	1.1	218.2	8.00	1.51	100.6	14.26	low	Ice thickness, some ice on margins very minimal, Photos: datasheet n/a, u/s 1220, d/s 1221, overview 1219.
October	K8	20-Oct-14	15:40	-	0.9	108.2	8.02	0.01	101.5	14.47	low	Ice thickness on margins ~3cm, more ice on margins than any other site so far today, Photos: datasheet 1225, u/s 1224, d/s 1223, overview 1222.
October	GCULV	20-Oct-14	16:00	-	1.1	65.1	7.93	1.61	100.5	14.25	low	Ice thickness on margins ~2cm, Photos: datasheet 1229, u/s 1227, d/s 1228, overview 1226.
October	VW3	20-Oct-14	16:15	-	1.0	168.2	7.75	0.06	100.0	14.18	low	Ice thickness on margins <1cm, Photos: datasheet 1233, u/s 1231, d/s 1232, overview 1230.
October	VW1	20-Oct-14	16:30	-	1.2	357.3	8.18	32.90	101.9	14.37	low	Ice thickness n/a, on margins and debris, Photos: datasheet 1237, u/s 1236, d/s 1235, overview 1234.
October	VW2	20-Oct-14	16:45	-	1.6	367.5	8.41	1.01	102.3	14.30	low	Ice thickness n/a, ice free, Photos: datasheet 1241, u/s 1239, d/s 1240, overview 1238.
October	VGMAIN	20-Oct-14	17:10	-	2.1	437.0	8.36	0.69	104.6	14.39	low	Ice thickness n/a, ice free, Photos: datasheet 1244, u/s 1242, d/s 1243, overview 1245.
October	P4	21-Oct-14	9:20	P4-r	1.5	340.0	7.45	4.80	103.8	114.45	low-moderate	Ice thickness n/a, Photos: datasheet n/a, u/s 1246, d/s 1247, overview 1248.
October	A1	21-Oct-14	9:45	-	0.5	351.0	7.92	4.61	106.0	15.25	moderate	Ice thickness n/a, Photos: datasheet 1253, u/s 1249, downstream 1250, overview 1251-1252 + 1254.
October	R5	21-Oct-14	10:15	-	0.1	400.6	8.04	0.92	103.2	15.05	low	Ice thickness n/a, took sample on RDB side off island, water level low enough for heli to land on bar, Photos: datasheet1257, u/s 1256, d/s 1255, overview 1258.
October	R6	21-Oct-14	10:45	-	0.0	21.6	8.16	1.04	102.9	15.03	low-moderate	Ice thickness n/a, some ice forming on gravel bar and boulders in creek, Photos: datasheet 1266, u/s 1263, d/s 1264, overview 1265.
October	R4	21-Oct-14	10:35	-	0.0	510.9	7.98	1.37	100.2	114.57	low-moderate	Ice thickness n/a, some thin ice forming on vegetation on margin, Photos: datasheet 1261, u/s 1260, d/s 1259, overview 1262.
October	R3	21-Oct-14	11:05	-	0.0	565.5	7.89	1.60	100.0	14.60	low	Ice thickness n/a, add WPT to master list in office, Photos: datasheet 1270, u/s 1267, d/s 1268, overview 1269.
October	W10	21-Oct-14	11:30	-	0.2	110.1	7.89	2.39	110.0	14.20	low-moderate	Ice thickness n/a, open with thin ice and snow on margins, Photos: datasheet 1273, u/s 1271, d/s 1272, overview 1274.
October	FC	21-Oct-14	11:45	-	0.0	34.0	7.74	0.01	98.3	14.33	low-moderate	Ice thickness n/a, some ice on margins ~5cm, mostly open, Photos: datasheet 1278, u/s 1275, d/s 1276, overview 1277.
October	V20A	21-Oct-14	12:05	-	0.2	385.7	7.61	0.01	89.0	12.88	low	Ice thickness ~1-2cm mostly snow cover but open areas, Photos: datasheet 1281, u/s n/a, d/s 1280, overview 1279.
October	P1	21-Oct-14	12:25	-	1.6	338.8	8.23	2.30	103.5	14.42	low-moderate	Ice thickness n/a, Photos: datasheet 1285, u/s 1284, d/s 1283, overview 1282.
October	V8	21-Oct-14	13:00	-	1.0	472.9	7.54	1.68	106.2	15.07	low	Ice thickness n/a, Photos: datasheet 1288, u/s 1287, d/s 1286, overview 1289.
November	P4	19-Nov-14	9:55	-	0.0	410.9	6.87	1.01	69.0	10.06	low	Ice thickness 27cm, overflow and thick ice at edge of island, channel ice is thinner, some open areas u/s and d/s of island, Photos: datasheet 3793, u/s 3794, d/s 3795, ovreview 3796.
November	A1	19-Nov-14	10:15	-	0.0	316.7	7.72	1.02	71.0	10.37	low	Ice thickness variable, mushy overflow ice along edge of creek, water too shall/lots of overflow at regular site, sampled ~100m u/s ahead of sandbar, Photos: datasheets 3798, u/s 3801, d/s 3802, overview 3803.
November	R4	19-Nov-14	11:00	R4-r	0.0	363.8	7.26	0.41	60.5	8.82	low	Ice thickness variable ~25cm, lots of overflow and open patches sampled ~10m d/s from regular site @ open water, Photos: datasheet 3817, u/s 3818, d/s 3819, overview 3824.
November	R6	19-Nov-14	-	-	0.0	296.4	7.35	0.81	65.1	9.52	low	Ice thickness variable, lots of layered overflow, some open patches, sampled ~10 m u/s of regular site, Photos: datasheet 3825, u/s 3833, d/s 3835, overview 3832+3836.
November	R5	19-Nov-14	11:43	-	0.0	330.4	7.34	0.59	64.2	9.36	low	Ice thickness variable ~30cm at edge, lots of overflow and layered ice, some open patches including one at the sample site, Photos: datasheet 3837, u/s 3838, d/s 3839, overview 3840.
November	R3	19-Nov-14	12:20	-	0.0	375.4	7.35	0.71	65.1	9.52	low	Ice thickness variable, layered overflow ice, open patch of sample site, Photos: datasheet 3855, u/s 3856, d/s 3857, overview 3858.
November	W10	19-Nov-14	12:45	-	0.0	112.1	7.67	0.22	64.1	9.31	low	Ice thickness 2cm, very little flow, some only a trickly, some ponded water, Photos: datasheet 3859, u/s 3860, d/s 3861, overview 3863.
November	FC	19-Nov-14	13:10	-	0.0	34.5	7.49	0.27	65.7	9.58	low	Ice thickness 12cm, no water from ditch drainage, some layered ice from overflow, no open water, but some areas with thinner ice that may have been opened recently, Photos: datasheet 3864, u/s 3865, d/s 3866, overview 3867.
November	V20A	19-Nov-14	13:45	-	2.4	251.9	7.06	3.57	43.0	5.02	low	Ice thickness variable ~<1cm, flow level very low, main swampy area below road is dr/no ice, found puddle and some flow likely groundwater on the RDS bank side, algae pic 3871, Photos: datasheet 3868, u/s 3869, d/s 3870, overview 3871.
November	P1	19-Nov-14	14:10	-	0.0	407.7	7.89	1.28	68.6	10.00	low	Ice thickness variable, overflow ice, open channel near d/s side of island where we sampled, Photos: datasheet 3875, u/s 3876, d/s 3877, overview 3878-80.
November	V17A	19-Nov-14	16:15	-	0.0	281.2	7.48	3.10	60.0	8.73	low	Ice thickness 5cm, pool u/s f culvert does not have flow, found flow almost directly u/s of culvert under snow drift, Photos: datasheet 3881, u/s 3882, d/s 3883, overview 3884.
November	VR	19-Nov-14	16:30	-	0.0	71.6	7.83	1.11	64.6	9.44	low	Ice thickness 56.5cm, frozen almost to bed, culvert mostly frozen, but can hear some flow, lots of layered overflow directly u/s of culvert, water in layers in ice, Photos: datasheet 3885, u/s 3886, d/s 3887, overview 3888.
November	USFR	19-Nov-14	16:55	-	0.0	71.0	7.48	0.47	67.1	9.80	low	Ice thickness 8cm, lots of overflow, large ice at waterfall near sample site, channel narrowed by ice, but has strong flow, Photos: datasheet 3889, u/s 3890, d/s 3891, overview 3892.
November	K8	19-Nov-14	17:35	-	0.0	126.4	7.50	0.00	68.9	10.06	low	Ice thickness variable, layers of overflow ice, sampled at open patch, Photos: datasheet 3895, u/s 3894, d/s 3895, overview 3896-98.
November	GCULV	19-Nov-14	18:00	-	0.0	74.8	7.53	0.57	65.7	9.59	low	Ice thickness 10cm at hole and variable throughout, lots of layered and falling overflow, Photos: datasheet 3899, u/s 3800, d/s 3901, overview 3902.
November	VW3	19-Nov-14	18:25	-	0.2	232.8	7.47	0.61	66.5	9.66	low	Ice thickness variable, thin ice on channel, thicker overflow ice at edge, open water patches with sample site at one of these, Photos: datasheet, 3903, u/s 3904, d/s 3905, overview 3906.
November	VW2	19-Nov-14	19:10	-	0.5	638.2	8.12	0.08	68.9	9.93	low	Ice thickness variable, very little overflow ice, open water in small patches, sampled at opening, Photos: datasheet 3908, u/s 3909, d/s 3910, overview 3910.
November	X14	18-Nov-14	14:00	-	0.0	155.9	6.80	1.66	106.1	15.50	low	Ice thickness variable, open channel, ice 5-10cm at edge, can stand on ice closet o shore, Photos: datasheet 3728, u/s 3724, d/s 3725, overview 3726-3727.

Table D-1 Summary of 2014/15 Water Quality Field Notes.

Trip No.	Site Name	Date	Time	QA/QC Rep. ID	T (°C)	SPC (µS/cm)	pH	Turbidity (NTU)	DO (%)	DO (mg/L)	Flow Level	Site condition/ notes:
November	R1	20-Nov-14	8:40	-	0.0	231.8	7.40	0.94	99.1	14.48	low	Ice thickness variable ~2cm, lots of layered overflow ice, sampled at recently open patch, Photos: datasheet 3912, u/s 3913, d/s 3914, overview 3915.
November	NWID	20-Nov-14	9:30	-	0.0	254.1	7.98	0.01	103.2	15.08	low	Ice thickness variable 2-10cm, new WPT 0582751 691483 provided 20m off, some overflow layer, patches of thin ice, water ~4cm deep, Photo: datasheet 3916, us 3917, d/s 3918, overview 3919.
November	VW1	20-Nov-14	12:00	-	0.0	66.5	7.76	2.40	32.3	4.66	low	Ice thickness variable, found open flow along RDB, thin overflow ice layer and snow, lots of overflow ice layers, Photos: datasheet 305, u/s 648, d/s 461, overview 972.
November	V8	20-Nov-14	13:00	V8-r	0.0	55.7	7.96	7.43	131.1	19.15	low	Ice thickness variable, DO expected to be high because of proximity to waterfall and temperature, some overflow ice layers in channel and bank u/s and d/s of bridge, some larger open sections one right under bridge and sample site, Photos: datasheet 073, u/s 024, d/s 051, overview 237.
November	VGMAIN	20-Nov-14	14:30	-	0.0	497.0	7.96	0.38	130.0	18.92	low	Ice thickness variable, DO expected to be high because of proximity to waterfall and temperature, some layered overflow ice, some open water patches, sampled at one under bridge, Photos: datasheet 046, u/s 655, d/s 077, overview 078.
December	P4	22-Dec-14	10:45	-	0.2	395.6	7.52	2.66	79.2	11.47	low	Ice thickness 1 m (whole auger shaft). Thick layers of ice, then overflow, then another layer of ice, then water. Photos: datasheet 781, u/s 777-76, d/s 778, overview 779-80.
December	A1	22-Dec-14	10:55	-	-0.1	321.9	7.52	1.31	99.9	14.62	low	Ice thickness 6 cm at sample site. Small open water lead accessible for sampling. Photos: datasheet 787, u/s 782, d/s 783, overview 784-85.
December	R4	22-Dec-14	11:35	-	-0.1	409.3	7.09	0.43	95.2	13.94	low	Ice thickness variable. Lots of slumped overflow ice layers. Sampled ~10m d/s near area with thin ice. Ice top ~1 m above water.
December	R6	22-Dec-14	11:55	R6-r	-0.1	300.2	7.43	1.43	95.5	14.02	low	Ice thickness 5-80 cm. Photos: datasheet 809, u/s 805, d/s 806, overview 807-08.
December	R5	22-Dec-14	11:15	-	-0.1	357.5	7.22	0.95	97.6	14.29	low	Ice thickness 5-60 cm (variable). Sampled on RDB of left channel (left side of island). Lots of overflow ice layers. Photos: datasheet 795, u/s 791, d/s 792, overview 794-93.
December	R3	22-Dec-14	12:15	-	-0.1	442.8	7.32	3.70	89.8	13.07	low	Ice thickness 10 cm. Sampled at thin ice just u/s of overhanging tree. Photos: datasheet 813, u/s 810, d/s 811, overview 812.
December	W10	22-Dec-14	12:35	-	-	-	-	-	-	-	-	Frozen to bed, no flow. No sample taken. Photos: datasheet 817, u/s 815, d/s 816, overview 814.
December	FC	22-Dec-14	12:35	-	-0.1	38.2	7.20	0.56	95.5	13.96	low	Ice thickness 15 cm. Some runoff from road ditch just d/s of sample site. Ice soft. Photos: datahseet 821, u/s 818, d/s 819, overview 820.
December	V20A	22-Dec-14	13:15	-	0.0	440.2	7.18	0.83	60.9	8.96	low	Ice thickness 5-20 cm. Groundwater upwell, not very much movement of water. Photos: datasheet 825, u/s 822, d/s 823-24, overview 826-27.
December	P1	22-Dec-14	13:35	-	-0.1	380.9	7.44	0.99	90.6	11.80	moderate	Ice thickness 15 cm. Open water leads downstream of sampling site. Photos: datasheet 830, u/s 828, d/s 829, overview 831-32.
December	V17A	21-Dec-14	16:00	-	-	-	-	-	-	-	-	Chipped 4 holes in the ice, no water found. Frozen to bed at each whole. No sample taken. Photos: datasheet 750, u/s 742, d/s 743, overview 746-44.
December	VR	21-Dec-14	16:50	-	-0.1	75.2	7.81	0.39	81.5	11.98	low	Ice thickness 60 cm. Flow very low and along RDB . First hole in middle of channel hit bed. Culvert almost completely full of overflow ice. Flow still audible. Photos: datasheet 756, u/s 753, d/s 754, overview 751, 755.
December	USFR	22-Dec-14	15:15	-	0.1	78.0	6.78	1.15	98.2	14.32	low	Ice thickness 5 cm. Photos: datasheet 836, u/s 833, d/s 834, overview 835.
December	K8	22-Dec-14	16:10	-	-0.1	139.9	7.24	0.22	100.80	14.8	low	Ice thickness 5 cm (shelf ice). Low but steady flow. Photos: datasheet 845, u/s 841, d/s 842, overview 843.
December	GCULV	23-Dec-14	10:45	-	0.0	895.4	7.70	0.37	116.2	16.96	low	Ice thickness 10 cm. Photos: datasheet 868, u/s 865, d/s 866, overview 867.
December	VW3	23-Dec-14	11:15	-	0.0	297.7	7.47	0.86	116.8	16.91	low	Ice thickness 5-10 cm (variable). Photos: datasheet 872, u/s 869, d/s 870, overview 871.
December	VW2	22-Dec-14	8:30	VW2-r	0.1	668.4	7.16	0.25	102.7	14.93	low	Ice thickness 19 cm. Low flow, but steady flow. Photos: datasheet 762, u/s 758, d/s 759, overview 760-61.
December	X14	21-Dec-14	13:50	-	0.0	518.0	6.79	3.03	102.4	14.93	low	Ice thickness 14 cm. Open water lead just u/s. Ice fairly thin d/s. Photos: datasheet 707, u/s 703, d/s 704, overview 705-06.
December	R1	23-Dec-14	10:25	-	-0.1	266.3	7.73	2.32	110.5	16.16	low	Ice thickness 30 cm. Still truck accessible, borderline too much snow. Photos: datasheet 864, u/s 861, d/s 862, overview 863.
December	NWID	22-Dec-14	15:40	-	-0.1	294.4	7.36	1.19	100.1	14.50	very low	Ice thickness variable, slushy ice. Only about 5cm deep water. Photos: datasheet 840, u/s 837, d/s 838, overview 839.
December	VW1	22-Dec-14	9:00	-	-0.1	428.7	7.25	2.43	101.0	14.79	low	Ice thickness 43 cm. Thick ice, somewhat hard to find water. Photos: datasheet 766, u/s 763, d/s 764, overview 765.
December	V8	22-Dec-14	9:35	-	0.1	540.1	7.82	1.43	106.5	15.35	low	Ice thickness 25 cm. Very small opening in ice just upstream of bridge. Photos: datasheet 775, u/s 769, d/s 774, 770, overview 772-71.
December	VGMAIN	23-Dec-14	11:55	-	0.2	608.9	7.84	0.27	123.2	17.96	low	Ice thickness 15 cm. Photos: datasheet 876, u/s 873, d/s 874, overview 845.
January	P4	20-Jan-15	13:58	-	-0.1	335.0	7.62	0.51	-	8.01	low	Ice thickness 15 cm. Sampled at open water area on RDB of island.
January	A1	20-Jan-15	13:35	A1-r	-0.2	286.5	7.88	1.19	-	11.42	low	Ice thickness 40 cm. Could use ice auger next time. LDB good flow and depth at sample location.
January	R4	20-Jan-15	12:00	-	-0.2	504.8	7.49	1.31	-	10.93	low	Ice thickness 20 cm. Various levels of ice, large air spaces between. Photos: u/s 9494-95, d/s 9496, overview 9497.
January	R6	20-Jan-15	12:25	-	-0.2	318.2	7.63	1.03	-	11.63	low	Ice thickness 30 cm. Various ice levels, collapsed shelf. Photos: u/s 9488, d/s 9499, overview 9500.
January	R5	20-Jan-15	12:58	-	-0.1	338.7	7.68	0.52	-	11.11	low	Ice thickness 35 cm. RDB of island. Ice shelves. Photos: u/s 9502, d/s 9501
January	R3	20-Jan-15	11:30	-	-0.2	571.5	7.33	2.53	-	11.33	low	Ice thickness 15 cm. Good flow beneath ice, sampled at location where tracks and thin ice were. Photos: u/s 9492, d/s 9493, overview 9491.
January	W10	-	-	-	-	-	-	-	-	-	-	Frozen to bed at previous trip. Did not visit.
January	FC	20-Jan-15	11:10	-	-0.1	44.3	8.06	0.49	-	11.70	low	Ice thickness 25 cm. Good flow beneath ice. Photos: u/s 9489, d/s 9490
January	V20A	20-Jan-15	10:34	-	-0.1	494.6	7.69	0.66	-	7.67	low	Slow flow, but found sufficient water below ice. Photos: u/s 9487-86, d/s 9488.
January	P1	20-Jan-15	14:40	-	-0.2	272.8	7.52	0.25	-	8.43	low	Ice thickness 10 cm. Thinner ice area off LDB of small island in main channel.
January	V17A	-	-	-	-	-	-	-	-	-	-	Frozen to bed at previous trip. Did not visit.
January	VR	19-Jan-15	15:00	-	-0.1	92.9	6.03	0.30	-	-	low	No DO reading due malfunctioning equipment. Ice thickness 30 cm. About 3 cm of water beneath ice, close to freezing to bed. Photos: datasheet 9482, u/s 9480, d/s 9481.
January	USFR	19-Jan-15	15:50	-	-0.1	10.8	6.74	0.25	-	14.86	low	Ice thickness 10 cm. Regular sampling location, water low and shallow.
January	K8	19-Jan-15	17:15	-	-0.1	153.5	7.86	0.12	-	14.26	low	Ice thickness 15 cm. Good flow beneath ice. Photos: u/s 896-897, d/s 898.
January	GCULV	19-Jan-15	17:48	-	0.0	93.9	7.69	0.15	-	14.22	low	Ice thickness 20 cm. Sampled from regular location. Good flow beneath ice. Photos: u/s 899, d/s 903.
January	VW3	20-Jan-15	17:10	-	-0.1	320.1	7.55	4.67	-	12.85	low	Ice thinkness 30 cm. Brittle ice- hard layers on snow/ice layer. Water appears to be flowing upstream slowly- sample may be from a back eddy. No photos taken.
January	VW2	20-Jan-15	18:20	-	0.0	752.7	7.93	0.17	-	13.10	low	Ice thickness 25 cm. Ice easy to chip through. Good flow ~20cm water depth beneath ice. Photos: u/s 918, d/s 919.
January	X14	21-Jan-15	9:50	X14-r	0.0	710.0	7.11	2.11	-	13.98	low	Ice thickness 5 cm. Open water area at site and u/s area. Orange colour and orange algae on rocks. Photos: u/s 9515, d/s 9516, overview 9514.
January	R1	21-Jan-15	-	-	-	-	-	-	-	-	-	Ice thickness > 70 cm, too thick for spud and auger unsafe to sue due to missing pin. Will try to get sample next trip.
January	NWID	19-Jan-15	16:40	-	-0.2	312.4	7.52	0.13	-	12.34	low	Ice in layers; main layer ~15cm, above that brittle snow/ice ~20 cm. Can hear flow at site. 5-10 cm of water beneath ice. Photos: u/s 893, d/s 894, overview 895.
January	VW1	20-Jan-15	17:55	-	-0.1	481.5	7.51	3.10	-	13.20	low	Ice thickness 25 cm. Thick ice, could hear slow water tricklining. Sufficient flwo beneath ice for sample. Photos: u/s 910, d/s 911, overview 913.
January	V8	20-Jan-15	9:15	-	-0.1	685.9	7.64	2.46	-	-	low	Ice thickness 20cm. Forgot to write down DO reading. Sampled from middle of channel. Good flow beneath ice. Photos: u/s 907, d/s 908.
January	VGMAIN	20-Jan-15	8:28	-	-0.1	633.3	7.40	0.72	-	15.40	low	Ice thickness 10 cm. Sampled from RDB, thinner ice area. Good flow beneath ice. Photos: u/s 904, d/s 906.
February	P4	24-Feb-15	9:10	-	0.0	435.4	7.14	0.44	52.4	7.66	low	Ice thickness 42 cm. Minimal layers of overflow. ~15m from LDB. Channel with flow appears narrow. Open lead ~400m d/s. Used power auger to access sample water. Small pockets of open water on RDB side of island. Photos: datasheet 004, u/s 001, d/s 002, overview 003.

Table D-1 Summary of 2014/15 Water Quality Field Notes.

Trip No.	Site Name	Date	Time	QA/QC Rep. ID	T (°C)	SPC (µS/cm)	pH	Turbidity (NTU)	DO (%)	DO (mg/L)	Flow Level	Site condition/ notes:
February	A1	24-Feb-15	9:50	-	0.0	397.5	7.89	2.45	77.6	11.32	low	Ice thickness 39 cm. Ice dropped noticeably from last visit. Sampled near RDB in channel by leaning spruce tree at lowest point in channel. Some black particulates in the water (possibly from stirring up the water with the spud). Photos: datasheet 008, u/s 005, d/s 006, overview 007.
February	R4	24-Feb-15	11:20	-	0.0	600.4	7.63	0.73	72.4	10.57	low	Ice thicknes 10 cm to variable. Layers of overflow ice. Photos: datasheet 21, u/s 13, d/s 14, overview 15.
February	R6	24-Feb-15	11:45	-	0.0	329.8	7.84	0.80	73.5	10.72	low	Ice thickness 0cm to variable; lots of layers. Open water downstream ~1m under ice shelf. Photos: datasheet 022, u/s 16,20, d/s 17, overview 18, 19.
February	R5	24-Feb-15	10:35	-	0.0	450.7	7.68	0.84	75.6	11.03	low	Ice thickness 12 cm. Ice dropped from last visit- noticeable ground island at site. Open water leads scattered downstream.
February	R3	14-Feb-15	12:15	R3-r	0.0	707.4	7.51	2.93	69.2	10.08	low	Ice thickness variables; layers of ice. Open water at sample site. Photos: datasheet 026, u/s 23, d/s 24, overview 25
February	W10	-	-	-	-	-	-	-	-	-	-	Frozen to bed at previous trip. Did not visit.
February	FC	24-Feb-15	12:50	-	0.0	47.9	7.79	0.26	67.9	9.87	low	Ice thicknes 9 cm to variable. Low water depth. Flow not consistant/surging at times, might be getting caught up in ice overflow layers upstream. Photos: datasheet 30, u/s 27, d/s 28, overview 29.
February	V20A	24-Feb-15	13:25	-	-	-	-	-	-	-	-	Did not sample; no flow. Found seep, but only mud and slush. Photos: datasheet 35, u/s 33, d/s 34, overview 31, 32, 36
February	P1	24-Feb-15	14:05	-	0.0	426.4	7.46	0.28	57.7	8.39	low	Ice thickness 53cm. No visible open water in sampling area. Open water leads downstream ~400m. Used auger to access sample water. Photos: datasheet 43, u/s 38, d/s 37, overview 39.
February	V17A	-	-	-	-	-	-	-	-	-	-	Frozen to bed at previous trip. Did not visit.
February	VR	25-Feb-15	18:20	-	0.0	89.8	8.09	0.22	107.0	15.57	low	Sampled overflow water. Heard minimal flow through culvert, culvert entrance ~80% full of ice. Watched overflow water seeping into culvert. Made 2 holes, could not find flow beyond overflow water going through slush/ice.
February	USFR	26-Feb-15	8:00	-	0.0	106.4	7.64	0.64	127.4	18.61	low	Ice thickness 15 cm to variable. Sampled at same place as last visit. Photos: u/s 165, d/s 166, overview 167.
February	K8	24-Feb-15	16:20	-	0.0	165.7	7.96	0.32	74.0	10.79	low	Ice thickness ~15cm. Overflow ice in middle of channel at last visits site. Sample taken near LDB. Photos: datasheet 43, u/s 40, d/s 41, overview 42.
February	GCULV	24-Feb-15	16:55	-	0.0	112.5	7.74	0.19	73.2	10.67	low	Ice thickness 14 cm. Overflow ice ~1m on top. Photos: datasheet 48, u/s 45, d/s 44, overview 46, 47.
February	VW3	26-Feb-15	10:05	-	0.0	356.0	7.77	38.00	107.5	15.65	low	Ice thickness 66cm. May have stirred up some sediment when chipping; nearly frozen to bed. Photos: u/s 171, d/s 172, overview 173.
February	VW2	26-Feb-15	11:30	-	0.0	674.1	8.06	0.40	110.2	16.10	low	Ice thickness 34 cm to variable. Sweet little consistant VW2! Photos: u/s 178, d/s 179, overview 180.
February	X14	25-Feb-15	9:30	-	0.0	868.5	6.96	12.24	123.8	17.89	low	Open water at sample site and 20 m u/s, overflow on remaining ice (very thin layer of new ice forming).
February	R1	26-Feb-15	9:10	-	0.0	250.1	7.51	2.02	128.5	18.68	low	Ice thickness 50-60 cm to variable. Sampled ~4m d/s from staff gage on LDB. Ice noticeably muddy with sediments. Layers of overflow ice. Photos: u/s 169, d/s 168, overview 170.
February	NWID	26-Feb-15	8:30	-	-	-	-	-	-	-	-	Frozen to bed. No sample taken.
February	VW1	26-Feb-15	11:00	-	-	-	-	-	-	-	-	Top layer of ice 27cm, then 15 cm of snow, lower ice layer 76 cm= total ice thickness 82 cm. No sample taken. Layers of overflow ice. Sample hole hit alder root (thick!), broke through to bottom; slush, mud, no flow. Photos: u/s 176, d/s 174, overview 175, 177.
February	V8	24-Feb-15	17:35	-	0.0	722.2	8.03	2.14	79.3	11.56	low	Ice thickness ~40cm. Layers of overflow ice present at site. Photos: datasheet 53, u/s 50, d/s 51, overview 52.
February	VGMAIN	26-Feb-15	7:00	-	0.1	658.9	7.96	0.16	140.7	20.20	low	Ice thickness 15cm to variable. Sampled at same place as last visit. High DO levels: cold weather, base of waterfall. Photos: u/s 162, d/s 163, overview 164.
March	P4	24-Mar-15	8:55	P4-4	0.0	444.9	7.06	0.63	-	-	low	Ice thickness 64 cm. DO probe malfunctioning. Sampled ~15 m from LDB, between island and LDB. Open, standing water on other side of island. Photos: datasheet 230, u/s 231, d/s 232, overview 233.
March	A1	24-Mar-15	9:40	-	0.0	418.9	8.07	0.87	-	-	low	Ice thickness 7 cm. Sampled at thin ice near open lead, ~100 m d/s of regular sample site (bottom end of bend in creek) - see aerial photos. Photos: datasheet 243, u/s 244, d/s 246, overview 247-9.
March	R4	24-Mar-15	10:50	-	0.0	637.9	7.56	0.41	-	-	low	Ice thickness 10 cm. Sampled at same location as last visit. Thin ice under layered, hanging overflow ice. Photos: datasheet 254, u/s 255, d/s 256, overview 257.
March	R6	24-Mar-15	11:15	-	0.0	340.7	7.95	0.42	-	-	low	Ice thickness 9 cm. Sampled near LDB at same hole as last visit. Ice at hole is rotten. Good flow, water ~10 cm deep. Photos: datasheet 258, u/s 261-62, d/s 259, overview 260.
March	R5	24-Mar-15	10:35	-	0.0	470.6	7.75	0.54	-	-	low	Open hole at sample site. Sampled beside island between island and LDB. Photos: datasheet 253, u/s 250, d/s 252, overview 251.
March	R3	24-Mar-15	11:45	-	0.0	733.2	7.56	2.59	-	-	low	Ice thickness 12 cm. Some open patches and areas with thin ice. Good flow. Photos: datasheet 263, u/s 264, d/s 265, overview 266.
March	W10	-	-	-	-	-	-	-	-	-	-	Frozen to bed at previous trip. Did not visit.
March	FC	24-Mar-15	12:15	-	0.0	56.1	7.36	0.20	-	-	low	Ice thickness 10 cm. Flow nearer RDB. Sampled at old sample hole. Water ~10 cm deep, good hole (audible). Photos: datashee 267, u/s 268, d/s 269, overview 270.
March	V20A	24-Mar-15	12:45	-	-	-	-	-	-	-	-	Frozen to bed; some chunks of ice, mostly packed snow. No slush. Photos: u/s 271, overview 272.
March	P1	24-Mar-15	13:10	-	0.0	437.0	7.40	0.68	-	-	low	Ice thickness 30 cm. Sampled between LDB and island (landed on shore, not island). Open water holes, surrounding ice ~30cm. Water ~70 cm deep, good flow. Photos: datasheet 273, u/s274, d/s 275, overview 276.
March	V17A	-	-	-	-	-	-	-	-	-	-	Frozen to bed at previous trip. Did not visit.
March	VR	23-Mar-15	-	-	-	-	-	-	-	-	-	Ice thickness 96 cm. Frozen to bed, no sample taken. Very deep snow (> 1m) in area surrounding creek.
March	USFR	23-Mar-15	14:15	-	0.0	113.3	7.69	0.50	-	-	low	Ice thickness 8 cm to variable. Sampled at old sample hole where ice was thin. Flow shallow (~10 cm) but strong.
March	K8	25-Mar-15	8:20	-	0.0	171.2	8.03	0.22	-	-	low	Ice thickness 8-40 cm. Thin ice over old sample hole. Water ~8 cm deep, good flow.
March	GCULV	25-Mar-15	8:40	-	0.0	118.0	7.80	0.87	-	-	low	Ice thickness 15-40 cm. Sampled from existing hole. Water ~10 cm deep, good flow. Layered overflow ice and snow above. Photos: datasheet 314, u/s 315, d/s 316, overview 317.
March	VW3	25-Mar-15	7:25	-	0.2	452.4	7.38	5.54	-	-	low	Ice thickness 100 cm. Upwelling at hole. Suspect water is back up behind frozen culvert. Heard flow and found slush in willows near RDB beside road (photos 312-13). No sign of previous hole, upwelling once culvert froze may have filled it up. Photos: datasheet 308, u/s 309, d/s 310, overview 311.
March	VW2	24-Mar-15	17:45	-	0.0	779.4	8.09	0.06	-	-	low	Ice thickness 8- 27 cm. Thin ice over old sample hole; other ice 27 cm. Water ~8 cm deep, good flow. Photos: datasheet 300, u/s 301, d/s 302, overview 303.
March	X14	23-Mar-15	15:15	-	0.6	899.4	7.11	5.06	-	-	low	Ice thickness variable. Open lead at sample site. Recalibrated DO- getting bad readings. Photos: datasheet 217, u/s 214, d/s 215, overview 216.
March	R1	24-Mar-15	17:00	-	0.0	291.1	7.33	2.63	-	-	low	Ice thickness 40 cm. Sampled near LDB at site from last visit. Shallow water (<10 cm), good flow. Photos: datasheet 277, u/s 278, d/s 279, overview 280.
March	NWID	-	-	-	-	-	-	-	-	-	-	Frozen to bed at previous trip. Did not visit.
March	VW1	-	-	-	-	-	-	-	-	-	-	Frozen to bed at previous trip. Did not visit.
March	V8	24-Mar-15	18:20	V8-r	0.1	756.9	7.85	1.78	-	-	low	Ice thickness 40 cm. Sample hole open. Good flow. Photos: datasheet 304, u/s 305, d/s 306, overview 307.
March	VGMAIN	25-Mar-15	12:15	-	0.1	683.8	8.02	0.27	-	-	low	Ice thickness 5-40 cm. Thin ice on old sample hole just above bridge. 15-20 cm deep, good flow. Photos: datasheet 342, u/s 339, d/s 340, overview 341.