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NUTRIENT CONCENTRATIONS AND LOADS IN THE THOMPSON RIVER SYSTEM

E.OGUSS & W.E.ERLEBACH SEPTEMBER 1975



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Inland Waters Directorate Pacific and Yukon Region Vancouver, B.C.

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NUTRIENT CONCENTRATIONS AND LOADS

E. OGUSS W.E. ERLEBACH

WATER QUALITY BRANCH INLAND WATERS DIRECTORATE SEPTEMBER 1975

* A contribution to the Joint Federal/Provincial Task Force on Kamloops Lake and the Thompson River.

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INTRODUCTION

In the fall of 1973, a joint federal-provincial task force was created to study the cause of excessive algal growth, foaming, colour and fish tainting in the Thompson River. The task accepted by the Water Quality Branch was the measurement of nutrient concentrations and estimation of annual loads at several strategic locations for one The locations were (1) the North and South Thompson Rivers near year. their confluence, indicating the background nutrient levels from natural and diffuse cultural sources, (2) the Thompson River just downstream of the City of Kamloops, determining the contribution of known point sources to nutrient concentrations, and (3) the Thompson River just below Kamloops Lake, where the nuisance algal growth occurs. The nutrients measured were nitrate + nitrite, Kjeldahl nitrogen, total phosphorus and dissolved phosphorus. Provisional daily discharges were obtained from Water Survey of Canada for the calculation of nutrient loads. In addition, visual observations and nutrient analysis of benthic algae were done in April 1975.

This report presents the nutrient concentrations and estimates of annual loads, and offers some conclusions and recommendations concerning nutrients and algal growth in the Thompson River system.

METHODS

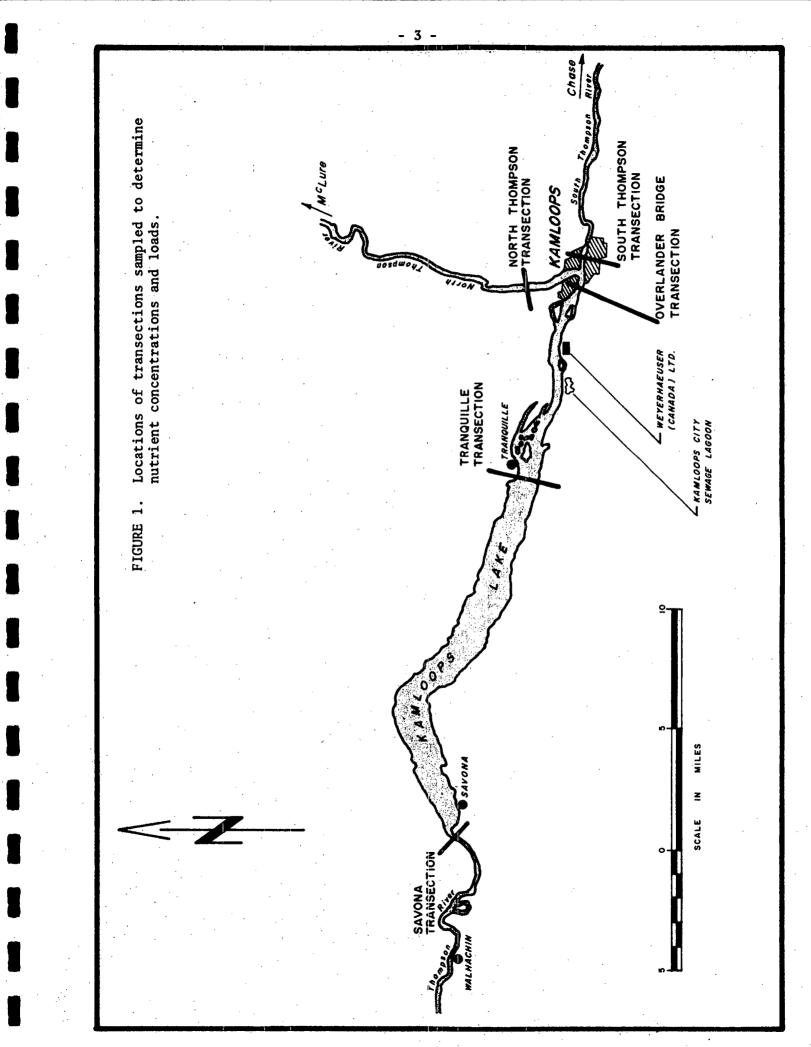
(1) Study Period

Field work began on May 1, 1974 when samples for total (unfiltered) phosphorus and nitrate + nitrite analysis were collected as described below. Field filtration of phosphorus samples began on July 17, 1974 and sampling for Kjeldahl nitrogen began on June 11, 1974. Sampling was done weekly during freshet and on a biweekly schedule at other times. Field work ended on June 17, 1975.

(2) Sampling Stations

Sampling stations were established on May 1, 1974 at the Overlander Bridge, Tranquille and the highway bridge near Savona. The North and South Thompson Rivers flow together shortly before the Overlander Bridge; during freshet the waters of the two rivers just below the bridge remained unmixed and sampling was done from this bridge. By August, some mixing was detected, and new sampling stations were established above the confluence. These new stations were the C.N. railway bridge over the North Thompson and the highway bridge over the South Thompson. The locations of the transections sampled are shown in Figure 1.

The sampling at Tranquille was done from a boat, at six points evenly spaced in a transection across the river. The intent was to estimate nutrient transport through each of six segments of equal width in the transection. This estimate would have required the measurement of discharge and concentration for each segment during the year of study. Since no statistically significant concentration gradients were found for the nutrients studied, making estimates for each segment was not warranted. Therefore, mean daily discharges through the transection and mean concentrations were used to calculate daily loads. The transection was generally sited in line with a group of pilings on the north side of the river



between the Tranquille School and the Tranquille River. The exact location of the transection varied slightly during the year as necessitated by ice and sandbars. On January 15 and 28, ice prohibited launching of the boat, and samples were collected from the north bank of the river.

It should be noted that the Savona station was located on the Thompson River and not in Kamloops Lake.

(3) Replicate Sampling

All samples were collected in replicate so that confidence limits could be established for the estimates of mean concentration. A sampler which simultaneously fills six bottles from the top metre of water was used to collect samples for total phosphorus, dissolved phosphorus, and nitrate + nitrite measurements. This sampler is described in an earlier report (Oguss and Erlebach, 1975). Samples for dissolved phosphorus were filtered within one-half hour of taking the sample, using 0.45μ cellulose acetate filters and a hand pump. Kjeldahl nitrogen samples were collected in pairs in one-litre plastic bottles. It should be noted that only surface waters were sampled. During the initial survey, samples were taken at a number of depths and no significant vertical gradients were found at that time. But the absence of vertical gradients during the remainder of the study cannot be confirmed. Nutrients associated with settleable solids may be underestimated in some cases. Bedload transport was not measured.

(4) Statistical Methods

Means, standard errors and standard deviations were calculated for each set of replicates. Since no significant lateral gradients were found at Tranquille, all 36 samples (six sets of six replicates) were pooled.

"Outliers," defined here as individual samples whose magnitude exceeds the value of the next closest individual sample by two or more

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standard deviations, were encountered regularly in unfiltered samples. These outliers are believed to represent a true component of nutrient distribution in these waters. Therefore, outliers were not excluded from the calculation of means, etc. Their presence and frequency are indicated in the Appendix.

An intensive evaluation of spacial and temporal variability of some nutrients and metal concentrations in the Thompson River at Shaw Springs (Oguss and Erlebach, 1975) indicates a very large degree of temporal variability in this system. This fact should not be overlooked in determining the significance of changes in concentration, especially when single, infrequent samples are compared.

Confidence limits for the daily loading estimates were based on the standard error of the estimate of the mean concentration and on a 5% error on the flow data. Confidence limits for the estimates of annual loads were calculated by taking the root mean squares of the daily load errors.

(5) Chemical Analyses

Total phosphate was determined by the automated Murphy-Riley method (Murphy and Riley, 1962) (Technicon AutoAnalyzer II Methodology, 1971) after the entire field sample was digested with sulphuric acid and potassium persulphate.

The concentrations of nitrate + nitrite were measured by an automated method (Technicon AutoAnalyzer II Methodology, 1972) which was modified. An aliquot of the sample was buffered at a pH of 8.5 with NH_4Cl and NH_4OH and then reduced by passage through a column packed with particles of copper-coated cadmium. A solution of sulphanilamide, N-1-napthylene-diamine dihydrochloride, and phosphoric acid was added to the reduced aliquot to develop the azo dye. The dye concentration was determined spectrophotometrically at 550 nm.

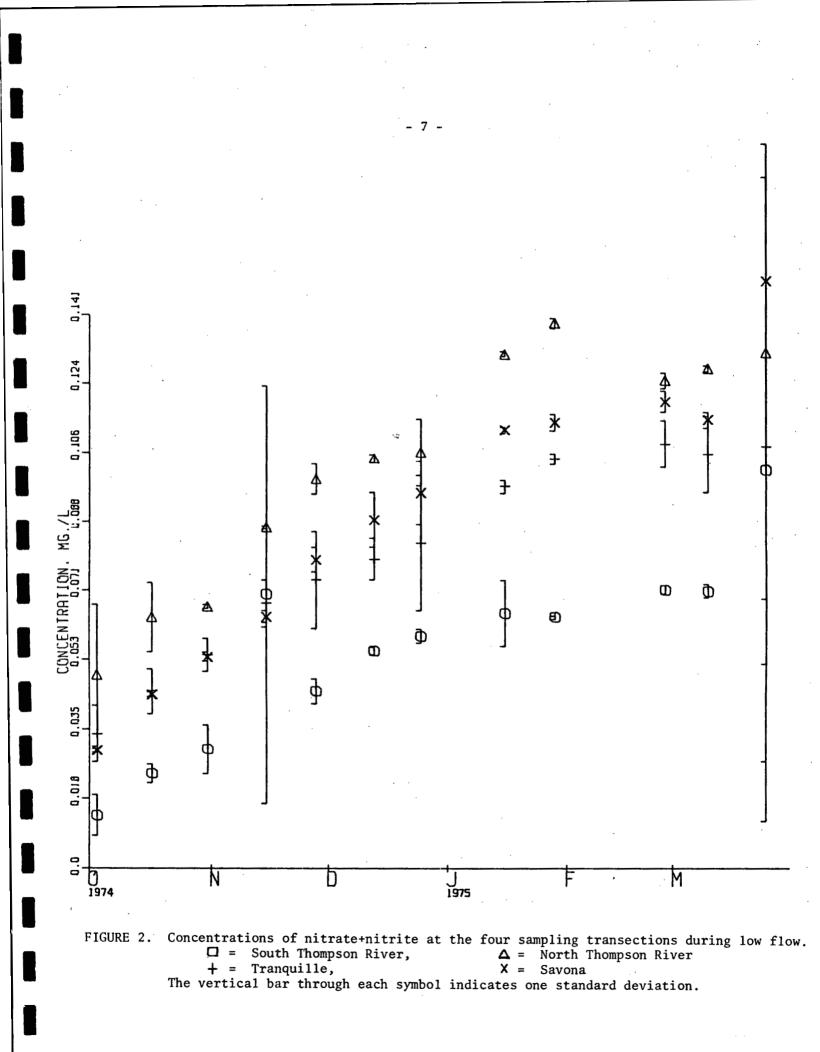
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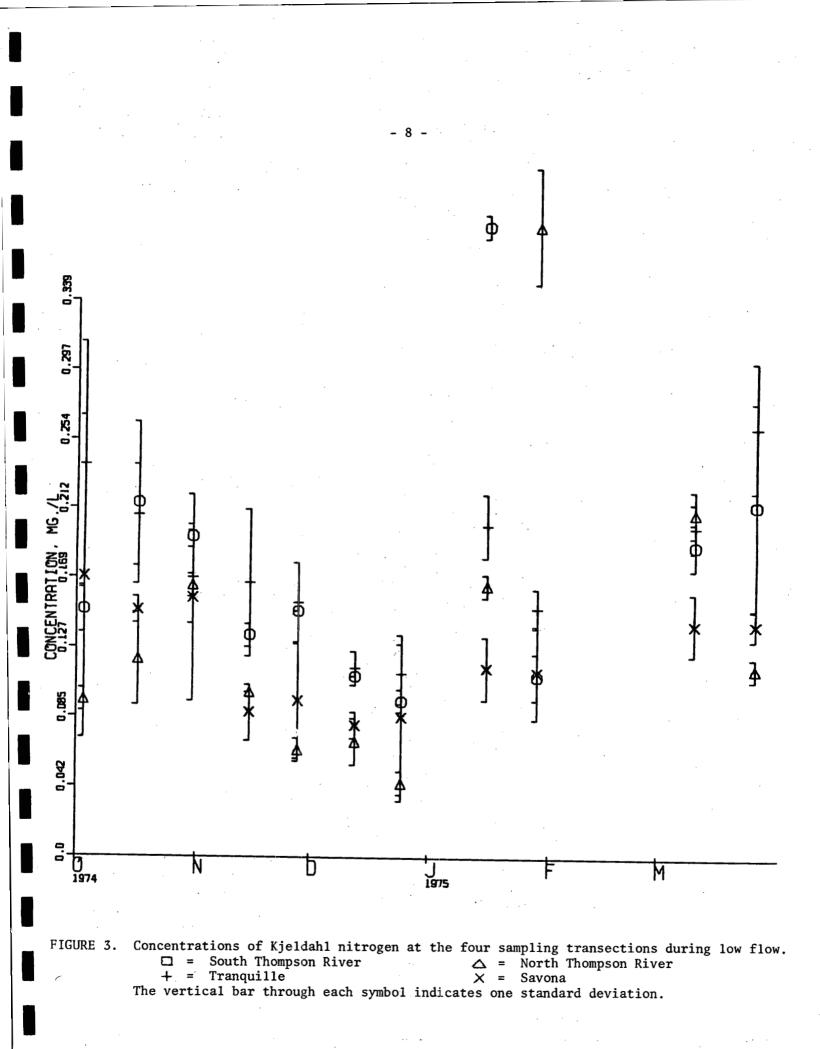
Total Kjeldahl nitrogen which includes the nitrogen from organic compounds converted to ammonium bisulphate by the digestion method used and the nitrogen from free ammonia was determined using the method described in Inland Waters Directorate Analytical Methods Manual (1974). After the sample was distilled into boric acid, the colour was developed using the indophenol-blue method. Colour intensity was measured spectrophotometrically at 640 nm.

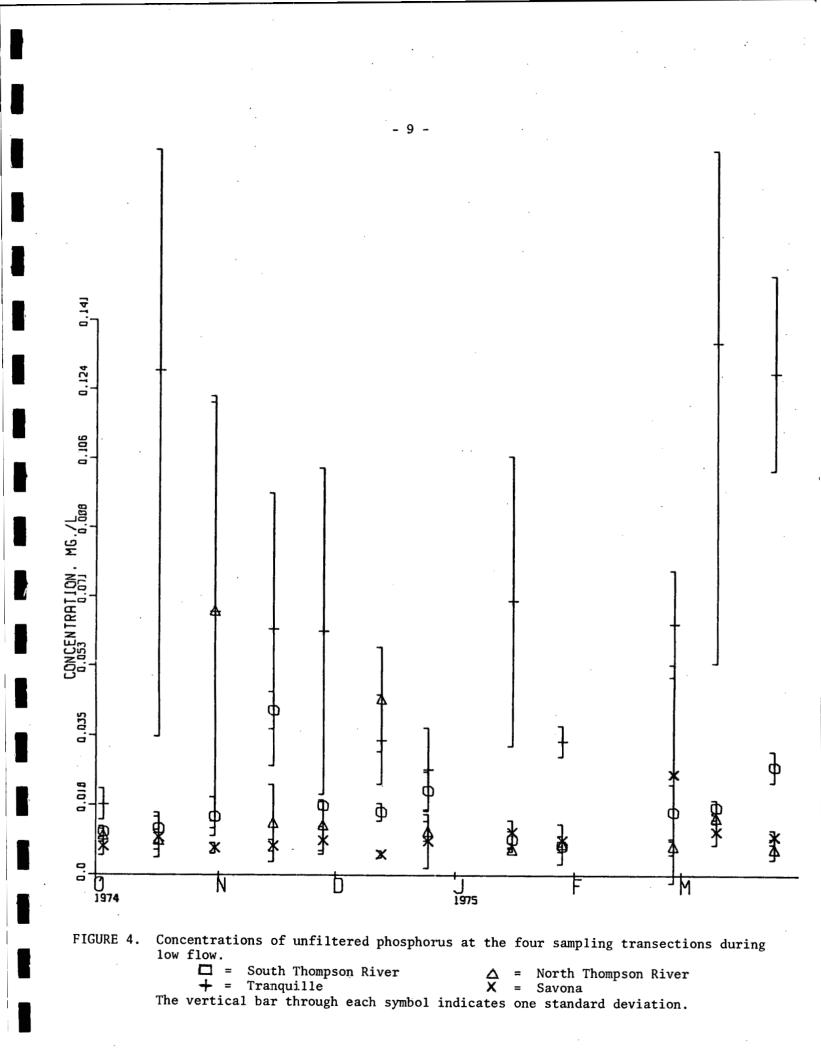
RESULTS AND DISCUSSION

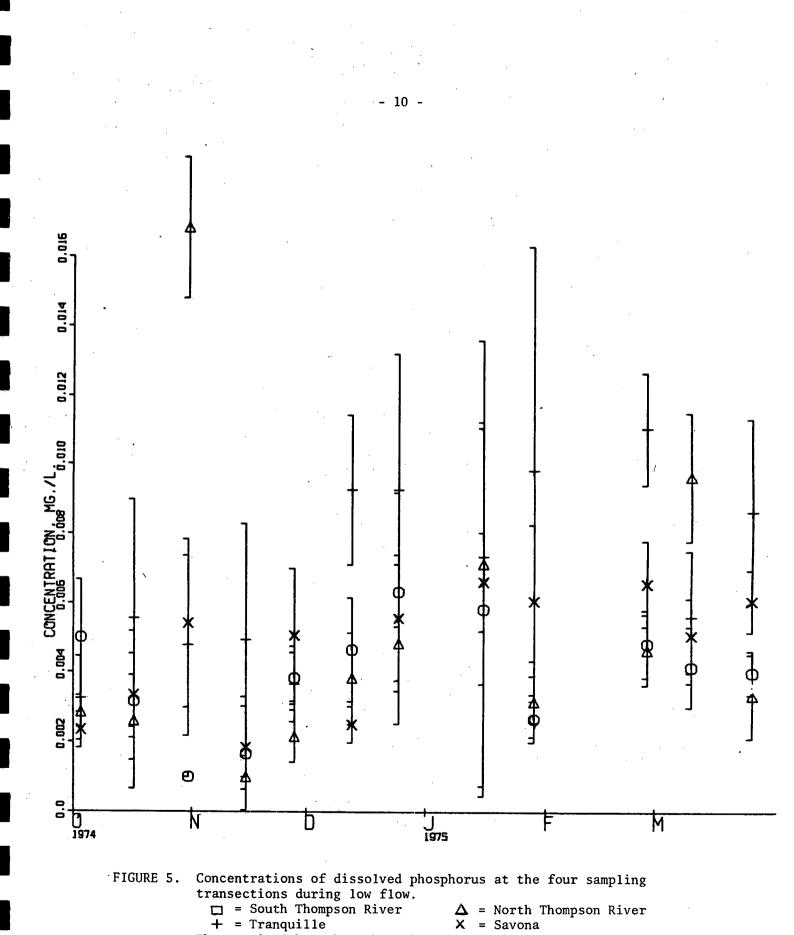
A complete listing of mean concentrations (with confidence limits, etc.), flows, and calculated loads for each nutrient and each sampling transection is given in the Appendix. Figures 2 through 5 show the concentrations of nutrients measured during the period of low flow. Figures 6 through 9 show the calculated daily loads at the four transections. For days when sampling was not done, concentrations were estimated by assuming a linear change in mean concentration between sampling times. Loads were calculated for each day from the estimated concentration and the measured daily flow. Table I presents the calculated annual loads.

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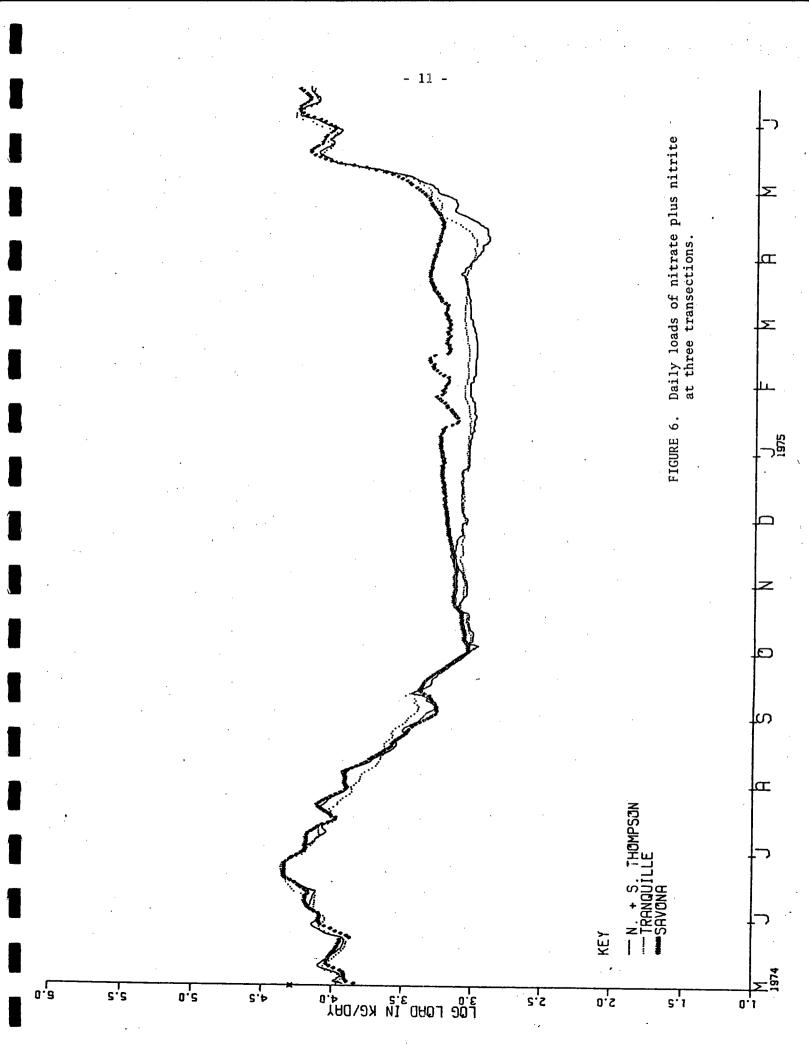


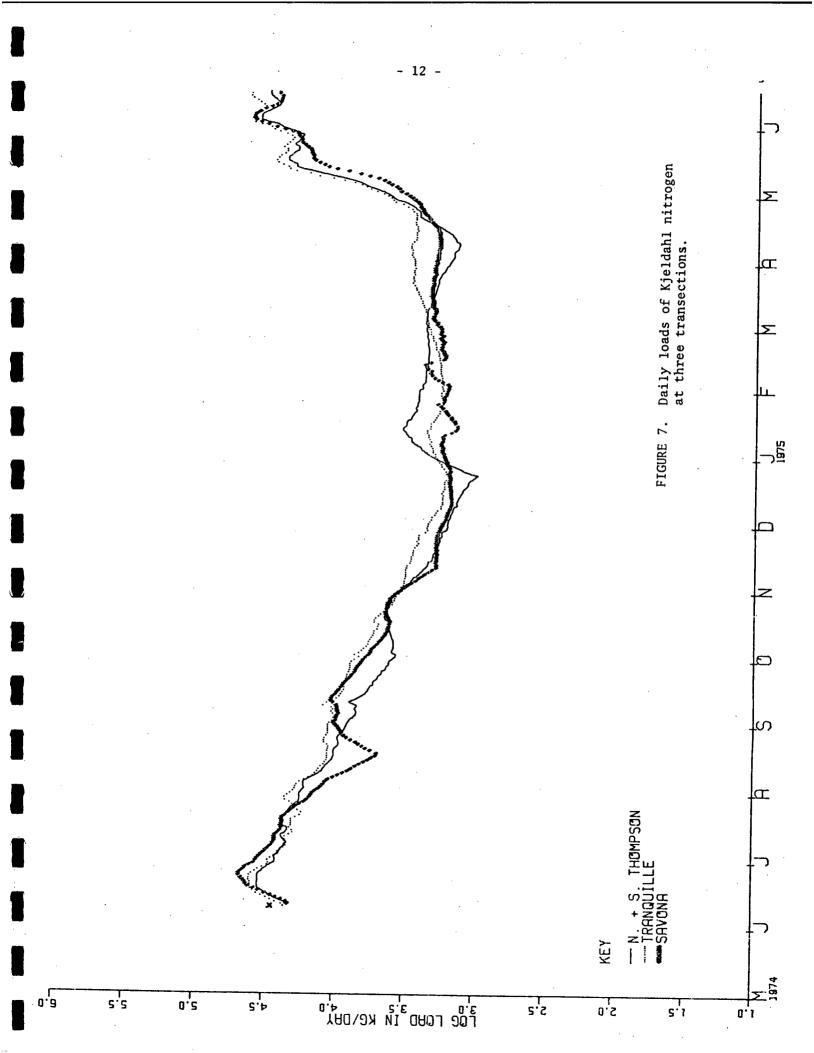


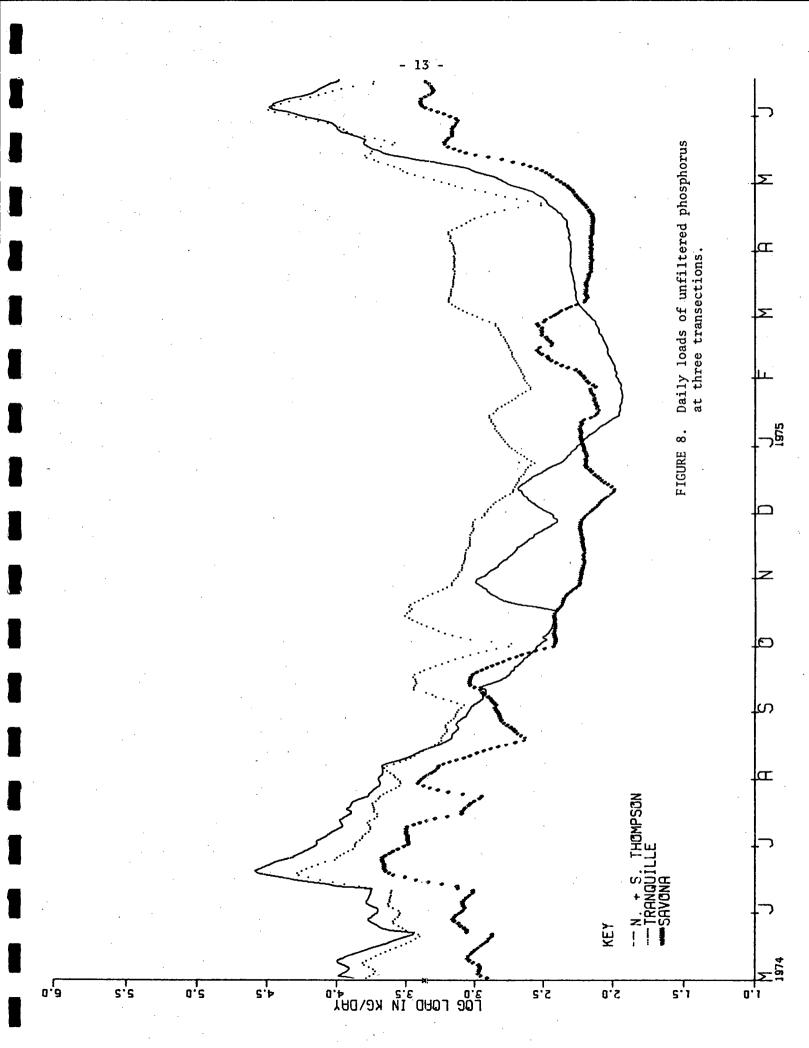




The vertical bar through each symbol indicates one standard deviation. $\lambda = Savona$







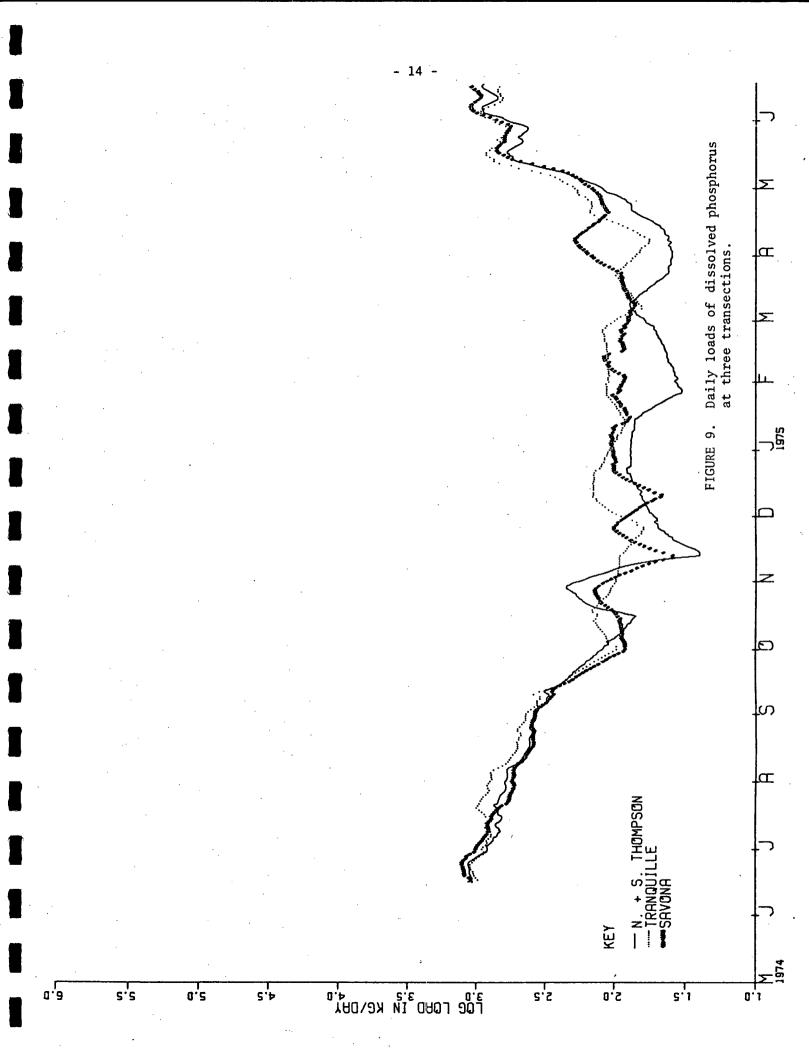


TABLE I

ANNUAL NUTRIENT LOADS (Tonnes) $\frac{2}{}$

	Nitrate + Nitrite	Kjeldahl Nitrogen	Total Phosphorus	Dissolved Phosphorus
(1) South Thompson	412 ± 2	1377 ± 17	371 ± 2	38 ± 1
(2) North Thompson	1198 ± 3	1804 ± 19	885 ± 8	60 ± 1
<pre>(3) Combined North and South Thompson (1 + 2)</pre>	1611 ± 4	3181 ± 25	1256 ± 8 1/	98 ± 2
(4) Tranquille	1640 ± 9	3671 ± 30	1188 ± 10 $\frac{1}{}$	118 ± 2
(5) Tranquille less com- bined Rivers (4-3)	29 ± 10	490 ± 39	- 68 ± 13	20 ± 3
(6) Savona	1812 ± 7	3266 ± 41	287 ± 4	111 ± 2
(7) Tranquille less Savona (4-6)	-172 ± 11	405 ± 50	901 ± 11	7 ± 2
			<u> </u>	<u> </u>

^{1/} The deposition of sediment with associated phosphate in the delta between the confluence and Tranquille can partly explain the lower load at Tranquille. The deposited load in the delta should in fact be increased by an amount of phosphate equivalent to the 100 tonnes estimated to have entered the river in Kamloops.

^{2/} The errors on the load are shown as 1.96 times the standard error. This error corresponds with a 95 percent confidence interval.

(1) Nitrate and Nitrite

In both the North and South Thompson Rivers, there are two seasonal peaks in the nitrate plus nitrite concentrations. The lower peak in each river occurs during early freshet (0.131 mg/l for the North Thompson on May 2 and 0.076 for the South Thompson on May 23), and the higher peak during low water (0.139 mg/1 for the North Thompson on January 28; 0.101 mg/1 for the South Thompson on March 24). The lowest concentrations in the rivers occur during late summer. The nitrate and nitrite loads calculated for the Tranquille transection were generally very close to the combined load (1,611 tonnes) of the North and South Thompson Rivers, with a net increase for the year estimated at 29 ± 10 tonnes (less than 2% of the total load). Annual loading estimates at Savona indicate a net increase of 172 tonnes (approximately 9% of the total load). This addition may represent production of nitrate in the lake. Most of this additional loading occurs during low water. From November through March the average concentration of the combined North and South Thompson Rivers was 0.090 ± .011 mg/1, while at Savona it was 0.104 ± .025 mg/1.

The high background levels of nitrate, plus the possibility of nitrate production in the lake, indicate that controlling algal growth via nitrogen limitation is not feasible in this system.

(2) Kjeldahl Nitrogen

Kjeldahl nitrogen concentration varied without an identifiable pattern on the North and South Thompson Rivers, except that concentrations were generally higher early in the freshet than at peak or falling flows. The loads calculated for the Tranquille transection are generally higher than the combined loads from the North and South Thompson Rivers. On two out of 29 occasions the combined loads were significantly higher than the loads measured at Tranquille. This may be attributable to sedimentation in the delta between the confluence and Tranquille. Annual totals indicate

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a net increase in Kjeldahl nitrogen of 490 \pm 28 tonnes (approximately 13% of the total load) from sources in the Kamloops area. Low Kjeldahl nitrogen concentrations at Savona indicate sedimentation or chemical conversion of this material in the lake, amounting to 405 \pm 35 tonnes per year. From November through March, the average concentration of the combined North and South Thompson Rivers was 0.16 mg/l \pm .08, while at Savona it was 0.11 mg/l \pm .02.

The combined total Kjeldahl and nitrate plus nitrite loads of nitrogen from sources in the Kamloops area (based on differences between the combined river loads and the load at the Tranquille transection) amounted to 577 tonnes per year. This can be compared with a calculated annual load of 460 tonnes based on estimated daily loads of total nitrogen in effluent from the two major point sources for a non-concurrent but overlapping period. The latter estimate was made in an interim report by Olan (1974).

(3) Total Phosphorus

Phosphorus concentrations are high in the Kamloops area, largely due to non-filterable solids; between 30 and 90% of the total phosphorus can be removed by filtration. Samples of solids concentrated from surface waters upstream of Kamloops during freshet and separated by centrifugation showed that between 60 and 95% (by volume) of these solids are inorganic. The mineral apatite is believed to constitute part of this material and may account for the high phosphorus concentrations found in unfiltered samples. While it is generally believed that the phosphorus in apatite is not biologically available, this hypothesis has not been tested with the appropriate bioassays. It is also possible that some phosphorus is adsorbed on the surface of clay particles and other solids.

Total phosphorus concentrations are very strongly correlated with flow in the Thompson River system, with maximum daily loads as high as $32.6 (\pm 2.8)$ tonnes in the North Thompson and $6.9 (\pm 0.2)$ tonnes in the South Thompson occurring during peak freshet. These high input levels obscure detection of additional loads from point sources in the urban area during freshet.

From November to April the combined North and South Thompson total phosphorus daily loads range between 0.5 and 0.1 tonnes, and net increases of between 0.3 and 0.7 tonnes per day were commonly observed at Tranquille. The variation in these differences may reflect variations in the discharges from the point sources and in the resuspension of sediments in the delta immediately above Tranquille. A mean value of approximately 0.6 tonnes // per day for the period can be compared with the estimated point source // discharges (Olan, 1974) of 0.3 tonnes per day.

Total phosphorus concentrations at Savona are lower than at Tranquille, largely due to the settling of non-filterable material in the lake. The estimate of the annual load to the lake of 901 \pm 11 tonnes is based on an assumption that 168 tonnes were deposited in the delta. This would account for the difference of 68 tonnes between the loads at Tranquille and the confluence and the approximately 100 additional tonnes estimated by Olan (1974) to have entered the river in Kamloops. If there were no accumulation of phosphate in the delta between the confluence and Tranquille, the annual accumulation in the lake could reach 1,069 tonnes. During a year of higher flow, some of this accumulation in the delta could be transferred to the lake. Bedload transport which was not measured would reduce the estimated deposition in the delta and increase the deposition in the lake below the delta.

(4) Dissolved Phosphorus

Concentrations of dissolved phosphorus are relatively constant under all flow conditions in the North and South Thompson Rivers. Therefore, the highest daily loads occur during freshet, peaking at 0.8 (\pm 0.2) tonnes in the North Thompson and 0.3 (\pm 0.1) tonnes for the South Thompson. Additional loads from the Kamloops area cannot be detected at Tranquille during freshet. Nevertheless, Figure 9 shows that the load at Tranquille exceeds the combined river loads for approximately 80 percent of the study period.

During low water the effect of point sources is evident (see Figure 3), with concentrations at Tranquille averaging 0.003 mg/l higher than upstream values. Since the average concentration of dissolved phosphorus above Kamloops ranges between 0.003 and 0.006 mg/l at this time of the year, the increase in concentration sometimes is as great as 100 percent. [However, this percentage should be accepted with some caution because the concentrations are close to the detection limit of the laboratory analysis (0.002mg/l) and to the average standard deviation in sets of six replicates ($\pm 0.002 \text{ mg/l}$).] Comparing annual loads, the increase detected at Tranquille amounts to 20 ± 3 tonnes, which is approximately 20 percent of the total dissolved phosphorus load into the lake.

Concentrations of dissolved phosphorus leaving Kamloops Lake are similar to the concentrations found in the North and South Thompson Rivers. From November through March the average concentration of the combined North and South Thompson Rivers was $.004 \pm .002 \text{ mg/l}$, while the average concentration at Savona was $.005 \pm .002 \text{ mg/l}$. The fact that these concentrations are not statistically different is relevant to the discussion of differences in periphyton growth at sites referred to in the next section.

An estimate of the reduction of dissolved phosphorus concentrations at Savona following the elimination of phosphorus additions in Kamloops would be useful in assessing the effect of these sources since phosphorus is most often found to be the limiting nutrient for algal growth in fresh water. Unfortunately, it is not possible to determine the amount of reduction by simple subtraction. A simulation model to predict phosphorus concentrations at Savona would have to include the dynamics of exchange between the pools of dissolved and particulate phosphorus. The relatively constant concentrations of dissolved phosphorus observed in the North and South Thompson Rivers and at Savona raise the possibility that such an equilibrium may be a major factor in controlling dissolved phosphorus concentrations. Physical and biological processes in the lake would affect the rates of exchange, as would additions of different types of solids (i.e., mainly organic) from a point source.

(5) Periphyton

A comparison of algal abundance in the North and South Thompson with the abundance in the Thompson at Savona, made in order to assess the availability of nutrients at these locations, is of uncertain value. The presence of the lake between the two upper and the lower reaches of the river changes the nutrient concentrations and availability, moderates water temperatures, and reduces turbidity. Differences in substrate availability and suitability, and flow velocities over the substrate add to the questionability of conclusions based on the comparison. Since, however, such comparisons are made, it should again be pointed out that the calculated mean concentrations of dissolved phosphorus in the combined North and South Thompson Rivers and at Savona are not significantly different during the low flow period. Consequently, these mean values cannot be used to support an explanation of the significantly greater algal abundance reported by Langer and Nassichuk (1975) in the river below the lake.

A limited investigation of the ratios of nitrogen to phosphorus in algal tissues and trial assays of alkaline phosphatase (an algal enzyme involved in phosphorus uptake) were made shortly after the peak of the spring bloom in the three reaches. On April 23, 1975, samples of gelatinous attached diatoms were collected from natural substrates in the vicinity of artificial substrates placed by Fisheries Operations at Chase, McLure, Savona and Walhachin and examined for nutrient content and alkaline phosphatase bioassay. The percentages (by dry weight) of Kjeldahl nitrogen and total phosphorus were determined by Kistritz (1975). Mean values based on duplicate tests are given in Table II.

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TABLE II

KJELDAHL	NITROGEN AND	FOTAL	PHOSPHORUS I	N ATTACHED	DIATO	MS
Site		<u>% N</u>	<u>%</u>	<u>P</u>	<u>N:P</u>	Ratio
Chase	· . (.07	8	10.0	: 1.0
McLure	(0.86	.05	7	15.1	: 1.0
Savona	:	1.04	.04	5.	23.1	: 1.0
Walhachin	:	1.58	.07	8	20.2	: 1.0

The interpretation of N:P ratios is controversial under the best of circumstances since so many factors can raise or lower the percentages of nitrogen and phosphorus. Interpretation of these four samples is made especially difficult by the lack of reported N:P ratios for gelatinous attached diatoms in the literature. Normal values for planktonic green and blue-green algae are generally between 7:1 and 11.5:1. The higher ratios observed in this case may be caused by extracellular proteins in the gelatinous stalks of the diatoms.

The alkaline phosphatase bioassay technique, which uses the titre of the enzyme alkaline phosphatase in fresh samples of indigenous algae as an indicator of phosphorus-limited growth, was used on periphyton samples from the four sites. High levels of the enzyme are found only when cells are starved for phosphorus (Fitzgerald, 1969). The results of the bioassay at all sites were negative; e.g., the algae were not limited by a lack of phosphorus. Since the samples were taken shortly after the peak of the algal bloom, when competition for phosphorus would be near the maximum, it can be concluded that there is more than sufficient phosphorus available. At the time of sampling, the abundant algal growth on gravel bars at Chase and McLure had in the estimate of the samplers reached nuisance levels. Other than these limited gravel bars, lack of suitable substrate for periphyton attachment between the two upstream sites and Kamloops could account for the limited algal standing crop in these regions of the North and South Thompson Rivers. These observations of abundant algae at locations near Chase and McLure indicate that the supply of biologically available phosphorus in waters upstream of Kamloops is sufficient to support substantial growth of algae where substrates are available and other physical conditions are favorable. Since in general algal populations are scarce in this part of the Thompson River system, the amount of these nutrients used is small and the remainder may constitute a supply of phosphorus sufficient to support blooms in downstream areas where physical conditions are favorable. Additions of phosphorus from diffuse cultural sources in both upstream watersheds should not be overlooked if control by phosphorus limitation is chosen as the means of suppressing nuisance algal growth.

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CONCLUSIONS

- (1) Replicate sampling is necessary to determine significant differences in concentrations of nutrients in this system.
- (2) High background levels (i.e., upstream from Kamloops) of nitrate, plus the possibility of nitrate production in the lake, indicate that controlling algal growth via nitrogen limitation is not feasible in this system.
- (3) During low water the concentrations of phosphorus in filtered and unfiltered samples are higher at Tranquille than at the North and South Thompson River stations.
- (4) During low water there is no significant difference in the phosphorus concentration in filtered samples from the North and South Thompson River stations and the Savona station. Therefore, the higher algal growth rates reported at Savona cannot with confidence be attributed to differences in concentrations of dissolved phosphorus.
- (5) Elimination of phosphorus additions in Kamloops would probably result in a reduction in phosphorus concentration at Savona. However, there is no direct way of calculating the magnitude of this reduction and no way of knowing if it would be sufficient to make phosphorus the limiting factor in algal growth below Savona.

RECOMMENDATIONS

- (1) Additions of biologically available phosphorus should be reduced wherever possible, both in the Kamloops area and in the North and South Thompson River watersheds.
- (2) The effluent from the Weyerhaeuser pulp mill should be examined in detail in order to identify potential biologically stimulating or inhibiting components, and should be tested with bioassays for its effect on river algae and invertebrates.
- (3) The biological availability of the phosphorus associated with non-filterable solids in the North and South Thompson Rivers should be determined.

ACKNOWLEDGEMENTS

The contribution from the Analytical Services Division of the Water Quality Branch in precisely analysing the approximately 6,000 samples collected in this nutrient study is much appreciated.

The efforts on the part of staff of Water Survey of Canada in making provisional data on river flow available and in providing technical advice are gratefully acknowledged.

Discussions with other members of the Federal-Provincial Thompson River Task Force were stimulating and helpful.

Finally, thanks are due to other members of the Water Quality Branch for assistance in planning, sampling, interpretation and report preparation.

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	JUNE JUNE 1 STATI DN S. THOMPSON	OVERLANDER TRANQUILLE SAVONA			SAVONA	I ENUL	S. THOMPSON N. THOMPSON N. THOMPSON	TPANOUILLE SAVONA	JUNE	STATION S. THOMPSON N. THOMPSON	OVEPLANDER Traypuille Savona

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APPENDIX PAGE 3	95 & CUNFIDENCE LIMITS +/- 682.		45 2 CONFIDENCE	LIMIIS +/- 331. +/- 310. +/- 331.	+/- 1080. +/- 4389.	95% CONFIDENCE LIMITS	+/- 293. +/- 746. +/- 301.		45.2 CONFIDENCE		1.1.1
S	LOAD (KG /DAY) 5513.	9601. 15115. 15062. 15723.	LCAD	1567047) 3252. 8100. 11351.	12550. 15031.	L C AD (KG /DAY)	2866. 7599. 10465.	10371. 9604.	040	(K5/DAY) 2234. 8667.	10901. 9183. 12474.
Y 634NCH ★ # → NITRATE+NITRITE LOADS * *	STANCARD DEVIATION .005	.012 .007 .001	STANCARD	003 003 003	• 018 • 041	STANDARD SEVIATION	100. 000	• 012 • 007	STANCARD	DEVIATION •001 •021	•015 • 003
)UALITY 83ANCH * * * * * JECT NITRATE+NI * * * *	STANDAR() 5400AR() 5408 5404 5404	-//+	STANDARD	100*0-/+ 000*0-/+	+/-0.012	STANDARD ERANDARD	000°0-/+	+/-0.003 +/-0.003	ST AND AR D	E3838 +/-0,001 +/-0,007	100-0-/+
н с 80ж	86AN CONC. (9671) • 351	. 076 . 965	MEAN CONC.	• 034 • 034 • 080	• <u>015</u>	MEAN CONC.	• 032 • 065	• 050 • 050	N D N D N N N N N N N N N N N N N N N N	(MG/L) • 027 • 052	• 149 • 364
ān Fallindsaikont	STITES I I	- 00	{	0 0	0 ¢	011 LI E3 S	C C	00		OJTLIERS 0 1 1	<u>د</u> ی
1	SA APLE STZE v	12 36 12	SAMOLE SAMOLE	5 5 12	3 ú 1 2	5215 5144 PS	4 2	24 00	ž Tok A2	5125 4 3	2 + 5
	3, 1974, DISCHARGE (CES) (K43/DAY) 43900 0.1074		(3. 1974	41630 0.1952 38933 0.9952 41630 0.1018 83530 0.1918	1. 1	17, 1974 915CHA36E (CFS) (KM370AY)	36900 0.0903 47620 0.1165 94500 0.2057		4, 1974 015CHA	(CFS) (KM3/DAY) 332D0 D. D312 434D0 0.1D62	
	INDS J WC H1	N. THOMPS(1) OVE PLANDEP TRANDUILLE SAVONA	1 A 10	STATE UN S. THOMPSON N. THOMPSON OVERLANDER	TRAYOUTLLE SAVONA		S. THOMP SON N. THOMPSON DVEPLANDFR	TRANDUILLE Savona	JULY 2	STATION S. THOMP SON N. THOM PSON	OVERLANDER TRANGUILLE SAVONA

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APPENDIX PAGE 4	95% COWFIDENCE LIMITS +/- 183. +/- 738. +/- 1261. +/- 991.	95% CUNFIDENCE LIMITS +/- 505. +/- 744. +/- 1092. +/- 1095. +/- 1008.	95% CONFIDENCE LIMITS +/~ 116. +/- 300. +/- 321. +/- 771. +/- 421.	95% CUNFIDENCE LIMITS +/- 141. +/- 338. +/- 512. +/- 390.
	L GAD (K5 /DAY) (K5 /DAY) 1592 813. 8405. 7427. 7455.	L G A C (KG / D AY) 1 71. 6 559. 8 330. 5 953. 5 242.	L GAD (KG /DAY) 532. 3051. 3583. 4329. 3794.	LCAD (K5/DAY) 320. 1565. 1885. 2523. 1808.
IRECTGRATE BRANCH * * MITRATE+NITRITE LUADS * *	51ANCARD DEVI4TION •001 •004 •016 •006	STANCARD DEVIATION .010 .008 .021 .008	STANDARD USVIATIUN 003 001 001 003	STANGARD DEVIATION 0056 015 015
	51 AND ARD EXRJK + 0 - 0 01 + / - 0 - 0 02 + / - 0 - 0 02	57 AND AR D ERD F +/-0.004 +/-0.002 +/-0.003 +/-0.002	STANDARD ERSJR +/-0.001 +/-0.000 +/-0.000 +/-0.001	STANDARD E3RJR +/-0.303 +/-0.304 +/-0.304
TER 2010 # ATERS TER 201AL117 PR0JECT + * * * *	MEAN CONC. (HG/L) .023 .076 .047 .051	MEAN CONC. (M3/L) (A3/L) • 031 • 083 • 044	MEAN CONC. (<u>M3/L)</u> 013 013 066 051	MFAN CONC. (M5/L) (M5/L) .012 .044 .044
I NL/ MAT THOMPSON FLVER	00 0 0 0 0	0 0 0 0 0 0	0.011L1F2S	0JTLJE3S 0 0 0 0
± ⊥	SAMPLE 512E 6 24 24 24 24	SAMPLF SIZE 6 12 36 12	SAMPLE S12E 6 12 36 12	SAMOLE SIZE 5 12 12 36
	• 1974 DISCHARGE (CFS) (KM3/DAY) 28300 0.0692 35400 0.1533 54700 0.1533 54700 0.1533 54700 0.1563	7, 1974 DISCHA?GE (CFS) (KM3/DAY) 23600 0.0577 32300 0.0790 55900 0.1368 55900 0.1368 57100 0.1397	1974 01SCHatGE 5) (KM3/04Y) 100 0.0394 800 0.0394 900 0.0354 900 0.0854	3F: 4, 1 574 3F: 4, 1 574 (CFS) (KM3/04Y) 11200 0.02574 14400 0.03525 25500 0.05626 27200 0.0665
			ST 20, [CF 16 34 34 34	Σ.
	JULY STATI UN S. THOMPSON N. THOMPSON N. THOMPSON DVE PLANDER TRANQUILLE SAVONA	A UGUS STATI ON S. THOM PSON N. THOM PSON DVE PLANDER TRANDUTLLE SAVONA	AUGU STATION S. THOMPSON N. THOMPSON NVERLANDEP TRANDUILLF S AV ON A	STATION STATION S. THOMPSON N. THOMPSON N. THOMPSON TRANGUILLE TRANGUILLE

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APPENDIX PAGE 5	95% CONFIDENCE LIMITS +/- 61. +/- 175. +/- 204.		95% CONFIDENCE LIMITS +/- 64.	+/- 239. +/- 248. +/- 174.		95 % CUNFIDENCE LIMITS	+/- 30. +/- 118. +/- 124.			95% CUNFIDENCE LIMITS	+/- 81. +/- 121.
	L DAD (KS/DAY) 146. 1312. 2312.	2187.	LCAD (KG/DAY) 198.	767. 565. 1038.	1101.	L DAD (KG /DAY)	284. 796. 1080.	1089. 1219.		L CAD (KG /DAY) 289.	830. 1119. 1194.
E ITRITE LOADS	51ANCARD DEVIATION .005 .002	100	STANDARD 0EVIA110N •005	• 018 • 007	. 001	 STANDARD DEVIATION	•005 •009	100 •		STANDAPD DEVIATION	001 400
DIRECTORATE Y BRANCH * * ■ MITRATE +NITRITE .* *	57 AND AR.D. EX 8.DF F - 0 - 0 - 0 - 0 - 1 0 - 0 0 - 0 1 0 - 0	000-6-/+	STANDARD FRTR +/-0.002	100-0-/+	000 • 0 - / +	STANDARD ERDA	- 10C°C-/+	+/-3.301 +/-9.000		5TANDARD 58838 +/-0-003	+/-0.000 +/-0.000
ANU WATERS TER JUALTT * * * * PROJFCT - * * *	MEAN CONC. (M3/L) .007 .066	• 042	MEAN CONC. (MG/L) .013	• 049	• 030	MEAN CONC.	• 024 • 064	• 045 • 044		MEAN CONC. (MG/L)	. 966 . 954
1 HOMPSON EI VEE	0 0	0	0JTL1E?S 1	- 1	0	0 JT L L F 3 S	1 1	00		0JT11595	40 G C
Ē	54.821.5 51.25 1.2 1.2 3.0	12	SAMPLE SIZF 6	9 . 6	12	SA 4PLE SIZE	¢	3ó 12		SAMPLE SIZE Á	2 2 2 C
		21200	DISCHA?GE (CES) (KM3/DAY) 6000 0.0147		- 0+036	<pre>3 16, 1974 015CHA36E (CFS) (K43/DAY)</pre>	4300 0°01125 5710 0°0125 6600 0°0242	9970 3.0242 11370 0.0276		015CHA265 (CFS) (KM370AY) 3330 0.0095	90000000000000000000000000000000000000
	SEPTEM3EP STATTON STATTON STHOMPSON N. THOMPSON OVERLANDER TRANDULL	SAVCNA OC TOBE3	STATI UN S. THOMP SCN	N. THOMPSON DVERLANDER TRAMOUTLE	SAVDNA	00 T0 9 53 S TA T 1 0N	S. THOMPSON N. THOMPSON OVERLANDER	TRAYOUILLE Savona	0.10 RF2	STATLON S. THOM PSOM	N. THUMPSON DVEPLANDER TRANGUILLE

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APPENDIX PAGE 6	95% CONFIDENCE LIMITS +/- 370. +/- 350. +/- 128. +/- 128.	95% CONFIDENCE 95% CONFIDENCE +/- 440. +/- 96. +/- 138. +/- 157.	95% CONFIDENCE LIMITS +/- 39. +/- 83. +/- 120. +/- 178.	95 # CONFIDENCE LIMITS +/- 42. +/- 92. +/- 130.
. 0	L CAC (KG /DAY) 597. 871. 1468. 1253. 1392.	L C A U (KG /UAY) 352. 873. 1226. 1556.	L CAD (KG /DAY) 391. 844. 1195. 1650.	LGAD (KG./DAY) 419. 700. 1119.
E Itrife Loads	STANUARD DEVIATION 0.053 .000 .005	STANEARD DEVIATION .003 .004 .004 .013 .003	STANCARD DEVI4TION •001 •001 •005 •007	STANCARD 0EVIATION .009 .017
S · DIRECTORATE TY 62ANCH * * * - NITRATE+NITRIT * * *	514N9480 E2738 +/-0.022 +/-0.000 +/-0.000	STANDARD F3RJR +/-0.001 +/-0.002 +/-0.001 +/-0.001	STANDARD ERRATK +/-0.000 +/-0.000 +/-0.002	STANIJARD ERKJR +/-0.001 +/-0.006 +/-0.003
AND WATER TER JUALI PROJECT * * *	MEAN_CENC. (M3/L) .070 .067 .067 .064	MEAN CUNC. (M3/L) .045 .099 .073	MEAN CONC. (M3/L) .055 .104 .079 .089	MEAN CONC. (M3/L) .059 .106
THL WA THUMPSON RIVER	0)TLIF25 1 0 0 0	0J1L163S 1 1 C	0.011LLE35 0.0 1.	0 0 1 1 1 1 1
Ť	SAMPLE 517E 6 36 35 12	54 чр. LE 5 I Z E 6 3 6 1 2 1 2	SA APLF SIZE 36 12	SA 39 LE S12 F 5 6 5 6 5 3 2
	E ⁿ 14. 157. <u>D15CH736F</u> (CF5) (KY37DAY) 3500 0.0086 4100 0.0135 7600 0.0135 7600 0.0135 3900 0.0213	ER 27, 1574 DISCHARGE (FFS) (KY3/74Y) 3200 0.0078 5800 0.0156 5300 0.0198 5300 0.0198	ER 12, 1574 01SCHAR6E (FES) (KM4/D1Y) 2957 0.0071 3300 0.0031 5200 0.0152 7500 0.0186	24, 157, <u>015CHA35E</u> CFS) (K43704Y) 2909 0.0071 2709 0.0137 5500 0.0137 7500 0.0137
	NOVE MBEP STATION S. THOMPSON N. THOMPSON OVEPLANDER TRANDUILLE SAVOPA	NOVE MBER STATION S. THOMPSON N. THOMPSON OVERLANDEP TRAVOUILLE SAVONA	DECE MBER STATLON S. THOMP SOM N. THOM PSOM N. THOM PSOM OVE PLANDER TRAUGUILLE S AVONA	DECEMBER STATION S. THOMPSON N. THOMPSON OVE FLANDER TPANDULLE

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APPENDIX PAGE 7	95% CONFIDENCE LIMITS +/- 64. +/- 57. +/- 85. +/- 107. +/- 134.	95% CUNFIDENCE LIMITS +/- 41. +/- 67. +/- 79. +/- 173.	95% CONFIDENCE LIMITS +/- 43. +/- 60. +/- 14. +/- 119. +/- 161.	95% CONFIDENCE LIMITS +/- 43. +/- 67. +/- 80.
	L DAD (KG/DAY) 444. 577. 1021. 1021. 1300.	LOAD (KG/DAY) 422. 680. 1102. 1751.	LOAD (KG/DAY) 433. 603. 1191. 1630.	L DAD (KG/DAY) 431. 685. 1117. 1214.
E Itrite Lüads	51 AN DARD DEVIATION .003 .001 .002	514N DARD DEVLATION • 001 • 002 • 032	51 AN DARD DEVIATION • 001 • 006 • 003	51 AN DARD DEVIATIGN • 002 • 010
DIRECTORATE Y 3°ANCH * 8°ANCH * NJTRATE+N JTRITE * *	STANUARD ERROR +/-0.003 +/-0.003 +/-0.000	5 T ANDAR J E R RJR + / - 0.000 + / - 0.001 + / - 0.001 + / - 0.001 + / - 0.001	ST ANDAR 9 ERRAR +/-0.000 +/-0.000 +/-0.001 +/-0.001 +/-0.001	 STANDARU ERRUF F 0.001 +/-0.002 +/-0.002
TNLAND WATERS D WATER DUALITY A * * * * * * * * * * * * * * * * * * *	MEAN CONC. (M3/L) .065 .131 .132	MEAN CONC. (M3/L) .064 .139 .104 .114	MEAN CONC. (M3/L) 071 .124 .128 .108 .119	<u>MEAN CONC.</u> (M3/L) 070 127 .127
THOMPSON RIVER	201LLE2S 1 0 0 0	3UTLIERS 0 0 0 0 0	0 0 1 1 1	0 0 0 0 0 0
Ë F	SAMPLE SIZE 5 36 12	S4MPLF S12E 6 35 35 12	SAMPLE SIZE 6 6 36 12	SAMPLE SIZE 6 35 35
	8Y 15, 1975 91 SCHA3GE (K43/74Y) (CFS) (K43/74Y) 2800 0.0064 1800 0.0103 4600 0.0113 5000 0.0122	Y 23, 1975 DI SCHARE (CFS) (KM370AY) 2700 0.0056 2700 0.0049 4700 0.0115 4700 0.0115 6307 0.0154	ARY 26, 1975 DISCHARGE (CFS) (KM370AY) 2500 0.0049 4500 0.0110 4500 0.0117 5600 0.0137	9. 1975 9. 1975 1500 0.0051 2500 0.0051 2200 0.0115 4700 0.0115 4700 0.0115 5300 0.0115
	JANJARY STATION S. THGMPSCH N. THOMPSCH N. THOMPSCH DVEPLANDER TRANQUILLE SAV7VA	JANUARY STALJON S. THOMPSCN N. THOMPSON OVERLANDEP TRANDULLLE SAVDVA	FEBRUARY SIALION S. THGMPSCN N. THOMPSCN N. THOMPSCN OVEPLANDER TRANGUILLE SAVOVA	MARCH STALLON S. THCMPSCN N. THCMPSCN DVEPLANDER TRANDULLE

APPENDIX PAGE 8	E NC E		INCE			ENCE .				ENC E		
	95 & CONFIDENCE LIMITS +/- 369. +/- 448.		95% CONFIDENCE LIMITS	 		95% CONFIDENCE LIMITS	+/- 26. +/- 116. +/- 119.			95% CONFIDENCE	LIMITS +/- 35. +/- 268.	+/- 270.
S .	LOAD (KG/DAY) 621. 1264.	2196.	LUAU (KG/UAY)	501. 818.	1868.	L 0A N (KG / DAY)	261. 1182. 1443.	1532. 1961.		LOAU	(KG/UAY) 346. 2726.	3072.
DIRECTORATE BRANCH * NITRATE+NITRITE LOADS *	STAN DARD DEVIATION • 074 • 363	• 096 • 098	STANDARD DEVIATION	• 047 • 047	•962	STAN DARD DEVIATION	100.	•018 •003		S T AN DAR D	UFVIATION • 001 • 001	-015
	STANDARD ERADR +/-0.030 +/-0.026	+/-0.016 +/-0.329	STANDARD ERROR	61C°C=/+	81 [• • • - / +	STANDARD FRADE	100°0-/+	+/-0.003	÷	ST ANDARD	ERROR +/-0.000 +/-0.000	+/-0-0303
VND WATERS R QUALIT R R QUALIT R R R R R P R L R C T -	MEAN CONC. (MS/L) .101 .131	•108 •159	MEAN CONC. (MS/L)	.1 02	.132	MEAN CONC.		•114 •116		MEAN CONC.	(M3/L) .029 .110	-080
THD4PSJN BIVLP	0 2 2	., с) —	OUTLIF3 S	~ ~ ~	3	0011163 S	Į	0 1			0 0 0 0 1 1 1 5 5 5 5 5 5 5 5 5 5 5 5 5	
T	SAMPLE SIZE 6	36 12	SAMPLE SIZE	, ,	12	SAMPLF SIZE	1	36 12		SAMPLE	312F 6 6	3.6
•			9, 1975 91 SCHARGE (CFS) (KM3/DAY) 2500 0 0000		1 1	22. 1975 015044355 (CFS) (KM372AY)	2733 9.3355 4200 0.3193 5930 0.0159				(CFS) (K437)47) (4900 0.0120 10100 0.0247	15000 0.0367 15000 0.0357
	- I I		-	OVERLANDER TPANNITIE	AVCVAS		S. THEMPSCN N. THOMPSCN DVFRLANDFR	TRANGUTLLE SAVYA		MAY 7.	STATION S. THCMPSCN N. THOMPSCN	OVERLANDER TRANDITIE

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		-						
+/- 1662. +/- 1914.	15273. 19509.	100.	+/-0.002 +/-0.000	.067 .088	10	36 12	53630 0.2233 90130 0.2204	AMOUTLLE VOVA
+/- 4/4. +/- 1185. +/- 1276.	4256. 11884. 16140.	• 003 • 002	100.0-/+	140.	1.0	0 Q		 S. THICMPSON N. THICMPSON DVEPLIANCER
33	LCAD (KG/DAY)	STANDARD DEVLATION		MEAN CONC.	0UTL153S	SA4PLE SIZG	1 X	JUNE
	15731.	.003	10°°°0-/+	• 093	c	12	69200 0.1 593	AVCVAS
+/- 1488. +/- 1572. +/- 2012	15171. 19387. 20881	-001 032	+/-0.000.	•100 080	n :		61700 0.1510 35800 0.2099 85300 0.2009	N. THOMPSON OVERLANDER TRANDUT 15
95% CONFIDENCE LIMITS +/- 508.	LJA9 (KG/DAY) 4216.	STANDARD DEV1ATION • 006	5 T AND AR () E R R C F + / - 0• 0 0 3	MEAN CONC. (%3/L) .071	0∪TLI⊑₹S 0	6 5126 6		
1 1	12762. 12576. 16044.	•024 •013	+/-0.00+/+	•104 •123	00	. ~ -	49400 0.1209 49400 0.1209 51300 0.1255	OVERLANDER TRANJUILLE SAVDVA
1	(KG/DAY) 2209. 10554.	DEV LATION • 004 • 001	E3808 +/-0.002 +/-0.000	(MS/L) .057 .128	00TLT53S 1 0	SIZE S S	(7ES) (KMs/7AY) 15733 0.0334 33730 0.0825	STATION S. THCMPSCN N. THOMPSON
95% CONFIDENCE	LOAD	STANDARD	ST AND AR U	MEAN CONC.		S	•	MAY 20
APPENDIX PAGE 9	s	F IITRITE LOAUS	WATERS DIRECTORATE WALITY BRANCH WARA H UJECT - NITRATE+NITRITE WARA H	PR0 PR0 *	as Ale NOSdw0H1 9 M 1NL	Γu		

APPENDIX PAGE 10	95% CONFIDENCE 1.1MITS +/- 1212 +/- 1213 +/- 268. +/- 726.	95% CONFIDENCE LIMITS +/- 247. +/- 880. +/- 914. +/- 800.	95% CONFIDENCE LIMITS +/- 4948. +/- 2121. +/- 2121. +/- 12174. +/- 1694.	95% CONFIDENCE LIMITS +/- 3981. +/- 7587. +/- 4933.
ŝ	LOAD (KG/CAY) 1050. 1541. 2631. 2814.	LDAD (KG/DAY) 2218. 5266. 7283. 673. 4247.	L 0 AD L 0 AD (K G / DAY) 74 50. 140 16. 215 C7. 265 89. 156 E9.	LDAD (KG/DAY) 27172. 34662. 40934. 37247.
JIRECICRATE BRANCH KJELCAHL NITRCGEN LOADS	STANDAFD DEVIATION .021 .070	5TANDARD DEVIATION .037 .021 .014 .037	STANDARD DEVIATION .002 .014 .123 .006	STANDARD DEVIATION .014 .038 .014
ND WATERS DIRECTCRATE ER QUALITY RRANCH * * * * * PROJECT KJELCAHL N * * * * *	5 TANCARD ERCR +/-0.015 +/-0.0 +/-0.0	STANCARD ERROR +/-0.005 +/-0.015 +/-0.006 +/-0.018	STANDARD ERRCP +/-0.065 +/-0.010 +/-0.050 +/-0.003	STANDARD FRRDR +/-0.010 +/-0.010 +/-0.010
	MEAN CONC. (MG/L) .165 .150 .167	MEAN CUNC. (MG/L) .185 .205 .190 .140	MFAN CONC. (MG/1) .155 .170 .220 .125	MEAN CUNC. (<i>NG</i> /L) .180 .155 .220
INLA WAT THOMPSON RIVEP	nuTLTERS 0 1	CUTI IERS 0 0 0	CUTLIEPS CUTLIEPS 0 0	CUTLIERS 0 0
THO	SIZE SIZE 2 2 12	SAMPLE SIZE 2 2 6 4	SAMPLF SIZF 2 2 2 2 4	SAMPLE SIZE 2 2 2
	22. 1975 01SCHARGE 15CHARGE 270C 0.0066 4200 0.0103 6900 0.0169	1975 DISCHAF GF (CFS) (KM3/DAY) 4960 0.0120 10100 0.0247 15000 0.0367 15000 0.0367 12400 0.0303	• 1975 DTSCHARGE (CFS) (FM3/DAY) 15700 0.0384 33700 0.0384 49400 0.1209 49400 0.1205 51300 0.1255	 1575 DISCHARGE DISCHARGE (CFS) (KW3/DAY) E1700 0.1510 E5800 0.2099 E5800 0.2099 65200 0.1693
	APRIL 2 STATION S. THCMPSON N. THCMPSON OVERLANDER TRANQUILLE	MAY 7. STATION S. THEMPSON N. THEMPSON N. THEMPSON OVERLANDER TRANDUILLE SAVGNA	MAY 20, STATION S. THCMPSON N. THOMPSON CVERLANDER TPANOUTLLE SAVONA	JUNE 4 STATION N. THCMPSON OVERLANDER TRANQUILLE SAVONA

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APPENDIX PAGE 11		E NC E													
		NF I DE	LIMITS - 1370. - 6056.	6209. 7211. 3458.						and and and a state					_
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SC		L0 A	KG/D 1123 2041	31644. 43128. 27555.				-		Non-water and the second					
רטענ						entror - o e e vonente									
CGEN		ANDAP	DEVIATION .007 .028	.032 .C10					•						
TRECTCRATE BRANCH * KJELDAHL NITRCGEN LDADS *		1											er - de vers i rock andri a		
CIRECICRATE BRANCH * * KJELCAHL N * *	-	CARD	ERKOR +/-0.005 +/-C.020	013 0C5	:										
CIRFC BRAN 8 KAN K JFL * 1 FL		STAN	F / - 0.	+/-0.013 +/-0.003											
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WATERS 0.ALITY 0.FCT		z	322	.188 .125		· .									
INLANC WATE NATER OLAL * * * * Thrypson River Project		MEA	2												
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NDS d/			0071												
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		SAMP	S 1 Z		i										
			0 7 Y) 8 3 2 4 5 8	290 290											
		HARGI	KM3/1 C.C.	536C0 0.2290 93600 0.2290 90100 0.2204					-					1	
		1975 1150	+000 +000	36C0 36C0 3100											
		17,	5	5 6 6											
		JUNE	NOS	L E R											
			STATION S. THOMP N. THOMP	RLAND VOU IL DNA						a de la constante de la constan					
			STA S.	OVERLANDER TRANOU ILLE SAVONA											
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APPENDIX PAGE 12	95% CONFIDENCE LIMITS +/- 1105. +/- 3439.	95% CONFIDENCE LIMITS +/- 4565. +/- 7321. +/- 322. +/- 3725. +/-17717.	95% CONFIDENCE LIMITS +/- 2561.	95% CONFIDENCE LIMITS +/- 1033. +/- 4681. +/- 5185.
s a	10AD (KG/DAY) (KG/DAY) 23139.	LD AD (KG/DAY) 12353. 19807. 32160. 46583.	L0 AD (KG/DAY) 17023.	LOAD (KG/DAY) 8906. 21258. 24711.
E NJTP CGEN LOADS	51ANDAPD DFVIATICN .014 .034	57 ANDAR D DEVIATION • 020 • 020 • 020 • 04 2	STANDARD DEVIATION • 018	STANDARD DEVIATION • 007 • 063
DIRFCTCRATE Y RRANCH * * - Kjeldahl N * *	STANDARD ERRUR +/-0.008	STANCARD ERRDR +/-0.020 +/-0.020 +/-0.020 +/-0.020	STANDARD FRFCP +/-0.005	STANDARD ERROR +/-0.003 +/-0.015
VE WATERS FP OUALITY * * * * * * * * * * * * * * * * * * *	MEAN CONC. {MG/L} .125 .142	MFAN CONC. (MG/L) (MG/L) .110 .110 .110 .110	MEAN CONC. (MG/L) .051	MEAN CONC. (MG/L) .100 .156
TNLA WATI WATI WATI	CUTLIERS.	OUTLIERS 0 0 0	CUTLJERS C	GUTLIERS 0 0
A DHE	SAMPLE SIZE 6 18	SAMPLE SIZE 1 2 2 2 2	SAMPLF SIZE 12	SAMPLE SIZE 5 18 18
	• 1974 DISCHARGE (CES) (KM3/DAY) 27400 0.0670 665C0 0.1627	1974 DI SCHARGE CFS 1 (KM3/DAY) 45900 0.1123 73600 0.2924 19500 0.2924 19000 0.2924	24, 1574 DISCHAPGE (CFS) (KM3/DAY) 766C0 0.1974	1. 1574 DISCHARGE (CFS) (KM3/DAY) 36400 0.0891 64700 0.1583 64700 0.1583
	JUNE 11 STATION S. THEMPSON TRANOUILLE	JUNE 26. STATION S. THEMPSON . THEMPSON N. THEMPSON OVE PLANDER I PRANCUILLE SAVONA 1	JULY 24 STATION TRANDUTLLE	JULY 31 STATICN N. THCMDSDN OVERLANDER TRANDUITLLE

+/- 2120.	9206.	• 038	+/-C.019	.177	0		21200 0.0519	AVUNA
95% CONFIDENCE LIMITS +/- 2067.	LUAD (KG/CAY) 8612.	STANDARD DEV LATION • C71	5 TAMD ARN EP RCP + /-0.020	MEAN CONC. (MG/L) •163	CUTLIFRS C	SAMPLE SIZE 12	MRFP 18, 1974 DISCHAPGE (CFS) (KM3/DAY) 19200 0,0470	SEPTEMAFP STATION (C TRANOUILLE 1
	anand ann an				.			
	(KG/DAY) 10334. 9816.	DFVIATION • 056 • 005	ERRGF +/-0.016 +/-0.0C2	(MG/L) .165 .147	OUTLIERS C 1	512F 12	(CFS) (KM3/DAY) 25600 C.0676 27200 D.0665	STATION TRANQUILLE SAVONA
95% CONFIDENCE	10 AD	STANDARD	STANDARD	MEAN CONC.		V.	PTEMBER 4, 1574 DISCHARGE	SEPTE
								-
+/- 2820. +/- 488.	11242. 4976.	• 054 • 000	+/-0.016 +/-0.000	•132 •060	-0	12	34900 0.0854 33900 0.0829	TRANQUILLE Savona
95% CONFIDENCE LIMITS	LDAD (KG/EAY)	STANDARD DEVIATION	ST AND ARD ERRCK	MEAN CONC.	<u>OUTLIERS</u>	SANPLE SIZE	20, 1974 DISCH (CFS) (K	AUGUST STATION
LIMITS +/- 1257. +/- 4735.	(KG/FAY) 82 58. 206 50.	015 015	ERKCR +/-0.006	(MG/L) •105	0	ت ک ۲	1(FS) (FM3/037) 32300 0.6790 55900 0.1368	N. THCMPSON N. THCMPSON DVERLANDER
95% CONFIDENCE	LUAD	STANDARD	STANC ARD	MEAN CUNC.		JIdwvs		AUGUST
	ADS	NITROGEN LOADS	*	PROJECT + + * *	THOMPSON RIVER	F		
APPENDIX PAGE 13		ш	DIPECICRATE Y BRANCH * *		τ NI Δ Ψ Δ τ			

APPENDIX PAGE 14	CONF LDENCE	LIMITS 360. 212.	417. 1958. 3588.		CONFIDENCE LIMITS	511. 985.	717.	463.	CONFIDENCE LIMITS	205. 236.	312. 619. 1617.	C ONF I DEN CE	LIMITS 141.	72. 172. 729. 409.
	95% C		/ + - / + + +		95% C	÷+	-/+	-/+	95% C		++++	95% 0	ן - ר + / - י	 + + +
AES	LCAD	(KG/CAY) 22 C2 - 14 88 -	3689. 7230. 6239.		LDAD (KG/EAY) 2525	1457.	5026.	4147.	LOAD (KG/DAV)	18 61. 2.3 59.	3919. 3743. 4007.	LUAD	(KG/CAY) 1156.	21 59. 21 59. 30 59. 19 05.
E NITROGEN LOADS	ST AN DAR D	DFVIATION • 014 • 007	• 098		STANDARD DEV LATION DAO	. 028	.031	• 008	STANCAR D DEVIATION	.007 .007	.028 .063	STANDAPD	0.EV I AT I ON • CO 7	.045 .017
UIKFC-LCKA BRANCF & * KJELDAHL * *	STANDARD	ERRCR +/-0.010 +/-0.005	+/-0.031		STANDARD ERECR	+/-0.020	+/-0-011	+/-0.004	STANDARD Error	+/-0.005 +/-0.005	+/-0.012 +/-0.031	STANDARD	ERRCR +/-0.0C5	+/-0.018 +/-0.009
INLANC WALEY, I WATER OUALITY * * * * * * * * * * * * * * * * * * *	MEAN CONC.	(MG/L) .150 .055	.238		MEAN CONC. (MG/L)	.120	.207	.150	MEAN CONC.			MEAN CONC.	(MG/L) .135	.167 .087
THU MA THUMPSON RIVER		OUTLIERS 0 0	00		GUTLIESS 0	òo	o	0	OUTLIERS		00		GUTLIERS C	0 - 0
ŨНТ	SAMPLE	\$12E 2 2	1 Q 7		SAMPLE SIZE	5	a)	4	SIZE	~ ~	υ 4	SAMPLE	SIZE 2	v ~ 4
	1º74 PISCEARGE	CFSJ (KM3/DAY) 60C0 0.0147 6400 0.0157		1974	LISCHARGE S) (KM3/DAY)			0.0276	30, 1974 DISCHAPGE DISCHAPGE (CFS) (KM3/DAY)	0.0055 0.0125		4, 1574 015CHARG5	×	0.0100 0.0186 0.0186 0.0218
	~ •	(CFS) 6000 6400	12400 12400 15000	16.	(CFS)	2100	00 66	11300		3900 5100	9000 9000 10400	14. 14.	(CFS) (3500	7600
	nc three	STATION S. THCMPSON N. THFMPSON		OCTOBER	STATION C TUCNDCOM	N. THEMPSON	TRANOU ILLE	SAVONA	OCTORER Station	S. THOMPSON N. THOMPSON	OVERLANDER TRANOUTLLE SAVONA	NOV EM BER	4	N. HLEFSON DVFRLANDER TRANOU ILLE SAVONA

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MEAN CONC. STANCARD MEAN CONC. STANDARD SSS -/-0.0005 MEAN CONC. STANDARD SSS -	THUMPNEON RIVEP PPNJECT RANCH WATEF OLATITY PRANCH * * * * * THUMPSON RIVEP PPNJECT KJELCAHL * * * * * SIZF OUTLIERS FERCP 0 0 2 0 0 0 2 0 0 0 155 +/-0.010 4 0 0 0 2 0 155 +/-0.010 4 0 155 +/-0.010 4 0 155 +/-0.010 2 0 155 +/-0.010 4 0 155 +/-0.055 9 -0.055 112 +/-0.055 112 +/-0.055 112 +/-0.055 112 +/-0.055 112 +/-0.055 112 +/-0.055 112 +/-0.055 112 +/-0.055 112 +/-0.055 112 +/-0.055 112 +/-0.055 112 +/-0.055 112 +/-0.055 112 +/-0.055 112 +/-0.055 112 -/-0.055 112 +/-0.055 <th>INLART P. OLALITY REANCH WATEP OLALITY REANCH WATEP CLALITY REANCH WATE P. OLALITY REANCH WATE P. OLALITY REANCH MEAN CCNC. STANEARD OUTLIERS (MG/L) RAN CONC. STANEARD OUTLIERS (MG/L) RAN CONC. STANEARD OUTLIERS (MG/L) REAN CONC. STANEARD O -0.0010 O -1.0.006 O -1.0.007 O -1.0.007 O -1.0.007 O -1.12 REAN CONC. STANEARD REAN</th> <th>APPENDIX PAGE 15</th> <th>C LOAD 95% CONFIDENCE CNI (KG/CAY) LIMITS 1174. +/- 174. +/- 572. +/- 1747. +/- 1747. +/- 1743. +/- 1883. +/-</th> <th>D LDAD 95% CONFIDENCE (DA (KCFAY) LIMITS (DA (KCFAY) </th> <th>D L() AD 95% COMF I DENCE DN (KG/DAY) L I MI TS CN (KG/DAY) L I MI TS 674. +/- 96. 674. +/- 96. 711. 96. 713. 971. 1530. +/- 911. 1539. +/- 911.</th> <th>D LOAD 95% CUNFIDENCE (NN (KG/DAY) LIMITS 2637. +/- 267. 727. +/- 83. 3364. +/- 280. 2270. +/- 283. 1277. +/- 280.</th>	INLART P. OLALITY REANCH WATEP OLALITY REANCH WATEP CLALITY REANCH WATE P. OLALITY REANCH WATE P. OLALITY REANCH MEAN CCNC. STANEARD OUTLIERS (MG/L) RAN CONC. STANEARD OUTLIERS (MG/L) RAN CONC. STANEARD OUTLIERS (MG/L) REAN CONC. STANEARD O -0.0010 O -1.0.006 O -1.0.007 O -1.0.007 O -1.0.007 O -1.12 REAN CONC. STANEARD REAN	APPENDIX PAGE 15	C LOAD 95% CONFIDENCE CNI (KG/CAY) LIMITS 1174. +/- 174. +/- 572. +/- 1747. +/- 1747. +/- 1743. +/- 1883. +/-	D LDAD 95% CONFIDENCE (DA (KCFAY) LIMITS (DA (KCFAY)	D L() AD 95% COMF I DENCE DN (KG/DAY) L I MI TS CN (KG/DAY) L I MI TS 674. +/- 96. 674. +/- 96. 711. 96. 713. 971. 1530. +/- 911. 1539. +/- 911.	D LOAD 95% CUNFIDENCE (NN (KG/DAY) LIMITS 2637. +/- 267. 727. +/- 83. 3364. +/- 280. 2270. +/- 283. 1277. +/- 280.
MEAN MATER 0.4117 WATER 0.4117 * * * * WATER 0.4117 * * * * MEAN * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * 66/11 * * 66/11 * * 060 • 010 * * 060 • 115 * * 060 • 112 * * 060 • 112 * * 060 • 065 * * 065 • 065 * * 065 • 065 * * 065 • 065 * * 12 • 385 * * 165 • 165	AMPLE MILEN THUMPSON RIVEP PPNJECT THUMPSON RIVEP PPNJECT ** * **	THUMPSON RIVEP PATER 77. 1974 WATER OLALITY 77. 1974 WATER OLALITY 77. 1974 MATER OLALITY 7600 0.0166 C 7600 0.0152 C 7600 0.0152 C 7600 0.0152 C 7600 0.0152 C 7600 0.0157	PECTCRATE Ranch 	0 0 0	L ST	DE DE	0.61
	THUMPSON RI THUMPSON RI SIZE CUTLIER 2 0	THUMPSON RI 77, 1974 01SCFLARGE 6700 7200 740 740 740 740 740 740 740 740 740 7400 <td></td> <td>CONC. 711 711 711 711 711 75 7 7 7 7 7 7 7 7</td> <td>CONC. (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)</td> <td>COAC. (1) 055 45 45 + +</td> <td>CONC</td>		CONC. 711 711 711 711 711 75 7 7 7 7 7 7 7 7	CONC. (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	COAC. (1) 055 45 45 + +	CONC
	AMPL SIZE SIZE AMPL	27. 1974 SAMPL 0157446 SAMPL 0500 0.0076 2200 0.0076 2200 0.0076 2200 0.0166 6800 0.0166 6800 0.0166 6800 0.0166 6800 0.0166 6800 0.0166 6800 0.0166 6800 0.0152 6200 0.0181 23300 0.0081 23300 0.00166 6200 0.0152 6200 0.0152 6200 0.0152 6200 0.0152 6200 0.0152 6200 0.0152 6200 0.0152 6200 0.0152 6200 0.0152 6200 0.0152 6200 0.0152 6200 0.0152 6200 0.0157 6200 0.0157 6200 0.0157 6200 0.0157 6200 0.0157 6200 0.0157 6200 0.0157 6200 0.0157 6200 0.0157 6400 0.01513 600 <td>ця 1</td> <td>0 0 0 0 0 0 0 0</td> <td>CUTLIERS 0 0 0</td> <td></td> <td>CUTLIERS 0 0 0</td>	ця 1	0 0 0 0 0 0 0 0	CUTLIERS 0 0 0		CUTLIERS 0 0 0

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+/- 103.	18 RO.	• 644	420.0-/+	•132	0	4		SAVUNA
					•			
	3064	.103	+/-0.042	.278	0	9		TRANGUILLE
+/- 70.	1270	. 007	+/-0.005	•105	0	2	2000 0.0049	
+/- 146.	856.	.014	+/-0.010	.140	0	2	2500 0.0061	
95% CONFIDENCE LIMITS	LO AD (KG/CAY)	STANDARD DFV LATION	ERROR	MEAN CONC.	CUTI TERS	SAMPLE	DISCHARGE	
							1075	
	2092.	.010	+/-0.005	•142	0	4	i	SAVONA
	2859.	.040	+/-0.016	.263	0	Ý		RANDUILLE
	563. 1878.		+/-0*005	.115	С	2		SON DER
	1315.	{	+/-0.045	.215	0	2	2500 0.0061	1
95% CONFIDENCE LIMITS	LOAD (KG/CAY)			MEAN CONC. (MG/L)	OUTLIERS	SAMPLE SIZE	• 197 - 115 CFS)	IARCH 2
	23 19. 20 22 •	.015 .019	+/-0.000	• 2 C 2 • 1 4 2	00	× 4		TRANQUILLE SAVONA
	1130.	.014	+/-0.010	• 2 10	0	2		, THCMPSON
LIMITS - 165.	(KG/GAY) 11 62.	DEV 1 #11 DN • 014	+	(MG/L) •150	CUTLIERS 0	S12E 2	CFS) (k 2500	_
							1975	MARCH 5.
	an tabala di anno di Andrea di							
	1744 • 1734 •	.012 .029	+/-0.305 +/-0.014	•152 •112	00	Ф 4		TRANQUILLE SAVONA
1	26 10.	•			2	3.	1	VERLANDER
LIMIIS +/- 148 +/- 303.	(KG/EAY) 727. 1884.	0EVIATION .014 .035	ERACP +/-0.010 +/-0.025	(M5/L) •110 •385		512F 2 2	÷	STATION S. THCMPSON N. THCMPSON
95% CONFIDENCE		STANDARD	SFANDARD	MEAN CONC.		SAMPLF		ANUARY
				1 1				
APPENDI PAGE 16			TY BRANCH	2 * 0 2 * 0 2 * 10 2 * 10	5	ł		
	APPE PAGE 1 I MI TS 1	L0 AD 95% CONFIDEN 6/ EAY 11115 727 +/- 1724 +/- 1744 +/- 1744 +/- 1744 +/- 1734 +/- 1355 +/- 1315 +/- 1315 +/- 1315 +/- 1315 +/- 2022 +/- 2192 +/- 2292 +/- 23192 +/- 2555 2025 2292 +/- 2319 +/- 2565 - 2022 +/- 2593 - 2022 +/- 1130 - 11315 - 11315 - 12315 - 2022 - 2192 - 2192 - 2192 - 2192 - 2192 - 2192 - 2192 - 2192 - 2192 - 2192 - 2192 - 2192 2192 </td <td>NITPCGEN LCAES 95% CONFIDEN STANDARD L0 AD 95% CONFIDEN DEVIATION KG/ EAY L1 MITS 014 727 +/- 148. 035 035 1844. +/- 303. 014 727 +/- 148. 015 1744. +/- 303. 012 1744. +/- 303. 012 1744. +/- 303. 013 1162. 1734. +/- 014 1130. +/- 165. 014 1162. +/- 317. 015 2192. +/- 165. 014 1162. +/- 165. 014 1162. +/- 165. 014 1162. +/- 165. 014 1162. +/- 165. 015 2192. +/- 165. 014 1130. +/- 165. 014 1315. +/- 555. 007 2859. +/- 555. 010 2052. +/- 555. 010 2859. +/- 555. 014 516. +/- 267.</td> <td>SFANDARD STANDARD T27 +/- 148 FEARD OUI4 IR84 +/- 303 - - 337 - 337 - 337 - 337 - 337 - 337 - 337 - 337 - 337 - 337 - 337 - 337 - - 337 - - 337 - - 337 - - 337 - - 333 - - - 337 - - - - - - - 333 -</td> <td>TER GUAITY RANCF ************************************</td> <td>WATER OUALITY BRANCH FIVER PRCUECT KJELCAHL NITPCGEN LCAGS FIVER PRCUECT KJELCAHL NITPCGEN LCAGS ******** ******** ******** ******** ******** ******** ******** ******* ******** ******** ******** ********* ******** ********* ******** ********* ********** *********** ************ ****************** ************************************</td> <td>THOMPSON PLVER PROJECT</td> <td>Price durity family and the control of the</td>	NITPCGEN LCAES 95% CONFIDEN STANDARD L0 AD 95% CONFIDEN DEVIATION KG/ EAY L1 MITS 014 727 +/- 148. 035 035 1844. +/- 303. 014 727 +/- 148. 015 1744. +/- 303. 012 1744. +/- 303. 012 1744. +/- 303. 013 1162. 1734. +/- 014 1130. +/- 165. 014 1162. +/- 317. 015 2192. +/- 165. 014 1162. +/- 165. 014 1162. +/- 165. 014 1162. +/- 165. 014 1162. +/- 165. 015 2192. +/- 165. 014 1130. +/- 165. 014 1315. +/- 555. 007 2859. +/- 555. 010 2052. +/- 555. 010 2859. +/- 555. 014 516. +/- 267.	SFANDARD STANDARD T27 +/- 148 FEARD OUI4 IR84 +/- 303 - - 337 - 337 - 337 - 337 - 337 - 337 - 337 - 337 - 337 - 337 - 337 - 337 - - 337 - - 337 - - 337 - - 337 - - 333 - - - 337 - - - - - - - 333 -	TER GUAITY RANCF ************************************	WATER OUALITY BRANCH FIVER PRCUECT KJELCAHL NITPCGEN LCAGS FIVER PRCUECT KJELCAHL NITPCGEN LCAGS ******** ******** ******** ******** ******** ******** ******** ******* ******** ******** ******** ********* ******** ********* ******** ********* ********** *********** ************ ****************** ************************************	THOMPSON PLVER PROJECT	Price durity family and the control of the

APPENDIX PAGE 17	CONFIDENCE LIMITS 131. 749. 760. 575. 90.	CONFIDENCE LIMITS 189. 389. 947. 1024. 122. 132.	CUNFIDENCE LIMITS 115. 315. 336. 386. 132.	CONFIDENCE LIMITS 225. 249. 502. 283. 144.
	95% CONFID 11 MITS +/- 131. +/- 749. +/- 760. +/- 575.	95% CONFIDE LIMITS +/- 389. +/- 947. +/- 1024. +/- 132.	95% CONFID LIMITS +/- 115. +/- 315. +/- 336. +/- 132.	95% CONEID LIMITS +/- 225. +/- 502. +/- 283. +/- 283.
L(IADS	L CAD (KG /DAY) 1116. 6390. 7513. 4842. 789.	L CAD (K5 /DAY) 1785. 8053. 9838. 6157. 818.	L CAD (KG/DAY) 956. 1888. 2983. 2565. 752.	LCAD (KG /DAY) (KG /DAY) 1256. 2841. 4 C57. 2745.
SUPORADRU C	STANCARD DE VIATION •003 •013 •012 •002	STANDARD DEVIATION .014 .015 .003 .003	STANDARD DEVIATION •002 •008 •009 •002	51ANDARD 9EVIATION •009 •002
INLAND WATEPS DIPECTORATE WATER JUALITY BRANCH * * * * * * VEF PROJECT UNFILTERED PHOSPHORUS LOADS * * * * * *	STANDARD E3RJR +/-0.001 +/-0.004 +/-0.002 +/-0.000	STANDARU ERRDR +/-0.006 +/-0.004 +/-0.001 +/-0.001	ST4NDARD ERRJK +/-0.002 +/-0.001 +/-0.001	STANDAR9 ERRJR +/-3.002 +/-0.003 +/-0.000
AND WATEP TE2 JUALI * * * PROJECT * * *	MEAN CONC. (46/L) .039 .111 .356	MEAN CONC. (MG/L) (MG/L) .059 .129 .0266 .011	4EAN CONC. (46/L) .022 .032 .032 .024	4EAN CONC. (MG/L) .027 .043 .024
I NL WA THOMPSON RIVEF	0JTLI53S	0 0 0 0 0	0 0 0 0 1 1 0 0 1 1 0	0 0 0 0 0 0 0 0 0 0
UT T	5440LE 512E 6 12 36 18	SAMPLE S1255 12 12 12 12	SA 49 LE SIZE 6 12 36 12	504015 5125 5126 12 36
	1974 DISCHARGE DISCHARGE (CFS) (KM3/DAY) (CFS) 0.0575 25500 0.0575 35100 0.0859 35100 0.0859 25930 0.0634	1974 015CHA4GE 015CHA4GE (CES) (K43/DAY) 12490 0.0303 25500 0.0330 38090 0.0930 38090 0.0930 38090 0.0937 29309 0.0717	. 1974 DISCHARGE <u>CFES</u> (Y13/DAY) 18500 0.0453 24300 0.1047 42800 0.1047 41030 0.1033	- 1974 - 1974 (CFS) (KM3/DAY) 18930 0.0462 26903 0.0121 45800 0.1121 45801 0.1121 45801 0.1121
	MAY 1, STATION S. THOMPSON N. THOMPSON DVE FLANDER TRANGUILLE SAVONA	MAY 2. STATION 5. THOMPSON N. THOMPSON OVERLANDER TRANDUILLE SAVONA	MAY 22, STATLUN S. THOMPSON N. THOMPSON OVEPLANDER TRANDUTLLE SAVONA	MAY 23, STATION S. THOMPSON N. THOMPSON N. THOMPSON DVE LANDER TRAYDUILLE SAVJNA

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APPENDIX PAGE 18	95% CONFIDENCE LIMITS +/- 245. +/- 598. +/- 459. +/- 189.	95% CONFIDENCE LIMITS +/- 525.	+/- 1313. +/- 1414. +/- 954. +/- 223.	95 % CONFIDENCE LIMITS +/- 1061. +/- 5354. +/- 5458. +/- 582.	95% CONFIDENCE LIMITS +/- 563. +/- 3890.
s LyADS	L CAD (K5/DAY) 1531. 4010. 5540. 4018. 1026.	L CAD (KS /DAY) 1973.	9522. 11495. 6935. 1345.	L CAD (K <u>5./DAY</u>) 5673. 32596. 38269. 19363. 4220.	L GAD (KG /DAY) 3612. 16041. 19653.
2 PHOSPHORUS	STANEARD DEVIATION •004 •008 •004 •002	STANEARD DEVLATION •009	.014 .012 .002	STANDARD DEVIATION -012 -039 -069 -063	5TAMDARD 0.E VI A TI ON • 0.05
WATERS DIRECT CHATE 3.04.117 8PANCH 3.4 * * * * * * * * * * * * * * * * * * *	STANDARD ERRJR +/-0.001 +/-0.002 +/-0.001 +/-0.001	STANDARD E3RJR +/-0.004	+/-0.004 +/-0.002 +/-0.001	STANDAP 0 E3R3R +/-0.095 +/-0.011 +/-0.012 +/-0.001	STANDARD E3RJR +/-0.002 +/-0.010
PRO PRO #	MEAN CONC. {M5/L} .042 .042 .025	MEAN CONC. (M3/L) -028		MEAN CONC. (MG/L) .062 .167 .067	MEAN CUNC. (MG/L) • 032
INI Mu Abu is nosamoht	0JTLI53S 0 0 0 0	S S	c - o	0 0 0 0 0 0 0 0 0	0 1
E E	SAMPLE SIZE 12 12 12 12	54 4P L5 S I 2 Ε	12 36 12	SAMPLE SIZE 5 12 36 12 12	SAMPLE SIZE LZE LZ
	974 915CHA26E 51 (K43/DAY) 400 0.0570 100 0.0577 500 0.1627 500 0.1627 300 0.1664		7.11.7 1181.0 1181.0 10.1831 0.1604	AY) 50 70 44	974 DISCHA?GE 5) (KM5/0AY1 900 0.1123 600 0.1801 500 0.2924
	114, 1974 DISCI (CFS) (1 27400 39100 66500 66500 68000	13, 1974 015C1 015C1 28830	48100 76900 58000 68000	1974 1974 1976 1050 1070 11730 11730 11730 11730 11730 11730 11730 11730 11730 124000 124000 12400 1240000 1240000 1240000 1240000 12400000 124000000000 124000000000000000000000000000000000000	26, 1974 015C (CFS) (45900 73600 119500
	JUNE 1 STATION S. THOMPSON N. THOMPSON OVERLANDER TRANQUILLE SAVONA		N. THOM PSON OVERLANDER TPANOUILLE SAVONA	JUNE 1 STATI GN S. THOM P SON N. THOM P SON N. THOM P SON OVE PLANDER TRANDUILLE SAVONA	JUNE 2 STATI GN S. THOM P SON N. THOM P SON OVE PLANDE P

APPENDIX PAGE 19	os ≥ canetora	LIMITS LIMITS +/- 682. +/- 1776.		95% CUNFIDENCE LIMITS +/- 520.	[+/- 732.	95 & CONFIDENCE LIMITS	+ /- 620. +/- 809. +/- 1023.	63 27	95 % CONFIDENCE			
, LŪADS	0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5		LGAD 95 (KG/DAY) 3831_ +			L C A D 45 (KS / D A Y)			L CAD 95	(KG/DAY) 1381. + 4433.		
E D PHORPHORUS LAADS	A TANFARD	DEVIATION .003 .019	• 0037 • 003	STANCARD DEVIATION	•014	• 005	S TANDARD DE VIA TION	• C O S	• 005 • 002	STANDAŘD	DEVIATION +003 -007	•004	
S DIRECTORATE TY BRANCH # * * UNFILTERED * * #	C AA ON AR O	ER3F +/-0.001 +/-0.007	100°0-/+	STANDARD SRDR +/-0-002	+/-0.05	+/-0-0002	STAND AR U ERRJR	+/-0.003	100°0-/+	C PAND AR D	+ +		
AND WATEP TES 3UALI * * * PROJECT * * *	MEAN CONC.	~ 0.0	• 031 • 013	MEAN CONC. (MG/L)	. 052	• 015	MEAN CONC. (MG/L)	• 030 • 050	• 026 • 006	MEAN CONC.		.026 .005	
T NL WA TH DM PS ON RIVER		0JTL1525 6 0		, UJTLTERS	00	0	OJTELERS		ర ర		0JTLIE2S 0 0	00	
Ĩ	1 GM VS	512 5 5126 33	2 * 8 *	SA HP LE S I Z E A		7 7 7	SA 4PLE SIZE	5 12	36	SAMPLE		1 ~ -	
	U C C C C C C C C C C C C C C C C C C C	KM3/04Y) 0.1074 0.1255	0.2329 0.2329 0.2359	1974 UISCHA36E FS) (KM3/DAY) 3000 0.0052	0.1970	9•1970 9•2009	974 015CHA2GE SJ (KM3ZDAY)	0.0903 0.1165 0.2057	0.1935	974 DISCHARGE	(CES) (KM3/D6Y) 33200 0.0812 43410 0.1062	0.1374 0.1374 0.1328	
	3, 1974 DISCHASEE	(CFS) (1 43930 51330	95200 95200 96400	10, 1974 01501 (CFS) (1	41600 80500	32100	17, 1974 0150		84500 79130	24, 1974 DISC	(CES) (1 33200 43410	76600 76600 79200	
	ישרא ז	STATION S. THOMPSON N. THOMPSON	OVERLANDER Tranguille Savona			<u>TEANUUTELE</u> Savona		S. THOMPSON N. THOMPSON OVERIANDER	TRAYQUILLE SAVONA	JULY	STATION S. THOMPSON N. THOMPSON	OVEFLANDER TRANSUILLE SAVINA	

APPENDIX PAGE 20	93 * CONFIDENCE LIMITS +/- 308 +/- 419. +/- 520. +/- 313.	95% CONFIDENCE LIMITS +/- +05. +/- 364. +/- 544. +/- 592.	95% CUNFIDENCE LIMITS +/- 81. +/- 194. +/- 210. +/- 59.	95* CUNFIDENCE LIMITS +/- 83. +/- 100. +/- 265. +/- 251.
\$ LOADS	L CAD (KG /DAY) 1616. 3406. 5022. 3518. 2541.	L GAD (KG / DAY) 1530. 2950. 4480. 4359. 1839.	L GAD (KG /DAY) 506. 962. 1468. 1758. 435.	L GAD (KG /DAY) 406. 558. 964. 1207. 699.
E D PHOSPHORUS LOADS	STANEARD DEVIATION 	STANCARD DEVIATION •008 •305 •045 •045	STAN CARD DE VIATION •002 •007 •023 •023	STANCARD DEVIATION .003 .004 .012
UIRECTORATE Y RRANCH * * - UNFILTERED * *	STANDARD ERRJR +/-0.002 +/-0.001 +/-0.001 +/-0.001	STANDARD FRRJR +/-0.003 +/-0.001 +/-0.008 +/-0.002	STANDARD ERCJR +/-0.001 +/-0.002 +/-0.004 +/-0.000	STANDARD ERRJR +/-0.501 +/-0.001 +/-0.002 +/-0.002
AND WATERS TER 3 (ALLIT * * * * PROJECT - * * * *	MEAN CONC. (M3/L) .0323 .038 .038 .022	MEAN CONC. (M5/L) .026 .037 .032 .032	MEAN CCINC. (M3/L) .013 .021 .021 .021	MEAN COMC. (M5/L) 015 016 016
THOMPSON RIVER	0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	0 0 0 1 0 0 1 0
HE	54MPLE 512E 12 36 12 12	SA Na LE SIZE 6 12 36 12 12	SAMPLE 512F 12 36 12	SAMPLF SIZE 12 12 36 35
	L. 1974 DISCHARGE (FS) (KM3/PAY) (CFS) (KM3/PAY) 28300 0.0692 264700 0.1533 64700 0.1533 64700 0.1533	7. 1974 DISCHARGE (CFS) (KM3/UAY) 23600 0.0577 32300 0.057790 55900 0.1358 55900 0.1368 55900 0.1368 57100 0.1397	20, 1974 DISCHA35E DISCHA35E (CFS) (KM3/DAY) 16100 0.0394 1800 0.0394 34900 0.0354 34900 0.0354 33900 0.0829	3E% 4, 1574 DISCHASGE (CFS) (KM3/DAY) 11290 0.0274 14400 0.0552 25600 0.0525 25600 0.0525 25600 0.0555
	JULY 31 STATION S. THOMPSON N. THOMPSON N. THOMPSON OVELANDER TRARUULLE SAVONA	A UGUST STATION S. THOM PSON N. THOM PSON OVERLANDER TRANQUILLE SAVONA	AUGUST STATION S. THOMPSON N. THOMPSON OVE PLANDER TRANQUILLE S AV ON A	SEPTEMBE STATION (S. THOMPSON N. THOMPSON OVEFLANDER TRANDUILLE SAVONA

DIX 21									•					-	
APPENDIX PAGE 21		96% CJNEIDENCE	LIMITS +/- 27. +/- 42.	აი		95% CONFIDENCE LIMITS		+/- 67. +/- 54.		95% CONFIDENCE	li i	+/- 48. +/- 799. +/- 86.	COME TORNES		
S LUADS			(KG/DAY) 203. 342.	545. 2741. 1037.		LOAD (KG/DAY)	157. 318.	545. 263.		LOAD KGZDAY J	139.	249. 3110. 265.		(KG/DAY) 142. 826	978 • 1472 • 174 •
E D PHOSPHURUS LUADS		STANDARD	DEVIATION .002 .002	•049 •033		STANDARD DEVIATION	•002	• 002		STAN DARD DEVIATION	•004	• 053 • 005	STANDARD.	DEVIATION • 005	.055
UIPECTORATE Y BRANCH * * * - UNFILTERED		STANDARD	ERROP +/-0.000	+/-0.008		STANDARD 55808 +/-0.001	100-0-/+	-100°0-/+		STANDARD ERPOR	+/-0.002	+/-0.015 +/-0.002	A NUMA TA	ERRE +/-0.002	000°0-/+
AND WATERS TFR QUALIT * * * * PPOJECT +	*	MEAN CONC.	N 0 0	• 0 58 ·		MEAN CONC. (MS/L)	010	• 018		MEAN CONC.	•012 •009	•128 •010	N COLOR		700.
I NL W4 THOMPSOH RIVER			OUTLIERS 0 C	0 0		DUTLIE? S	.o .	olo		00111F2S		00		UUTLIE? S 1 1	• 0
Η		SAMPLE	512E 12 12	36 12		SAMPLE SIZE 6	, ç	36 12		SAMPLE	0 Q	36 12		9 9 715 8	36 12
		IAER 13, 1974 PISCHA3GE	1×	19200 0.0470 19200 0.0470 21200 0.0519	R 2. 1974	DI SCHARGE (CFS) (KM3/DAY) 5000 0-01147				16, 1974 DISCHA355 (CFS) (KM37DAY)	0.0125	9900 0.0242 9900 0.0242 11300 0.0276	R 30, 1974 DISCHARGE	(CFS) (KM3/04Y) 3900 0.0095 5100 0.0125	9000 0.0220 9000 0.0220 10400 0.0254
		SEPT EMBER	STATION S. THOMPSON N. THOMPSON	OVERLANCER Trangui lle Savona	CCT 0 BER	STAFION S. THOMPSCN	N. THOMPSON OVERLANDER	SAVDVA SAVDVA		CCTOBER STATION	S. THOMPSON N. THOMPSON	UVERLANDER TRANQUILLE SAVDNA	OCTOBER	STATION S. THOMPSON N. THOMPSON	ERL ANDER Angui Lle Vona

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APPENDIX PAGE 22	95% CUNFIDENCE LLMITS +/- 48. +/- 80. +/- 240. +/- 25.	95% CONFIDENCE LIMITS +/- 15.	2	N N N	+/- 94. +/- 76. +/- 13.	NO ON	+/- 35. +/- 60. +/- 73.
20461 3	L JAD (K G/DAY) 358. 132. 490. 1163.	L (140 (K G/DAY) 138-	250. 1031. 173.	L UAD (KG/DAY) 114. 361.	414. 523. 99.	LUAD (KG/DAY) 153.	226. 365. 157.
DIRECTORATE BRANCH UNFILTERED PHOSPHORUS LJADS	51AN DAKD DEVI AT 10N • 005 • 035	5 T AN DA 2 D D E V I A T I C N • 0 0 1	• 045	STANDARD DEVIATIGN .002 .013	.001 100.	STANDARD DEVIATION • 0C5	•011 •007
L) 4 4	STANDARD ERPUR +/-0.002 +/-0.004 +/-0.005	STANDARD E & PD 2 +/-0.000	10C° C-/+	STANDARD STANDARD FROR +/-0.001 +/-0.005		51 AYDAR 0 E R R R R R R R A M - 0 • 0 0 2 +/-0 • 0 0 1	+/-0.002
AND WATES C ATER DUALITY * * * * * * PROJECT		MEAN CONC. (MS/L) .013	. 005. • 006.	MEAN CONC. (MG/L) .016 .045	• 034 • 005	MEAN CONC. (MG/L) 021	• 027 • 009
THUMPSON FIVER	0 0 0 0 0 0 0 0	0 0 0	n 00	0 0 0	00	OUTLIERS'	- د
H H	SA40LE SI2E 6 36 12	SAMPLE SIZE 6	36 0 12	SAMPLE SIZE 6 6	36 12	SAMPLE SIZE 6	36 12
	EP 14, 1974 DISCHARGE (JES) (KM3/DAY) 3500 0.0036 4100 0.0185 7600 0.0185 7600 0.0136 8900 0.0218	27, 1' 51 SCF 32,30 36,30	800 0.01066 5300 0.0156 3100 0.0198 3100 0.0198		<u>6200 0.0152</u> 5200 0.0152 7600 0.0135	24, 1 01 SCH 2900 2700	5600_0.0137 5600_0.0137 7400_0.0181
	NCVE MBEP STATTON S. THCMPSCN N. THOMPSCN N. THOMPSCN CVERLANDER TRANOUTLLE SAV2VA	NCVEMBER STATION S. THGMPSON		DECEMBER STATION S. THEMPSON N. THOMPSON	OV EPL ANDER TRANDUT LLE SAVDVA	2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	OVERI, ANDER Tranqui lle Savona

3								r			-	
APPENDIX PAGE 23		+/- 14. +/- 3. +/- 14. +/- 156. +/- 24.	C ONF L IMI	+/- 9. +/- 20. +/- 22.		S3% CONFIDENCE	LIMITS +/- 37. +/- 8.	+/- 30. +/- 85. +/- 218.	95% CONFIDENCE	LIMITS +/- 14-	[m]	
s LOADS	L 0AD (KG/DAY)	62 • 25 • 25 • 90 • 784 • 135 •	LOAD (KG/DAY)	48. 35. 88.	135.	L UAD	(KG/DAY) 98. 36.	704 •	L CAD	(KG/DAY) 106.	185. 1560. 157.	
D PHOPHOPUS LOADS	STANDARD DEVIATION	• 002 • 001 • 037 • 003	STANDARD DEVIATION	- 200 - 200	.001	STANDARD	9EV 1 AT 10N • 0C7 • 002	• 014 • 028	STANDARD	DEVIATION • 002	• 082 • 003	
DIRECTOMATE Y BRANCH * * - UNFILTFRED * *	STANDARU ER ROP	+/-0.001 +/-0.000 +/-0.006 +/-0.001		+/-0-002		s s	ERRDF +/-0.003 +/-0.001	+/-0.002 +/-7.008	STANDARD	ERROR + /-0.001 +/-0.001	+/-0.014 +/-0.014	
INLAND WATERS D WLTER OUALITY * * * * * * VER PROJECT VER PROJECT	MEAN CONC.	• 000 • 000 • 010	MEAN CONC.	-008 -008	• 000	M EAN "CONC.	(MG/L) .016 .007	• 064 • 326	M FAN COVC	(MG/L) .017	.136	
JWE 4 M 7 M 7 N CS J M CH L	OUTLIES S	00 00	DUTLIESS		0		0UTLIERS 0 0	1 0		OUTLIERS 0 0	N 0	
1 HL	SI ZE	с 36 12	S AMPLE SIZE	o o c n	12	S AMPLE	51.2 6 6 5	36 12	SAMPLE	51 28 6 6	35 12	
	15+ 197 91 SCH (CFS) (K	2330 0.0059 1300 0.0044 4500 0.0113 4600 0.0113 5000 0.0122	28, 197 H22 10 CFS) (K	2000 0.0049 2000 0.0049 4700 0.0115 4700 0.0115		1 1	2520 0.30549 2520 0.3061 2030 0.0049 2030 0.0049		9, 1975 DISCHARSE	(SES) (KM3/DAY) 2500 0.0061 2270 0.0054	4700 0.0115 4700 0.0115 5300 0.0142	
	J ANU ARY STATION	S. THOMPSCN N. THOMPSON DVERLANDER TRANOUTLLE SAVONA	STATION	3. THUMPSON N. THOMPSON OVERLANDER TRANDHILLE	AVDNA	FEBRUJARY	STATION S. THOMPSON N. THOMPSON	TRANOUT LLE SAVONA	MARCH	STATION S. THOM PSON N. THOM PSON	$ \mathbf{u} < >$	

APPENDIX PAGE 24	CONFIDENCE LIMITS 26. 11.	28. 164. 21.	CONFIDENCE LIMITS	20. 17. 27. 454.	20.	CUNF IDENCE LIMITS	24. 13. 30.	79 . 30.	CONFIDENCE LIMITS 98.	88. 131. 1719.
	95 % CON		95 % COA			95 % CUI	 + + +	-/+ +	95 % COI	
s LDADS	LCAD (KG/DAY) 169. 33.	202. 1408. 144.	LCAD (KG/DAY)	82. 82. 210. 1561.	14 2.	L GAD KG ZDAY)	142. 159. 301.	333. 164.	LOAD (KG/DAY) 346 -	141.3358.
E D PHOSPHORUS	STANDARD JEVLATION •004 •003	• 025	STANDAPD DEVI AT ION	•000•	• 0 0 2	STANDARD DEVLATION	•004 •001	•013 •003	STANDARD DEVIATION	• 139
DIRECTORATE * BRANCH * UNFILTERED * *	STANDARJ ERROR +/-0.001	+/-0•00++ +/-0•001	STANDARD ERROP	+/-0.002 +/-0.002	100.0-/+	STANDARD ERROR	000°0-/+	+/-0.002 +/-0.001	STANDARD ERROR +/	+/-0.023
INLAND WATERS C WATER QUALITY * * * * * * * VER PRIJECT	MEAN CONC. (46/L) • 025	.128 .010	MEAN CONC.	.017 .017	• 010	4FAN CONS.	.021 .015	• 020	4 EAN CONS. (MG/L)	- 052 - 052
53A I a' NCS decet	00111535 0 1	00	OUTLIERS	0 -	0	OUTLIERS	00	00	nuttiess 1	0 0
L H	<u>5 Ачрце</u> 5 I 2 6 6	36 12	SAMPLE SIZE	0 0 0 9 0 9 0	12	S AMPL E S I 7 E	ۍ ۍ	35	2 12	35
		4500 0.0110 4500 0.0110 5000 0.0147	1975 DISCF CES) (K	2000 0.0001 2000 0.0049 4500 0.0110 4500 0.0110	1 1	2, 1975 DISCHARGE (CES) (KM3/DAY)	700 0.0066 200 0.0103 900 0.0159		1975 015CHARGE (CES) (KM37/06Y) 4930 0.0120	10100 0.0247 15000 0.0367 15000 0.0367
	MAPCH 2- STATION S. THOMPSON N. THOMPSON	OVERLANDER TRANGUILLE SAVONA	TATION	S. HUMPSON N. THCMPSON DVERLANDER TRANDUTLE	SAVONA	APPIL 22 Station	S. THOMPSON V. THOMPSON VEBLANDER	TRAMOUTLLE SAVONA	-	N. THOMPSON DVERLANDER TRANOUILLE

APENDIX PAGE 25	CUVEIDENCE LIMITS 328.		Ш					· · .		
APPENDI PAGE 25	CUNFIDENCE IMITS 328-									
		+/- 724. +/- 794. +/- 510. +/- 509.	95% COWFIDENCE LIMITS +/- 762				+/- 740. +/- 322.			
S LUADS	L CAD (K3 /DAY) 2682.	3587. 6205. 3844. 1684.	L CAL L CAL (KG / DAY) 6869	24127. 30557. 31272. 2116.	L CAD (KS /DAY)	2246. 7364. 961C.	5420. 2315.			
JIRECTORATE BRANCH • * UNFILTERED PHUSPHURUS LOADS • *	STANDARD DEVIATION •006	010. 600.	STANDARD DEVIATION 008	• 013 • 036 • 003	S TANDARD D EVI ATION	•003	.007			
	0.52 ND 220 87.8 ND 97.8 ND 25.0 0.05	+/-0-00 +/-0-002 +/-0-002	STAND#RD ERCJ5 +/-0.003	+/-0.005			100*0-/+			
I QLAND WATEPS WATER DUALITY Y X X X X VER PPJECT	v <u>e</u> an crnc. (mg/l) -370		MEAN CONS. (MG/L) -116	160 149 012	-		• 024		<i>t</i>	
THDMPSON BLVES	S &	0 0 -	0JTL152S	0 00	0.JTL153S	00	- 1			
	<u>5349 LE</u> 512E 6	3 12 12	SA WPLE SIZF 5		SIZE SIZE	ာက	36 12		2	
	75 01SCHARGE 51 (KM3/DAY) 700 0.0384	0.1255 0.1259 0.1255	HARGE MARGE 0.0590	61730 0.1510 35300 0.2039 35820 0.2099 53230 0.1693		0.0332 0.1458 0.2230	0.2290 0.2234			
<i>r</i>	19 15 15	33700 49400 49400 51300	1975 1975 1975 1975 1975 1975	61700 85800 85800 59200	7, 1975 D19 LCFSJ	34000 55500 93600				
	MAY 20. STATI 30 S. THOMPSON	NCSAMOHT .N OVERLANDER TRANSUILLE SAVONA	JUN5 4, STATLON STATLON	N. THOMPSON OVEPLANDER TRAVQUILLE SAVONA		 S. THOMPSON N. THOMPSON OVEELANDEP 	TRANDUILLE Savona			

APPENDIX PAGE 26	95% CONFIDENCE 1 IMITS +/- 267. +/- 219. +/- 346. +/- 387.	95% CONFIDENCE LIMITS +/- 200. +/- 517.	95% CONFIDENCE LIMITS +/- 45. +/- 41. +/- 61. +/- 61.	95% CONFIDENCE LIMITS +/- 21. +/- 22. +/- 23. +/- 23.
RUS LOADS	LD AD (KG/LAY) 316. 378. 694. 853. 774.	L0 AD (KG/DΔΥ) 937. 581.	LD AD (KG/ CAY) 1 83. 3 35. 4 CO. 3 66.	LOAD (KG/DAY) 73. 118. 99. 86.
re Ved Phosphorus	51 ANDARD DEVIATION • 002 • 002 • 002	57 ANDAR D DEV 1 A T 1 ON • 0 0 2 • 0 0 3	STANDARD DEVIATION .002 .001 .003 .002	STANDARD DEVIATION .002 .001 .001
DIRECTCPATE Y BRANCE * * T DISSOLVED	STANDARD FRCR +/-0.001 +/-0.001 +/-0.001	STANDARD ERRNP +/-0.000	STANCARD EFRCF +/-0.001 +/-0.001 +/-0.001 +/-0.001	STANDARD FRRUR +/-0.001 +/-0.000 +/-0.000 +/-0.000
INLAND WATERS [WATER QUALITY * * * * * * RIVER PROJECT * * * * *	MEAN CONC. (MG/L) .003 .003 .003	MEAN CONC. (MG/L) .CC5 .CC3	MEAN CONC. (MG/L) • 007 • 006 • 005	MEAN CONC. (MG/L) • 0 C5 • C C3 • C C3
THOMFSON RI	חוודע IERS 0 0 1	NUTLIERS 0 0	0 0 0 0 0 0	CUTLIERS 0 0 0
	SAMPLF STZE 2 4 24 24	SAMPLE SIZE 22 4	SAMPLE SIZE 6 6 12 12	SAMPLE SIZF 6 6 12 6
	7, 1574 CISCHAPGF (CFS) [KM3/DAY] 36900 0.0902 47600 0.0902 84500 0.2067 84500 0.2067 84500 0.2067 79100 0.1935	24, 1574 DISCHARCE (CFS) (KW3/DAY) 76600 0.1874 79200 0.1938	BER 4, 1574 D1SCHARGF (CES) (KM3/DAY) 11200 0.0274 14400 0.0352 25600 0.0526 27200 0.0665 27200 0.0665	2. 1974 DISCHARGE (CFS) (KW3/DAY) 60CC C.C147 6400 C.C3C3 12400 C.C3C3 12400 C.C3C3 15000 0.C367
	JULY 17 STATICN S. THEMPSEN N. THEMPSEN OVFRLANDER TRANOUITLE SAVONA	JULY 24 STATION TRANOUTLLF SAVGNA	SEPTEMBER STATION (C 5. THGMPSON 1 N. THGMPSON 1 0VFRLANDER 2 TPANDUTLLE 2 SAVCNA 2	OCTOBER STATION S. THEMPSON N. THEMPSON N. THEMPSON DVERLANDER TRANOUILLE SAVONA

APPENDIX PAGE 27	95% CONFIDENCE LIMITS +/- 8. +/- 22. +/- 41. +/- 42.	95% CONFIDENCE LIMITS +/- 1. +/- 29. +/- 28. +/- 37.	95% CONFIDENCE LIMITS +/- 11. +/- 11. +/- 15.	95% CONFIDENCE LIMITS +/- 6. +/- 8. +/- 10.
IS LOADS	1040 (KG/ DAY) 37. 32. 135. 125.	LCAC LCAC (KG/DAY) 10- 210- 220- 138- 138-	LD AD (KG/CAY) 14. 10. 24. 52. 40.	10AD (KG/DAY) 30. 19. 61.
RECTCRATE RANCH DISSOLVED PHOSPHORUS LOADS *	51ANDAR N DEVIATION • CO1 • 002 • CO3	STANDARD DEVIATION • 000 • 003 • 002	STANDAPD DEVIATION • 002 • 000 • 003 • 001	STANDARD 0FVIATION 001 001 001
DIRECICRATE V BRANCH + * * DISSOLVED + *	STANDARD FRECR +/-0.001 +/-0.001 +/-0.001	STANDARD EFRCR +/-0.000 +/-0.001 +/-0.001 +/-0.001	STANDARD ERRGR +/-0.000 +/-0.000 +/-0.000	STANDARD ERRCP +/-0.000 +/-0.000
NC WATERS ER QLALIT * * * * PROJECT * * * *	MEAN CCNC. (MG/L) .003 .003 .003	MEAN CONC. (MG/L) .0C1 .C17 .C17 .CC5	MEAN CONC. (MG/L) 0C2 0C1 0C1 0C1	ME AN CCNC. (MG/L) • CC4 • CC4
I NLA WAT THOMPSON RIVER	CUTLIERS 0 1 3	CUTLIERS 0 0 0 0	DUTLIERS 0 0 0	CUTLIERS 0 0
F .	SAMPLE SIZE 6 18 18	SAMPLE SIZE 6 18 12 12	SAMPLE SIZE 6 18 12	SAMPLE SIZF 6 18
	R 16, 1974 DISCHARGE (CFS) (KM3/DAY) 4800 0.0117 5100 0.0125 9900 0.0242 11300 0.0276	30, 1974 715CHARGE (CFS) (KM3/DAY) 2900 0.0125 9000 0.0125 9000 0.0220 10400 0.0254	EP 14, 1574 DISCHAPGE (CES) (KM3/DAY) 3500 0.0086 4100 0.0186 7600 0.0186 7600 0.0186 8900 0.0218	EP 27, 1574 PISCHARGE (CFS) (KM3/DAY) 3200 0.0078 3600 0.0078 6800 0.0166 6800 0.0166
	OCTOBER STATIEN S. THEMPSON N. THOMPSON N. THOMPSON DVFRLANDER TRANDIILLE SAVONA	OCTOBER STATICN S. THCMPSON N. THCMPSON N. THCMPSON NCFRLANDER TRANGUILLE SAVONA	NDVFMBER STATION S. THCMPSON N. THCMPSON N. THCMPSON OVERLANDFR TRANDUTLLE SAVONA	NJVEMBEP STATION S. THEMPSON N. THEMPSON N. THEMPSON N. THEMPSON

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DIX 28	-														
APPENDIX PAGE 28	95% CONFIDENCE	LIMITS +/- 9. +/- 9.	7	ne ver uter and a second and a	95% CONFIDENCE LIMITS	+/- 13.	+/= 28. +/- 21.		95% CONFIDENCE 1 IMITS	+/- 30. +/- 23.		95% COMPLIDENCE	1 1 1	1111	
s LOADS	LO AD	(KG/DAY) 33.	64. 141. 46.	na da contra da contra de la contra de	LOAD (KG/DAY) 45.	32.	127. 1C1.	n - Landau - Landau - Landau - Landau - An	LO AD LO AD	40. 32.	63. 81.		(KG/CAY) 18. 15	33. 113. 54.	der umversenen onder gesten der eine ster eine der eine ster
RECTCRATE BANCH * DISSOLVED PHOSPHORUS LOADS	ST ANCAR D	DEVIATION • 002 • 001	.002 .001		STANDARD DEVIATION	• 002	• 002	anno e a teannachta a - a cais nachadan an c	STANCAPD DEVIATION	• 005 • 006	•004	STANDARD	DEVIATION • 001	. CO6 002	
	STANDARD	FRRCP +/-0.001 +/-0.001	+/-0.000			+/-0.001	+/-0.001		S T ANC ARD FRACK	+/-0.002 +/-0.003	000°0-/+	STANDARD	ERRCR +/-0.000	+/-0.002	da nye mandalan da Mandalan yang yang da aya yang dalam mandala
ND WATERS FR QLALIT * * * * PROJECT * * * *	MEAN CONC.	(MG/1) .005 .004	• 0 C9. • C C2		MEAN CONC. (MG/L) .CC6	• 0 6 5	• 0 (0		MEAN CONC.	.006	.0C7 .0C7	MEAN CONC.	003	10	
INLA WAT THOMPSON RIVER	-	OUTLIERS 0 0	00		CUTLIERS 0	0	00		OUTLIFES	1	00		CUTLIFRS 0 0	0	
T	SAMPLF	512F 6 6	18 12		SAMPLE SIZE 6	ę	18		SAMPLE SIZE		11	H I d W V S	SIZF 6 6	. 18 12	
	12. DIS	(CFS) (KM3/DAY) 2900 0.0071 3300 0.0081	1		015 CFS) 2900		7400 0,0181 7400 0,0181				4600 C.0113 50C0 0.0122	28, 1075 DISCHARGE	(KM3/PAY) 0 0.0066 0 0.0066	4700 0.0115 4700 0.0115 6300 0.0154	
	DECEMBEP	STATION S. THEMPSON N. THEMPSON	1 m a >		STATION (STATION (STATION)	N. THEMPSON OVERLANDER	I RANGU I LLE SAVENA		JANUARY Station	S. THEMPSON N. THEMPSON DVFRIANDFR	TRANO!! ILLE SAVONA	Y ANU ANY	STATION S. THEMPSON N. THEMPSON		

APPENDIX PAGE 29	95% CONFIDENCE LIMITS +/- 6.	7. 15. 13.	CONFIDENCE LIMITS	10. 11.	11.		CONFIDENCE LIMITS	4 v v	16. 12.	95% CONFIDENCE	L IMI TS 6. 5.	7. 9. 21 2.
	95% CC	-/+ -/+	95% C(+ + -	-/+		95% C(-/+ +	-/+	95% C[-/+	 + + + +
RUS LUADS	LD AD (KG/EAY) 30.	52 . 1 22 . 90 .	L0 AD (K G/ CÁY) 25.2	52. 78.	12.		LOAD (KG/CAY)	24. 16. 41.	55 . 89 .	UV U	(KG/CAY) 25. 16.	41. 56.
IRECTERATE BRANCH * DISSOLVED FHOSPHORUS LOADS	STANDARD DEVIATION • 001 • 001	.002 .001	STANDARD DEVIATION	• 002	.001		ST ANDAP C DEVIATION	.001 .001	.003 .001	STANDARD	DEVIATION • 001 • 000	. 001 . 026
	STANCARD EPRCR +/-0.000	+/-0.000	STANDARD ERRCR +/-0-000	+/-0.001	0000-/+	-	STANCARD ERCC	+/-0*0000	+/-0.001 +/-0.000	STANDAPD	ERRCR +/-0.000 +/-0.000	+/-0.000 +/-0.008
AND WATERS TEP OLALITY * * * * VER PROJECT	MEAN CONC. (MG/L) • CC5 • OC5		MEAN CONC. (MG/L) .004		• 005		MEAN CUNC. (MG/L)		• 0 6 6	MFAN CONC.	(MG/L) •0C4 •0C3	
THOMPSON RT	GUTLIERS 0 0	00	CUTLIERS	0 0	o		OUTLIER S	O D	60		CUTLIFRS 0 0	
	SIZF 6 6	1 8 1 2	SAMPLE SIZE 6	\$ 0	12		SA MP1 F SIZE	ن ی	18 12	SAMPLE	SIZF č	18 12
	70, 1372 015CHAPGE (CFS) (KM3/FAY) 2500 0.061 2000 0.0049						5 [HARGE [KM3/DAY]	2500 0.0061 2000 C.CO4° 4500 0.0110	4500 C.0110 6000 0.0147	, 1975 DISCHARGE	۸۲) 13 49	
				THEMPSON ERLANDER ANDITLE	SAVENA		N H	 S. THCMPSON N. THCMPSON DVERLANDER 	TRANGUILLE SAVONA	APRIL 9.	STATION S. THOMPSON N. THOMPSON	DVERLANDER TRANOUILLE SAVONA

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	APPENDIX PAGE 30	95% CONFIDENCE	+/- 5. +/- 18.	+/- 18. +/- 122. +/- 48.			95% CONFIDENCE LIMITS +/- 17		+/- 44.		95% CONFIDENCE LIMITS	+/- 26. +/- 96. +/- 90		95% CONFIDENCE		+/- 369. +/- 107. +/- 488.	-
	LOADS	LUAD	30. 30.	76. 150. 115.			L0 AD (K G/ DAY) 56-2	152. 208.	2 69. 1 52.		L() AD	122. 399. 520	722.	LOAD	(KG/DAY) 2C3. 778.	986. 598. 1102.	
·	IRECTCPATE BRANCH bissolved Phosphorus Loads *	STANCARD	.001 .001 .002	.016 .005			STANDAPD DEVIATION	100 •	• 002		STANDARD DEVIATION	• 001 • 001	• 002 • 003	STANDARD	0EVIATION • 002 • 003	.001 .004	
	CIRECICPATE Y BRANCH * * - DISSOLVED * *	STANCARD	+/-0.0C0 +/-0.0C1	+/-0.004 +/-0.001			STANDARD ERRCR + /-0-001	+/-0.001	+/-0*01		STANCAPC Fracr	+/-0.000	+/-0.000	STANDARD	ERROP +/-0.001 +/-0.001		-
	WATERS 0.1ALIT 0.1ECT + + + + + + + + + + + + + + + + + + +	MEAN CONC.	• • 0 0 4 • 0 0 4	• C C 9			MEAN CONC.	•000	• 000		MEAN CONC.		•0C6	MEAN CONC.	200	.cc3 .0c5	
	TNLAND WATER THOMPSON RIVER PRC		0 0				GUTLIERS 0	1	-		OUT LIFESS	00	00		CUTLIERS 0: 0	00	
	TH	SAMPLE	514 E 6	18 12			SAMPLE	י ב י ע	12		SAMPLE	ب م	18 12	SAMPLE	SIZE 6 6	18 12	•
•		22, 1975 DISCHARGE	£.	-5910*0 0069 6910*0 0069 6910*0 0069		1075	DISCHARGE (CFS) (KM3/DAY) 4600 0.0120		12400 0.0303 12400 0.0303		-	15700 0.0384 33700 0.0384 49400 0.1209	49400 C.1209 51300 C.1255	17, 1975 DISCHAPGE	(CFS) (KM3/DAV) 34000 0.CR32 59600 0.1458		
. 1	· ·	APRIL	STHCMPSON	OVEPLANDER TRANQUILLE SAVENA		MAY 7.	ATION	• • >	SAVONA SAVONA		MAY 20.	S. THOMPSON N. THCMPSON NVEBLANDED	TRANOUTLLE SAVENA	JUNE 17	STATION S. THEMPSON N. THEMPSON	u < >	
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