

Ramsey Lake St. Johns PRF Monitoring Proposal

1.0 INTRODUCTION

This sampling plan details the sampling protocol for sampling at the pollution reduction facility accepting the storm water run off from the St. Johns residential area.

The results of the sampling plan will aid in evaluating the efficiency of the facility to reduce the load of pollutants entering the Columbia Slough and ground water.

2.0 SAMPLING PLAN

2.1 Sampling Objectives and Scope

The objective of this sampling plan is to obtain accurate, unbiased and precise data from which reliable estimates of the chemical properties and loading of pollutants entering the pollution reduction facility (PRF) and entering the Columbia Slough. Samples will be collected in such a manner as to evaluate the "first flush" and the remaining portion of storm events for pollutant loading.

2.2 Sampling locations

The two sampling locations will be selected for monitoring the influent, effluent of the first stage treatment area. In addition the adjacent wet land will have a monitoring location at the effluent location of the second stage treatment area..

Continuous flow monitoring will be done at one location on the influent line up stream of the PRF. A second flow monitoring location will be arranged at the effluent location of the "first stage" of the PRF.

An existing ground water monitoring well at one locations will be monitored for water quality quarterly. One additional ground monitoring well may be installed and monitored at a later date.

3.0 SAMPLE COLLECTION AND FREQUENCY

A total of 46 water quality samples will be collected in 95/96FY. This includes :

- 1.) 24 monthly grab samples (two samples per month in the first stage area -influent and effluent).
- 2.) 18 samples collected for storm event monitoring (three locations with grab samples collected during the first 30 minutes of each storm and three composite samples collected during the remaining portion of the storm).
- 3.) 4 duplicate samples for QA/QC.

Three storm events will be monitored during the 95/96 FY.

Monthly monitoring will be by grab sampling methods. Storm event sampling will be composite sampling using Isco samplers at influent and effluent locations.

Well depths will be monitored monthly.

Flow monitoring data will be collected monthly from the portable flow meters and distributed to the project manager.

4.0 SAMPLING QA/QC PROCEDURE

4.1 Field QA/QC

Duplicate samples will consist of a second sample collected during three of the monthly sampling events and a second sample collected at one of sites during storm events.

4.2 Laboratory QA/QC

Normal laboratory QA/QC procedures will be followed for the City's Water Pollution Control Laboratory.

No split samples will be taken.

5.0 SAMPLE ANALYSIS

46 samples will be analyzed for TDS, TSS, alkalinity, chloride, fluoride, hardness, nitrogen, oil and grease, pH, conductivity, temp, phosphate-tot, phosphate-ortho, sulphate and heavy metals (Cd, Cr, Cu, Pb, Ni, Ag, Zn)

Six samples will be analyzed for organic compounds volatile organic compounds and semi volatile compounds (EPA methods 625 and 624).

6.0 RESULTS

All monitoring results will be submitted to the project manager in hard copy and disk. Simple statistical analysis will be performed and may be displayed graphically. Attempts will be made to show flow weighted trend analysis.

7.0 COSTS

Cost for this analysis will be approximately:

Planning and reporting \$ 8,000

Sampling and Analysis \$20,500

TOT \$28,500

Ramsey Lake-Rivergate Industrial PRF Monitoring and Cost Proposal

1.0 INTRODUCTION

This sampling plan details the sampling protocol for sampling at the pollution reduction facility accepting the storm water run off from the rivergate industrial area.

The results of the sampling plan will aid in evaluating the efficiency of the facility to reduce the load of pollutants entering the Columbia Slough.

2.0 SAMPLING PLAN

2.1 Sampling Objectives and Scope

The objective of this sampling plan is to obtain accurate, unbiased and precise data from which reliable estimates of the chemical properties and loading of pollutants entering into and discharged from the pollution reduction facility (PRF) during storm event and dry weather conditions.

2.2 Sampling locations

The two sampling locations will be selected for monitoring: 1.) influent of the treatment area, 2.) effluent of the treatment area.

Continuous flow monitoring will be done at one location on the influent line up stream of the PRF at an accessible location.

3.0 SAMPLE COLLECTION AND FREQUENCY

24 water quality samples will be collected for monthly monitoring. An additional 12 samples will be collected to monitor storm events. This includes monthly sampling at the influent and effluent locations. In addition four samples will be collected for QA/QC purposes.

Monthly monitoring will be by grab sampling methods provided that material is availability to collect.

Storm event sampling will be by composite sampling methods using automatic samplers at influent and effluent locations. The automatic samplers will be programed to collect one sample into two glass gallon containers during the first 30 minutes of the storm. Subsequently, time proportional composite samples will be collected for the duration of the storm event.

Flow monitoring data will be collected monthly by portable flow meters and distributed to the project manager.

4.0 SAMPLING QA/QC PROCEDURE

4.1 Field QA/QC

Duplicate samples will consist of a second sample collected during three of the monthly sampling events and a second sample collected at one of sites durring storm events.

4.2 Laboratory QA/QC

Normal laboratory QA/QC procedures will be followed for the City's Water Pollution Control Laboratory.

No split samples will be taken.

5.0 SAMPLE ANALYSIS

5.1 Field analyses

Field parameters will consist of pH, conductivity and temperature for each grab sample collected immediately after sample is collected.

5.2 Laboratory analyses

36 samples will be analyzed for TSS, TDS, Alkalinity, chloride, fluoride, hardness, nitrogen, oil and grease, pH, conductivity, temp, phosphate-tot, phosphate-ortho, sulphate and heavy metals (Cd, Cr, Cu, Pb, Ni, Ag, Zn)

Six grab samples from the storm events will be analyzed for organic compounds: Volatile organic compounds and semi volatile compounds (EPA methods 625 and 624).

6.0 RESULTS

All monitoring results will be submitted to the project manager in hard copy and disk. Simple statistical analysis will be performed and may be displayed graphically. Attempts will be made to show flow weighted trend analysis.

7.0 COSTS

Cost for this analysis will be approximately:

Planing and reporting \$ 7,000

Sampling and Analysis \$15,500

TOT \$22,500