**Susitna-Watana Hydroelectric Project**

**2013 Baseline Monthly Water Quality Study**

**Chlorophyll Data Dictionary**

Chlorophyll samples were collected at all baseline monthly water quality monitoring sites along the Susitna River from June to September 2013. This document describes the standard abbreviations used in the MS Excel database used to assemble tables and graphs and to report values. Furhter, it describes the nomenclature for labeling sample bottles and identifying sample locations. The baseline monthly water quality chlorophyll data, formatted for input into the GINA database, is described in the following sections. Each section corresponds to the column heading in the Excel database.

# LAB\_WORK\_ORDER

Describes the lab work order number assigned to a batch of chlorophyll samples by SGS Analytical Laboratories, Anchorage, Alaska.

# SAMPLE\_ID

Describes the sample ID given to each chlorophyll sample by the field crew at the time of collection. This sample ID was recorded on the field form, sample bottle, and COC. The sample ID includes a combination of letters and numbers to identify the sample location within the project area, water column and location along the river. The first two letters of the sample ID identify the type of study, WQ = Water Quality. The next two letters of the sample ID identify sample type, SW = Surface Water. The next letter in the sample ID indentfies the type of WQ study, B = Baseline. These letters are then followed by the Project River Mile (PRM) for each sample location (see table bleow for Site Names and PRMs) and then the location in the water column (vertically and horizontally) from which the sample was taken. LT – left top, LB = left bottom, MT = middle top, MB = middle bottom, RT = right top, and RB = right bottom. Duplicate samples are indicated with a “D”. Field blanks were also collected and are labeled with “FB” in the sample ID.

| **Project River Mile (PRM)** | **Site Name** |
| --- | --- |
| 29.9 | Susitna Station |
| 32.5 | Yentna River |
| 33.6 | Susitna above Yentna |
| 45.1 | Deshka River |
| 59.9 | Susitna |
| 87.8 | Susitna at Parks Highway East |
| 102.8 | Talkeetna River |
| 107 | Talkeetna |
| 118.6 | Chulitna River |
| 124.2 | Curry Fishwheel Camp |
| 140.1 | Gold Creek |
| 142.2 | Indian River |
| 142.3 | Susitna above Indian River |
| 152.3 | Portage Creek |
| 152.7 | Susitna above Portage Creek |
| 174\* | Susitna below Watana Dam Site |
| 187.2 \*\* | Susitna at Watana Dam Site |
| 235.2 | Oshetna Creek |

\*Sampled three times as a point sample due to accessibility

**\*\*Due to access, this site was sampled by helicopter at PRM 184 and PRM 187.8.**

# WQ\_STUDY

This field indicates which type of water quality study the sample was collected for, Baseline or Focus Area. All samples in this dataset are associated with the Baseline water quality study.

# PRM

Describes the project river mile (PRM) from which monthly samples were collected. Refer to Table in Section B for corresponding PRMs and Site Names.

# HORZ\_POS

This field describes the horizontal position across the river where the sample was collected, Left = 25% from Left Bank, Middle = 50% from Left Bank, Right = 75% from Left Bank. If the sample collected was a duplicate, “Dupe” is added to the horozontial position.

# VERT\_POS

This field describes the vertical position in the water column at which the sample was collected, Top = 1.5 feet from surface, Bottom = 1.5 feet above the river bottom.

# DUPE\_Y\_N\_FB\_MS/MSD

This field indicates whether the sample collected was a duplicate (Y=Yes, N=No), a field blank (FB), or a matrix spike/matrix spike duplicate (MS/MSD).

# GPS\_Coord\_LB\_Latitude

This field gives the global positioning system (GPS) latitude (WGS 84) for the transect end point location where samples were collected. Coordinates were taken with a handheld Garmin GPS unit from the left bank (LB).

# GPS\_Coord\_LB\_Longitude

This field gives the global positioning system (GPS) longitude (WGS 84) for the transect end point location where samples were collected. Coordinates were taken with a handheld Garmin GPS unit from the left bank (LB).

# GPS\_Coord\_RB\_Latitude

This field gives the global positioning system (GPS) latitude (WGS 84) for the transect end point location where samples were collected. Coordinates were taken with a handheld Garmin GPS unit from the right bank (RB).

# GPS\_Coord\_RB\_Longitude

This field gives the global positioning system (GPS) longitude (WGS 84) for the transect end point location where samples were collected. Coordinates were taken with a handheld Garmin GPS unit from the right bank (RB).

# LAB\_SAMPLE\_ID

This field describes the unique lab sample ID number assigned to each sample by SGS Analytical Laboratories, Anchorage, Alaska.

# DATE\_COLLECTED

This field indicates the date which the sample was collected.

# MONTH\_COLLECTED

This field indicates the month which the sample was collected and was used primarily for graphing purposes. In some instances a sample was collected at the very beginning of one month (July) but was graphed as collected in June since the sample was collected as part of the June sampling event.

# RECEIVED\_FRM\_LAB

This field indicates the date that the data was received from the lab.

# NO.\_LAKE\_SAMPLE\_NO

This field describes the unique lab sample number assigned to each sample by the sub-contract lab which did the chlorophyll analysis, Northern Lake Service, Crandon, WI.

# CC\_a

This field reports the Corrected Chlorophyll a concentration as reported by the lab.

# CC\_a\_FLAG

This field reports any flag associated with the Corrected Chlorophyll a concentration reported in field “Q”. Flags reported for this study include “\*” which was assigned by the laboratory. According to lab reports; The complex calculations used to differentiate the various chlorophyll species magnify error at low concentration and sometimes produce negative values, which are reported as 0.0 on lab reports. These 0.0 values were flagged with an “\*”.

# CC\_a\_UM

This field indicates the units of measures for Corrected Chlorophyll a, µg/L.

# Pheo\_a

This field reports the Pheophytin a concentration as reported by the lab.

# Pheo\_a\_FLAG

This field reports any flag associated with the Pheophytin a concentration reported in field “T”. Flags reported for this study include “\*” which was assigned by the laboratory. According to lab reports; The complex calculations used to differentiate the various chlorophyll species magnify error at low concentration and sometimes produce negative values, which are reported as 0.0 on lab reports. These 0.0 values were flagged with an “\*”.

# Pheo\_a\_UM

This field indicates the units of measures for Pheophytin a, µg/L.

# TC\_a

This field reports the Trichromatic Chlorophyll a concentration as reported by the lab.

# TC\_a\_FLAG

This field reports any flag associated with the Trichromatic Chlorophyll a concentration reported in field “T”. Flags reported for this study include “\*” which was assigned by the laboratory. According to lab reports; The complex calculations used to differentiate the various chlorophyll species magnify error at low concentration and sometimes produce negative values, which are reported as 0.0 on lab reports. These 0.0 values were flagged with an “\*”.

# TC\_a\_UM

This field indicates the units of measures for Trichromatic Chlorophyll a, µg/L.

# TC\_b

This field reports the Trichromatic Chlorophyll b concentration as reported by the lab.

## AA. TC\_b\_FLAG

This field reports any flag associated with the Trichromatic Chlorophyll b concentration reported in field “T”. Flags reported for this study include “\*” which was assigned by the laboratory. According to lab reports; The complex calculations used to differentiate the various chlorophyll species magnify error at low concentration and sometimes produce negative values, which are reported as 0.0 on lab reports. These 0.0 values were flagged with an “\*”.

## AB. TC\_b\_UM

This field indicates the units of measures for Trichromatic Chlorophyll b, µg/L.

## AC. TC\_c

This field reports the Trichromatic Chlorophyll c concentration as reported by the lab.

## AD. TC\_c\_FLAG

This field reports any flag associated with the Trichromatic Chlorophyll c concentration reported in field “T”. Flags reported for this study include “\*” which was assigned by the laboratory. According to lab reports; The complex calculations used to differentiate the various chlorophyll species magnify error at low concentration and sometimes produce negative values, which are reported as 0.0 on lab reports. These 0.0 values were flagged with an “\*”.

## AE. TC\_c\_UM

This field indicates the units of measures for Trichromatic Chlorophyll c, µg/L.

## AF. QC\_NOTES

This field includes any notes and/or comments from the data entry personnel when transcribing the laboratory data from pdf to excel.

## AG. Pheo>TC\_a\_CALC

This field calculates whether the Pheophytin a concentration was greater than the Trichromatic Chlorophyll a concentration. This calculation was done to determine which Chlorophyll a concentration should be used for analysis.

## AH. CHLA\_TO\_GRAPH

These fields describes the chlorophyll concentration that was used for analysis and graphing based on whether Pheophytin a was greater than Trichromatic Chlorophyll a. If Pheophtyin a was greater than Trichromatic Chlorophyll a then the TC\_A concentration was used for analysis; if not then the Corrected Chlorophyll a concentration was used for analysis and graphing.