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Hovvatn, a 1 km^2, chronically-acidified lake in southernmost Norway, was treated with 200 metric tons of powdered limestone in March 1981. An additional 40 metric tons were spread uniformly on the ice of a 0.045 km^2 pond (Pollen) draining into Hovvatn. At ice-out pH rose from 4.4 to 6.3 (Hovvatn) and 7.5 (Pollen), Ca and alkalinity increased, and total aluminum decreased by about 120 µg/l. After 2 years 40 % of the limestone in Hovvatn and 20 % in Pollen had dissolved.

Hovvatn and Pollen reacidified to about pH 5.0 during the 2 years following liming. The reacidification of Pollen has proceeded by simple flushing. In Hovvatn, however, dissolution of additional limestone during the 2 years since liming has considerably slowed reacidification.

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Changes in the chemistry of Lake Hovvatn, Norway following liming and reacidification

Oslo, August 1984

Richard F. Wright

ABSTRACT

Hovvatn, a 1 km^2, chronically-acidified lake in southernmost Norway, was treated with 200 metric tons of powdered limestone in March 1981. Limestone was spread in a 10-m wide strip along 3-km of sandy shoreline. An additional 40 metric tons were spread uniformly on the ice of a 0.046 km^2 pond (Pollen) draining into Hovvatn. At ice-out pH rose from 4.4 to 6.3 (Hovvatn) and 7.5 (Pollen), Ca and alkalinity increased, and total aluminum decreased by about 120 µeq/l.

The amount of limestone dissolved, calculated from the lake calcium budgets, was 40% after 2 years in Hovvatn and 20% in Pollen. A greater fraction dissolved at Hovvatn because the limestone lay in the active surf zone. In Pollen, limestone not dissolved at ice-out formed a layer on the sediment surface from which only minimal dissolution occurred. Flux of calcium between the organic-rich sediments and overlying water amounted to only about 1% of the limestone applied.

Hovvatn and Pollen reacidified to about pH 5.0 during the 2 years following liming. The dilution of limed lakewater by acidic runoff can be described by a simple flushing model. The rate of flushing varies with volume of acidic runoff and seasonal pattern of thermal stratification. Surface water and bottom water follow separate paths during summer and winter stratification periods. The reacidification of Pollen has proceeded by simple flushing. In Hovvatn, however, dissolution

of additional limestone during the 2 years since liming has considerably slowed reacidification.

The strategy of partial liming on the shores appears well-suited for Hovvatn. Due to water retention times of less than 1 year liming of acidic lakes in southern Norway would require reliming at 1-2 year intervals to maintain water quality suitable for fish.

INTRODUCTION

Acid precipitation, acidification of freshwaters, and loss of fish populations has affected thousands of lakes and streams in southern Norway (Jensen and Snekvik, 1972; Overrein et al., 1980). Years before the cause of the acidic surface waters was known, it was discovered that neutralization with materials such as limestone or marine shell sand reduced the toxicity to salmonid fish (Atkins, 1922). As early as in the 1920's acidic waters were treated in fish hatcheries in southern Norway (Sunde, 1926). In several cases local fisheries clubs successfully limed small lakes for put-and-take brown trout fishing.

In 1980 the Norwegian government started a 5-year research project with the goal of documenting to what extent neutralization (liming) provides a feasible biological, technical and economic means of reducing the damage caused by acidification (Matzow, 1982). Hovvatn, a chronically-acidic lake in southernmost Norway, was chosen as one of the sites to be studied as part of the Norwegian liming project. I report here the chemical conditions at Hovvatn before and during a 2 1/2 year period following liming. A preliminary report is given by Wright (1982).

HOVVATN

Hovvatn, a 1.1 km^2 lake with a 5.8 km^2 terrestrial catchment, is located at 600 m above sea level, 50 km north of Kristiansand (Figure 1). The catchment is of granitic bedrock with thin to non-existent poorly-developed podzolic and mor

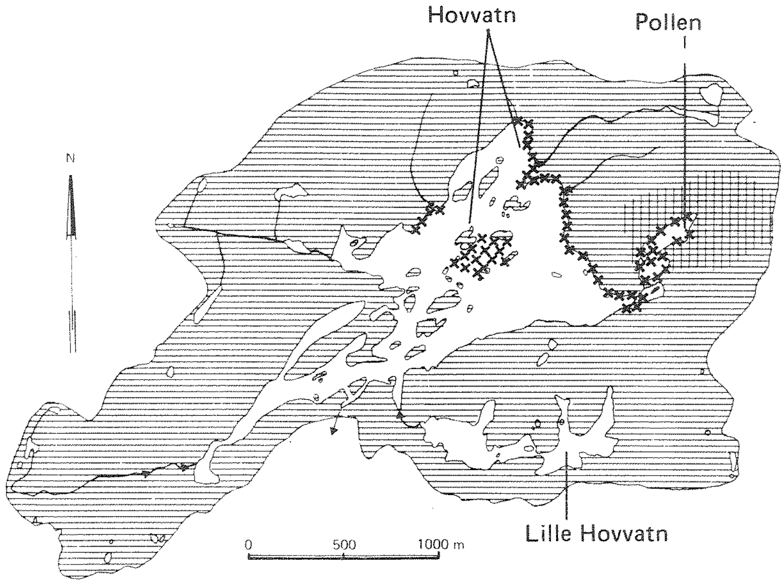

Figure 1. Hovvatn and its catchment showing location of Pollen and Lille Hovvatn (unlimed control). Crosses indicate areas on which limestone was spread.

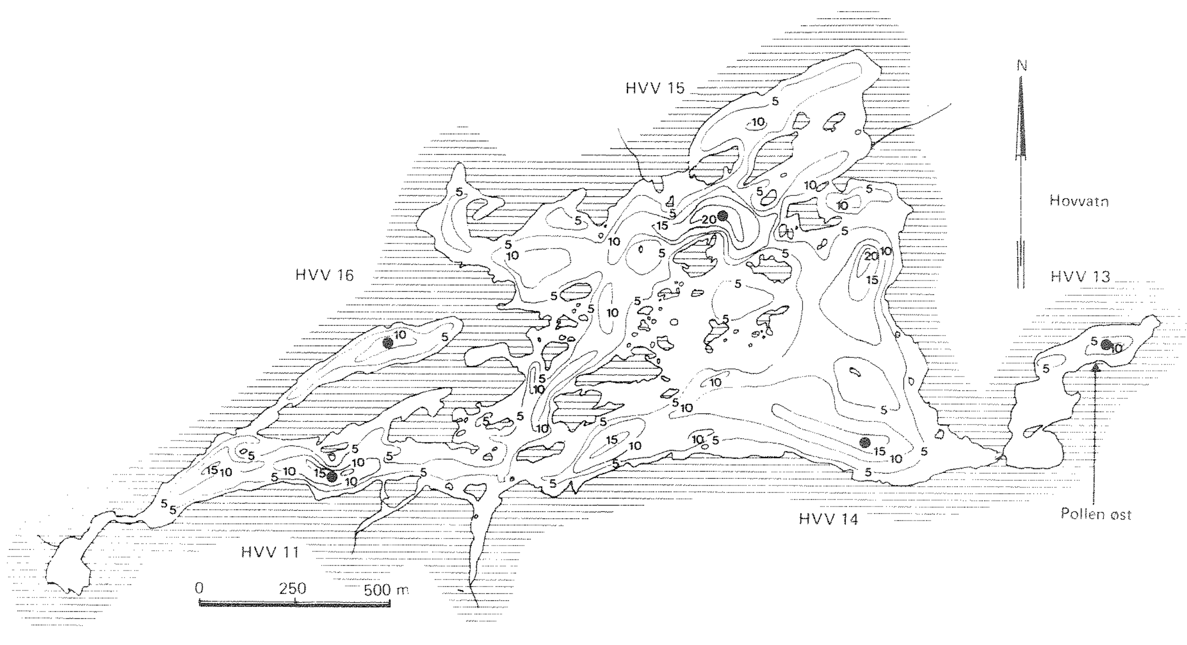

Figure 2. Bathymetric map of Hovvatn and Pollen showing codes and locations of sampling stations.

soils. Open forests of spruce, pine and birch are interspersed with peaty areas. Hovvatn has a mean water residence time of about 0.8 years (Table 1). Shore morphology is complicated with numerous bays and islands (Figure 2). A small 4.6 ha pond (called Pollen) is attached to the eastern arm of the lake by a 1-m wide shallow channel. The liming experiment at Hovvatn comprised 2 parts--liming of Hovvatn itself and liming of Pollen. Lille Hovvatn, a small lake draining into Hovvatn from the south, was used as the untreated "control".

Hovvatn is a privately-owned lake. Journal records kept by the local fishermen indicate that Hovvatn supported brown trout until the late 1940's. A scientist from the Directorate for Game and Freshwater Fish (DVF) visited Hovvatn in the 1930's and reported that brown trout spawned in shallow, sandy areas between the islands. In spite of repeated stockings in the 1950's no fish have been caught since 1948. Test fishing conducted in 1980 yielded no fish.

The earliest water chemistry data for Hovvatn date from 1961. Six pH measurements conducted in the 1960's by E. Snekvik from the DVF indicated pH levels 4.6-5.1. Hovvatn was included as lake number 4.1 in a regional survey of 155 small lakes in southern Norway first conducted in October 1974 (Wright and Henriksen, 1978) and later repeated in 1975, 1976, 1977, 1978, and 1981. These data show pH 4.3-4.6 in Hovvatn during the 1970's.

Table 1

Morphological and hydrological parameters for Hovvatn and Pollen

	Hovvatn	Pollen
Lake area, km^2	1.14	0.046
Catchment area incl. lake, km^2	6.96	0.30
Average depth, m	5.6	3.3
Maximum depth, m	22.0	10.0
Volume, 10^6 m^3	6.4	0.15
Hydraulic retention time[a], yr.	0.8	0.4

[a]lake volume/annual outlet discharge assuming discharge of 1250 mm/yr.

Hovvatn's chemistry and fisheries records indicate that it was typical of about 10% of the lakes in southernmost Norway. Of 719 lakes in this area about 10% had pH levels as low or lower than Hovvatn (Wright and Snekvik, 1978) and about 8% had lost their fish populations prior to 1950 (Sevaldrud et al., 1980).

LIMING

In March 1981 200 metric tons of powdered limestone were spread on the snow in a 10-m wide 3-km long strip along the eastern shore of Hovvatn and around the islands (Figure 1). An additional 40 metric tons were spread on the ice over the entire Pollen on the east end. Spreading was accomplished in two steps. First, a 2-m wide layer was laid down by a tractor-driven manure spreader. Then a tractor-mounted snow blower deposited a 10-m wide cloud of limestone mixed with snow along the shore. Cost of the limestone, transport and spreading amounted to 1000 NOK/ton (equivalent to US $200/metric ton at 1981 exchange rates).

The limestone was agricultural grade with 90% <0.1 mm and 50% <0.01 mm. Its composition was 80% $CaCO_3$ and 14% SiO_2. The liming doses for Hovvatn and Pollen were 0.27 tons/ha and 1.3 tons/ha terrestrial catchment, respectively, which correspond to 25 g/m^3 and 210 g/m^3 lakewater. The dose for Hovvatn was chosen to achieve pH 6-7 and alkalinity of 50-100 µeq/l after liming and to neutralize an additional one-year of acidic runoff. The theoretical requirement to increase alkalinity by 120 µeq/l (from -46 µeq/l) of 6.4×10^6 m^3 lakewater is 40 metric tons of $CaCO_3$. An additional 40 tons are required to neutralize one year of acidic runoff. Liming experiments in Sweden indicated that only 40-50% of the applied limestone could be expected to dissolve within the first 2-3 years (Swedish National Board of Fisheries, 1981). Thus, 160 metric tons of $CaCO_3$ (equivalent to 200 tons of limestone with 80% $CaCO_3$) was chosen as the dose for Hovvatn. The higher dose for Pollen was chosen with the aim of maintaining pH levels above 5.5 for 5 years. In comparison to similar lake-liming experiments in Sweden and Canada, the dose at Hovvatn was rather modest and that for Pollen rather high.

SAMPLING AND CHEMICAL METHODS

Samples for water chemistry were collected about 8 times a year at 2 to 5 depths from 4 (later 3) stations in Hovvatn, one in Pollen and (beginning in 1983) one in Lille Hovvatn (Figure 2). The major inflowing stream to Hovvatn (from Lille Hovvatn) and the outlet of Hovvatn were sampled more frequently.

The samples were collected in polyethylene bottles and stored cool and in the dark during transport to the laboratory at NIVA. Analysis is by routine methods for softwaters. pH is measured with an Orion 701 meter and Radiometer GK 2301C glass electrode. Specific conductance is determined with a Phillips PW 9501 meter at 20°C. Ca, Mg, K and Na are determined by atomic absorption spectrophotometry. Lanthanum is added to mask interferences. Total aluminum, sulfate, chloride, nitrate and ammonium are determined using automated colorimetric procedures. The catechol violet method (Al), thorin method (SO_4), iron-thiocyanate method (Cl), NEDA method (NO_3), and indophenol method

(NH_4) are used. Alkalinity is determined by acid titration to pH 4.5 fixed-endpoint and then converted to inflection-point alkalinity using the procedure suggested by Henriksen (1983). Total organic carbon is measured as CO_2 by gas chromatography. Total phosphorus is measured by UV-oxidation to ortho-P and the molybdate method. Total N is determined as NO_3 following UV oxidation.

In addition to this routine sampling and analysis program, occasional samples were collected in acid-washed glass vials and analyzed for Fe, Mn, Pb, Cl, Cu, and Zn by atomic absorption spectrophotometry and graphite furnace.

The complete analytical data are listed in Wright (1984).

RESULTS AND DISCUSSION

Water Chemistry

Prior to liming the chemistry of Hovvatn was characterized by high mineral acidity (pH 4.3-4.5), high aluminum concentrations and negative alkalinity with sulfate as the major anion (Table 2). This chemical composition is typical for Lille Hovvatn, the inflowing streams and surface waters in much of the region.

In dilute oligotrophic freshwaters the major contributors to alkalinity are typically bicarbonate, hydrogen-ion, and inorganic aluminum species (Wright, 1983):

$$\text{Alkalinity} = HCO_3 - H^+ - \Sigma Al$$

Table 2.

Concentrations of major and minor components in Hovvatn and Pollen before and one year after liming.
Units: µeq/l unless otherwise indicated.

	HOVVATN		POLLEN	
	Before 21 May 1980 (1 m)	1-yr. after 21 April 1982 (5 m)	Before 21 May 1980 (1 m)	After 21 April 1982 (6 m)
H^+ (pH)	35 (4.45)	2 (5.66)	34 (4.47)	0 (6.35
Na	39	45	38	46
K	5	4	4	4
Ca	22	107	22	276
Mg	14	16	14	16
Al[b]	34	12	34	22
NH_4	3	7	3	4
NO_3	23	18	23	21
SO_4	87	87	87	98
Cl	42	54	42	54
HCO_3	0	28	0	180
Sum +	149	193	149	368
Sum -	152	187	152	353
TOC mg/ℓ	2.2	3.7	3.2	5.3
tot-P µg/ℓ	3[a]	7	5[a]	9
tot-N µg/ℓ	400[a]	550	300[a]	570
Fe µg/ℓ	118	180	143	460
Mn µg/ℓ	17	13	11	8
Cu µg/ℓ	5.3	3.4	6.1	3.0
Zn µg/ℓ	19	20	19	10
Cd µg/ℓ	0.6	0.3	0.6	0.3
Pb µg/ℓ	2.7	2.2	2.5	2.3

[a]on 18 March 1981

[b]measured as total-Al but expressed as µeq/l with valence of 3.

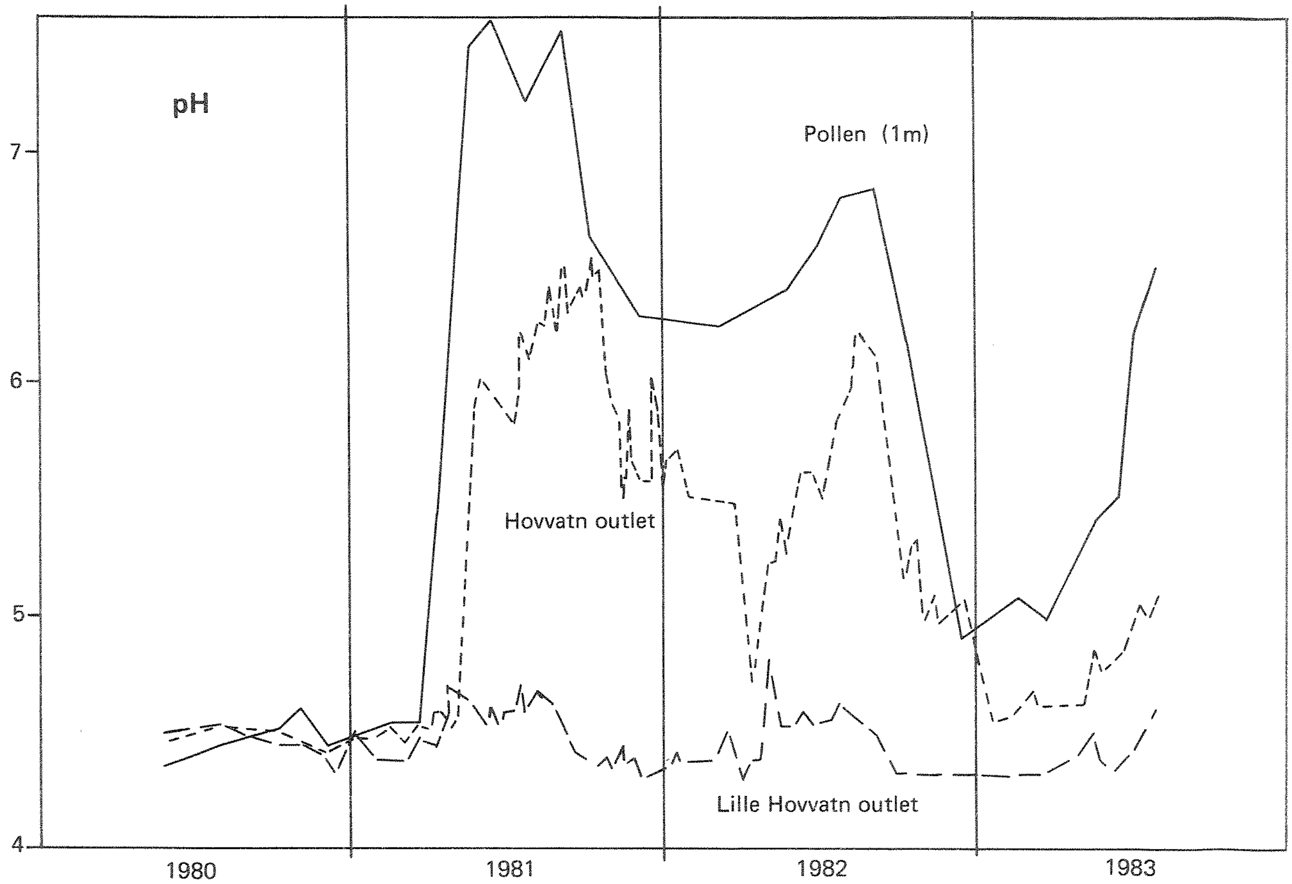

Figure 3. pH levels in the untreated Lille Hovvatn (outlet), the limed Hovvatn (outlet) and limed Pollen (1 m) over the period May 1980-July 1983.

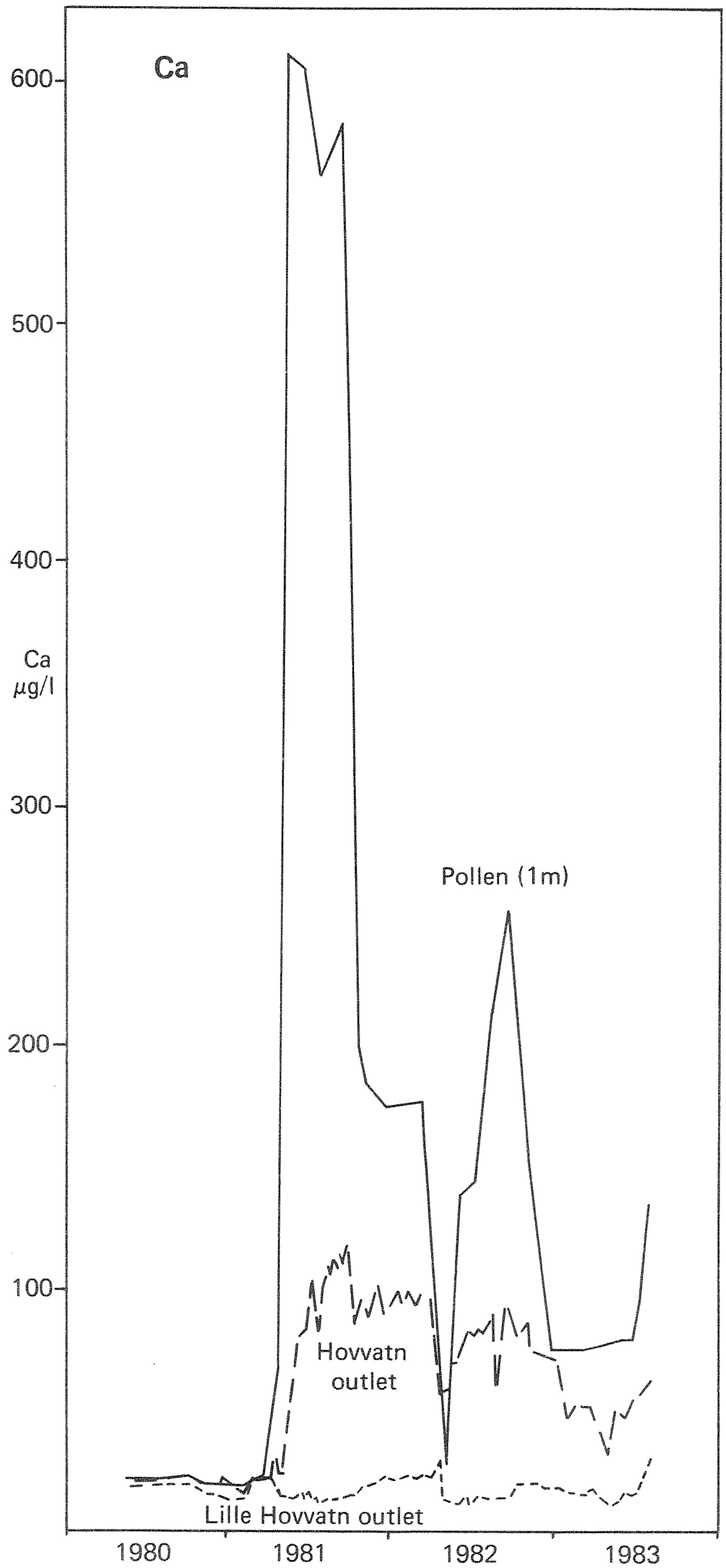

Figure 4. Concentrations of calcium (µeq/l) in the untreated Lille Hovvatn (outlet), the limed Hovvatn (outlet) and limed Pollen (1 m) over the period May 1980-July 1983. Liming was on the ice during March 1981.

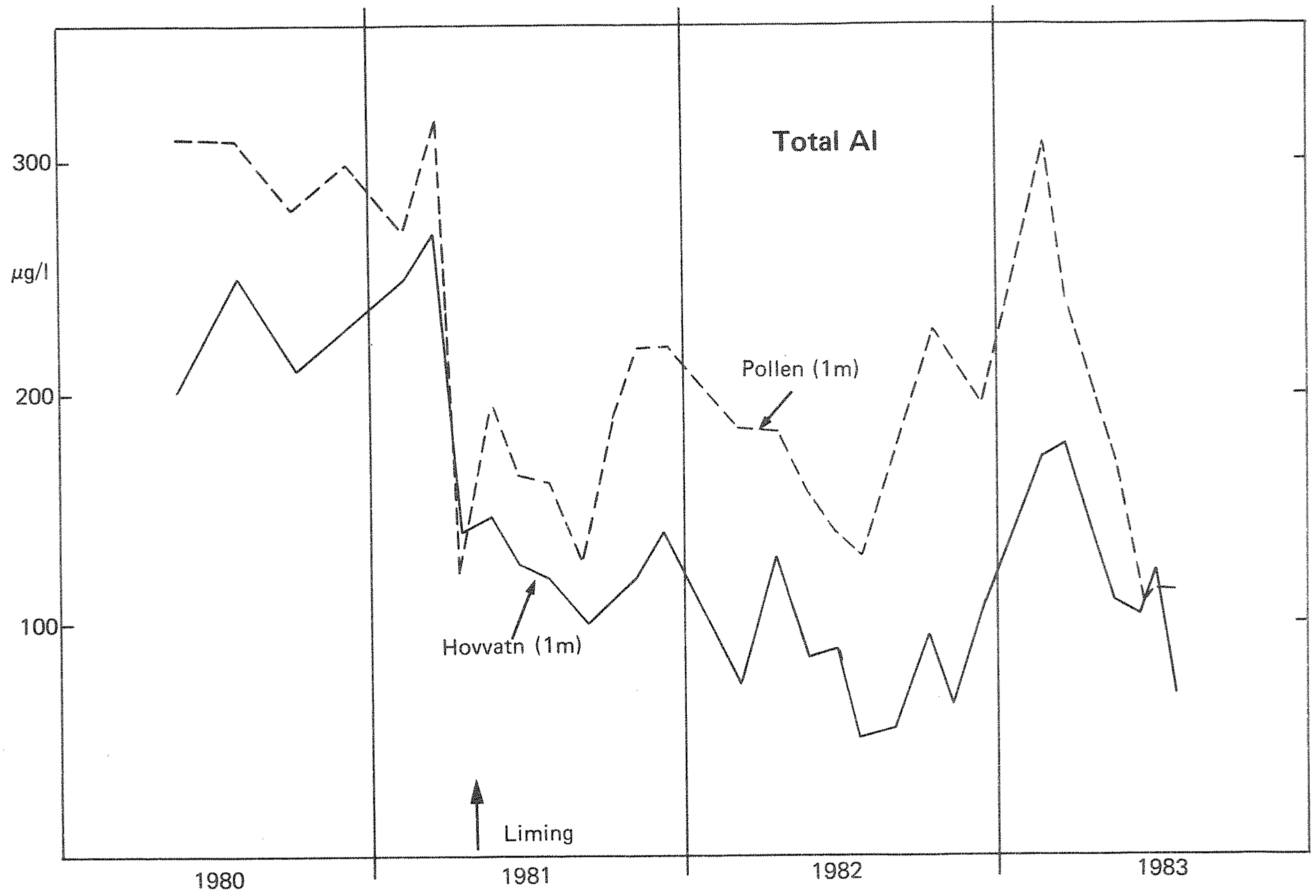

Figure 5. Concentrations of total aluminum (µg/l) in Hovvatn (station 15, 1 m) and Pollen (1 m) over the period May 1980–July 1983.

where ΣAl denotes the sum of positively-charged inorganic Al species and units are μeq/l . In practice, if alkalinity is positive, H^+ and ΣAl are negligible, and if alkalinity is negative, HCO_3 is negligible (Wright, 1983). ΣAl is important only when pH <5 and is assumed equal to the difference in measured total-Al before and after liming.

As expected application of limestone resulted in dramatic increases in pH, alkalinity and calcium and large declines in total-aluminum concentrations (Table 3) (Figures 3-5). The change occurred within 5 days of ice-out, when the limestone powder on the ice and along the shores first came in contact with the acidic lake water. The immediate increase in Ca concentrations was from 24 μeq/l to 64 μeq/l in Hovvatn and to 612 μeq/l in Pollen. pH increased from 4.5 to 6.4 and 7.4, respectively. Aluminum declined by about 14 μeq/l at both sites. None of the other major ions exhibited significant changes in concentration as a result of liming.

The immediate increase in calcium concentration was equal to the increase in alkalinity (Table 3). In Hovvatn the 64 μeq/l increase in alkalinity came from a reduction in hydrogen-ion concentration of 32 μeq/l, a reduction in Al of 14 μeq/l and an increase in HCO_3 concentration of 18 μeq/l. In Pollen the changes in hydrogen-ion and ΣAl were as in Hovvatn, but the greater lime dose resulted in a much larger HCO_3 concentration, 543 μeq/l.

Table 3.

Changes in water chemistry as a result of liming and acidification in Hovvatn (station 15 at 1 m depth) and Pollen (Station 13 at 1 m depth). Units: µeq/l. Δalk and ΔCa are changes relative to pre-liming conditions. Δalk is defined as $\Delta HCO_3 - \Delta H^+ - \Delta Al$.

	HOVVATN				POLLEN			
	before	after			before	after		
		0 yrs.	1 yr.	2 yrs.		0 yrs.	1 yr.	2 yrs.
	18 Mar. 1980	19 May 1981	25 May 1982	13 May 1983	18 Mar. 1980	19 May 1981	25 May 1982	13 May 1983
H^+	32	0	3	12	30	0	0	4
(pH)	(4.49)	(6.42)	(5.57)	(4.91)	(4.53)	(7.43)	(6.38)	(5.39)
Ca	24	88	79	60	22	610	138	81
total Al[a]	30	16	9	12	36	22	18	19
HCO_3	0	18	6	0	0	543	64	9
Δalk		64	56	38		587	112	52
ΔCa		64	55	36		588	116	59

[a]measured as total-Al but expressed as µeq/l with valence of 3.

The decrease in aluminum concentration probably resulted from the precipitation of an aluminum hydroxide phase such as microcrystalline gibbsite. The solubility of $Al(OH)_3$ decreases dramatically as pH increases from below 4.5 to above 5.0. A study of aluminum speciation across the pH gradient at the mouth of the acid stream from Lille Hovvatn out into the limed Hovvatn showed that total Al concentrations decreased with increasing pH, and that Hovvatn at pH 5.4 was slightly oversaturated with respect to microcrystalline gibbsite (Wright and Skogheim, 1983).

Precipitation of aluminum hydroxide from neutralized lakewater apparently proceeds slowly. Following ice-out in May 1981 pH, Ca and alkalinity in Hovvatn and Pollen increased immediately as the limestone came in contact with the water. The levels of total-Al in unfiltered water, however, declined slowly over the next several weeks (Figure 5). Furthermore, Al concentrations exhibited a marked vertical gradient in the water column with higher concentrations in the bottom waters. Slow removal of Al after liming acid water has also been reported from Sweden (Swedish National Board of Fisheries, 1981).

In both Hovvatn and Pollen, alkalinity and Ca concentrations increased further during the first summer after liming to maximum levels in early September, prior to the onset of autumn rains. This indicates that limestone continued to dissolve during the first summer.

Reacidification of Hovvatn and Pollen began with the onset of autumn rains in September 1981. Precipitation and runoff from the terrestrial catchments were, of course, acidic and unaffected by the lime treatment. The effect of the liming decreased in both water bodies as the high pH, limed water was back-titrated and flushed out by incoming acidic runoff and precipitation. By 25 May 1982, one year after liming, the pH level in Hovvatn had decreased to 5.6 (from a high of 6.7 in September 1981); in Pollen the pH was 6.4 (from a maximum 7.5). Calcium and bicarbonate levels had also decreased. After two full years, 13 May 1983, pH in Hovvatn was 4.9 and 5.4 in Pollen (Table 3) (Figure 3).

Liming did not affect the concentrations of the other major ions (Na, K, Mg, NH_4, NO_3, SO_4 and Cl), or the trace metals (Cu, Zn, Cd, Pb, Fe) (Table 2). Mn concentrations appeared to decrease following liming in both Hovvatn and Pollen from concentrations of 10-20 µg/l before liming to 5-10 µg/l by the end of the first summer after liming. Liming experiments in Sweden and Ontario, Canada, also caused decreases in Mn concentrations; a possible cause may be and the co-precipitation with aluminum hydroxides (Dickson, 1979, Dillon et al., 1979).

At Hovvatn there is no evidence that redox reactions in the hypolimnion or sediment surface cause significant changes in sulfate, nitrate, or ammonium concentrations. Such reactions were observed in several Swedish lakes, both limed and acidic (Hultberg and Andersson, 1982). An extreme case is experimentally-acidified Lake 223 in the Experimental Lake Area, Ontario where sulfate reduction in the hypolimnion is a significant source of alkalinity (Schindler et al., 1980). Unlike Hovvatn and the Swedish lakes, however, Lake 223 does not experience complete oxygenation of the hypolimnion during spring turnover and thus anoxic conditions are more readily obtained. Measurements of the dissolved oxygen concentration in Hovvatn in April 1982, after the winter-long stagnation and just prior to ice-out, showed >50% saturation at all water depths.

Total organic carbon (TOC), total phosphorus (tot-P) and possibly also total nitrogen (tot-N) were affected by the limestone treatment. TOC levels increased from about 2-3 mg C/l before liming to about 4 mg/l and 5-8 mg/l in Hovvatn and Pollen, respectively, during the first and second year after treatment. Data for the first half of 1983 indicate that TOC levels had decreased to pre-liming concentrations (Figure 6).

Many studies have shown that liming acidic lakes causes changes in total organic carbon, color and transparency. Liming with high doses of $CaCO_3$ can result in decreases in TOC and color (transparency increases) apparently due to precipitation of humic substances. Several lakes in Sweden responded in this manner (Swedish National Board of Fisheries 1981, Hultberg and Andersson, 1982) as did a lake in the Adirondack Mountains, NY (Driscoll et al., 1982). On the other hand, liming can cause increases in TOC and color and decrease transparency (Dickson, 1979). Mechanisms here include increased phytoplankton growth, increased respiration in the sediment with release of organic substances to the overlying water, and simple pH-dependent light

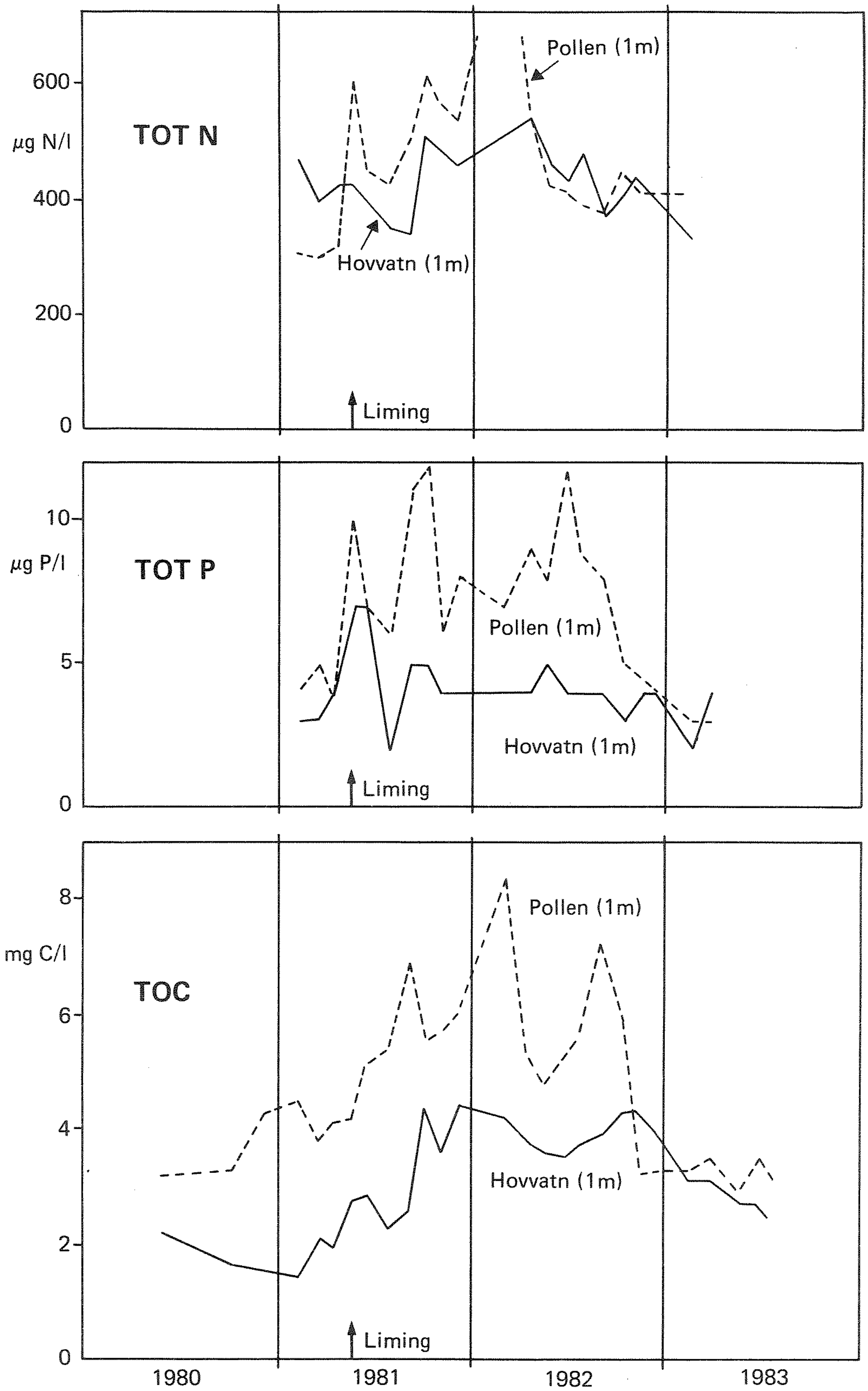

Figure 6. Concentrations of total-nitrogen, total phosphorus and total organic carbon in surface waters of Pollen and Hovvatn (station 15) over the period May 1980-July 1983.

absorption by humic substances (Hultberg and Andersson, 1982; Yan, 1983). In Hovvatn, as in several other limed lakes in Ontario (Dillon et al., 1979; Yan, 1983), changes in TOC, color and transparency cannot be explained by changes in the phytoplankton. The changes in TOC, color and transparency with liming and reacidification are variable and probably due to several factors. As both Hultberg and Andersson (1982) and Yan (1983) point out, such changes in transparency influence light penetration, heat balance and mixing in lakes and may be of biotic significance.

Concentrations of total-phosphorus (tot-P) in Hovvatn and Pollen increased with liming (Figure 6). In Hovvatn the increase was from about 4-5 µg/l to 7 µg/l and was only of a few months duration. In Pollen the increase was larger - to 10-12 µg/l and was evident during both 1981 and 1982. Increases in phosphorus could come from dissolution of trace amounts of phosphorus contained in the limestone or from release of P from the sediments as a result of increased respiration Trace amounts of phosphorus in a Swedish limestone amount to about 0.5-1 µg P/l per mg Ca/l dissolved (Swedish National Board of Fisheries, 1981). In Hovvatn calcium concentrations increased about 2 mg/l. Using the Swedish data an increse of 1-2 µg P/l would be expected, approximately the increase observed. In Pollen the high dose gave a Ca increase of about 12 mg/l which would correspond to 6-12 µg P/l, again approximately as observed. In the liming experiments conducted by Hultberg and Andersson (1982) no P increases were observed, but here the neutralization was with a Ca-silicate industrial waste product that may not have contained soluble phosphorus.

The increased phosphorus concentrations may, however, be due to release from the lake sediments. Several lines of evidence support this mechanism. (1) The long duration of increased P levels in Pollen suggests a continued supply rather than one-time addition with the limestone. (2) The elevated P levels roughly parallel the elevated TOC levels with both returning to pre-liming levels by 1983. If increased respiration in the sediments occurs as a result of liming, then TOC and P might be released together. On the other hand, other liming experiments did not produce increases in total-P (Hultberg and Andersson, 1982; Eriksson et al., 1983) and a Norwegian study of sediment-water interactions indicates only a minor effect on P released with liming (Sanni et al., 1983). Furthermore, a laboratory incubation of Hovvatn and Pollen sediments with limed and acidic water indicates only minor release of P from the sediment to overlying water (Norton and Wright, in prep.). Clearly further work is necessary before the effect of liming on phosphorus concentrations can be satisfactorily explained.

Amount of Limestone Dissolved

The calcium budget for a lake provides the best measure of the amount of limestone dissolved and of the rate of reacidification. The Ca budget is comprised of the inputs from runoff (includes groundwater) from the catchment and precipitation on the lake surface, dissolution of limestone and release from the lake sediments and of outputs via outlet discharge and via removal from the water to the sediments.

Alternatively, alkalinity could be used because dissolution of $CaCO_3$ produces equivalent amounts of Ca and alkalinity. Alkalinity is, however, more cumbersome a measure because it is comprised of 3 components, HCO_3, H^+ and ΣAl, and it would be necessary to assess the fluxes into and out of the lake water for all of these.

For the Ca budgets at Hovvatn and Pollen fluxes in runoff, precipitation and outlet discharge are obtained from hydrologic budgets and measured Ca concentrations in stream and lake water. The flux of Ca across the sediment-water interface is estimated from laboratory experiments (Norton and Wright, in prep.) and also from changes in Ca concentration in bottom water during periods of thermal stratification. The calcium derived from dissolution of limestone is estimated by difference.

For the purpose of assessing the liming efficiency an adequate hydrologic budget is obtained from measurements of precipitation depth at a station operated by the Norwegian Meteorological Institute (MI) at Dovland, about 10 km south of Hovvatn. Evapotranspiration is assumed equal to 200 mm/year. Outlet discharge is then obtained by difference:

$$Q = P - ET$$

where P is measured precipitation depth, ET is estimated evapotranspiration, and Q is outlet discharge and units are mm. Precipitation in winter comes as snow and runs off during spring snowmelt. Winter baseflow is assumed to be 25-40 mm/month.

This method produces adequate hydrologic budgets for relatively long periods. The year is divided into 4 hydrologic periods--summer (ice out to onset of autumn circulation), autumn (until ice on), (winter until snowmelt), spring (snowmelt to ice out). In addition to these 4 periods in 1982 a mid-winter melting period was added. The hydrologic year used here is thus May to May (ice-out to ice-out).

The first 2 years since liming were hydrologically different (Table 4). During 1981-82 precipitation depth was normal (1450 mm - 30-year mean 1460) and also distributed normally over the year. The next year, 1982-83, was substantially wetter (1710 mm) and characterized by a mild winter. Ice-on was not until mid December, one month later than normal, and in January rain and high temperatures caused melting of much of the snowpack.

Ca concentration of inflowing water from the catchment to both Hovvatn and Pollen is about 20 µeq/l, the level in both lakes prior to liming, in Lille Hovvatn, and in the inflowing streams. The volume of water flowing into Hovvatn and Pollen is assumed equal to that flowing out. The Ca concentration in outflow water for each hydrologic period was set as the mean concentration in the outlet stream (Hovvatn) and at 1-m depths Pollen. The change in amount of Ca contained in Hovvatn and the Pollen (ΔCa) was estimated from concentrations measured at several depths at the beginning and end of each hydrologic period.

For Pollen the amount of limestone dissolved during each hydrologic period is then obtained from:

$$\text{Ca dissolved} = Ca_{out} - Ca_{in} + \Delta Ca$$

where ΔCa is the change in Ca contained in the water (concentration x volume) and units are keq. One keq of Ca is equivalent to 0.05 ton $CaCO_3$. For Hovvatn the calculation is similar except that output from the Pollen is an additional input to Hovvatn.

These calculations indicate that in Pollen 4.4 metric tons of $CaCO_3$ dissolved immediately upon ice-out in May 1981 (14% of the applied limestone) and a further 1.0 tons dissolved during the course of the first summer (Table 4). Since then further dissolution has been minor. An additional 0.9 tons dissolved during the summer of 1982. During the rest of the year dissolution was minimal. By 29 June 1983, over 2 years after the limestone was applied, a total of only 6.2 tons $CaCO_3$ had dissolved (19%) (Figure 7).

In Hovvatn about 21.6 metric tons of $CaCO_3$ dissolved within a few days of ice-out (14% of applied dose). But in Hovvatn, substantial amounts of limestone have continued to dissolve during the ice-free summers and autumns of 1981, 1982 and 1983 (Table 4). By 29 June 1983 a total of 65.8 tons $CaCO_3$ (41% of applied limestone) had dissolved (Figure 7).

The difference in liming efficiency between Pollen (19% after 2 years) and Hovvatn (41%) is due to the differences in

TABLE 4.

Hydrologic and calcium budgets for Hovvatn and Pollen

Dates	Hydrologic period[a]	Water: Hydrology (mm) P[c]	E[d]	Q[e]	Hovvatn Ca: Output[f] outlet µeq/l	keq	Inputs[g] catch-ment keq	from Pollen keq	In Lake[h] at end of period µeq/l	keq	ΔCa[i] keq	Dissolved[j] keq	cum. %	Pond Ca: Output[k] Outlet µeq/l	keq	Input[l] keq	In Pollen[m] at end of period µeq/l	keq	ΔCa[i] keq	Dis-solved[n] keq	Cum. %
12 Apr, '81 19 May '81	preliming at ice-out[b]								20 88	128 560	0 432	0 +432	13				20 600	3 90	0 +87	0 +87	14
14 May - 13 Sep '81	Summer	301	200	101	100	70	12	18	125	800	+240	+280	22	600	18	0	630	94	+4	+22	17
14 Sep - 15 Nov '81	autumn	602	0	602	90	380	76	72	110	704	-96	+136	26	400	72	3	185	28	-66	+3	17
16 Nov - 25 Mar '82	winter	446	0	100	92	60	12	5	105	672	-32	+11	27	180	5	0	250	38	+10	+5	18
26 Mar - 18 May '82	spring	102	0	450	70	220	49	4	80	512	-160	+7	27	30	4	2	145	22	-16	-16	17
19 May - 20 Sep '82	summer	382	200	180	88	110	20	11	105	672	+160	+239	34	200	11	1	255	38	+16	+26	20
21 Sep. - 7 Dec '82	autumn	761	0	760	80	420	83	23	75	480	-192	+122	38	100	23	4	80	12	-26	-7	19
8 Dec - 30 Jan '83	mid-winter melting	262	0	260	60	110	27	6	70	448	-32	+44	40	75	6	1	75	11	-1	+4	19
31 Jan - 5 Mar '83	winter	92	0	40	55	15	5	1	70	448	0	+9	40	75	1	0	100	15	+4	-3	19
6 Mar - 8 May '83	spring	212	0	260	45	80	27	2	60	384	-64	-14	40	30	2	1	80	12	-3	-2	18
8 May - 29 Jun '83	summer	281	75	210	55	80	23	6	60	384	0	+51	41	90	6	1	85	13	+1	+6	19

FOOTNOTES TO TABLE 4

[a]hydrologic periods: summer is defined as from ice-out to onset of autumn circulation and heavy rains; autumn is from onset of autumn circulation until ice-on; winter is from ice-on until onset of spring snowmelt; spring is from snowmelt until ice-out.

[b]at ice-out: during a period of a few days in May 1981 the limestone first came in contact with the water in significant amounts.

[c]P: precipitation depth measured at Dovland.

[d]E: evapotranspiration estimated to be 200 mm/summer.

[e]Q: by difference P-E=Q. During winter Q is estimated at 25 mm/month. During snowmelt $Q = P_{winter} + P_{snowmelt} - Q_{winter}$.

[f]Ca out: (Hovvatn): from measured concentrations in outlet averaged over period. Mass obtained by Q(mm) x 6.96 km^2 x conc. µeq/l x 10^{-1} = keq Ca.

[g]Ca in: (Hovvatn): catchment runoff contains about 20 µeq Ca/l. Mass obtained by Q(mm) x 5.47 km^2 x 20 µeq/l x 10^{-1} = keq Ca. 5.47 km^2 is area of catchment exclusive Hovvatn and Pollen and its catchment. Input from Pollen to Hovvatn is equal to output from Pollen.

[h]Ca in lake at end of period (Hovvatn): measured concentrations µeq/l x 6.4 x 10^6 m^3 x 10^{-6} = keq Ca

[i] CA: Change in mass of Ca in lake during period

[j]Ca dissolved (Hovvatn): out-in from catchment-in from Pollen + ΔCa. Cum % is total amount of limestone dissolved since application in March 1981.

[k]Ca out (Pollen): from measured concentrations in surface water (1 m) averaged over period. Mass obtained by Q(mm) x 0.046 km^2 x conc. µeq/l x 10^{-1} = keq Ca.

[l]Ca in (Pollen) runoff contains 20 µeq/l. Mass obtained by Q(mm) x 0.25 km^2 x 20 µeq/l x 10^{-1} = keq Ca. 0.25 km^2 is area of catchment exclusive pond.

[m]Ca in lake at end of period (Pollen): Measured concentrations µeq/l x 0.15 x 10^6 m^3 x 10^6 = keq Ca.

[n]Ca dissolved (Pollen): out-in from catchment + ΔCa. Cum % is total fraction of limestone since application in March 1981.

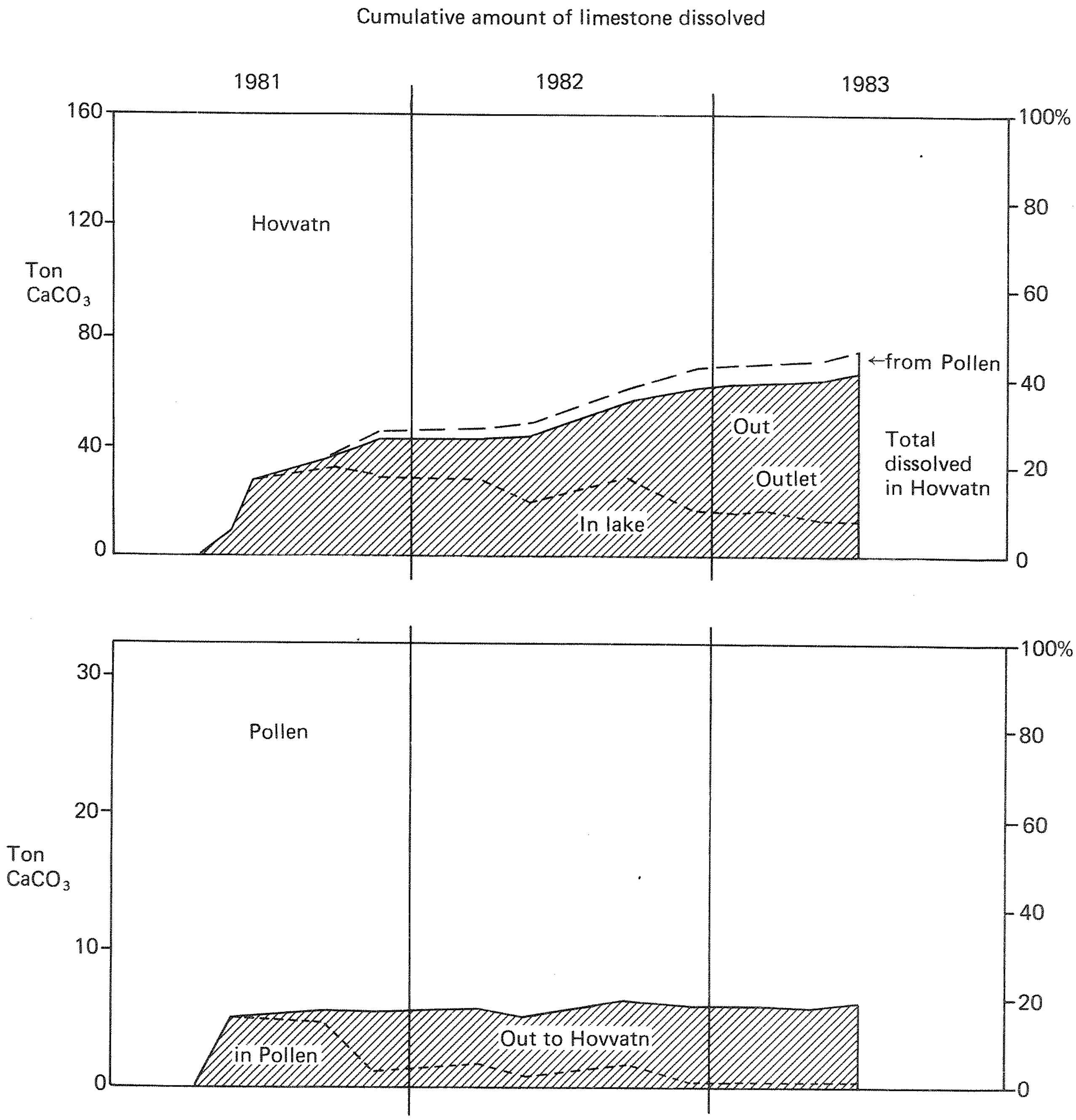

Figure 7. Cumulative amount of limestone dissolved at Hovvatn and Pollen since liming in March 1981 through June 1983 as calculated from the calcium budgets. Hovvatn receives lime-rich water from Pollen in addition to limestone dissolved in the lake itself.

dose (1.3 and 0.27 ton $CaCO_3$/ha terrestrial catchment, respectively) and method of application (spread on ice over entire Pollen and spread along one shoreline of Hovvatn, respectively). In Pollen limestone not dissolved while settling through the water column upon ice-out formed a layer of limestone on the sediment at the bottom. The sediment is organic rich, fine grained gyttja, and previous studies have shown that additional dissolution of limestone in such cases is minimal (Bjerle et al. 1982). The fact that some of this limestone did dissolve is indicated by the increase in pH (Figure 8) and especially Ca concentrations (Figure 11) in the bottom water during the summer and winter stratification periods, but even if it is assumed that the 1 meter of water over the sediment over the entire Pollen is affected, the total amount of $CaCO_3$ dissolved in the bottom water during the 2 summers and 2 winters since liming totals only 20 keq Ca, about 3% of the limestone dose. This value is similar to that obtained from the Ca budget (Table 4).

In Hovvatn the situation is different. The 120 tons of $CaCO_3$ not immediately dissolved at ice-out in 1981 lie along the sandy northeastern shore and along the shores of islands near the center of the lake. During periods of winds from the southwest these shores are subject to considerable wave action and the turbulence promotes dissolution of the fine-grained limestone. During the 2 summers after liming the shallow water was observed to be cloudy due to suspension of limestone particles.

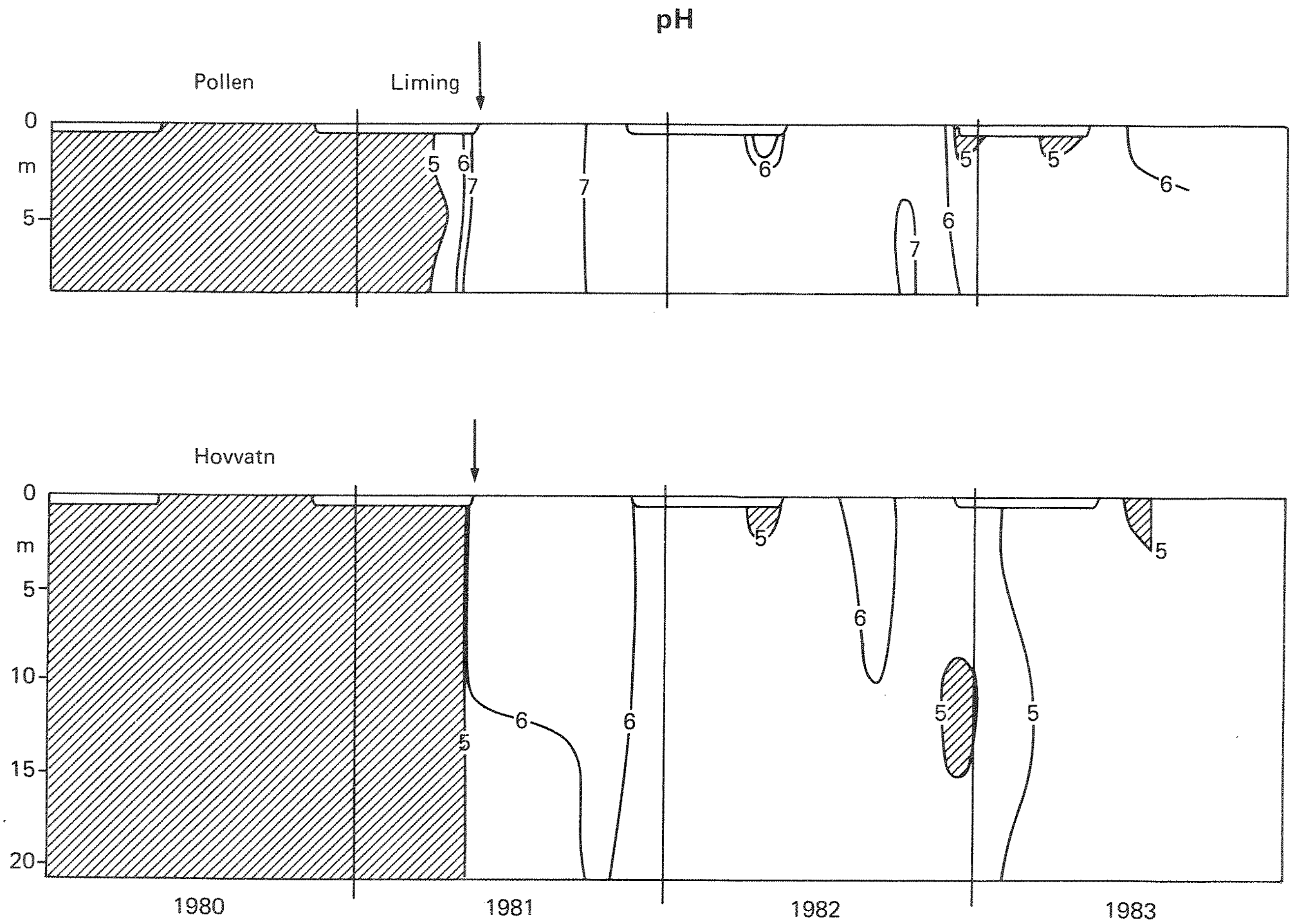

Figure 8. Time-depth diagrams of pH levels in Pollen and Hovvatn (station 15) over the period May 1980-July 1983.

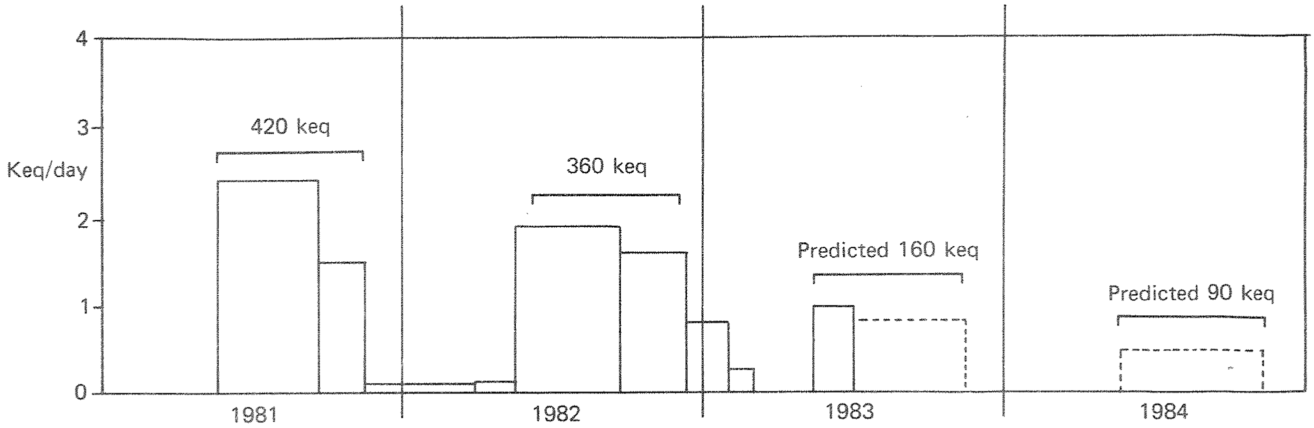

Figure 9. Dissolution rate of residual limestone at Hovvatn as calculated by difference from the calcium budget. Units: keq Ca/day. One metric ton of $CaCO_3$ corresponds to 20 keq Ca.

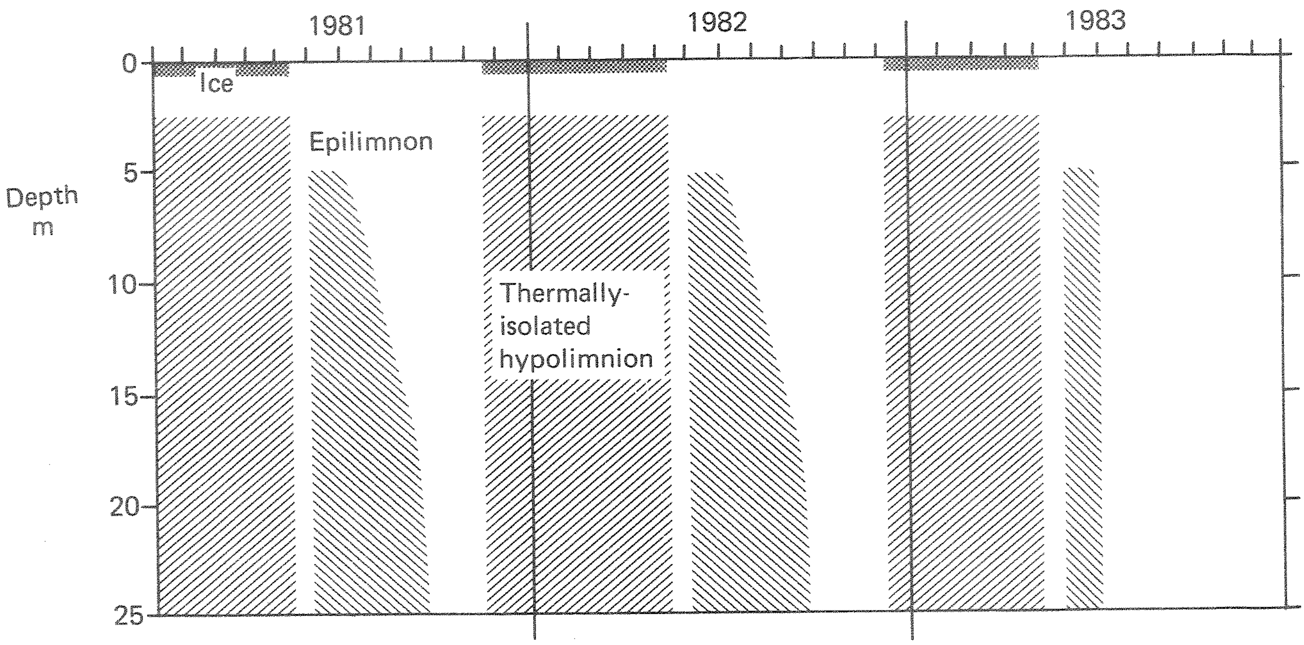

Figure 10. Schematic time-depth diagram of thermal and chemical stratification at Hovvatn over the period January 1981-July 1983.

Dissolution of limestone in Hovvatn proceeds during the ice-free period, with on the average, less limestone dissolved per day in each successive year after liming (Table 4, Figure 9). The Ca budget indicates that very little limestone is dissolved during the winter and during snowmelt. The ice cover would preclude wave action and inhibit dissolution of residual limestone along the shoreline.

The above discussion has neglected the sediments themselves as a sink or source of Ca to the water. The sediments can act as a buffer during liming by taking up Ca from the water (by ion exchange with H^+ on organic materials, for example) and then during reacidification releasing the Ca back to the overlying water (Lindmark, 1982; Dillon and Scheider, 1983; Sanni et al., 1983).

To assess the importance of sediment buffering for Hovvatn and Pollen, a series of laboratory experiments with water and sediment from Lille Hovvatn, Hovvatn and Pollen were conducted in spring 1983 (Morton and Wright, in prep.). Water from each site was incubated with sediment from each site and the flux of major ions and several trace components measured. This experiment indicates that Pollen sediments will release about 0.7 g Ca/m^2. Extrapolated to the entire Pollen and Hovvatn these values correspond to about 0.8% and 1.1%, respectively, of the limestone applied.

At neither site is the flux across the sediment-water interface sufficiently large enough to be a significant sink of Ca at liming or source of Ca during reacidification. The observed chemical changes in Hovvatn bottom water confirm this conclusion. During periods of thermal and chemical stratification, the concentration of Ca in Hovvatn bottom water changes only very slightly indicating minimal influence of the sediments. The very large changes in Ca concentrations in Pollen bottom water are probably due to dissolution of residual limestone on the sediment rather than interaction with the sediment itself.

Reacidification

Liming raised the pH, alkalinity and calcium concentration in the lake and Pollen water. Runoff from the catchment was unaffected. Reacidification occurs as the acidic runoff back-titrates and flushes out the limed water. The rate of reacidification depends on the lake's inherent flushing time (volume/outlet discharge), the mixing regime in the lake, and rate of additional dissolution of limestone. With a flushing time of 0.4 years (Hovvatn 0.8), and only minimal dissolution of residual limestone during the 2 years after application, Pollen should a priori reacidify faster than Hovvatn.

Dimictic lakes such as Hovvatn and Pollen are thermally stratified during summer and winter. During such times flushing by acidic runoff affects only the epilimnion. The theoretical path of reacidification can be constructed taking into account the observed thermal stratification and flux of acidic runoff from the catchment (Dillon and Scheider, 1983). Complete horizontal mixing is assumed. The concentration of calcium is again used as a measure of degree of reacidification.

In the absence of chemical reactions involving Ca (such as dissolution of limestone or release from sediments) the mixing of low-Ca runoff with high-Ca limed water will yield lake water with Ca concentration given by:

$$\frac{Ct-Cb}{Co-Cb} = e^{-Q/V}$$

where Ct is calcium concentration at time t, Co is the calcium concentration after liming, Cb is the background calcium concentration in runoff, Q is total volume of runoff over the period from time 0 to time t, and V is the volume of lake water mixed.

The volume of the mixed layer varies seasonally (Figure 10). At Hovvatn spring circulation lasts about two weeks from ice-out; during this time the entire water column mixes and is subject to reacidification by acid runoff. The mixed volume is thus the entire lake, 6.4×10^6 m^3. Thermal stratification during the summer results in a mixed epilimnion 0-5 m in June, down to 10 m by early August, 15 m in early September and 25 m in mid-September. The mixed volume during the summer increases from 3.1×10^6 m^3 in June to 6.4×10^6 at autumn turnover. Autumn turnover lasts until ice-on, usually early November. Under the ice only a 2-m thick layer is flushed by winter runoff and snowmelt. This volume is only 2.2×10^6 m^3, about 1/3 of the entire lake. At Hovvatn during snowmelt in April 1982, the pH gradient under the ice went from 4.6 at 2 m to 5.2 at 3 m and 5.6 at 5 m. In Pollen the gradient was from pH 4.7 at 1 m to 6.4 at 5 m (Figure 8).

The thermal stratification and resulting changes in mixed volume are similar in Pollen except that (1) the epilimnion is shallower during early summer (Pollen is more sheltered from wind mixing) and (2) Pollen is fully mixed earlier in the autumn because maximum depth is only 9 m .

For Pollen the observed Ca concentrations in surface water (1-m samples) closely follow those predicted by this simple reacidification model (Figure 11). Observed levels are higher than predicted during the second year after reacidification, but this is due to mixing of Ca-rich bottom water during spring circulation in May 1982. The bottom water (8-m samples) acquired additional Ca from dissolution of residual limestone on the sediments (Figure 11). Indeed, the Ca concentration in bottom water increases during every period of thermal isolation, and drops due to mixing with reacidified surface water during periods of circulation. Because the volume of the hypolimnion is small relative to the volume of the epilimnion, the effect of dissolution of residual limestone on reacidification of Pollen is minor.

At Hovvatn dissolution of residual limestone and incorporation into surface waters during the ice-free periods greatly retards reacidification (Figure 12). A simple flushing model predicts that Ca levels in surface water should have decreased from initial levels after liming of 90 μeq/l to 55

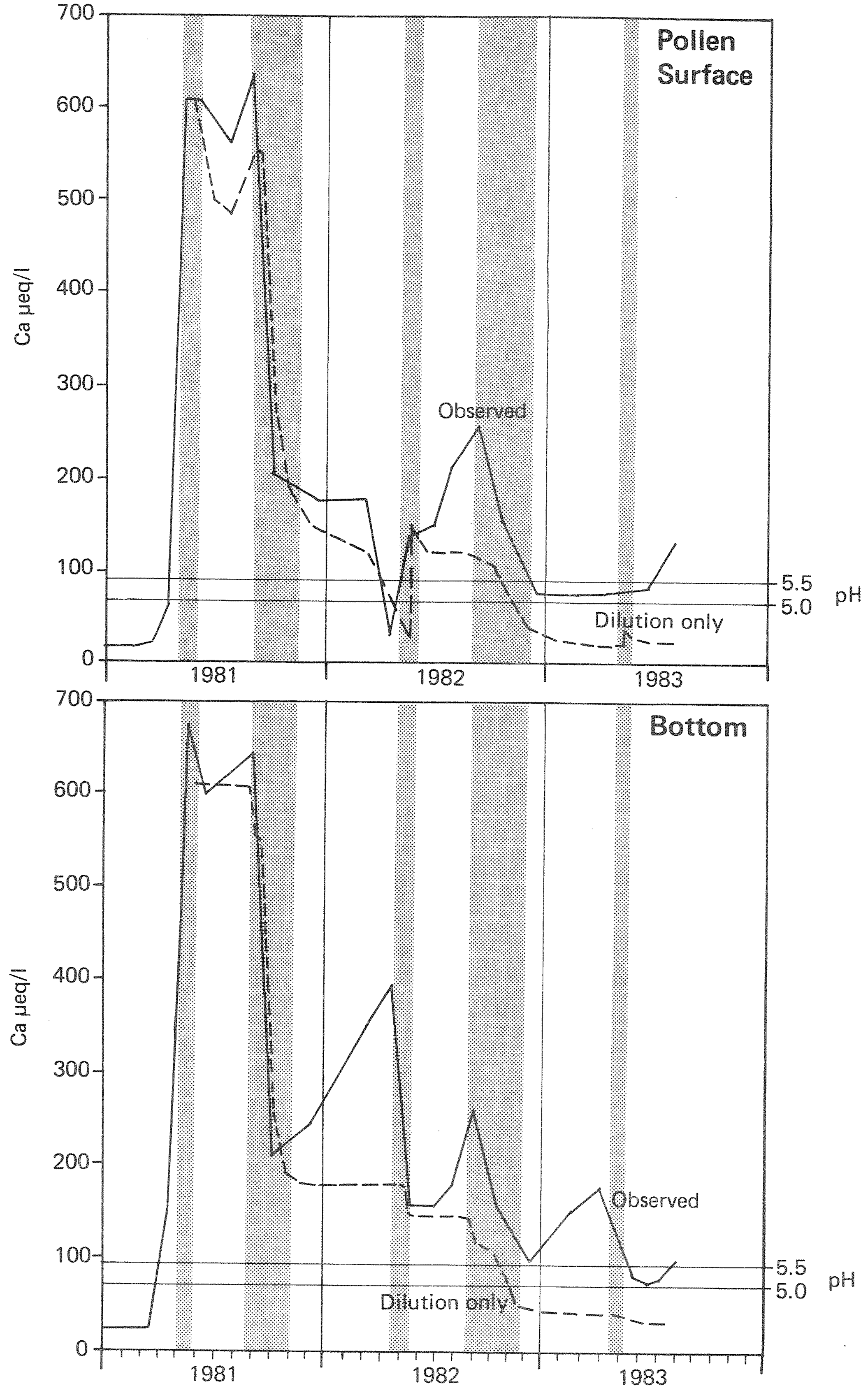

Figure 11. Reacidification at Pollen. See Figure 12 for details.

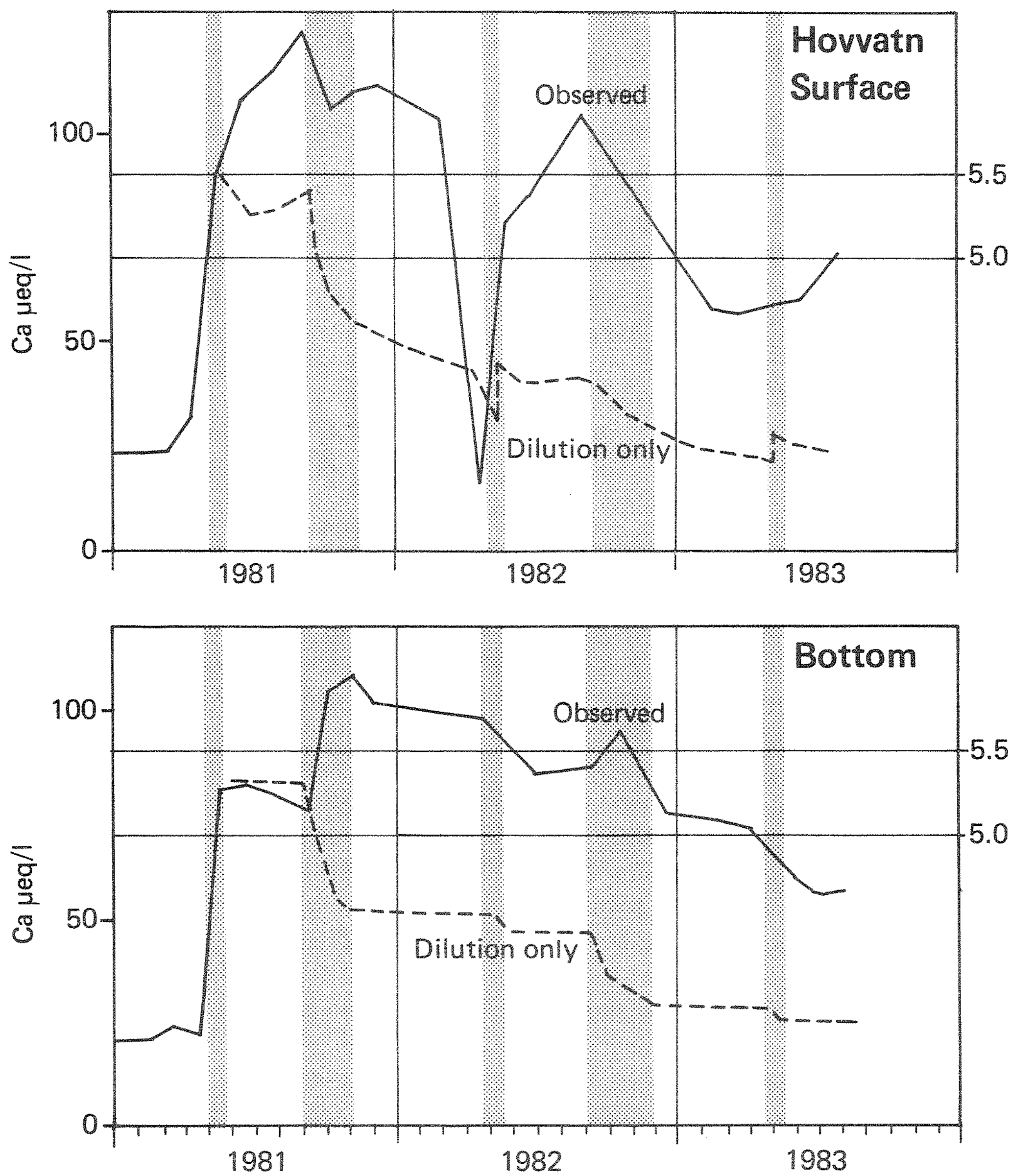

Figure 12. Reacidification of surface water (1 m) and bottom water (20 m) at Hovvatn during the 2 1/3 years since liming in March 1981. Ca concentrations indicate effect of liming and rate of reacidification. Background, pre-liming levels are about 20 µeq/l. The dashed curves show the expected path if the only process occurring is dilution of limed water with Ca-poor runoff. Observed Ca levels are higher indicating significant dissolution of residual limestone since May 1981. During spring and autumn circulation periods the surface and bottom waters mix to the same chemical composition. Also shown are the Ca levels at which pH drops below 5.5 and 5.0, respectively.

μeq/l by ice-on in November 1981. In fact, the Ca concentration actually increased to 110 μeq/l during this period, most likely due to dissolution of limestone in the littoral zone during the ice-free period. During ice-covered periods the observed concentrations follow the path predicted by the reacidification model.

The Ca concentration in the bottom water (20-m samples) changes during the spring and autumn circulation periods. During the autumn turnover, the Ca concentration in bottom water increases because during the ice-free period the surface water has acquired Ca from dissolution of residual limestone. During spring turnover, the Ca concentration in bottom water decreases due to dilution with Ca- poor surface water; the surface water beneath the ice has been flushed out by acidic, low-Ca runoff. In the absence of limestone dissolution the Ca concentration in bottom water should follow a step-like path over time with sharp declines during circulation periods and no change during stratification periods. In fact, the steps are up in autumn and down in spring. In between, when the water is thermally isolated, only very slight changes were measured, and these were probably due to Ca release or loss to the sediments.

The variations in Ca concentrations over time and with depth are readily translated to pH. Empirically, at a Ca concentration of about 90 μeq/l pH in Hovvatn is about 5.5 and at 70 μeq/l pH is about 5.0. Bicarbonate concentrations become negligible below pH 5.0, and toxic, inorganic forms of aluminum increase in concentration.

Both Hovvatn and Pollen had reacidified to about pH 5.0 by spring turnover in 1983, 2 years after liming (Figure 8). Nevertheless, during summer 1983 levels at both sites had again risen to above pH 5.5. By then a water volume equivalent to 3.2 times that of Hovvatn and 5.8 times that of Pollen had entered as acidic runoff and left via the outlets. Clearly the liming strategies chosen for both Hovvatn and Pollen have been adequate for maintaining satisfactory pH levels for at least 2 years.

Liming Strategy

The liming strategy at Hovvatn - partial liming along the shores - appears well chosen. About 40% of the limestone applied had benefitted the lake. This efficiency compares favorably with lakes in Sweden and Canada treated with agricultural grade limestone.

At Pollen the liming strategy did not result in maximum return. Only 20% of the applied limestone benefitted Pollen. Here a more moderate dose would probably have had about the same effect. As Sverdrup and Bjerle (1983) point out, liming efficiency depends on the choice of neutralization material, dose and application method, and this choice depends, in turn, on the characteristics of the lake to be limed.

At Hovvatn the partial liming strategy creates refugia of acceptable water quality in some parts of the lake during times when other parts of the lake contain more acidic, toxic water. The brown trout population can then seek out such refugia and survive temporary pH-depressions. Re-liming perhaps can be delayed somewhat.

With its small catchment-to-lake area ratio, Hovvatn is somewhat unusual for Norway. Water retention time is about 1 year, whereas other acidic, barren lakes in the region typically have retention times of 1-6 months. Whereas liming at Hovvatn has resulted in pH levels above 5 in at least one part of the lake for a full 2 years (3.2 water retention times), in a lake with a shorter retention time such a liming treatment would have maintained acceptable pH levels for only one year or less. Liming lakes in this part of Norway, must, thus be based on annual or biannual treatments. This contrasts sharply with the situation in Sweden and Ontario, Canada, where due to lower specific runoff rates, the water retention time in acidic lakes is commonly 2-5 years, and reacidifcation following liming can take 5-10 years (Hultberg and Andersson, 1982; Dillon and Scheider, 1983).

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Appendix 2. Water chemistry data for Hovvatn.

a) Sampling stations (see figures 1 and 2).

	Code	Name
Streams	HVE 01	outlet Hovvatn
	HVE 02	inlet northwest
	HVE 03	inlet northeast
	HVE 04	inlet from L. Hovvatn
	HVE 05	Hovvassåa River at highway bridge
	HVE 06	inlet north northeast
	HVE 07	inlet southwest below liming
	HVE 08	inlet southwest above liming
Lakes	HVV 11	near boathouse
	HVV 13	pollen
	HVV 14	southeastern basin
	HVV 15	north basin
	HVV 16	west arm
	HVV 20	Lille Hovvatn

b) Major ions. Computer codes, units and analysis methods. "M" preceeding a number indicates "less than".

CODE	PARAMETER	UNITS	METHOD
AR-MD-DG	Sampling date	yr-month-day	-
DYP	Depth	cm	-
pH	pH	$- \log H^{+}$, mol/l	potentiometric
COND	conductivity	mS/m at $25^{o}C$	potentiometric
ENA	Na	µeq/l	atomic absorption spect.
EK	K	µeq/l	atomic absorption spect.
ECA	Ca	µeq/l	atomic absorption spect.
EMG	Mg	µeq/l	atomic absorption spect.
EAL	total-Al	µeq/l, valence +3	colorimetric (catechol violet)
ECL	Cl	µeq/l	colorimetric (iron-thiocyanate)
ES04	SO_4	µeq/l	colorimetric (thorin)
ENO3	NO_3	µeq/l	colorimetric (NEDA)
ALK-X	alkalinity	µeq/l	titration to pH-4.5 fixed end-point, corrected to inflection point alk.

FILKODE: REGION NAVN: REGIONALE UNDERSØKELSER - VANN REGIONALE DATA DATO: 840807

BLK	LOK	ÅR M D R N G	DYP	PH	COND	ENA	EK	ECA	EMG	EAL	ECL	ESO4	ENO3	ALK-X
4	1	741012	50	4.43	3.30	59.2	3.8	25.9	23.9	21.1	64.9	89.5	11.4	0.0
4	1	741012	300	4.45	3.37	64.8	3.6	28.9	23.7	23.4	59.2	91.6	12.1	0.0
4	1	750311	50	4.59	3.18	118.3	15.6	14.0	32.9	8.9	126.9	64.5	8.6	0.0
4	1	750311	9999	4.47	3.01	54.8	2.3	19.0	23.0	25.6	56.4	85.4	10.7	0.0
4	1	760303	50	4.32	3.65	57.9	4.1	25.7	23.0	23.4	59.2	99.9	20.7	0.0
4	1	760303	600	4.47	3.01	53.1	3.8	25.9	22.2	26.7	43.0	89.5	12.1	0.0
4	1	770321	50	4.23	4.78	78.3	6.4	30.7	23.7	31.1	73.3	135.3	40.7	0.0
4	1	770321	400	4.33	3.73	59.2	7.2	26.4	13.9	27.8	53.6	93.7	32.1	0.0
4	1	780307	50	4.40	3.54	69.2	6.7	27.4	25.5	32.2	64.6	95.3	21.1	0.0
4	1	780307	900	4.40	3.41	58.7	7.7	27.4	25.5	33.9	67.7	87.4	22.8	0.0
4	1	810318	100	4.49	2.94	44.4	3.8	23.5	17.5	30.0	56.4	75.0	15.7	0.0
4	1	810318	1500	4.49	2.83	39.6	4.1	25.0	17.3	27.8	45.1	79.1	17.1	0.0

FILKODE: HVVV NAVN: HOVVATN VEST, SNITT I VANN HOVVATN DATO: 840307

ÅR M D R N G	DYP	PH	COND	ENA	EK	ECA	EMG	EAL	ECL	ESO4	ENO3	ALK-X
770608	100	4.52	2.84	44.8	8.2	22.5	18.9	16.7	33.9	75.0	13.6	0.0
770608	200	4.52	2.87	49.2	8.2	22.5	18.9	22.2	33.7	79.1	19.3	0.0
770608	400	4.53	2.94	45.7	8.4	22.5	18.9	32.2	33.9	81.2	13.6	0.0
770608	600	4.52	2.96	48.7	8.2	22.5	18.9	20.0	33.9	85.3	17.8	0.0
770608	800	4.50	3.03	50.5	7.7	24.0	19.7	22.2	33.9	83.3	17.8	0.0
770816	100	4.59	2.58	58.3	10.5	24.0	19.7	21.1	48.0	79.1	16.4	0.0
770816	200	4.59	2.61	47.0	7.2	23.0	18.9	21.7	48.0	79.1	17.8	0.0
770816	400	4.58	2.61	50.0	7.9	22.5	19.7	19.5	48.0	79.1	17.8	0.0
770816	600	4.57	2.68	43.5	6.4	23.5	18.9	20.0	45.1	77.0	17.8	0.0
770816	800	4.57	2.66	44.8	7.2	23.5	19.7	15.6	45.1	79.1	17.1	0.0
770816	1000	4.57	2.73	48.3	7.9	23.0	19.7	17.3	45.1	31.2	16.4	0.0
771013	0	4.50	2.83	41.8	7.2	22.5	20.6	24.5	50.8	64.5	17.8	0.0
771013	100	4.55	2.81	43.9	7.4	22.5	20.6	23.4	56.4	70.8	17.8	0.0
771013	200	4.63	2.72	45.2	6.6	23.0	20.6	22.2	56.4	72.9	17.1	0.0
771013	400	4.55	2.85	42.6	5.9	22.0	20.6	23.4	56.4	72.9	19.3	0.0
771013	600	4.54	2.86	42.2	5.4	21.5	20.6	24.5	56.4	72.9	17.8	0.0
771013	800	4.54	2.84	43.1	5.4	23.0	20.6	21.1	56.4	75.0	17.8	0.0
780307	100	4.40	3.54	63.9	9.2	27.4	25.5	42.3	84.6	95.8	23.9	0.0
780307	800	4.40	3.41	53.7	7.7	27.4	25.5	55.6	67.7	85.4	22.8	0.0
780602	100	4.58	2.78	50.0	6.1	26.4	21.4	27.8	42.3	75.0	16.8	0.0
780602	200	4.56	2.83	50.0	6.1	23.5	18.9	30.6	39.5	75.0	16.8	0.0
780602	400	4.58	2.84	47.8	4.6	23.5	19.7	25.0	39.5	72.9	17.5	0.0
780602	600	4.58	2.84	52.2	4.6	23.5	19.7	25.6	39.5	75.0	17.5	0.0
781004	100	4.66	2.42	39.1	3.8	15.0	14.0	30.0	42.3	70.8	17.1	0.0
781004	200	4.63	2.47	39.1	3.8	15.0	14.8	31.1	42.3	68.7	16.4	0.0
781004	400	4.61	2.45	39.1	4.6	16.0	13.2	30.0	42.3	70.8	16.8	0.0
781004	600	4.63	2.42	39.1	4.6	15.0	14.0	32.2	42.3	68.7	16.8	0.0
781004	800	4.62	2.44	39.1	7.2	17.5	14.0	30.0	42.3	77.0	16.8	0.0
790613	100	4.57	2.54	46.5	6.4	20.5	18.1	24.5	48.0	72.9	18.2	0.0
790613	200	4.55	2.62	45.7	5.6	19.5	18.1	23.9	48.0	72.9	18.2	0.0
790613	400	4.54	2.64	45.7	5.9	19.0	17.3	22.2	48.0	70.8	18.6	0.0
790613	800	4.55	2.58	45.2	5.9	19.0	17.3	25.0	48.0	70.8	18.6	0.0
791007	100	4.42	2.55	40.0	4.1	21.5	14.0	22.2	33.7	79.1	19.6	0.0
791007	200	4.50	2.46	39.6	4.3	20.0	14.0	22.2	33.9	79.1	17.5	0.0
791007	400	4.50	2.52	40.9	4.1	21.0	14.0	21.1	33.9	79.1	17.5	0.0
791007	600	4.50	2.53	41.8	4.6	21.5	14.0	20.0	39.5	79.1	17.8	0.0
791007	1000	4.56	2.45	41.3	4.3	22.0	14.8	20.0	39.5	79.1	17.1	0.0
800521	100	4.45	2.91	37.8	4.6	22.0	14.8	23.4	42.3	89.5	22.5	0.0
800521	400	4.45	2.94	33.7	4.6	21.5	14.8	23.4	42.3	89.5	22.1	0.0

FILKODE: HVV NAVN: HOVVATN, SNITT I VANN (FLERE LOKASJONER) HOVVATN DATO: 840807

LOK	ÅR M D R N G	DYP	PH	COND	ENA	EK	ECA	EMG	EAL	ECL	ESO4	ENO3	ALK-X
10	800521	100	4.52	3.09	40.9	4.6	22.5	15.6	21.1	42.3	89.5	19.3	0.0
10	800521	200	4.47	2.95	40.0	4.9	22.5	15.6	20.0	42.3	89.5	19.3	0.0
10	800521	400	4.46	3.00	41.3	4.6	22.5	15.6	18.9	42.3	89.5	13.6	0.0
10	800521	800	4.47	2.98	42.2	5.1	22.5	15.6	18.9	45.1	95.8	18.6	0.0
11	800521	100	4.49	2.96	39.6	4.9	21.5	14.8	21.1	45.1	87.4	20.0	0.0
11	800521	200	4.47	2.99	40.5	4.3	22.0	14.8	21.1	50.8	87.4	20.7	0.0
11	800521	400	4.48	2.93	39.1	4.3	22.0	15.6	20.0	42.3	89.5	20.7	0.0
11	800521	800	4.49	2.90	41.8	4.9	22.5	15.6	18.9	42.3	87.4	17.1	0.0
11	800521	1200	4.49	2.89	41.8	4.9	22.0	15.6	20.0	42.3	87.4	16.4	0.0
11	800731	100	4.50	2.65	37.8	4.1	24.5	14.0	28.9	39.5	89.5	17.1	0.0
11	800731	500	4.49	2.72	36.1	3.8	23.0	14.0	26.7	36.7	89.5	17.1	0.0
11	800731	1000	4.53	2.77	40.9	5.4	24.5	14.8	28.9	39.5	89.5	16.4	0.0
11	800731	1300	4.54	2.78	40.9	5.1	25.0	15.6	26.7	42.3	89.5	15.7	0.0
11	801002	100	4.45	2.93	33.9	4.1	25.9	14.0	23.4	42.3	83.3	18.6	0.0
11	801002	500	4.47	2.95	33.1	3.8	25.0	14.0	27.8	39.5	85.4	18.6	0.0
11	801002	1000	4.48	2.94	32.6	4.1	24.5	14.0	21.1	39.5	83.3	19.3	0.0
11	801209	100	4.42	2.99	41.3	4.1	24.0	16.5	25.6	48.0	91.6	15.0	0.0
11	801209	200	4.49	2.89	38.7	3.8	23.5	15.6	25.6	45.1	85.4	15.7	0.0
11	801209	500	4.46	2.96	37.8	3.8	23.0	15.6	24.5	45.1	83.3	16.4	0.0
11	801209	1000	4.49	2.93	43.5	4.1	23.5	16.5	27.8	45.1	83.3	16.4	0.0
11	810213	100	4.54	2.74									0.0
11	810213	500	4.47	2.85									0.0
11	810213	1000	4.49	2.76									0.0
11	810318	100	4.53	2.87									0.0
11	810318	500	4.50	2.74									0.0
11	810318	1000	4.50	2.77									0.0
11	810411	100	5.33	1.93	46.5	8.2	53.4	13.9	15.6	67.7	60.4	7.9	7.6
11	810411	500	4.52	2.64	37.4	4.1	22.5	16.5	24.5	45.1	83.3	15.0	0.0
11	810411	1000	4.52	2.63	37.4	4.1	23.0	16.5	25.6	45.1	83.3	16.1	0.0
11	810519	100	5.40	2.03	40.9	5.4	63.9	14.0	17.8	48.0	77.0	15.4	0.0
11	810519	500	5.58	1.83	40.9	5.4	64.9	14.0	15.6	50.3	79.1	15.4	0.0
11	810519	1000	5.27	1.85	40.5	5.1	57.4	14.8	17.8	48.0	83.3	15.0	0.0
11	810616	100	6.30	2.07	37.3	4.9	99.3	14.8	15.0	48.0	72.9	13.9	0.0
11	810616	500	6.12	2.02	38.3	4.6	84.8	15.6	15.6	48.0	72.9	13.2	0.0
11	810616	1000	5.50	1.99	38.7	4.9	68.4	15.6	16.7	45.1	72.9	13.2	0.0
11	810616	1300	5.05	2.09	38.7	5.1	51.9	15.6	20.6	48.0	70.8	13.2	0.0
11	810730	100	6.19	2.17									0.0
11	810730	500	6.19	2.20									0.0
11	810730	1000	5.29	2.11									0.0

FILKODE: HVV　　NAVN: HOVVATN, SNITT I VANN (FLERE LOKASJONER)　　HOVVATN　　DATO: 840807

LOK	Å M D / R N G	DYP	PH	COND	ENA	EK	ECA	EMG	EAL	ECL	ESO4	ENO3	ALK-X
11	810730	1500	4.92	2.22									0.0
11	810908	100	6.41	2.27									0.0
11	810908	500	6.46	2.24									0.0
11	810908	1000	6.21	2.23									0.0
11	811007	100	5.60	2.24	40.5	4.9	83.3	16.5	11.1	53.6	93.7	12.9	8.7
11	811007	500	5.55	2.23	40.5	4.9	81.3	16.5	11.1	53.6	95.8	12.9	4.1
11	811007	1000	5.56	2.23	41.3	4.9	80.3	16.5	12.2	53.6	93.7	12.9	4.1
11	811104	100	5.55	2.22									0.0
11	811104	500	5.62	2.24									0.0
11	811104	1000	5.57	2.22									0.0
11	811210	100	5.63	2.29	41.3	4.6	93.3	54.5	8.9	56.4	79.1	14.3	14.2
11	811210	500	5.60	2.25	40.0	4.9	107.8	59.2	12.2	53.6	79.1	14.3	4.1
11	811210	1000	5.51	2.31	39.1	4.9	112.8	70.7	13.3	53.6	79.1	14.3	1.6
11	820308	100	5.47	2.42									0.0
11	820308	500	5.62	2.31									0.0
11	820308	1000	5.47	2.32									0.0
11	820421	100	4.58	2.33									0.0
11	820421	500	4.46	2.41									0.0
11	820421	1000	5.32	2.25									0.0
11	820525	100	5.30	2.13									0.0
11	820525	500	5.28	2.12									0.0
11	820525	1000	5.24	2.25									0.0
11	820630	100	5.61	2.13									0.0
11	820630	500	5.64	2.12									0.0
11	820630	1000	5.06	2.25									0.0
11	820727	100	5.83	2.01									0.0
11	820727	500	5.53	2.01									0.0
11	820727	1000	5.16	2.14									0.0
11	820907	100	5.85	2.08									0.0
11	820907	500	5.85	2.04									0.0
11	820907	1000	5.82	2.05									0.0
11	821013	100	5.24	2.36									0.0
11	821013	500	5.25	2.37									0.0
11	821013	1000	5.28	2.33									0.0
11	821216	100	5.04	2.35									0.0
11	821216	500	4.80	2.52									0.0
11	821216	1000	4.79	2.58									0.0
11	830222	100	4.72	2.83									0.0
11	830222	500	4.82	2.65									0.0
11	830222	1000	4.87	2.62									0.0
11	830329	100	4.80	2.75									0.0
11	830329	500	4.83	2.67									0.0
11	830513	100	4.75	2.49									0.0
11	830513	500	4.82	2.40									0.0
11	830513	1000	4.75	2.49									0.0
11	830613	100	4.87	2.34					10.0				0.0
11	830613	500	4.84	2.34					10.6				0.0
11	830613	1000	4.76	2.39									0.0
11	830701	100	4.98	2.24									0.0
11	830701	1000	4.77	2.43									0.0
11	830728	100	5.19	2.13			68.4		8.9				.0
11	830728	1000	4.73	2.43			51.9		13.3				0.0
11	830822	100	5.22	2.12									0.0
11	830822	500	5.19	2.13									0.0
11	830822	1000	4.96	2.25									0.0
11	830912	100	5.19	2.14									0.0
11	830912	500	5.17	2.17									0.0
11	830912	1000	5.28	2.17									0.0
11	831018	100	4.95	2.83	46.5	3.1		16.5		59.2	83.3	11.4	0.0
11	831018	500	4.89	2.32	47.4	3.1		15.6		59.2	85.4	11.4	0.0
11	831018	1000	4.91	2.35	46.5	3.1		15.6		59.2	83.3	11.4	0.0
11	831220	100	5.23	2.36									0.0
11	831220	500	5.02	2.37									0.0
11	831220	1000	5.03	2.35									0.0
12	810318	100	4.50	2.81									0.0
12	810318	500	4.50	2.78									0.0
13	800521	100	4.47	2.96	38.3	4.6	22.0	14.0	34.5	42.3	87.4	22.8	0.0
13	800521	200	4.46	3.06	37.8	4.9	22.0	14.0	35.6	42.3	85.4	22.8	0.0
13	800521	400	4.46	3.03	37.0	4.9	22.0	14.0	35.6	42.3	85.4	24.3	0.0
13	800521	800	4.47	3.08	37.4	4.9	22.0	14.0	36.7	42.3	87.4	24.3	0.0
13	800731	100	4.57	2.35	26.1	2.0	21.5	10.7	34.5	25.4	85.4	5.7	0.0
13	800731	500	4.48	2.60	26.5	2.6	21.0	10.7	35.6	28.2	85.4	8.6	0.0
13	800731	700	4.51	2.96	36.5	4.9	24.5	14.0	40.0	42.3	89.5	21.4	0.0
13	801002	100	4.49	2.63	25.2	2.3	23.5	10.7	31.1	36.7	79.1	6.4	0.0
13	801002	500	4.50	2.66	24.8	2.3	22.0	9.9	31.1	36.7	77.0	6.4	0.0
13	801002	800	4.52	2.60	25.2	2.3	22.5	9.9	30.0	36.7	79.1	6.4	0.0
13	801209	100	4.42	2.72	33.9	2.3	18.5	11.5	33.4	42.3	70.8	7.1	0.0
13	801209	200	4.47	2.65	32.6	2.3	20.0	10.7	33.4	45.1	70.8	6.4	0.0
13	801209	500	4.46	2.75	34.8	2.8	20.0	11.5	36.7	45.1	70.8	6.4	0.0
13	801209	800	4.54	2.66	36.1	4.3	23.5	12.3	33.9	48.0	75.0	5.7	0.0
13	810212	100	4.54	2.50	33.1	2.8	17.5	12.3	30.0	45.1	58.3	7.1	0.0
13	810212	500	4.54	2.47	31.3	2.8	18.5	12.3	31.1	48.0	64.5	5.7	0.0
13	810212	800	4.57	2.43	33.5	6.6	19.5	12.3	32.2	42.3	62.5	5.7	0.0
13	810318	100	4.53	2.60	37.0	3.1	22.0	12.3	35.6	50.8	72.9	7.9	0.0
13	810318	500	4.57	2.43	33.5	3.1	20.0	11.5	33.4	45.1	64.5	7.1	0.0
13	810318	800	4.67	2.24	33.9	3.8	20.5	11.5	31.1	50.8	72.9	5.0	0.0
13	810412	100	5.43	1.79	35.2	7.7	56.9	12.3	13.3	56.4	50.0	13.9	18.6
13	810412	500	4.92	2.14	37.0	4.3	50.4	13.2	35.6	50.8	75.0	7.1	0.0
13	810412	800	5.87	2.47	37.4	4.9	144.7	14.8	37.8	50.3	75.0	9.3	80.6
13	810519	100	7.43	5.18	39.6	7.2	608.8	17.3	21.7	53.6	72.9	10.7	0.0
13	810519	500	7.46	5.39	40.0	7.4	588.8	17.3	22.2	53.6	68.7	10.4	0.0
13	810519	800	7.38	7.12	37.8	6.6	673.6	17.3	25.6	50.8	68.7	10.0	0.0
13	810616	100	7.57	5.74	39.6	6.4	603.8	18.1	13.3	53.6	68.7	8.6	0.0
13	810616	500	7.55	6.80	39.6	6.4	593.8	18.1	18.9	53.6	70.8	8.6	0.0
13	810616	800	7.52	5.83	39.6	6.6	598.8	18.1	17.8	53.6	70.8	8.9	0.0
13	810729	100	7.23	5.23	37.4	6.4	558.9	15.6	17.8	50.8	70.8	6.4	493.1
13	810729	500	7.11	6.03	36.5	6.1	533.9	14.8	17.8	48.0	70.8	10.0	456.6
13	810729	800	7.05	6.85	38.3	6.9	618.8	15.6	16.7	50.8	72.9	10.0	529.7
13	810907	100	7.52	7.15	33.5	6.9	633.7	17.3	13.9	53.6	75.0	5.4	561.1
13	810907	500	7.50	7.13	33.9	7.2	633.7	17.3	14.5	53.6	72.9	5.0	561.1
13	810907	800	7.46	7.23	33.9	6.9	633.7	17.3	13.3	53.6	72.9	5.4	567.2
13	811006	100	6.63	3.47	37.8	4.9	205.6	18.9	21.1	50.8	104.1	15.0	127.1
13	811006	500	6.65	3.49	37.4	4.6	205.6	18.9	21.1	53.6	106.2	15.0	126.0
13	811006	800	6.72	3.54	38.3	4.9	209.6	18.9	22.2	50.8	104.1	15.0	130.2
13	811104	100	6.46	3.06	37.4	4.1	184.6	14.8	24.5	50.8	89.5	17.1	82.7
13	811104	500	6.54	3.07	37.8	4.1	186.1	14.8	24.5	50.8	91.6	17.1	82.7
13	811104	800	6.50	3.10	38.7	4.1	185.1	14.8	23.4	50.3	89.5	17.1	81.6
13	811210	100	6.27	2.84	40.9	3.6	173.7	32.6	24.5	56.4	81.2	14.3	60.8
13	811210	500	6.43	3.31	39.6	4.3	216.1	42.8	24.5	53.6	91.6	19.3	98.2
13	811210	800	6.50	3.52	40.5	4.3	240.5	40.3	25.6	53.6	93.7	19.3	124.0

FILKODE: HVV NAVN: HOVVATN, SNITT I VANN (FLERE LOKASJONER) HOVVATN DATO: 840807

LOK	RMD RNG	DYP	PH	COND	ENA	EK	ECA	EMG	EAL	ECL	ESO4	ENO3	ALK-X
13	820308	100	6.21	3.15	45.7	4.1	178.1	20.6	20.6	56.4	[illegible]	23.6	99.2
13	820308	500	6.36	3.83	43.5	4.3	263.5	13.9	[illegible]	53.6	99.9	22.1	174.3
13	820308	800	6.57	4.51	44.8	4.6	[illegible]	[illegible]	20.0	56.4	106.2	2_.1	248.0
13	820421	100	4.66	2.16	[illegible]	[illegible]	26.4	7.4	20.6	[illegible]	50.0	17.8	.0
13	820421	500	5.35	3.63	46.1	4.1	276.4	16.5	21.7	53.6	97.9	21.4	181.5
13	820421	800	6.53	4.78	45.2	50.6	391.2	18.1	21.7	53.6	106.2	20.7	285.7
13	820525	100	6.38	2.38	40.0	4.1	138.7	14.0	17.8	45.1	66.6	15.0	64.0
13	820525	500	6.49	2.58									0.0
13	820525	800	6.48	2.63	40.9	4.3	154.7	14.0	18.3	45.1	66.6	17.8	83.7
13	820630	100	6.59	2.68	38.7	2.8	146.7	12.3	15.6	42.3	68.7	7.1	96.1
13	820630	500	5.96	2.18	33.5	2.5	120.8	11.5	17.3	33.9	62.5	7.1	44.1
13	820630	800	6.27	2.80	41.3	3.1	155.7	13.2	18.9	48.0	64.5	17.1	84.7
13	820727	100	6.80	2.95	31.3	3.8	213.6	12.3	14.5	42.3	72.9	2.1	136.3
13	820727	500	6.14	2.32	30.5	3.6	154.2	10.7	15.6	39.5	72.9	9.3	77.5
13	820727	800	6.15	2.82	35.7	4.3	179.1	12.3	22.2	48.0	72.9	15.0	100.3
13	820907	100	6.84	3.39	38.7	4.3	258.0	16.5	20.0	50.8	79.1	3.6	175.3
13	820907	500	7.02	3.46	37.3	4.9	254.5	16.5	18.3	50.8	79.1	3.6	175.3
13	820907	900	7.03	3.48	38.3	4.3	253.5	16.5	19.5	50.8	77.0	3.6	175.3
13	821013	100	6.16	2.70	44.4	4.1		16.5	25.6	56.4	95.8	10.0	52.5
13	821013	500	6.31	2.70	43.9	3.6	154.7	16.5	27.2	53.6	104.1	10.7	52.5
13	821013	800	6.36	2.74	44.8	3.8	154.2	14.0	25.0	56.4	99.9	10.0	52.5
13	821216	100	4.87	2.60	57.4	2.0	74.8	17.3	23.9	79.0	81.2	15.7	0.0
13	821216	500	5.06	2.50	53.9	1.8	35.8	17.3	22.8	73.3	75.0	15.7	.0
13	821216	800	5.28	2.43	54.4	2.3	97.8	17.3	23.9	73.3	77.0	15.7	.0
13	830222	100	5.05	2.63	66.1	2.6	75.3	17.3	34.5	90.3	77.0	16.4	.0
13	830223	500	5.70	2.70	57.9	2.6	120.3	18.1	24.5	81.8	85.4	16.4	28.2
13	830223	800	5.86	2.88	55.7	2.8	145.7	18.1	21.7	79.0	89.5	17.8	44.1
13	830329	100	4.95	2.62			75.8		26.7				0.0
13	830329	500	5.38	2.60			104.3		23.4				9.8
13	830329	800	5.86	3.05			174.6		21.1				71.2
13	830513	100	5.39	2.19			80.3		18.9				8.7
13	830513	500	5.33	2.20			81.8		16.7				5.3
13	830513	800	5.35	2.22			81.3		15.6				4.1
13	830613	100	5.51	1.92			81.3		12.2				6.4
13	830613	500	5.47	1.92			78.3		12.8				.0
13	830613	800	5.17	1.95			69.9		13.9				.0
13	830701	100	6.20	1.98			97.8		12.8				24.0
13	830701	800	5.50	2.01			75.3		18.9				.0
13	830728	100	6.48	2.27			134.2		12.8				54.6
13	830728	800	5.57	2.08			94.3		16.1				14.2
13	830822	100	6.80	2.63			172.7		10.6				88.9
13	830822	500	6.75	2.64			169.2		11.7				86.8
13	830822	800	6.33	2.56			157.2		13.9				72.3
13	830912	100	6.52	2.64			170.7		12.8				70.2
13	830912	500	6.42	2.60			160.7		14.5				60.8
13	830912	800	5.86	2.37			130.2		17.8				21.8
13	831018	100	5.55	2.12	42.2	3.3	93.8	13.2	25.0	62.1	79.1	6.4	5.3
13	831018	500	5.53	2.17	42.6	3.6	93.3	13.2	24.5	62.1	77.0	6.4	.0
13	831018	800	5.53	2.14	42.2	3.3	94.3	13.2	25.0	62.1	77.0	6.4	2.9
13	831220	100	5.92	2.47			121.3		21.1				32.5
13	831220	500	5.96	2.48			130.2		20.6				36.7
13	831220	800	5.89	2.59			134.2		20.0				45.1
14	800521	100	4.45	3.08	38.7	4.9	21.5	14.8	23.4	42.3	85.4	22.1	0.0
14	800521	200	4.44	3.15	39.1	4.9	22.0	14.8	23.4	42.3	85.4	22.1	0.0
14	800521	400	4.45	3.08	39.6	4.9	21.5	14.8	24.5	45.1	87.4	22.1	0.0
14	800521	800	4.44	3.03	37.8	4.9	21.5	14.8	23.4	45.1	89.5	22.5	0.0
14	800521	1200	4.45	2.86	38.7	4.6	22.0	14.8	22.2	45.1	89.5	22.8	0.0
14	800731	100	4.47	2.90	36.5	3.8	23.5	14.0	27.8	39.5	89.5	17.8	0.0
14	800731	500	4.53	2.81	36.1	3.8	22.5	14.0	28.9	36.7	89.5	17.8	0.0
14	800731	1000	4.48	3.08	38.3	4.9	24.0	14.8	31.1	42.3	91.6	24.3	0.0
14	800731	1300	4.46	3.18	39.6	5.1	25.0	14.8	30.0	42.3	93.7	25.0	0.0
14	801002	100	4.50	2.91	33.1	3.8	23.5	13.2	20.0	39.5	89.5	20.0	0.0
14	801002	500	4.48	2.95	33.1	3.6	23.0	13.2	21.1	39.5	81.2	20.0	0.0
14	801002	1000	4.47	2.99	32.6	3.8	23.0	13.2	22.2	39.5	85.4	20.7	0.0
14	810212	100	4.52	2.65									0.0
14	810212	500	4.48	2.75									0.0
14	810212	1000	4.47	2.84									0.0
14	810212	1300	4.48	2.86									0.0
14	810318	100	4.45	3.13									0.0
14	810412	100	4.49	2.97									0.0
14	810412	500	4.48	2.79									0.0
14	810412	1000	4.47	2.89									0.0
14	810412	1400	4.48	2.94									0.0
14	810519	100	5.99	1.98	40.0	4.6	86.3	14.0	17.8	48.0	83.3	16.1	0.0
14	810519	500	6.10	2.01	40.0	4.6	83.8	14.0	17.2	45.1	83.3	16.8	0.0
14	810519	1000	5.94	1.98	39.6	4.6	85.3	14.0	16.7	45.1	83.3	16.8	0.0
14	810616	100	6.72	2.33	39.6	5.6	111.3	15.6	15.6	48.0	79.1	14.3	0.0
14	810616	500	6.64	2.24	37.8	4.6	110.3	15.6	15.6	48.0	72.9	13.9	0.0
14	810616	1000	6.62	2.27	38.3	4.6	109.3	14.8	15.0	48.0	72.9	14.3	0.0
14	810616	1300	6.56	2.27	38.3	4.6	106.3	15.6	16.7	48.0	72.9	14.3	0.0
14	810730	100	6.41	2.29									0.0
14	810730	500	6.41	2.28									0.0
14	810730	1000	6.25	2.25									0.0
14	810730	1300	5.98	2.24									0.0
14	810907	100	6.87	2.44									0.0
14	810907	500	6.79	2.44									0.0
14	810907	1000	6.78	2.43									0.0
14	811006	100	6.34	2.51									0.0
14	811006	500	6.32	2.40									0.0
14	811006	1000	6.34	2.39									0.0
14	811006	1300	6.35	2.40									0.0
14	811210	100	6.12	2.29									0.0
14	811210	500	6.06	2.31									0.0
14	811210	1000	6.06	2.34									0.0
14	830329	100	4.71	2.73			48.4		23.4				0.0
14	830329	500	5.06	2.44			79.3		14.5				.0
14	830329	1000	5.08	2.58			83.8		14.5				.0
14	830329	1500	4.99	2.55			75.8		15.6				0.0
15	800521	100	4.45	2.86	39.1	4.9	22.0	14.8	22.2	45.1	89.5	21.4	0.0
15	800521	400	4.45	2.85	39.1	4.9	22.0	14.8	21.1	45.1	87.4	22.1	0.0
15	800521	800	4.44	2.89	38.7	4.9	21.5	14.8	22.2	42.3	85.4	22.1	0.0
15	800521	1200	4.43	2.96	39.1	4.3	21.5	14.8	23.4	42.3	89.5	23.2	0.0
15	800521	2000	4.44	3.06	38.3	4.9	22.0	14.8	23.4	42.3	85.4	23.2	0.0
15	800731	100	4.48	2.98	37.0	4.1	23.5	14.0	27.8	39.5	93.7	17.8	0.0
15	800731	500	4.47	2.98	36.5	3.8	22.5	14.0	25.6	36.7	93.7	17.8	0.0
15	800731	1000	4.50	3.04	39.1	4.9	24.0	14.0	28.9	42.3	93.7	22.8	0.0
15	800731	1500	4.47	3.15	39.6	5.1	23.5	14.8	30.0	42.3	95.8	22.8	0.0
15	801002	100	4.49	2.95	33.5	3.8	23.0	13.2	23.4	39.5	83.3	20.7	0.0
15	801002	500	4.48	2.97	32.6	3.8	23.0	13.2	22.2	39.5	91.6	20.7	0.0
15	801002	1000	4.51	2.90	32.6	3.8	23.0	13.2	22.2	39.5	83.3	20.0	0.0

FILKODE: HVV NAVN: HOVVATN, SNITT I VANN (FLERE LOKASJONER) HOVVATN DATO: 840807

LOK	Å M D R N G	DYP	PH	COND	ENA	EK	ECA	EMG	EAL	ECL	ES04	EN03	ALK-X
15	801002	1500	4.46	3.00	33.9	4.1	23.0	13.2	22.2	42.3	87.4	20.7	0.0
15	810212	100	4.35	3.64	53.1	4.1	23.5	20.6	27.8	67.7	89.5	20.7	0.0
15	810212	500	4.47	2.82	35.7	3.6	21.0	16.5	22.2	45.1	77.0	18.6	0.0
15	810212	1000	4.46	2.82	35.7	3.8	21.0	16.5	22.2	45.1	83.3	17.1	0.0
15	810212	1500	4.46	2.82	36.1	3.8	21.0	17.3	24.5	48.0	77.0	17.8	0.0
15	810318	100	4.49	2.94	44.4	3.8	23.5	17.3	30.0	56.4	75.0	15.7	0.0
15	810318	500	4.51	2.74	37.0	3.8	23.5	15.6	26.7	45.1	77.0	17.1	0.0
15	810318	1000	4.49	2.69	34.8	3.8	21.5	14.8	24.5	39.5	68.7	16.4	0.0
15	810318	1500	4.49	2.83	39.6	4.1	25.0	17.3	27.8	45.1	79.1	17.1	0.0
15	810412	100	4.66	2.53	42.6	3.1	30.9	14.8	15.6	56.4	68.7	19.6	0.0
15	810412	500	4.51	2.74									0.0
15	810412	1000	4.51	2.73	39.1	3.8	23.5	16.5	25.6	45.1	83.3	17.5	0.0
15	810412	1500	4.47	2.83									0.0
15	810412	2000	4.49	2.83	39.1	4.1	22.5	16.5	23.4	45.1	83.3	16.1	0.0
15	810519	100	6.42	2.12	40.9	5.1	88.3	14.0	16.1	48.0	75.0	16.4	0.0
15	810519	500	6.28	1.95	40.0	4.6	87.8	14.8	13.3	45.1	81.2	16.8	0.0
15	810519	1000	6.11	2.01	40.5	4.6	86.8	14.8	18.3	48.0	72.9	16.8	0.0
15	810519	1500	5.83	1.92	40.5	4.6	81.8	14.8	18.3	45.1	79.1	17.1	0.0
15	810616	100	6.60	2.27	38.7	4.9	107.8	15.6	13.9	48.0	72.9	12.5	0.0
15	810616	500	6.58	2.27	37.8	5.1	107.3	15.6	15.6	48.0	72.9	13.6	0.0
15	810616	1000	6.55	2.23	37.8	4.6	105.3	15.6	15.6	48.0	72.9	14.3	0.0
15	810616	1500	5.71	2.06	37.4	4.3	82.3	14.8	13.3	48.0	72.9	15.4	0.0
15	810729	100	6.32	2.25	36.1	4.6	114.8	13.2	13.3	45.1	75.0	17.1	49.3
15	810729	500	6.32	2.27	37.0	4.6	116.8	13.2	12.2	45.1	72.9	12.9	48.3
15	810729	1000	6.23	2.27	37.4	4.9	113.8	13.2	12.2	45.1	72.9	14.3	45.1
15	810729	1500	5.69	2.06	36.5	4.6	86.8	13.2	15.6	45.1	72.9	17.1	18.6
15	810729	1900	5.45	2.02	36.5	4.6	79.8	13.2	18.9	45.1	72.9	17.1	14.2
15	810908	100	6.72	2.35	32.6	5.1	124.8	14.0	8.9	48.0	77.0	12.5	54.6
15	810908	500	6.70	2.45	33.9	5.9	127.7	14.0	8.3	50.8	77.0	12.9	44.1
15	810908	1000	6.69	2.39	33.1	5.1	125.2	14.0	8.9	50.8	79.1	12.1	53.5
15	810908	1500	5.57	2.16	31.8	4.9	85.8	13.2	13.9	48.0	77.0	16.8	16.4
15	810908	1900	5.30	2.17	32.6	4.9	75.8	13.2	17.8	48.0	77.0	16.1	7.6
15	811006	100	6.28	2.39	35.2	4.3	105.3	16.5	10.0	50.8	85.4	15.7	30.4
15	811006	500	6.30	2.33	35.2	4.3	106.3	17.3	10.0	50.8	85.4	15.7	29.3
15	811006	1000	6.26	2.39	35.7	4.3	105.3	17.3	7.8	50.8	83.3	15.7	28.2
15	811006	1500	6.25	2.35	35.7	4.3	104.8	17.3	8.9	50.8	85.4	15.7	31.4
15	811006	1900	6.27	2.34	35.7	4.3	103.8	17.3	8.9	50.8	85.4	15.0	34.6
15	811104	100	6.10	2.34	36.5	4.3	109.8	14.0	11.1	50.8	81.2	15.0	19.7
15	811104	500	5.96	2.35	37.0	4.3	108.8	14.0	10.0	50.8	81.2	15.7	18.6
15	811104	1000	6.08	2.34	39.1	4.6	107.8	14.0	10.0	50.8	77.0	15.0	19.7
15	811104	1500	5.98	2.34	37.8	4.3	108.8	14.0	11.1	50.8	79.1	15.0	19.7
15	811104	2000	5.98	2.36	37.8	4.3	108.3	14.0	11.1	50.8	79.1	14.3	20.7
15	811210	100	5.84	2.46	40.5	4.9	110.8	34.5	13.3	56.4	81.2	15.7	13.1
15	811210	500	5.82	2.34	39.6	4.9	105.8	33.7	13.3	56.4	79.1	14.3	12.0
15	811210	1000	5.73	2.39	41.3	5.1	103.3	30.4	13.3	56.4	79.1	15.0	13.1
15	811210	2000	5.72	2.39	38.7	4.6	101.3	28.8	12.2	56.4	79.1	14.3	9.8
15	820222	1000	5.13	2.49	52.6	3.1	73.4	19.7	15.0	70.5	81.2	15.7	.0
15	820308	100	5.84	2.51	43.9	4.6	103.8	18.1	8.3	56.4	95.8	20.0	29.3
15	820308	500	5.80	2.46	44.4	4.9	104.8	18.1	8.3	56.4	95.8	18.6	31.4
15	820308	2000	5.57	2.45	41.8	4.3	99.3	17.3	9.5	53.6	89.5	20.7	22.9
15	820421	100	4.70	1.69	23.9	2.0	16.0	7.4	14.5	31.0	187.4	12.9	.0
15	820421	200	4.58	2.84									0.0
15	820421	300	5.22	2.77									0.0
15	820421	500	5.66	2.34	44.8	4.6	107.3	15.6	12.2	53.6	87.4	17.8	29.3
15	820421	1000	5.61	2.35	44.8	4.3	108.3	15.6	12.2	53.6	89.5	18.6	27.2
15	820421	1500	5.62	2.40	44.8	4.6	109.3	15.6	12.2	53.6	89.5	19.3	28.2
15	820421	2000	5.29	2.42	45.7	5.4	98.3	16.5	15.6	53.6	93.7	18.6	20.7
15	820525	100	5.57	2.15	41.8	4.3	78.8	15.6	9.5	45.1	75.0	17.8	7.6
15	820525	500	5.57	2.12									0.0
15	820525	1000	5.52	2.15	40.9	4.3	73.3	15.6	11.7	45.1	72.9	18.6	5.3
15	820525	1500	5.53	2.24									0.0
15	820525	2000	5.48	2.19	42.6	4.3	81.8	15.6	10.6	45.1	75.0	20.0	7.6
15	820630	100	5.82	2.14	41.8	3.1	85.3	14.0	10.0	42.3	72.9	17.1	1.6
15	820630	500	5.83	2.12	42.2	3.1	86.3	14.0	8.9	53.6	68.7	17.1	4.1
15	820630	1000	5.56	2.19	41.8	3.1	83.8	14.0	8.9	42.3	70.8	18.6	1.6
15	820630	1500	5.42	2.29	42.6	3.3	84.3	14.8	13.3	42.3	68.7	20.0	4.1
15	820630	2000	5.35	2.34	42.6	3.3	83.8	14.8	11.1	42.3	75.0	20.0	.0
15	820727	100	5.99	2.03	37.0	4.3	94.3	13.2	5.6	45.1	77.0	16.4	15.3
15	820727	500	5.76	2.07	35.2	3.8	88.8	13.2	5.6	45.1	75.0	16.4	9.8
15	820727	1000	5.46	2.12	36.1	4.3	83.3	13.2	10.0	45.1	75.0	20.0	5.3
15	820727	1500	5.44	2.16	36.1	4.3	85.3	14.0	11.1	45.1	77.0	20.7	7.6
15	820727	2000	5.41	2.16	37.0	4.1	84.8	14.0	11.1	45.1	75.0	20.7	8.7
15	820907	100	6.24	2.18	41.3	4.3	105.3	17.3	6.1	48.0	81.2	13.6	27.2
15	820907	500	6.21	2.17	41.3	4.3	105.8	17.3	4.4	48.0	77.0	15.0	26.1
15	820907	1000	6.18	2.15	41.3	4.3	105.8	17.3	6.1	48.0	79.1	15.0	26.1
15	820907	1500	5.83	2.19	41.3	4.6	98.8	17.3	8.3	48.0	77.0	17.8	19.7
15	820907	2000	5.36	2.27	41.8	4.9	85.8	17.3	13.9	48.0	79.1	20.7	10.9
15	821013	100	5.73	2.25	42.6	4.1	95.3	14.8	10.6	50.8	89.5	15.0	6.4
15	821013	500	5.63	2.25	42.2	3.6	95.8	14.8	9.5	50.3	35.4	15.0	6.4
15	821013	1000	5.53	2.23	43.1	4.1	95.3	14.8	9.5	50.3	81.2	15.0	6.4
15	821013	1500	5.52	2.28	43.1	4.1	94.3	14.8	8.3	56.4	85.4	15.7	5.3
15	821013	2000	5.57	2.25	42.6	4.1	94.8	14.8	9.5	50.3	87.4	15.0	4.1
15	821107	100	5.55	2.22	41.8	3.6	37.3	16.5	7.2	50.8	89.5	15.7	2.9
15	821216	100	5.20	2.27	47.8	3.1	76.8	18.1	12.2	59.2	81.2	15.7	.0
15	821216	500	5.09	2.34	48.7	3.1	71.9	18.1	10.6	59.2	81.2	14.3	.0
15	821216	1000	4.96	2.35	50.0	3.1	72.4	18.1	11.7	59.2	77.0	14.3	0.0
15	821216	1500	4.95	2.41	48.7	3.1	70.4	18.1	11.7	59.2	77.0	14.3	0.0
15	821216	1950	5.06	2.34	47.4	3.3	75.3	18.1	10.6	56.4	75.0	15.7	.0
15	830222	100	4.74	2.89	62.6	2.8	57.9	19.7	19.5	81.8	83.3	13.6	.0
15	830222	500	4.97	2.58	53.1	3.8	73.9	19.7	16.1	67.7	83.3	15.0	.0
15	830222	1000	5.13	2.49	52.6	3.1	73.4	19.7	15.0	70.5	81.2	15.7	.0
15	830222	1500	5.06	2.49	52.2	3.1	74.8	19.7	16.7	70.5	83.3	16.4	.0
15	830222	2000	4.93	2.60	53.5	3.1	73.4	19.7	16.1	70.5	93.7	16.4	.0
15	830329	100	4.68	3.21			56.9		20.0				0.0
15	830329	500	4.91	2.59			73.9		14.5				0.0
15	830329	1000	4.87	2.65			70.9		15.6				0.0
15	830329	1500	4.83	2.71			69.9		16.7				0.0
15	830329	2000	4.82	2.75			71.4		15.6				0.0
15	830513	100	4.91	2.40			59.9		12.2				0.0
15	830513	500	5.02	2.33			61.4		11.1				.0
15	830513	1000	4.88	2.42			59.9		12.2				0.0
15	830513	1500	4.94	2.38			60.4		11.1				0.0
15	830613	100	4.93	2.26			59.9		11.7				0.0
15	830613	500	4.91	2.24			59.9		11.7				0.0
15	830613	1000	4.92	2.26			57.4		11.7				0.0
15	830613	1500	4.86	2.36			56.4		12.2				0.0
15	830613	1900	4.94	2.25			57.4		11.7				0.0
15	830701	100	5.07	2.17			61.9		13.9				.0
15	830701	2000	4.88	2.36			55.9		15.6				0.0
15	830728	100	5.42	2.08			71.9		7.8				.0

FILKODE: HVV   NAVN: HOVVATN, SNITT I VANN (FLERE LOKASJONER)   HOVVATN   DATO: 840807

LOK	Å M D R N G	DYP	PH	COND	ENA	EK	ECA	EMG	EAL	ECL	ESO4	ENO3	ALK-X
15	830728	2000	4.96	2.27			57.4		13.3				0.0
15	830822	100	5.58	2.10			79.8		6.1				.0
15	830822	500	5.45	2.11			77.3		6.7				.0
15	830822	1000	5.60	2.12			78.3		5.0				4.1
15	830822	1500	4.84	2.34			53.4		13.3				0.0
15	830822	2000	4.84	2.38			57.9		13.9				0.0
15	830912	100	5.72	2.08			81.8		4.4				.0
15	830912	500	5.65	2.03			80.8		3.3				.0
15	830912	1000	5.61	2.04			80.3		5.0				.0
15	830912	1500	5.43	2.08			78.8		4.4				.0
15	830912	2000	4.85	2.39			58.9		11.1				0.0
15	831018	100	5.27	2.14	44.8	2.8	72.4	14.8	11.1	56.4	77.0	13.6	.0
15	831018	500	5.34	2.13	47.0	2.8	72.9	14.8	11.7	56.4	79.1	13.6	.0
15	831018	1000	5.38	2.11	44.8	2.8	72.9	14.8	11.1	53.6	79.1	13.6	.0
15	831018	1500	5.18	2.19	45.2	2.8	71.9	15.6	11.7	53.6	83.3	13.6	.0
15	831018	2000	5.26	2.15	44.8	2.8	71.9	14.8	11.1	53.6	83.3	13.6	.0
15	831220	100	5.23	2.37			80.8		12.2				.0
15	831220	500	5.28	2.25			77.3		11.7				.0
15	831220	1000	5.30	2.19			77.8		11.7				1.6
15	831220	1500	5.20	2.25			74.8		11.1				.0
15	831220	2000	5.01	2.51			78.3		16.1				.0
16	810213	100	4.39	3.29	45.7	4.1	21.0	18.1	21.1	59.2	79.1	17.1	0.0
16	810213	500	4.50	2.44	37.4	4.3	22.5	17.3	21.1	48.0	79.1	15.7	0.0
16	810319	100	4.51	2.92	46.1	3.8	22.5	17.3	23.4	56.4	77.0	16.4	0.0
16	810319	500	4.53	2.77	46.1	3.8	25.0	17.3	25.6	45.1	77.0	15.7	0.0
16	810412	100	4.42	2.88	40.5	3.1	13.0	13.2	11.1	50.8	70.8	20.0	0.0
16	810412	500	6.85	3.89	40.9	3.8	314.9	20.6	20.0	45.1	83.3	16.1	264.3
16	810519	100	4.84	2.13	40.5	4.6	33.9	14.0	17.8	48.0	72.9	14.3	0.0
16	810519	500	4.68	2.40	40.0	4.3	27.9	14.0	20.0	45.1	72.9	13.6	0.0
16	810616	100	5.56	1.91	39.1	4.6	64.4	15.6	12.8	48.0	72.9	12.5	0.0
16	810616	500	5.43	1.95	38.3	5.1	64.9	14.8	14.5	48.0	72.9	12.9	0.0
16	810730	100	6.07	2.07									0.0
16	810730	500	6.00	2.06									0.0
16	810908	100	6.32	2.17									0.0
16	810908	500	6.35	2.17									0.0
16	811007	100	5.52	2.17	39.1	5.1	74.4	15.6	7.8	50.8	87.4	13.6	.0
16	811007	500	5.46	2.13	39.1	4.9	74.4	15.6	8.9	50.8	91.6	13.6	.0
16	811104	100	5.31	2.22									0.0
16	811104	500	5.29	2.22									0.0
16	811210	100	5.50	2.35	42.2	4.1	38.8	28.8	15.6	59.2	81.2	12.1	.0
16	811210	500	5.30	2.33	40.5	5.6	30.8	27.1	12.2	56.4	79.1	12.9	.0
16	820308	100	5.57	2.36									0.0
16	820308	500	5.31	2.31									0.0
16	820308	1000	5.72	2.40									0.0
15	820421	100	4.66	2.22									0.0
16	820421	500	5.20	2.40									0.0
16	820525	100	5.14	2.13									0.0
16	820525	500	5.01	2.27									0.0
16	820630	100	5.35	2.10									0.0
16	820630	500	5.19	2.17									0.0
16	820727	100	5.68	2.12									0.0
16	820727	500	5.16	2.11									0.0
16	820907	100	5.61	2.01									0.0
16	820907	500	5.63	2.05									0.0
16	821013	100	5.15	2.35									0.0
16	821013	500	5.11	2.34									0.0
16	821216	100	5.36	2.25									0.0
16	821216	500	4.88	2.46									0.0
16	830222	100	4.65	3.03									0.0
16	830222	500	4.88	2.57									0.0
16	830329	100	4.64	3.09			60.9						0.0
16	830329	500	4.76	2.74			64.9						0.0
16	830513	100	4.86	2.45									0.0
16	830513	500	4.76	2.55									0.0
16	830613	100	4.84	2.32									0.0
16	830613	500	4.74	2.37									0.0
16	830701	100	4.95	2.31									0.0
16	830701	500	4.99	2.25									0.0
16	830728	100	5.07	2.17			61.4		9.5				.0
16	830728	500	5.00	2.17			58.9		10.0				.0
16	830822	100	5.19	2.16									0.0
16	830822	500	5.14	2.17									0.0
16	830912	100	5.09	2.20									0.0
16	830912	500	5.11	2.19									0.0
16	831018	100	4.89	2.36	45.2	2.8		16.5		56.4	79.1	12.1	0.0
16	831018	500	4.89	2.37	47.4	2.8		16.5		56.4	81.2	12.1	0.0
16	831220	100	5.21	2.47									0.0
16	831220	500	4.99	2.39									0.0
20	820422	100	4.38	2.99	37.4	3.6	16.5	11.5	19.5	48.0	75.0	25.7	0.0
20	820630	100	4.49	2.68	40.0	2.5	18.5	13.2	21.1	42.3	75.0	10.7	0.0
20	820630	500	4.44	3.01	43.1	3.1	21.0	14.0		45.1	72.9	15.0	0.0
20	820630	800	4.44	3.20	43.7	3.1	22.0	14.8	30.0	48.0	62.5	15.7	0.0
20	820727	100	4.64	2.30	33.5	2.8	19.5	12.3	18.9	39.5	68.7	9.3	0.0
20	820727	500	4.55	2.60	33.5	3.3	20.5	13.2	23.4	42.3	68.7	12.9	0.0
20	820727	800	4.53	2.88	38.3	4.1	23.0	14.8	23.4	48.0	77.0	16.4	0.0
20	820907	100	4.53	2.54	40.5	3.3	22.5	16.5	28.4	45.1	75.0	9.3	0.0
20	820907	500	4.50	2.66	40.0	3.1	21.0	16.5	25.0	45.1	75.0	9.3	0.0
20	820907	800	4.48	2.86	41.3	3.3	22.0	17.3	26.7	48.0	77.0	12.1	0.0
20	821013	100	4.40	3.00	43.1	3.6	24.0	14.8	26.7	56.4	85.4	12.1	0.0
20	821013	500	4.40	3.11	43.9	3.6	25.0	14.8	25.6	50.8	87.4	12.1	0.0
20	821013	800	4.40	3.24	45.2	3.8	25.0	15.6	27.2	48.0	89.5	12.1	0.0
20	821216	100	4.33	3.60	58.3	1.3	22.0	17.3	27.8	81.8	62.5	13.6	0.0
20	821216	500	4.37	3.31	44.8	2.6	22.5	17.3	25.0	53.6	75.0	14.3	0.0
20	821216	900	4.38	3.27	45.2	2.3	22.5	18.1	22.8	53.6	72.9	14.3	0.0
20	830222	100	4.43	3.42	70.0	1.5	23.0	19.7	35.6	93.1	72.9	9.3	0.0
20	830222	500	4.45	3.15	45.7	2.3	24.0	18.1	28.9	53.6	91.6	14.3	0.0
20	830222	800	4.40	3.31	44.4	2.3	24.0	18.1	26.7	53.6	89.5	14.3	0.0
20	830514	100	4.40	3.11			20.0		20.0				0.0
20	830514	500	4.40	3.16			19.5		18.9				0.0
20	830514	700	4.39	3.18			19.5		18.9				0.0
20	830613	100	4.41	2.86			19.0		17.2				0.0
20	830613	500	4.40	2.94			18.5		17.2				0.0
20	830613	900	4.41	3.03			19.5		18.3				0.0
20	830701	100	4.48	2.92			20.0		21.7				0.0
20	830701	800	4.44	3.01			20.0		21.7				0.0
20	830728	100	4.53	2.63			21.5		18.3				0.0
20	830728	800	4.44	2.96			21.0		20.0				0.0
20	830822	100	4.55	2.62			20.5		17.2				0.0
20	830822	500	4.53	2.65			19.5		17.2				0.0
20	830822	800	4.52	2.71			20.5		18.9				0.0

FILKODE: HVV NAVN: HOVVATN, SNITT I VANN (FLERE LOKASJONER) HOVVATN DATO: 840807

LOK	ÅR M D RNG	DYP	PH	COND	ENA	EK	ECA	EMG	EAL	ECL	ESO4	ENO3	ALK-X
20	830912	100	4.52	2.79			20.5		16.1				0.0
20	830912	500	4.62	2.56			22.0		14.5				0.0
20	830912	800	4.50	2.87			21.0		15.6				0.0
20	831018	100	4.45	2.98	42.6	2.3	20.5	14.8	27.2	50.8	81.2	9.3	0.0
20	831018	500	4.48	2.88	41.3	2.0	21.0	14.8	26.1	53.6	79.1	9.3	0.0
20	831018	800	4.44	3.00	42.2	2.0	20.5	14.8	26.1	53.6	79.1	9.3	0.0
20	831220	100	4.42	3.20			23.5		31.1				0.0
20	831220	500	4.46	3.02			21.0		28.9				0.0
20	831220	800	4.78	2.44			26.4		43.4				0.0

FILKODE: HVE NAVN: BEKKER KNYTTET TIL HOVVATN HOVVATN DATO: 840807

LOK	ÅR M D RNG	PH	COND	ENA	EK	ECA	EMG	EAL	ECL	ESO4	ENO3	ALK-X
1	770608	4.49	3.00	45.2	7.9	23.0	18.9	18.9	33.9	77.0	17.8	0.0
1	771013	4.52	2.94	43.9	6.4	23.0	21.4	25.6	56.4	75.0	17.1	0.0
1	781004	4.61	2.42	39.1	4.6	15.0	14.8	29.5	42.3	70.8	15.7	0.0
1	790613	4.53	2.62	45.7	6.1	19.0	17.3	22.8	48.0	70.8	17.8	0.0
1	791007	4.54	2.43	37.8	4.3	21.5	14.0	20.0	39.5	77.0	17.1	0.0
1	800521	4.35	3.05	40.0	5.1	22.0	14.8	23.4	42.3	87.4	103.5	0.0
1	800801	4.45	3.00	35.2	3.8	23.5	13.2	27.8	36.7	99.9	16.4	0.0
1	801002	4.48	2.94	33.1	3.8	23.0	13.2	22.2	42.3	85.4	18.6	0.0
1	801102	4.62	2.46	37.4	4.1	19.0	15.6	30.0	45.1	85.4	17.1	0.0
1	801130	4.46	2.89	37.0	3.3	21.0	14.8	24.5	42.3	79.1	15.0	0.0
1	801208	4.43	3.10	39.6	3.8	23.0	15.6	25.6	48.0	81.2	15.0	0.0
1	810104	4.47	2.88	39.6	3.8	19.0	15.6	20.0	59.2	75.0	12.1	0.0
1	810131	4.48	2.99	41.8	3.6	20.5	17.3	24.5	56.4	79.1	12.9	0.0
1	810213	4.49	2.86	43.9	4.3	21.5	18.1	21.1	56.4	66.6	12.9	0.0
1	810228	4.45	3.05	48.3	4.3	24.0	18.1	25.6	56.4	89.5	16.4	0.0
1	810319	4.48	2.89	45.2	3.8	25.4	18.1	28.9	56.4	81.2	15.7	0.0
1	810328	4.48	2.74	44.4	3.8	23.5	17.3	25.6	56.4	85.4	15.4	0.0
1	810411	4.58	2.76	47.4	5.6	31.4	18.9	24.5	56.4	72.9	13.9	0.0
1	810415	4.61	2.69	44.4	6.1	30.4	17.3	20.0	62.1	68.7	12.9	0.0
1	810419	4.50	2.62	42.6	4.9	23.5	14.8	24.5	45.1	77.0	16.1	0.0
1	810425	4.55	2.58	41.3	4.9	23.5	14.0	22.3	48.0	70.8	15.0	0.0
1	810502	4.58	2.54	39.6	4.3	25.4	14.8	26.7	45.1	72.9	14.6	0.0
1	810510	4.93	2.11	40.5	4.9	47.4	14.8	18.9	45.1	72.9	15.0	0.0
1	810520	5.68	1.85	40.5	5.1	70.4	14.8	16.7	48.0	72.9	15.4	0.0
1	810523	5.83	1.94	39.6	4.9	80.8	14.0	15.6	45.1	70.8	14.3	0.0
1	810531	6.02	1.97	40.0	4.6	82.8	14.0	16.7	45.1	85.4	14.3	0.0
1	810609	5.81	2.09	39.6	4.3	84.3	14.8	15.6	45.1	72.9	14.3	0.0
1	810614	5.93	2.08	39.6	4.9	89.8	14.8	14.5	45.1	75.0	13.9	0.0
1	810616	6.21	2.07	38.7	4.6	83.3	15.6	13.9	50.8	72.9	13.6	0.0
1	810619	6.17	1.99	37.4	4.9	86.8	15.6	15.0	45.1	75.0	12.9	0.0
1	810628	6.08	2.11	24.3	4.3	103.8	15.6	14.5	45.1	68.7	12.9	32.5
1	810705	6.24	2.03	36.5	4.9	80.8	14.0	12.2	45.1	75.0	13.6	25.0
1	810713	6.22	2.06	36.5	4.6	102.8	14.0	13.3	45.1	77.0	14.3	29.3
1	810719	6.41	2.16	36.5	4.9	102.3	14.0	12.2	48.0	77.0	13.6	38.8
1	810726	6.26	2.11	35.7	4.6	105.3	13.2	12.2	48.0	75.0	12.9	39.9
1	810729	6.21	2.17	36.5	4.3	110.3	13.2	11.1	35.7	75.0	12.9	40.9
1	810802	6.48	2.20	37.4	5.1	108.3	13.2	11.1	45.1	77.0	12.9	40.9
1	810808	6.27	2.23	31.8	5.1	112.3	14.8	8.9	45.1	77.0	11.4	36.7
1	810816	6.36	2.25	32.6	4.6	112.8	14.8	8.9	45.1	79.1	11.8	40.9
1	810827	6.41	2.23	33.5	4.9	108.8	14.8	8.3	48.0	77.0	13.9	44.1
1	810830	6.36	2.28	33.1	5.1	115.3	14.0	11.1	48.0	83.3	12.1	47.2
1	810906	6.43	2.27	39.1	4.9	114.3	14.0	7.8	48.0	79.1	12.9	43.0
1	810908	6.51	2.29	33.1	5.1	114.8	14.0	7.8	48.0	79.1	12.5	45.1
1	810913	6.45	2.35	37.8	5.1	118.6	14.0	7.8	45.1	81.2	13.6	48.3
1	810921	6.23	2.30	38.3	4.3	106.3	17.3	11.1	48.0	31.2	12.9	30.4
1	810926	6.06	2.23	37.0	4.6	93.8	17.3	8.9	48.0	85.4	12.9	16.4
1	811004	5.88	2.23	37.4	4.3	83.8	15.6	8.9	50.8	89.5	14.3	4.1
1	811006	5.83	2.25	37.0	4.3	88.8	18.1	10.0	50.8	87.4	14.3	13.1
1	811013	5.48	2.24	36.5	5.1	94.3	15.6	13.3	50.8	83.3	12.9	.0
1	811018	5.88	2.34	35.7	4.9	98.3	17.3	11.1	48.0	89.5	13.6	13.1
1	811026	5.67	2.24	37.0	4.6	92.3	16.5	12.2	45.1	77.0	13.6	12.0
1	811101	5.57	2.24	37.0	4.3	90.3	14.8	12.2	50.8	79.1	13.6	5.3
1	811104	5.58	2.24	38.3	4.1	90.8	17.3	11.1	50.8	75.0	13.6	5.3
1	811108	5.57	2.24	38.3	4.3	89.3	17.3	12.2	53.6	89.5	14.3	7.6
1	811114	6.03	2.32	40.9	4.6	95.3	17.3	11.1	53.6	89.5	15.7	21.8
1	811128	5.87	2.27	40.0	4.6	103.8	17.3	12.2	56.4	79.1	12.9	19.7
1	811210	5.46	2.35	41.8	4.3	89.8	25.5	14.5	59.2	31.2	14.3	.0
1	820104	5.62	2.46	40.5	4.3	100.3	14.8	11.7	56.4	87.4	15.0	14.2
1	820116	5.71	2.40	44.4	5.1	92.8	16.5	10.6	43.0	87.4	14.3	390.6
1	820130	5.51	2.41	46.1	4.9	101.3	19.7	13.9	50.8	89.5	15.7	16.4
1	820214	5.51	2.38	43.9	4.9	93.3	18.9	12.2	59.2	95.8	15.7	9.8
1	820228	5.49	2.42	43.1	4.6	98.3	18.9	12.8	50.8	87.4	16.4	16.4
1	820308	5.48	2.46	43.9	4.6	96.3	18.9	11.7	56.4	106.2	18.6	34.6
1	820320	5.50	2.34	43.5	5.1	97.3	18.9	8.3	56.4	89.5	17.1	17.5
1	820404	4.73	3.16	54.8	5.9	77.8	22.2	18.3	64.9	116.6	30.0	.0
1	820417	4.67	3.12	54.8	6.9	64.9	18.9	22.2	59.2	104.1	22.1	.0
1	820422	4.66	2.72	45.7	4.3	49.9	14.8	16.7	50.8	83.3	20.7	.0
1	820425	4.81	2.59	42.2	4.3	60.9	17.3	13.9	48.0	77.0	20.0	.0
1	820502	5.19	2.08	38.3	4.3	63.9	15.6	10.0	45.1	62.5	16.4	2.9
1	820510	5.23	2.16	40.5	4.1	70.9	17.3	11.7	48.0	72.9	15.0	1.6
1	820516	5.40	2.11	41.8	4.3	71.9	16.5	10.0	45.1	79.1	17.8	4.1
1	820525	5.26	2.12	40.9	4.3	70.9	15.6	9.5	45.1	79.1	16.4	2.9
1	820531	5.42	2.11	44.8	5.6	71.9	16.5	8.9	45.1	75.0	16.4	4.1
1	820611	5.60	2.12	43.1	4.6	83.3	15.6	7.8	42.3	77.0	17.1	6.4
1	820629	5.57	2.13	41.3	3.1	80.3	13.2	10.0	48.0	75.0	16.4	0.0
1	820709	5.49	2.05	41.3	4.9	83.8	15.6	6.7	45.1	70.8	17.1	5.3
1	820727	5.80	2.01	36.1	3.8	88.3	13.2	4.4	45.1	75.0	15.7	9.8
1	820810	5.97	2.12	41.8	5.1	92.3	17.3	3.3	45.1	77.0	14.3	16.4
1	820816	6.20	1.73	28.3	5.6	59.9	21.4	20.0	19.7	64.5	.7	5.3
1	820907	6.12	2.13	41.8	4.3	95.3	17.3	6.1	48.0	72.9	12.9	17.5
1	821003	5.14	2.34	39.6	3.8	81.3	18.9	1.1	48.0	87.4	13.6	.0
1	821013	5.26	2.37	43.5	4.1	87.8	18.1	10.6	50.8	87.4	14.3	4.1
1	821017	5.32	2.26	41.3	1.3	87.3	16.5	7.8	53.6	37.4	14.3	.0
1	821031	4.97	2.46	44.4	3.8	76.3	17.3	12.8	45.1	93.7	15.7	.0
1	821107	5.05	2.35	43.9	3.3	74.8	17.3	11.7	50.8	97.9	14.3	.0
1	821113	4.94	2.36	42.6	3.1	75.8	16.5	13.3	50.8	79.1	15.7	.0
1	821205	5.02	2.52	47.0	2.6	75.3	18.1	11.7	59.2	83.3	16.4	.0
1	821216	5.08	2.32	48.3	3.1	72.4	18.1	11.7	59.2	75.0	15.0	.0
1	830102	4.76	2.77	51.8	2.8	68.4	18.1	12.2	64.9	83.3	15.0	.0
1	830123	4.53	3.40	74.8	2.0	49.4	22.2	21.7	98.7	77.0	11.4	0.0
1	830222	4.61	3.08	67.0	2.0	53.9	20.6	20.6	87.5	70.8	12.1	.0

FILKODE: HVE NAVN: BEKKER KNYTTET TIL HOVVATN HOVVATN DATO: 840807

LOK	R M D R N G	PH	COND	ENA	EK	ECA	EMG	EAL	ECL	ESO4	ENO3	ALK-X
1	830306	4.68	3.07	66.1	2.6	55.4	21.4	18.9	90.3	81.2	14.3	.0
1	830319	4.58	3.16	68.3	2.6	47.9	18.1	21.1	90.3	64.5	15.7	0.0
1	830501	4.62	2.55	42.6	5.1	32.4	14.8	11.1	50.8	64.5	12.9	0.0
1	830513	4.83	2.46			52.4		12.2				0.0
1	830529	4.75	2.32	45.2	2.8	48.4	15.6	11.1	50.8	93.7	15.0	0.0
1	830613	4.83	2.31	44.8	2.3	56.4	15.6	11.7	53.6	79.1	16.4	0.0
1	830701	4.98	2.23			59.4		15.0				0.0
1	830703	5.02	2.17	45.7	3.1	58.9	14.8	12.2	48.0	72.9	15.0	.0
1	830728	4.98	2.26			63.9		8.9				0.0
1	830731	5.10	2.24	51.3	3.8	66.4	15.6	7.8	59.2	77.0	10.7	.0
1	830904	5.05	2.44	51.3	4.1	67.9	17.3	5.0	62.1	83.3	15.0	.0
1	830911	5.05	2.32			69.9		6.1				.0
1	831001	5.09	2.26	41.8	3.1	69.4	16.5	12.2	56.4	77.0	13.6	.0
1	831017	4.90	2.35	45.2	2.8	61.9	15.6	15.0	56.4	83.3	12.1	0.0
1	831105	5.02	2.29	47.8	3.1	67.4	17.3	13.9	50.8	79.1	13.6	.0
1	831204	5.28	2.30	50.0	4.1	77.3	18.1	11.7	64.9	81.2	14.6	1.6
1	831220	4.93	2.69			75.8		15.6				0.0
1	840104	4.67	2.97	63.1	2.8	55.9	18.1	18.9	79.0	89.5	14.6	0.0
1	840129	4.79	2.79	59.2	3.3	65.4	17.3	16.7	73.3	89.5	15.4	0.0
2	770608	4.40	3.09	37.0	9.5	18.5	18.9	71.2	39.5	81.2	10.0	0.0
2	771013	4.36	3.45	47.4	4.6	20.0	22.2	41.1	62.1	77.0	3.6	0.0
2	781004	4.46	2.97	39.1	3.6	15.0	13.1	54.5	64.9	79.1	2.9	0.0
2	790613	4.61	2.49	60.9	6.9	23.5	23.0	28.9	53.6	79.1	4.6	0.0
2	800731	4.65	2.33	44.4	2.6	25.4	14.8	27.8	39.5	87.4	.7	0.0
2	801002	4.44	3.15	40.5	2.8	22.0	14.8	35.6	56.4	89.5	2.1	0.0
2	801208	4.76	2.53	52.2	3.1	29.4	23.9	34.5	48.0	91.6	9.3	0.0
2	810212	4.55	2.71	49.2	3.3	24.0	23.9	32.2	62.1	137.4	7.9	0.0
2	810319	4.92	2.47	50.9	5.6	38.9	28.0	31.1	62.1	79.1	15.7	0.0
2	810412	4.50	2.33	45.7	6.6	19.5	18.1	33.4	67.7	62.5	8.2	0.0
2	810519	4.48	3.28	54.4	5.1	25.0	19.7	36.7	73.3	77.0	13.2	0.0
2	810616	4.54	2.55	47.4	1.8	19.5	16.5	31.7	45.1	79.1	3.2	0.0
2	810729	4.57	2.36	38.3	1.0	21.5	14.0	24.5	39.5	66.6	1.4	.0
2	811006	4.36	3.57	49.6	2.3	21.5	22.2	34.5	45.1	118.7	3.6	0.0
2	811210	4.53	2.88	52.2	2.6	26.9	31.3	37.8	56.4	81.2	9.3	0.0
2	820308	4.48	3.76	64.8	4.1	33.9	32.1	49.5	70.5	114.5	34.3	0.0
2	820421	4.45	2.63	37.8	3.8	11.5	13.2	28.9	31.0	68.7	12.9	0.0
2	820525	4.43	2.59	42.2	3.8	15.0	15.6	31.1	48.0	75.0	5.7	0.0
2	820629	4.39	2.76	32.6	.2	15.5	10.7	35.6	25.4	70.8	.7	0.0
2	820727	4.64	2.29	47.4	3.3	24.5	17.3	20.0	42.3	75.0	.7	0.0
2	820907	4.27	3.73	43.5	1.0	24.0	18.9	49.5	70.5	85.4	.7	0.0
2	821013	4.36	3.49	55.2	1.5	23.0	20.6	41.1	53.6	104.1	1.4	0.0
2	821216	4.45	3.21	59.2	1.0	23.0	19.7	32.2	79.0	77.0	10.0	0.0
2	830222	4.56	3.29	77.4	2.6	28.4	24.7	35.6	95.9	83.3	10.7	0.0
2	830513	4.42	2.86			14.0		22.2				0.0
2	830613	4.66	2.28									0.0
2	830911	4.24	4.02									0.0
2	831018	4.35	2.53	53.5	.7		16.5		84.6	75.0	.7	0.0
2	831220	4.60	3.13									0.0
3	770608	4.42	3.00	41.8	5.4	30.9	18.9	24.5	45.1	66.6	2.9	0.0
3	771013	4.43	3.25	47.4	3.6	31.4	23.0	28.9	67.7	77.0	6.4	0.0
3	781004	4.44	3.35	47.8	4.6	32.4	20.6	45.6	76.2	83.3	1.4	0.0
3	790613	5.10	2.09	63.9	5.4	52.9	23.0	26.7	59.2	79.1	4.3	0.0
3	791007	5.31	2.07	60.9	5.1	57.9	20.6	14.5	56.4	83.3	5.7	0.0
3	800521	4.68	2.40	47.0	4.3	37.4	15.6	16.7	45.1	77.0	8.6	0.0
3	800731	5.35	2.06	54.4	3.1	68.4	16.5	31.1	42.3	81.2	.7	0.0
3	801208	5.07	2.23	56.1	3.1	53.9	20.6	13.9	50.8	85.4	8.6	0.0
3	810212	5.38	1.70	52.2	2.6	64.9	20.6	16.7	56.4	72.9	5.7	0.0
3	810319	5.75	2.57	70.5	5.1	103.8	25.5	33.4	59.2	77.0	8.6	0.0
3	810412	4.53	2.71	44.8	7.4	26.4	16.5	22.2	67.7	54.1	7.5	0.0
3	810519	4.70	2.89	57.0	11.5	46.4	19.7	30.0	81.8	75.0	7.1	0.0
3	810616	4.84	2.12	47.8	1.8	43.9	16.5	27.8	45.1	56.6	.7	0.0
3	810729	5.15	1.79	41.8	1.8	55.4	13.2	23.4	48.0	60.4	.7	6.4
3	810907	5.81	3.06	72.2	3.3	93.3	19.7	18.9	64.9	66.6	.7	68.1
3	811006	4.44	3.41	45.2	2.0	40.4	22.2	25.6	45.1	116.6	2.1	0.0
3	811104	4.39	3.05	39.6	.5	25.0	15.6	25.6	39.5	75.0	6.4	0.0
3	811210	5.14	2.21	52.6	1.5	57.9	27.1	26.7	48.0	77.0	5.7	.0
3	820308	5.32	2.98	68.3	3.8	97.3	32.1	26.1	64.9	112.4	30.0	33.5
3	820421	4.45	2.38	36.5	3.1	17.0	12.3	20.6	33.9	58.3	12.1	0.0
3	820525	4.53	2.38	41.8	2.0	24.5	15.6	25.0	42.3	66.6	2.1	0.0
3	820629	4.44	2.47	27.4	.2	25.0	9.9	32.2	16.9	62.5	.7	0.0
3	820727	5.48	2.05	55.7	1.8	74.8	18.9	18.9	50.8	70.8	.7	30.4
3	820907	4.33	3.64	43.5	.7	49.9	20.6	47.8	79.0	93.7	.7	0.0
3	821013	4.53	3.09	53.9	1.3	46.9	19.7	33.4	48.0	102.0	1.4	0.0
3	821216	4.50	2.95	57.0	.7	36.4	17.3	28.4	70.5	77.0	7.1	0.0
3	830222	5.45	2.48	74.4	2.6	79.3	24.7	23.9	87.5	83.3	7.9	12.0
3	830513	4.36	3.13			22.0		17.8				0.0
3	830613	5.27	2.01									0.0
3	830911	4.24	4.15									0.0
3	831018	4.36	3.43	53.5	.2		15.6		81.8	75.0	.7	0.0
3	831220	5.17	2.60									0.0
4	770607	4.46	2.83	34.8	6.1	16.0	15.6	14.5	33.9	62.5	11.4	0.0
4	771013	4.44	3.17	43.1	5.9	20.5	21.4	24.5	62.1	77.0	14.3	0.0
4	781004	4.55	2.45	39.1	3.1	15.0	14.0	29.5	42.3	66.6	7.9	0.0
4	790613	4.45	2.76	43.5	5.9	17.0	15.6	18.3	45.1	68.7	16.8	0.0
4	791007	4.47	2.67	37.8	3.6	20.5	14.8	24.5	33.9	83.3	13.2	0.0
4	800521	4.48	2.69	37.0	5.4	19.5	14.8	18.9	42.3	83.3	16.4	0.0
4	800731	4.53	2.50	30.0	2.6	20.5	12.3	23.4	31.0	87.4	5.7	0.0
4	801002	4.46	2.95	33.5	3.8	20.5	12.3	23.4	45.1	81.2	10.7	0.0
4	801102	4.44	2.82	34.8	2.8	17.0	14.0	26.7	45.1	79.1	12.1	0.0
4	801130	4.40	2.83	34.4	2.6	17.0	12.3	22.2	45.1	68.7	10.0	0.0
4	801209	4.30	3.51	42.2	2.8	19.5	14.8	25.6	56.4	79.1	12.9	0.0
4	810104	4.50	2.61	38.3	2.3	14.5	13.2	17.8	59.2	64.5	9.3	0.0
4	810131	4.37	3.33	45.7	3.1	16.5	16.5	23.4	67.7	68.7	10.7	0.0
4	810213	4.37	3.20	47.0	2.8		16.5	21.1	67.7	58.3	10.0	0.0
4	810228	4.35	3.38	57.0	3.3	22.5	18.1	25.6	76.2	81.2	12.9	0.0
4	810318	4.47	3.17	51.8	3.3	22.5	17.3	26.7	67.7	72.9	10.7	0.0
4	810328	4.50	2.58	51.8	3.8	22.0	17.3	26.7	62.1	70.8	11.4	0.0
4	810412	4.42	3.15	46.5	5.9	19.0	17.3	16.7	62.1	64.5	16.4	0.0
4	810419	4.57	2.45	42.6	6.1	17.5	13.2	17.8	53.6	58.3	10.4	0.0
4	810425	4.69	2.13	39.6	6.1	16.0	12.3	15.6	53.6	50.0	9.3	0.0
4	810502	4.75	2.11	48.7	8.9	15.0	11.5	14.5	59.2	45.8	7.9	0.0
4	810510	4.67	2.07	35.7	7.2	14.5	11.5	13.9	50.8	47.9	7.9	0.0
4	810516	4.62	2.12	36.5	6.6	15.5	11.5	14.5	50.8	47.9	7.9	0.0
4	810520	4.59	2.24	37.0	6.6	16.0	12.3	15.6	50.8	56.2	8.6	0.0
4	810523	4.57	2.24	37.0	6.1	19.5	11.5	15.6	48.0	54.1	7.5	0.0
4	810531	4.57	2.31	37.0	5.6	15.5	12.3	15.6	48.0	62.5	6.8	0.0
4	810609	4.48	2.56	37.0	4.9	14.5	13.2	17.2	48.0	56.2	6.4	0.0
4	810614	4.60	2.20	43.9	6.1	17.5	13.2	16.1	48.0	60.4	6.1	0.0
4	810616	4.56	2.39	37.4	4.9	16.5	13.2	17.2	50.8	58.3	5.7	0.0
4	810619	4.52	2.42	36.1	4.9	16.0	13.2	20.6	45.1	62.5	4.3	0.0

FILKODE: HVE NAVN: BEKKER KNYTTET TIL HOVVATN HOVVATN DATO: 840807

LOK	ÅR MND DAG (Å M D R N G)	PH	COND	ENA	EK	ECA	EMG	EAL	ECL	ESO4	ENO3	ALK-X
4	810628	4.58	2.28	36.1	4.1	16.5	14.0	17.8	48.0	52.0	.7	0.0
4	810705	4.60	2.16	34.8	4.3	17.0	12.3	16.7	48.0	64.5	.7	0.0
4	810713	4.58	2.28	35.7	4.6	18.0	12.3	17.8	45.1	70.8	.7	0.0
4	810719	4.71	2.10	33.9	4.3	18.0	12.3	20.0	45.1	66.6	.7	.0
4	810726	4.70	2.07	33.9	4.3	16.5	11.5	16.7	45.1	62.5	.7	.0
4	810730	4.61	2.27	34.8	4.6	17.0	11.5	13.3	48.0	62.5	.7	.0
4	810802	4.69	2.11	35.7	4.3	17.0	11.5	13.3	45.1	68.7	3.6	.0
4	810808	4.65	2.27	32.2	5.1	17.5	13.2	14.5	48.0	66.6	.7	0.0
4	810816	4.66	2.23	31.8	5.4	18.0	13.2	16.7	48.0	68.7	.7	0.0
4	810921	4.40	3.16	38.7	3.8	18.0	15.6	15.6	50.8	79.1	9.3	0.0
4	810926	4.41	3.16	37.8	4.1	18.0	16.5	15.6	50.8	83.3	10.0	0.0
4	811004	4.38	3.52	36.5	3.8	18.5	14.8	17.8	50.8	89.5	13.6	0.0
4	811006	4.35	3.44	37.4	3.6	19.5	17.3	20.0	50.8	93.7	12.9	0.0
4	811013	4.36	3.33	36.1	4.1	22.0	14.8	22.2	48.0	85.4	11.4	0.0
4	811018	4.38	3.29	35.2	3.8	21.0	16.5	23.4	48.0	85.4	12.1	0.0
4	811026	4.37	3.33	37.8	3.8	20.5	16.5	23.4	50.8	77.0	12.1	0.0
4	811101	4.37	3.29	36.5	3.3	20.0	14.0	22.2	50.8	77.0	12.9	0.0
4	811104	4.40	3.20	38.3	2.8	20.5	16.5	23.4	50.8	70.8	12.1	0.0
4	811108	4.42	3.20	38.7	3.6	21.0	17.3	24.5	53.6	89.5	14.3	0.0
4	811114	4.38	3.39	43.5	3.6	22.0	18.1	27.2	53.6	95.8	13.6	0.0
4	811128	4.39	3.27	43.1	3.1	19.5	17.3	24.5	59.2	77.0	10.7	0.0
4	811210	4.28	3.84	50.0	3.1	23.5	24.7	28.9	64.9	87.4	13.6	0.0
4	820104	4.35	3.81	48.3	3.8	22.5	16.5	27.8	64.9	89.5	13.6	0.0
4	820116	4.40	3.44	66.1	9.2	23.0	18.1	28.4	67.7	91.6	13.6	0.0
4	820130	4.37	3.37	50.5	4.9	23.0	19.7	29.5	56.4	89.5	13.6	0.0
4	820214	4.38	3.42	50.5	4.1	24.5	21.4	26.7	48.0	99.9	17.1	0.0
4	820228	4.38	3.16	47.0	3.6	24.0	19.7	30.0	56.4	89.5	16.4	0.0
4	820308	4.45	3.28	48.3	4.3	24.0	20.6	27.2	59.2	91.6	16.4	0.0
4	820320	4.51	2.77	45.7	4.9	23.0	19.7	22.8	56.4	85.4	15.0	.0
4	820404	4.27	4.38	58.3	6.9	28.4	23.0	28.4	70.5	122.8	41.4	0.0
4	820417	4.39	3.54	48.7	4.1	32.4	16.5	30.0	56.4	97.9	34.3	0.0
4	820422	4.39	3.04	37.4	3.1	16.5	11.5	18.9	48.0	72.9	23.6	.0
4	820425	4.44	2.58	30.5	3.6	13.5	11.5	15.0	36.7	56.2	18.6	0.0
4	820502	4.82	1.91	31.8	3.3	13.0	12.3	13.3	39.5	45.8	13.6	.0
4	820510	4.66	2.12	33.9	3.1	13.0	12.3	13.9	42.3	45.8	12.1	.0
4	820525	4.51	2.36	36.5	3.3	13.0	13.2	18.9	45.1	56.2	10.7	0.0
4	820527	4.50				13.0		18.3				0.0
4	820531	4.52	2.36	37.8	18.4	14.5	13.2	18.3	39.5	62.5	13.6	0.0
4	820611	4.59	2.36	41.3	3.1	17.5	13.2	16.7	42.3	66.6	15.0	.0
4	820629	4.51	2.50	38.7	1.8	15.5	11.5	16.7	42.3	64.5	5.0	.0
4	820709	4.54	2.25	39.1	3.6	18.0	15.6	15.6	42.3	66.6	4.3	.0
4	820727	4.61	2.35	34.8	2.3	18.0	11.5	12.2	42.3	68.7	3.6	0.0
4	820907	4.47	2.76	40.9	1.8	19.0	15.6	13.3	48.0	77.0	5.0	0.0
4	821003	4.34	3.36	38.3	2.6	22.0	18.1	22.8	48.0	87.4	12.1	0.0
4	821013	4.36	3.40	42.6	2.3	22.0	17.3	24.5	45.1	89.5	8.6	0.0
4	821017	4.34	3.22	40.0	1.0	22.5	16.5	22.8	53.6	85.4	11.4	0.0
4	821031	4.35	3.23	42.2	2.8	22.5	17.3	23.9	45.1	87.4	13.6	0.0
4	821106	4.36	3.25	45.7	2.6	22.0	16.5	25.0	50.8	91.6	14.3	0.0
4	821113	4.37	3.09	43.5	2.3	22.5	15.6	23.9	50.8	79.1	15.0	0.0
4	821205	4.34	3.58	59.6	.7	19.5	18.9	19.5	84.6	72.9	11.4	0.0
4	821216	4.31	3.85	62.6	1.5	20.0	19.7	20.6	90.3	58.3	11.4	0.0
4	830102	4.30	3.81	63.9	1.8	21.5	18.1	20.0	90.3	77.0	12.9	0.0
4	830123	4.29	4.21	39.6	1.0	19.0	21.4	22.2	118.5	66.6	11.4	0.0
4	830222	4.41	3.61	79.2	2.3	18.0	18.1	22.2	107.2	64.5	10.0	0.0
4	830306	4.37	3.68	74.4	1.3	17.5	18.1	20.6	104.4	62.5	10.7	0.0
4	830319	4.42	3.54	75.3	1.3	19.5	16.5	23.4	98.7	56.2	19.3	0.0
4	830501	4.48	2.42	33.5	3.1	13.0	10.7	11.1	42.3	58.3	15.0	0.0
4	830513	4.62	2.43			13.0		13.3				0.0
4	830529	4.44	2.60	37.4	2.0	17.5	14.0	19.5	42.3	77.0	13.6	0.0
4	830613	4.41	2.36	39.6	1.5	18.0	14.8	16.1	42.3	75.0	12.9	0.0
4	830703	4.52	2.50	39.6	1.5	17.5	13.2	19.5	39.5	79.1	5.0	0.0
4	830731	4.78	2.41	71.3	4.6	31.4	21.4	23.4	81.8	72.9	.7	0.0
4	830904	4.52	3.57	77.9	12.3	42.4	32.1	40.6	107.2	83.3	27.1	0.0
4	830912	4.43	3.07			20.0		12.8				0.0
4	831001	4.52	2.73	39.6	2.0	20.5	15.6	22.2	50.8	77.0	8.6	0.0
4	831018	4.45	2.91	44.4	1.8	20.5	14.8	22.3	56.4	81.2	8.6	0.0
4	831105	4.47	2.65	47.4	2.3	22.0	17.3	23.9	53.6	75.0	8.6	0.0
4	831204	4.40	3.52	59.2	2.8	25.4	20.6	36.7	70.5	95.8	12.1	0.0
4	831220	4.34	3.98			26.9		35.6				0.0
4	840104	4.36	3.57	64.8	2.6	24.0	18.1	29.5	79.0	81.2	15.4	0.0
4	840128	4.37	3.59	65.2	2.8	23.5	17.3	23.4	90.3	85.4	13.6	0.0
5	770608	4.49	3.06	51.8	10.2	27.4	20.6	21.1	33.9	75.0	17.8	0.0
5	770817	4.93	2.42	59.2	9.5	49.9	27.1	12.2	56.4	91.6	9.3	0.0
5	781004	4.62	2.52	39.1	5.1	20.0	15.6	36.7	45.1	72.9	15.7	0.0
5	800423	4.35	4.10	52.2	6.1	36.9	23.0	35.6	62.1	118.7	35.0	0.0
5	800701	4.48	3.07	39.1	4.9	30.4	18.1	27.8	42.3	95.8	15.0	0.0
6	810212	4.84	2.33	51.8	3.6	42.4	21.4	20.0	62.1	68.7	7.9	0.0
6	810319	4.97	2.20	53.9	4.6	45.9	21.4	24.5	59.2	72.9	8.6	0.0
6	810412	4.57	2.58	43.9	6.6	21.0	17.3	21.1	62.1	83.3	11.4	0.0
6	810519	4.30	2.32	49.6	8.9	35.9	15.6	18.9	59.2	66.6	8.6	0.0
6	810616	4.73	2.23	44.8	2.3	31.9	23.9	19.5	50.8	66.6	3.6	0.0
6	810729	4.85	1.98	41.3	1.3	38.4	13.2	15.6	42.3	64.5	2.9	.0
6	810907	5.66	2.32	67.0	4.1	75.8	19.7	16.1	62.1	81.2	4.3	32.5
6	811006	4.41	3.39	46.1	3.3	29.4	21.4	23.4	48.0	106.2	9.3	0.0
6	811104	4.41	3.20	43.9	1.5	25.4	17.3	26.7	50.8	75.0	8.6	0.0
6	811210	4.62	2.95	56.1	2.3	42.9	29.6	27.8	62.1	87.4	11.4	0.0
6	820308	4.60	3.16	59.6	4.3	46.4	25.5	32.8	64.9	99.9	29.3	0.0
6	820421	4.41	2.75	40.0	3.8	15.5	13.2	21.1	36.7	66.6	15.0	0.0
6	820525	4.51	2.50	43.5	3.3	21.5	14.8	17.2	42.3	68.7	5.0	0.0
6	820629	4.47	2.60	36.5	.2	22.5	11.5	18.9	36.7	75.0	.7	0.0
6	820727	5.19	1.91	53.5	1.5	45.9	16.5	14.5	48.0	70.8	1.4	.0
6	820907	4.56	2.92	47.8	1.8	49.4	22.2	32.8	59.2	87.4	2.9	0.0
6	821013	4.46	3.24	53.5	2.0	36.9	20.6	29.5	53.6	91.6	7.1	0.0
6	821216	4.47	3.15	58.7	1.5	31.9	19.7	25.6	76.2	77.0	9.3	0.0
6	830222	4.77	2.92	77.0	3.3	50.4	23.9	26.7	95.9	83.3	10.7	.0
6	830513	4.49	2.72			19.0		16.7				0.0
6	830613	4.94	2.08									0.0
6	830911	4.32	3.69									0.0
6	831018	4.46	3.06	52.6	1.5		17.3		73.3	75.0	2.1	0.0
6	831220	4.81	3.04									0.0
7	801210	4.70	2.45	48.3	3.8	32.9	20.6	16.7	62.1	72.9	2.9	0.0
7	810213	4.69	2.64	59.6	3.3	34.4	25.5	22.2	73.3	70.8	3.6	0.0
7	810411	4.84	2.19	44.8	8.7	40.4	18.1	22.2	67.7	54.1	4.3	0.0
7	810519	5.07	2.28	57.9	14.8	46.4	18.9	20.0	67.7	79.1	2.9	0.0
7	810616	5.07	1.99	48.7	1.0	39.9	18.9	20.6	48.0	66.6	.7	0.0
7	810730	5.07	1.77	38.7	.7	52.4	14.0	14.5	39.5	58.3	.7	.0
7	810908	6.22	3.23	65.2	3.1	173.7	24.7	12.8	59.2	72.9	.7	149.7
7	811007	4.31	3.53	43.9	6.1	26.9	19.7	18.9	50.8	104.1	4.3	0.0
7	811104	4.41	3.17	44.4	.2	25.4	18.9	22.2	48.0	81.2	2.9	0.0
7	811210	4.84	2.44	57.4	2.3	48.4	30.4	22.2	59.2	83.3	3.6	.0

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LOK	ÅR MND	PH	COND	ENA	EK	ECA	EMG	EAL	ECL	ESO4	ENO3	ALK-X
7	820308	4.81	3.12	70.0	4.6	55.9	31.3	29.5	73.5	110.5	16.4	0.0
7	820421	5.86	1.95	44.4	4.6	86.3	12.3	17.2	42.3	104.1	5.0	56.7
7	820525	4.62	2.32	44.8	2.3	23.5	15.6	17.2	39.5	66.6	1.4	.0
7	820629	4.43	2.88	38.7	.5	25.9	14.8	23.4	45.1	81.2	.7	0.0
7	820727	5.66	2.05	49.2	4.1	87.8	17.3	14.5	48.0	66.6	.7	32.5
7	820907	4.48	3.20	52.2	2.0	50.4	25.5	25.6	70.5	89.5	.7	0.0
7	821013	4.65	3.20	57.4	1.3	38.4	22.2	27.8	50.8	102.0	2.1	0.0
7	821216	4.42	3.33	63.1	.5	27.4	22.2	22.8	81.8	81.2	5.0	0.0
7	830222	4.91	2.84	31.8	2.8	55.4	26.3	25.0	101.6	31.2	6.4	.0
7	830513	4.44	2.76			17.5		14.5				0.0
7	830613	5.23	1.99									0.0
7	830911	4.22	4.54									0.0
7	831018	4.38	3.58	59.6	1.0		21.4		90.3	79.1	.7	0.0
7	831220	4.58	3.60									0.0
8	810519	4.59	2.74	57.0	12.8	25.0	18.1	20.6	67.7	72.9	2.9	0.0
8	810616	4.59	2.47	48.3	.5	22.5	18.1	20.0	48.0	66.6	.7	0.0
8	810730	4.61	2.22	39.6	.5	23.0	12.3	18.9	39.5	56.2	.7	.0
8	810908	5.56	2.17	62.2	2.6	71.4	19.7	20.0	59.2	68.7	1.8	31.4
8	811007	4.28	3.70	43.5	5.9	22.0	19.7	20.0	50.8	106.2	5.0	0.0
8	811104	4.39	3.18	45.2	.2	21.5	18.9	22.2	50.8	91.6	2.9	0.0
8	811210	4.57	2.35	54.8	1.5	33.9	31.3	25.6	62.1	83.3	5.0	0.0
8	820308	4.58	3.41	68.3	4.1	38.9	31.3	29.5	76.2	112.4	18.6	0.0
8	820421	4.50	2.46	41.3	3.6	15.5	10.7	16.1	36.7	64.5	2.9	.0
8	820525	4.49	2.49	43.9	2.0	16.0	14.8	17.8	39.5	66.6	1.4	0.0
8	820629	4.37	3.03	39.6	.2	20.5	14.0	25.6	42.3	79.1	.7	0.0
8	820727	4.76	2.17	50.5	.7	28.9	14.8	18.9	45.1	70.8	.7	0.0
8	820907	4.44	3.26	53.5	2.0	36.9	24.7	32.2	67.7	93.7	.7	0.0
8	821013	4.35	3.64	58.3	1.8	29.9	23.9	30.6	56.4	99.9	3.6	0.0
8	830222	4.57	3.32	30.0	2.6	36.9	26.3	31.1	112.8	81.2	7.9	0.0
8	830513	4.48	2.66			16.0		18.9				0.0
8	830613	4.66	2.32									0.0
8	830911	4.20	4.52									0.0
8	831018	4.35	3.67	62.2	.7		19.7		87.5	83.3	.7	0.0
8	831220	4.57	3.52									0.0

c) Nutrients, organic matter, aluminum species and fluoride. Computer codes, units and analysis methods. "M" preceeding a number indicates "less than".

CODE	PARAMETER	UNITS	METHOD
NO3N	NO_3-N	µgN/l	colorimetric (NEDA)
NN4N	NH_4-N	µgN/l	colorimetric (indopheol)
TOTN	total-N	µgN/l	colorimetric (NEDA)
TOTP	total-P	µgP/l	colorimetric (molybdate)
TOC	total organic C	µgC/l	gas chromatogrophy (as CO_2)
FARG	color	mgPt/l	-
PERM	oxygen demand	mgO/l	$KMnO_4$ oxidation
SIO2	silicon	mgSiO_2/l	colorimetric
RAL	acid reactive Al	µgAl/l	colorimetric (catechol violet)
ILAL	non-labile Al	µgAl/l	colorimetric (catechol violet) after ion exchange
F	total-F	µgF/l	ion-specific electrode

FILKODE: REGION NAVN: REGIONALE UNDERSØKELSER - VANN REGIONALE DATA

BLK	LOK	ÅRMND	DYP	NO3N	NH4N	TOTN	TOTP	TOC	FARG	PERM	SIO2	RAL	ILAL	F
4	1	741012	50	160.			3.				.5			
4	1	741012	300	170.			4.				.5			
4	1	750311	50	120.			0.							
4	1	750311	9999	150.			2.							
4	1	760303	50	290.		670.	3.	2.7						
4	1	760303	600	170.		480.	3.	2.3						
4	1	770321	50	570.		790.	4.	7.8						
4	1	770321	400	450.		610.	4.	3.9						
4	1	780307	50	295.				2.9						
4	1	780307	900	320.				2.5						
4	1	810318	100	220.										
4	1	810318	1500	240.										

FILKODE: HVVV NAVN: HOVVATN VEST, SNITT I VANN HOVVATN

ÅRMND	DYP	NO3N	NH4N	TOTN	TOTP	TOC	FARG	PERM	SIO2	RAL	ILAL	F
770608	100	260.	75.			2.5	24.0					
770608	200	270.	70.			2.5	24.0					
770608	400	260.	70.			1.9	26.0					
770608	600	250.	70.			3.1	26.0					
770608	800	250.	370.			2.1	36.0					
770816	100	230.	85.									
770816	200	250.	65.									
770816	400	250.	60.									
770816	600	250.	55.									
770816	800	240.	65.									
770816	1000	230.	130.									
771013	0	250.										
771013	100	250.				.7						
771013	200	240.										
771013	400	270.				2.0						
771013	600	250.										
771013	800	250.										
780307	100	335.	145.			3.4	37.5					
780307	800	320.	80.			2.5	32.5					
780602	100	235.				3.0	40.5					
780602	200	235.				2.6	37.5					
780602	400	245.				2.9	54.5					
780602	600	245.				2.8	54.5					
781004	100	240.	40.			1.5	27.5		.6			
781004	200	230.	60.			1.6	37.0		.6			
781004	400	235.	45.			1.8	30.5		.6			
781004	600	235.	55.			1.7	33.5		.6			
781004	800	235.	80.			1.6	30.5		.6			
790613	100	255.										
790613	200	255.										
790613	400	260.										
790613	800	260.										
791007	100	275.										
791007	200	245.										
791007	400	245.										
791007	600	250.										
791007	1000	240.										
800521	100	315.	95.			2.4		1.9				39.
800521	400	310.	95.									

FILKODE: HVV NAVN: HOVVATN, SNITT I VANN (FLERE LOKASJONER) HOVVATN

LOK	ÅRMND	DYP	NO3N	NH4N	TOTN	TOTP	TOC	FARG	PERM	SIO2	RAL	ILAL	F
10	800521	100	270.	80.			2.4		1.8				40.
10	800521	200	270.	75.									
10	800521	400	260.	85.									
10	800521	800	260.	95.			2.2		2.1				41.
11	800521	100	280.	90.					1.8				38.
11	800521	200	290.	90.									
11	800521	400	290.	90.									
11	800521	800	240.	65.									
11	800521	1200	230.	75.					2.9				40.
11	800731	100	240.										
11	800731	500	240.										
11	800731	1000	230.										
11	800731	1300	220.										
11	801002	100	260.	45.			2.2		1.6				
11	801002	500	260.	45.			2.2		1.7				
11	801002	1000	270.	45.			1.7		2.2				
11	801209	100	210.	40.			2.9		2.5				
11	801209	200	220.	40.			2.3		1.9				
11	801209	500	230.	45.			2.1		2.3				
11	801209	1000	230.	55.			2.5		1.6				
11	810411	100	110.	40.	300.	4.	3.8						
11	810411	500	210.	50.	330.	2.	2.3						
11	810411	1000	225.	35.	350.	3.	2.4						
11	810519	100	215.	35.	440.	5.	2.8						
11	810519	500	215.	35.	470.	6.	2.1						
11	810519	1000	210.	40.	380.	4.	2.1						
11	810616	100	195.	20.	380.	4.	3.1						
11	810616	500	185.	25.	350.	3.	2.5						
11	810616	1000	185.	30.	370.	3.	2.1						
11	810616	1300	185.	30.	360.	4.	2.1						
11	811007	100	180.	70.	530.	5.	3.1						
11	811007	500	180.	70.	510.	5.	3.2						
11	811007	1000	180.	70.	530.	7.	4.3						
11	811104	100											
11	811104	500											
11	811104	1000											
11	811210	100	200.	70.	420.	4.	3.4						
11	811210	500	200.	90.	450.	3.	4.0						
11	811210	1000	200.	80.	440.	5.	5.3						
11	850728	100					2.1						
11	850728	1000					2.5						
11	831018	100	160.										
11	831018	500	160.										
11	831018	1000	160.										

FILKODE: HVV NAVN: HOVVATN, SNITT I VANN (FLERE LOKASJONER) HOVVATN

LOK	ÅMD RNG	DYP	NO3N	NH4N	TOTN	TOTP	TOC	FARG	PERM	SIO2	RAL	ILAL	F
12	810318	500											
13	800521	100	320.	40.			3.2		2.3				43.
13	800521	200	320.	40.									
13	800521	400	340.	60.									
13	800521	800	340.	60.			3.1		2.7				43.
13	800731	100	30.										
13	800731	500	120.										
13	800731	700	300.										
13	801002	100	90.	30.			3.3		2.3				
13	801002	500	90.	25.			3.4		3.1				
13	801002	800	[illegible]	30.			3.4		3.3				
13	801209	100	100.	25.			7.		4.3				
13	801209	200	90.	35.			4.3		3.6				
13	801209	500	90.	30.			4.1		3.2				
13	801209	800	80.	55.			4.6		3.4				
13	810212	100	100.	25.	310.	4.	4.5						
13	810212	500	80.	35.	280.	4.	3.8						
13	810212	800	80.	55.	300.	5.	3.6						
13	810318	100	110.	30.	300.	5.	3.9						
13	810318	500	100.	40.	330.	6.	3.7						
13	810318	800	70.	75.	300.	4.	3.0						
13	810412	100	195.	70.	470.	4.	4.1						
13	810412	500	100.	70.	320.	4.	4.2						
13	810412	800	130.	50.	330.	4.	3.8						
13	810519	100	150.	115.	610.	10.	4.2						
13	810519	500	145.	120.	480.	7.	4.4						
13	810519	800	140.	80.	390.	6.	3.9						
13	810616	100	120.	60.	450.	7.	5.1						
13	810616	500	120.	60.	480.	6.	5.0						
13	810616	800	125.	60.	430.	5.	4.6						
13	810729	100	90.	25.	430.	6.	6.4						
13	810729	500	140.	35.	400.	5.	5.4						
13	810729	800	140.	45.	470.	8.	4.9						
13	810907	100	75.	75.	520.	11.	6.9						
13	810907	500	70.	55.	470.	8.	6.5						
13	810907	800	75.	70.	450.	8.	6.0						
13	811006	100	210.	60.	620.	12.	5.6						
13	811006	500	210.	80.	580.	8.	6.0						
13	811006	800	210.	80.	550.	7.	5.7						
13	811104	100	240.	70.	570.	5.	5.7						
13	811104	500	240.	70.	580.	6.	5.7						
13	811104	800	240.	60.	600.	7.	5.4						
13	811210	100	200.	70.	540.	8.	4.3						
13	811210	500	270.	80.	610.	7.	6.0						
13	811210	800	270.	80.	590.	7.	5.3						
13	820308	100	400.		900.	5.	8.4						
13	820308	500	310.		620.	7.	5.4						
13	820308	800	310.		560.	6.	5.3						
13	820421	100	250.	70.	460.	3.	4.4						
13	820421	500	300.	60.	570.	9.	5.5						
13	820421	800	290.	30.	550.	9.	5.3						
13	820525	100	210.		440.	8.	4.8						
13	820525	500											
13	820525	800	250.		490.	6.	4.7						
13	820630	100	100.		420.	12.	5.3						
13	820630	500	100.		380.	8.	5.8						
13	820630	800	240.		450.	6.	3.9						
13	820727	100	30.		400.	9.	5.6						
13	820727	500	130.		420.	6.	5.1						
13	820727	800	210.		530.	13.	4.5						
13	820907	100	50.		390.	8.	7.2						
13	820907	500	50.		380.	7.	6.6						
13	820907	900	50.		400.	8.	7.3						
13	821013	100	140.		460.	5.	5.9						
13	821013	500	150.		440.	5.	5.8						
13	821013	800	140.		480.	6.	5.8						
13	821216	100	220.		420.	4.	3.3						
13	821216	500	220.		400.	4.	3.2						
13	821216	800	220.		420.	4.	3.2						
13	830222	100	230.		420.	3.	3.3						
13	830223	500	230.		400.	3.	3.3						
13	830223	800	250.		420.	4.	3.3						
13	830329	100				3.	3.5						
13	830329	500				3.	3.5						
13	830329	800				6.	3.2						
13	830513	100					2.9						
13	830513	500					3.1						
13	830513	800					3.1						
13	830613	100					3.3						
13	830613	500					3.2						
13	830613	800					3.5						
13	830701	100					3.5						
13	830701	800					3.2						
13	830728	100					3.1						
13	830728	800					2.9						
13	830822	100					3.5						
13	830822	500					3.5						
13	830822	800					3.1						
13	830912	100					4.1						
13	830912	500					4.6						
13	830912	800					6.1						
13	831018	100	90.				4.7						
13	831018	500	90.				5.0						
13	831018	800	90.				4.8						
13	831220	100					4.6				116	96	
13	831220	500					4.3				115	98	
13	831220	800					4.1				103	89	
14	800521	100	310.	100.			2.3		1.5				41.
14	800521	200	310.	100.									
14	800521	400	310.	100.									

FILKODE: HVV NAVN: HOVVATN, SNITT I VANN (FLERE LOKASJONER) HOVVATN

LOK	Å M D R N G	DYP	NO3N	NH4N	TOTN	TOTP	TOC	FARG	PERM	SIO2	RAL	ILAL	F
14	800521	800	315.	110.									
14	800521	1200	320.	110.			2.2		1.8				41.
14	800731	100	250.										
14	800731	500	250.										
14	800731	1000	340.										
14	800731	1300	350.										
14	801002	100	280.	45.			1.5		1.2				
14	801002	500	280.	40.			1.5		1.1				
14	801002	1000	290.	45.			1.4		1.2				
14	810519	100	225.	45.	440.	5.	2.7						
14	810519	500	235.	40.	390.	4.	2.1						
14	810519	1000	235.	35.	450.	5.	2.4						
14	810616	100	200.	45.	540.	5.	2.7						
14	810616	500	195.	30.	400.	4.	2.2						
14	810616	1000	200.	35.	400.	4.	2.2						
14	810616	1300	200.	30.	390.	23.	2.5						
14	830329	100				3.	3.5						
14	830329	500				3.	3.1						
14	830329	1000				3.	2.8						
14	830329	1500				3.	2.9						
15	800521	100	300.	100.			2.2		1.5				40.
15	800521	400	310.	100.			2.1		1.9				39.
15	800521	800	310.	110.			2.4		1.9				39.
15	800521	1200	325.	110.			2.3		2.0				39.
15	800521	2000	325.	115.					1.9				39.
15	800731	100	250.										
15	800731	500	250.										
15	800731	1000	320.										
15	800731	1500	320.										
15	801002	100	290.	45.			.9		1.2				
15	801002	500	290.	45.			1.6		1.1				
15	801002	1000	280.	45.			1.4		1.1				
15	801002	1500	290.	50.			1.4		1.1				
15	810212	100	290.	20.	470.	3.	3.7						
15	810212	500	260.	45.	400.	3.	2.4						
15	810212	1000	240.	45.	390.	2.	2.1						
15	810212	1500	250.	40.	400.	3.	2.1						
15	810318	100	220.	45.	440.	5.	3.1						
15	810318	500	240.	45.	410.	3.	2.1						
15	810318	1000	230.	45.	400.	3.	2.0						
15	810318	1500	240.	45.	430.	4.	2.4						
15	810412	100	275.	150.	520.	3.	1.9						
15	810412	500											
15	810412	1000	245.	45.	370.	3.	1.9						
15	810412	1500											
15	810412	2000	225.	45.	360.	5.	1.9						
15	810519	100	230.	50.	430.	7.	2.8						
15	810519	500	235.	45.	390.	28.	2.2						
15	810519	1000	235.	45.	370.	4.	2.1						
15	810519	1500	240.	40.	420.	5.	2.4						
15	810616	100	175.	M 10.	460.	7.	2.9						
15	810616	500	190.	M 10.	400.	6.	2.6						
15	810616	1000	200.	30.	400.	26.	2.3						
15	810616	1500	215.	35.	390.	3.	2.0						
15	810729	100	240.	10.	360.	4.	2.3						
15	810729	500	180.	20.	350.	2.	2.8						
15	810729	1000	200.	30.	390.	2.	2.2						
15	810729	1500	240.	25.	380.	2.	2.2						
15	810729	1900	240.	20.	360.	3.	2.0						
15	810908	100	175.	20.	340.	5.	2.6						
15	810908	500	180.	20.	490.	6.	3.2						
15	810908	1000	170.	20.	370.	5.	2.8						
15	810908	1500	235.	40.	400.	4.	2.3						
15	810908	1900	225.	40.	400.	5.	2.2						
15	811006	100	220.	70.	470.	5.	4.5						
15	811006	500	220.	70.	510.	5.	3.7						
15	811006	1000	220.	70.	480.	4.	3.4						
15	811006	1500	220.	70.	480.	7.	3.3						
15	811006	1900	210.	70.	490.	5.	3.3						
15	811104	100	210.	70.	480.	4.	3.6						
15	811104	500	220.	70.	510.	6.	3.8						
15	811104	1000	210.	70.	470.	4.	3.7						
15	811104	1500	210.	70.	510.	4.	3.3						
15	811104	2000	200.	70.	560.	6.	3.3						
15	811210	100	220.	90.	470.	4.	4.4						
15	811210	500	200.	80.	460.	5.	4.1						
15	811210	1000	210.	100.	530.	4.	4.1						
15	811210	2000	200.	90.	450.	4.	3.6						
15	820222	1000	220.		380.	3.	3.0						
15	820308	100	280.		520.	4.	4.2						
15	820308	500	260.		500.	4.	4.1						
15	820308	2000	290.		470.	4.	3.7						
15	820421	100	180.	150.	500.	4.	3.1						
15	820421	200											
15	820421	1500	270.	90.	570.	4.	3.3						
15	820421	2000	260.	70.	490.	6.	3.5						
15	820525	100	250.		470.	5.	3.6						
15	820525	500											
15	820525	1000	260.		450.	5.	2.9						
15	820525	1500											
15	820525	2000	280.		460.	6.	3.9						
15	820630	100	240.		440.	4.	2.7						
15	820630	500	240.		440.	5.	2.6						
15	820630	1000	260.		480.	4.	3.0						
15	820630	1500	280.		510.	4.	2.9						
15	820630	2000	280.		480.	5.	3.3						
15	820727	100	230.		490.	4.	3.0						
15	820727	500	230.		430.	4.	2.9						
15	820727	1000	280.		570.	5.	2.9						
15	820727	1500	290.		570.	4.	3.0						
15	820727	2000	290.		570.	4.	3.0						
15	820907	100	190.		380.	4.	3.4						
15	820907	500	210.		400.	4.	4.1						
15	820907	1000	210.		370.	3.	3.3						
15	820907	1500	250.		440.	4.	3.7						
15	820907	2000	290.		480.	4.	3.4						

FILKODE: HVV NAVN: HOVVATN, SNITT I VANN (FLERE LOKASJONER) HOVVATN

LOK	ÅMD RNG	DYP	NO3N	NH4N	TOTN	TOTP	TOC	FARG	PERM	SIO2	RAL	ILAL	F
15	821013	100	210.		420.	3.	3.8						
15	821013	500	210.		410.	4.	3.9						
15	821013	1000	210.		420.	4.	3.8						
15	821013	1500	220.		430.	4.	3.7						
15	821013	2000	210.		430.	4.	3.9						
15	821107	100	220.	40.	450.	4.	3.5						
15	821216	100	220.		420.	4.	2.8						
15	821216	500	200.		400.	3.	2.9						
15	821216	1000	200.		450.	3.	2.9						
15	821216	1500	200.		400.	3.	2.9						
15	821216	1950	220.		420.	4.	2.9						
15	830222	100	190.		340.	2.	3.1						
15	830222	500	210.		420.	3.	3.2						
15	830222	1000	220.		380.	3.	3.0						
15	830222	1500	230.		380.	3.	2.6						
15	830222	2000	230.		400.	3.	3.1						
15	830329	100				4.	3.1						
15	830329	500				3.	2.8						
15	830329	1000				3.	2.8						
15	830329	1500				2.	3.0						
15	830329	2000				2.	3.0						
15	830513	100					2.7						
15	830513	500					2.7						
15	830513	1000					2.4						
15	830513	1500					2.7						
15	830613	100					2.7						
15	830613	500					2.6						
15	830613	1000					3.0						
15	830613	1500					2.3						
15	830613	1900					2.6						
15	830701	100					2.5						
15	830701	2000					2.8						
15	830728	100					1.8						
15	830728	2000					2.2						
15	830822	100					1.7						
15	830822	500					1.5						
15	830822	1000					1.8						
15	830822	1500					2.2						
15	830822	2000					2.3						
15	830912	100					2.0						
15	830912	500					1.9						
15	830912	1000					1.5						
15	830912	1500					1.8						
15	830912	2000					2.2						
15	831018	100	190.				2.2						
15	831018	500	190.				2.4						
15	831018	1000	190.				2.4						
15	831018	1500	190.				2.4						
15	831018	2000	190.				2.3						
15	831220	100					2.4				84	31	
15	831220	500					2.3				78	26	
15	831220	1000					2.2				73	23	
15	831220	1500					2.3				84	26	
15	831220	2000					2.3				97	31	
16	810213	100	240.	30.	390.	3.	2.5						
16	810213	500	220.	35.	390.	6.	2.8						
16	810319	100	230.	35.	380.	3.	2.6						
16	810319	500	220.	40.	360.	3.	2.1						
16	810412	100	280.	170.	540.	3.	1.8						
16	810412	500	225.	45.	370.	4.	2.3						
16	810519	100	200.	35.	370.	4.	2.2						
16	810519	500	190.	35.	380.	5.	2.4						
16	810616	100	175.	15.	360.	4.	2.4						
16	810616	500	180.	10.	350.	5.	2.7						
16	811007	100	190.	60.	490.	6.	5.0						
16	811007	500	190.	70.	480.	5.	3.0						
16	811104	100											
16	811104	500											
16	811210	100	170.	80.	390.	4.	4.1						
16	811210	500	180.	90.	570.	8.	4.0						
16	830728	100					2.0						
16	830728	500					2.2						
16	831018	100	170.										
16	831018	500	170.										
16	831220	100											
16	831220	500											
20	820422	100	360.	180.	620.	3.	4.4						
20	820630	100	150.		370.	5.	3.2						
20	820630	500	210.		530.	6.	4.0						
20	820630	800	220.		520.	5.	3.9						
20	820727	100	130.		370.	4.	3.0						
20	820727	500	180.		460.	6.	3.7						
20	820727	800	230.		520.	4.	3.7						
20	820907	100	130.		340.	4.	2.9						
20	820907	500	130.		330.	4.	2.6						
20	820907	800	170.		410.	5.	3.1						
20	821013	100	170.		430.	5.	3.7						
20	821013	500	170.		430.	4.	3.5						
20	821013	800	170.		420.	4.	4.0						
20	821216	100	190.		360.	3.	3.1						
20	821216	500	200.		430.	4.	3.2						
20	821216	900	200.		450.	4.	3.3						
20	830222	100	130.		320.	4.	3.4						
20	830222	500	200.		380.	3.	2.9						
20	830222	800	200.		400.	3.	2.9						
20	830514	100					3.0						
20	830514	500					2.9						
20	830514	700					2.9						
20	830613	100					2.8						
20	830613	500					3.0						
20	830613	900					2.7						
20	830701	100					2.8						
20	830701	800					3.4						
20	830728	100					1.4						
20	830728	800					3.0						
20	830822	100					.7						
20	830822	500					1.3						
20	830822	800					2.1						
20	830912	100					1.6						
20	830912	500					1.6						
20	830912	800					2.0						
20	831018	100	130.				3.2						
20	831018	500	130.				3.4						
20	831018	800	130.				3.1						
20	831220	100					3.1				243	41	
20	831220	500					3.0				223	37	
20	831220	800					2.9				302	43	

FILKODE: HVE NAVN: BEKKER KNYTTET TIL HOVVATN HOVVATN

LOK	R M D R N G	NO3N	NH4N	TOTN	TOTP	TOC	FARG	PERM	SIO2	RAL	ILAL	F
1	770608	250.	70.			1.9	26.0					
1	771013	240.				1.8						
1	781004	220.	45.			1.6	30.5		.6			
1	790613	250.										
1	791007	240.										
1	800521	1450.	90.			1.9		1.7				36.
1	800801	230.										34.
1	801002	260.	45.			1.9		1.6				
1	801102	240.	10.			2.1		1.8				
1	801130	210.	45.			2.7		2.4				
1	801208	210.	45.			2.9		2.2				
1	810104	170.	40.			3.5		3.0				
1	810131	180.	30.	380.	4.	7.8						
1	810213	180.	35.	400.	4.	3.1						
1	810228	230.	30.	360.	4.	2.9						
1	810319	220.	40.	390.	4.	2.8						
1	810328	215.	45.	390.	4.	2.4						
1	810411	195.	65.	430.	4.	2.9						
1	810415	180.	60.	420.	6.	4.5						
1	810419	225.	50.	460.	6.	2.7						
1	810425	210.	50.	370.	3.	2.7						
1	810502	205.	30.	330.	2.	2.2						
1	810510	210.	40.	340.	3.	2.4						
1	810520	215.	35.	360.	4.	2.2						
1	810523	200.	30.	390.	4.	2.2						
1	810531	200.	30.	420.	4.	2.1						
1	810609	200.	20.	350.	3.	2.5						
1	810614	195.	25.	360.	5.	2.6						
1	810616	190.	30.	410.	4.	2.7						
1	810619	180.	15.	340.	3.	2.9						
1	810628	180.	15.	370.	4.	2.7						
1	810705	190.	15.	480.	10.	3.0						
1	810713	200.	M 10.	450.	5.	2.8						
1	810719	190.	M 10.	350.	4.	2.5						
1	810726	180.	M 10.	350.	4.	2.6						
1	810729	180.	10.	370.	4.	3.0						
1	810802	180.	10.	400.	5.	2.5						
1	810808	160.	M 10.	320.	4.	3.0						
1	810816	165.	15.	350.	4.	2.6						
1	810827	195.	M 10.	360.	3.	2.5						
1	810830	170.	10.	410.	6.	3.0						
1	810906	180.	10.	400.	5.	2.5						
1	810908	175.	20.	360.	5.	4.3						
1	810913	190.	20.	400.	4.	2.9						
1	810921	180.	40.	440.	7.	4.1						
1	810926	180.	30.	420.	4.	3.8						
1	811004	200.	60.	440.	4.	4.3						
1	811006	200.	70.	500.	6.	3.9						
1	811013	180.	70.	440.	6.	3.4						
1	811018	190.	60.	560.	10.	3.1						
1	811026	190.	90.	630.	5.	5.8						
1	811101	190.	80.	550.	5.	4.5						
1	811104	190.	70.	470.	4.	4.0						
1	811108	200.	80.	550.	4.	3.7						
1	811114	220.	80.	510.	4.	3.9						
1	811128	180.	70.	450.	4.	4.0						
1	811210	200.	90.	450.	4.	3.6						
1	820104	210.	90.	500.	5.	4.7						
1	820116	200.	70.	400.	4.	4.2						
1	820130	220.	90.	440.	4.	3.2						
1	820214	220.	60.	470.	4.	4.5						
1	820228	230.	80.	500.	4.	4.1						
1	820308	260.		650.	4.	3.9						
1	820320	240.	90.	600.	10.	4.5						
1	820404	420.	180.	820.	6.	4.1						
1	820417	310.	170.	610.	4.	4.3						
1	820422	290.	170.	560.	3.	3.8						
1	820425	280.	140.	560.	3.	3.9						
1	820502	230.	90.	500.	6.	3.8						
1	820510	210.	70.	450.	3.	4.5						
1	820516	250.	60.	530.	7.	3.6						
1	820525	230.		430.	8.	4.8						
1	820531	230.	50.	510.	4.	4.0						
1	820611	240.	40.	430.	4.	3.4						
1	820629	230.		410.	4.	3.0						
1	820709	240.	20.	480.	5.	3.1						
1	820727	220.		450.	3.	3.2						
1	820810	200.	M 10.	430.	4.	2.9						
1	820816	M 10.	40.	660.	12.	8.0						
1	820907	180.		380.	4.	4.0						
1	821003	190.	50.	390.	3.	4.8						
1	821013	200.		400.	4.	4.1						
1	821017	200.	40.	460.	5.	3.7						
1	821031	220.	50.	430.	5.	4.2						
1	821107	200.	50.	420.	3.	4.2						
1	821113	220.	60.	420.	4.	4.4						
1	821205	230.	40.	420.	4.	4.3						
1	821216	210.		400.	5.	2.8						
1	830102	210.	30.	430.	2.	3.0						
1	830123	160.				3.0						
1	830222	170.		350.	4.	3.0						
1	830306	200.		420.	3.	3.3						
1	830319	220.				3.5						
1	830501	180.				3.4						
1	830513					2.7						
1	830529	210.				2.9						
1	830613	230.				2.3						
1	830701					2.2						
1	830703	210.				2.3						
1	830728					2.1						
1	830731	150.				2.2						
1	830904	210.				2.4						
1	830911					2.4						
1	831001	190.				2.2						
1	831017	170.				2.6						
1	831105	190.				2.8						
1	831204	205.				2.8						
1	831220					2.7				124	26	
1	840104	205.				3.3				146	44	
1	840129	215.				2.9				154	63	

FILKODE: HVE NAVN: BEKKER KNYTTET TIL HOVVATN HOVVATN

LOK	Å M D / R N G	NO3N	NH4N	TOTN	TOTP	TOC	FARG	PERM	SIO2	RAL	ILAL	F
2	770608	140.	80.			4.2	28.5					
2	771013	50.				4.7						
2	781004	40.	M 10.			5.9	43.5		2.4			
2	790613	65.										
2	800731	M 10.										
2	801002	30.	M 5.			4.9		5.8				
2	801208	130.	15.			3.6		3.2				
2	810212	110.	30.	220.	2.	3.5						
2	810319	220.	15.	400.	6.	3.0						
2	810412	115.	M 10.	250.	3.	3.5						
2	810519	185.	35.	390.	3.	3.9						
2	810616	45.	M 10.	260.	3.	5.5						
2	810729	20.	M 10.	210.	3.	4.8						
2	811006	50.	10.	260.	3.	4.8						
2	811210	130.	20.	340.	4.	4.2						
2	820308	480.		630.	5.	4.3						
2	820421	180.		350.	4.	4.6						
2	820525	80.		270.	9.	5.9						
2	820629	10.		250.	6.	6.4						
2	820727	M 10.		200.	3.	3.8						
2	820907	M 10.		210.	2.	6.7						
2	821013	20.		190.	2.	5.9						
2	821216	140.		260.	2.	2.9						
2	830222	150.		260.	2.	2.8						
2	830513					3.9						
2	830613											
2	830911											
2	831018	M 10.										
2	831220											
3	770608	40.	M 10.			6.7	49.0					
3	771013	90.				5.1						
3	781004	20.	50.			7.3	50.0		2.1			
3	790613	60.										
3	791007	80.										
3	800521	120.	M 10.			3.8		4.1				50.
3	800731	10.										
3	801208	120.	20.			3.1		2.5				
3	810212	80.	M 10.	200.	2.	3.8						
3	810319	120.	10.	350.	9.	4.2						
3	810412	105.	M 10.	270.	5.	4.5						
3	810519	100.	35.	400.	9.	5.6						
3	810616	M 10.	M 10.	270.	4.	7.3						
3	810729	M 10.	M 10.	220.	4.	6.3						
3	810907	M 10.	M 10.	150.	4.	4.6						
3	811006	30.	M 10.	350.	4.	6.5						
3	811104	90.	M 10.	340.	3.	6.2						
3	811210	80.	10.	250.	3.	4.3						
3	820308	420.		710.	4.	4.5						
3	820421	170.		360.	5.	6.9						
3	820525	30.		250.	6.	5.7						
3	820629	M 10.		330.	6.	8.6						
3	820727	M 10.		220.	6.	4.5						
3	820907	M 10.		300.	4.	8.2						
3	821013	20.		230.	3.	7.8						
3	821216	100.		270.	3.	4.0						
3	830222	110.		240.	2.	3.0						
3	830513					4.8						
3	830613											
3	830911											
3	831018	M 10.										
3	831220											
4	770607	160.	100.			1.9	63.5					
4	771013	200.				3.6						
4	781004	110.	35.			3.6	56.5		.5			
4	790613	235.										
4	791007	185.										
4	800521	230.	100.			2.2		2.0				30.
4	800731	80.										
4	801002	150.	40.			2.4		3.5				
4	801102	170.	25.			3.8		3.6				
4	801130	140.	45.			4.9		4.3				
4	801209	180.	35.			5.9		5.5				
4	810104	130.	30.			4.5		4.8				
4	810131	150.	25.	440.	6.	6.0						
4	810213	140.	25.	360.	4.	5.4						
4	810228	180.	20.	370.	4.	6.4						
4	810318	150.	35.	400.	7.	5.2						
4	810328	160.	270.	410.	5.	5.1						
4	810412	230.	140.	530.	6.	4.1						
4	810419	145.	105.	470.	6.	4.1						
4	810425	130.	95.	460.	6.	3.1						
4	810502	110.	70.	470.	6.	3.2						
4	810510	110.	70.	400.	6.	3.2						
4	810516	110.	55.	370.	6.	3.3						
4	810520	120.	65.	370.	6.	3.6						
4	810523	105.	50.	350.	5.	3.0						
4	810531	95.	25.	440.	5.	2.6						
4	810609	90.	15.	320.	5.	3.7						
4	810614	85.	10.	360.	6.	3.3						
4	810616	80.	M 10.	330.	7.	3.8						
4	810619	60.	10.	230.	5.	3.7						
4	810628	10.	10.	340.	6.	4.2						
4	810705	M 10.	25.	260.	5.	4.4						
4	810713	10.	30.	300.	4.	4.8						
4	810719	10.	15.	300.	8.	3.3						
4	810726	M 10.	10.	260.	5.	3.2						
4	810730	M 10.	20.	240.	4.	3.3						
4	810802	50.	40.	300.	6.	3.3						
4	810808	M 10.	70.	300.	7.	4.2						
4	810816	M 10.	75.	370.	7.	5.2						
4	810921	130.	150.	420.	7.	3.0						
4	810926	140.	70.	460.	5.	2.7						
4	811004	190.	130.	540.	7.	3.3						
4	811006	180.	120.	530.	5.	4.0						
4	811013	160.	100.	510.	8.	4.2						
4	811018	170.	80.	600.	5.	3.4						
4	811026	170.	100.	590.	5.	4.3						
4	811101	180.	80.	530.	8.	4.3						
4	811104	170.	90.	510.	5.	4.1						
4	811108	200.	90.	590.	5.	4.1						
4	811114	190.	80.	520.	4.	3.8						
4	811128	150.	70.	410.	4.	4.3						
4	811210	190.	70.	450.	5.	5.0						

FILKODE: HVE NAVN: BEKKER KNYTTET TIL HOVVATN HOVVATN

LOK	ÅMD RNG	NO3N	NH4N	TOTN	TOTP	TOC	FARG	PERM	SIO2	RAL	ILAL	F
4	820104	190.	100.	580.	9.	5.7						
4	820116	190.	110.	900.	16.	6.7						
4	820130	190.	110.	490.	4.	4.9						
4	820214	240.	90.	540.	4.	4.6						
4	820228	230.	130.	570.	4.	4.4						
4	820308	230.		530.	4.	4.5						
4	820320	210.	150.	620.	8.	4.1						
4	820404	580.	340.	1120.	4.	4.1						
4	820417	480.	280.	860.	4.	4.2						
4	820422	330.	200.	740.	3.	4.0						
4	820425	260.	150.	600.	3.	4.8						M 1.
4	820502	190.	160.	510.	4.	4.4						
4	820510	170.	110.	490.	3.	4.1						
4	820525	150.	40.	390.	5.	3.5						
4	820527					4.0		2.5				M 1.
4	820531	190.	20.	330.	5.	2.9						
4	820611	210.	20.	300.	4.	2.7						
4	820629	70.		250.	6.	2.4						
4	820709	60.	M 10.	290.	6.	2.6						
4	820727	50.		320.	6.	2.0						
4	820907	70.		260.	3.	2.0						
4	821003	170.	110.	420.	4.	4.9						
4	821013	120.		460.	5.	4.0						
4	821017	160.	70.	470.	4.	4.2						
4	821031	190.	70.	510.	5.	4.6						
4	821106	200.	70.	450.	4.	6.3						
4	821113	210.	70.	450.	5.	4.5						
4	821205	160.	30.	340.	4.	4.2						
4	821216	160.		340.	4.	3.2						
4	830102	130.	30.	460.	3.	3.3						
4	830123	160.				3.4						
4	830222	140.		340.	4.	3.5						
4	830306	150.		350.	3.	3.6						
4	830319	270.				4.0						
4	830501	210.				4.0						
4	830513					3.1						
4	830529	190.				3.2						
4	830613	180.				2.4						
4	830703	70.				2.2						
4	830731	M 10.				10.6						
4	830904	380.				11.7						
4	830912					2.2						
4	831001	120.				3.0						
4	831018	120.				3.4						
4	831105	120.				3.6						
4	831204	170.				3.4						
4	831220					3.6				288	43	
4	840104	215.				3.6				217	52	
4	840128	190.				3.3				229	80	
5	770608	250.	50.			3.5	28.5					
5	770817	150.	25.									
5	781004	220.	60.			3.4	40.0		.9			
5	800423	490.										
5	800701	210.										
6	810212	110.	M 10.	230.	2.	3.1						
6	810319	120.	45.	330.	7.	3.6						
6	810412	160.	55.	340.	4.	3.2						
6	810519	120.	30.	380.	7.	3.8						
6	810616	50.	M 10.	230.	3.	3.8						
6	810729	40.	M 10.	220.	4.	3.9						
6	810907	60.	M 10.	260.	4.	4.7						
6	811006	130.	20.	350.	3.	4.3						
6	811104	120.	20.	320.	2.	4.2						
6	811210	160.	30.	320.	2.	3.7						
6	820308	410.		610.	4.	3.1						
6	820421	210.		370.	4.	4.0						
6	820525	70.		250.	8.	3.9						
6	820629	M 10.		220.	6.	5.3						
6	820727	20.		230.	5.	3.8						
6	820907	40.		260.	3.	6.7						
6	821013	100.		260.	1.	5.1						
6	821216	130.		270.	2.	3.1						
6	830222	150.		240.	2.	2.5						
6	830513					3.5						
7	801210	40.	20.			5.9		4.3				
7	810213	50.	M 10.	180.	3.	3.7						
7	810411	60.	M 10.	220.	5.	5.0						
7	810519	40.	25.	340.	6.	6.3						
7	810616	M 10.	M 10.	220.	3.	6.0						
7	810730	M 10.	M 10.	210.	3.	6.3						
7	810908	M 10.	M 10.	200.	5.	4.5						
7	811007	60.	M 10.	290.	4.	6.1						
7	811104	40.	10.	250.	3.	5.4						
7	811210	50.	40.	460.	4.	5.9						
7	820308	230.		360.	3.	3.9						
7	820421	70.	40.	340.	3.	5.2						
7	820525	20.		230.	6.	5.8						
7	820629	M 10.		300.	6.	7.6						
7	820727	M 10.		370.	11.	6.1						
7	820907	M 10.		260.	5.	8.3						
7	821013	30.		190.	2.	5.6						
7	821216	70.		210.	2.	3.1						
7	830222	90.		190.	2.	2.9						
7	830513					4.2						
7	831018	M 10.										
7	831220											
8	810519	40.	25.	360.	6.	5.9						
8	810616	M 10.	M 10.	210.	3.	5.0						
8	810730	M 10.	M 10.	230.	3.	5.8						
8	810908	25.	M 10.	260.	5.	5.4						
8	811007	70.	30.	340.	8.	5.6						
8	811104	40.	20.	240.	3.	5.1						
8	811210	70.	40.	360.	3.	4.3						
8	820308	260.		460.	3.	4.2						
8	820421	40.	30.	300.	3.	5.3						
8	820525	20.		210.	5.	5.5						
8	820629	M 10.		270.	6.	6.7						
8	820727	M 10.		250.	6.	5.5						
8	820907	10.		230.	3.	7.5						
8	821013	50.		210.	1.	6.1						
8	830222	110.		250.	3.	2.8						
8	830513					4.0						
8	830613											
8	830911											
8	831018	M 10.										

d) Metals and weak and strong acid. Computer codes, units and analysis methods. "M" preceeding a number indicates "less than".

CODE	PARAMETER	UNITS	METHOD
FE	Fe	µgFe/l	atomic absorption with graphite furnace
Mn	Mn	µgMn/l	atomic absorption with graphite furnace
PB	Pb	µgPb/l	atomic absorption with graphite furnace
CD	Cd	µgCd/l	atomic absorption with graphite furnace
CU	Cu	µgCu/l	atomic absorption with graphite furnace
ZN	Zn	µgZn/l	atomic absorption with graphite furnace
S.ACID	strong acid	µeq/l	Gran titration
W.ACID	weak acid	µeq/l	Gran titration

FILKODE: REGION   NAVN: REGIONALE UNDERSØKELSER - VANN   REGIONALE DATA

BLK	LOK	ÅR MND RNG	DYP	FE	MN	PB	CD	CU	ZN	S.ACID	W.ACID
4	1	741012	50	40.	18.	1.0		.5	15.0		
4	1	741012	300	60.	19.	1.0		3.0	16.0		
4	1	750311	50	120.	6.	2.0	.26	1.5	22.0		
4	1	750311	9999	240.	18.	4.5	.23	1.0	21.0		
4	1	760303	50								
4	1	760303	600								
4	1	770321	50								
4	1	770321	400								
4	1	780307	50							48.0	60.0
4	1	780307	900							48.0	53.0
4	1	810318	100								
4	1	810318	1500								

FILKODE: HVVV   NAVN: HOVVATN VEST, SNITT I VANN   HOVVATN

ÅR MND RNG	DYP	FE	MN	PB	CD	CU	ZN	S.ACID	W.ACID
770608	100	105.	19.						
770608	200	100.	22.						
770608	400	105.	20.						
770608	600	110.	21.						
770608	800	130.	20.						
771013	100							29.0	12.0
771013	200							23.0	34.0
771013	400							30.0	22.0
771013	600							32.0	14.0
771013	800							31.0	19.0
780307	100	150.	20.						
780307	800	110.	20.						
780602	100	145.	22.						
780602	200	140.	26.						
780602	400	120.	42.						
780602	600	140.	43.						
781004	100	60.	20.						
781004	200	80.	18.						
781004	400	65.	21.						
781004	600	70.	20.						
781004	800	65.	18.						
800521	100	133.	13.	4.3	1.10	5.8	14.0		
800521	400								

FILKODE: HVV NAVN: HOVVATN, SNITT I VANN (FLERE LOKASJONER) HOVVATN

LOK	Å M D R N G	DYP	FE	MN	PB	CD	CU	ZN	S.ACID	W.ACID
10	800521	100	145.	17.	3.8	.61	5.7	14.0		
10	800521	200								
10	800521	400								
10	800521	800	133.	14.	2.8	.80	5.7	18.0		
11	800521	100	215.	20.	4.4	1.70	21.6	20.0		
11	800521	200								
11	800521	400								
11	800521	800								
11	800521	1200	173.	13.	2.7	.56	5.5	16.0		
11	810519	100	130.	14.						
11	810519	500	110.	15.						
11	810519	1000	120.	14.						
11	811007	100	170.	10.		.21	5.0	10.0		
11	811007	500	170.	11.		.22	3.3	10.0		
11	811007	1000	150.	14.		.20	3.3	10.0		
13	800521	100	143.	11.	2.5	.63	6.1	19.0		
13	800521	200								
13	800521	400								
13	800521	800	176.	10.	2.8	.61	3.2	22.0		
13	810519	100	390.	16.						
13	810519	500	380.	16.						
13	810519	800	430.	17.						
13	810907	500	740.	6.	6.5	.87	8.7	20.0		
13	810907	800	840.	5.	3.7	.42	6.6	10.0		
13	811006	100	230.	9.	3.0	.33	9.5	20.0		
13	811006	500	230.	8.	3.7	.36	10.5	20.0		
13	811006	800	250.	8.	2.7	.34	2.1	10.0		
13	811104	100	250.	6.	2.5	.69	7.1	M 10.0		
13	811104	500	240.	7.	1.8	.37	4.4	10.0		
13	811104	800	250.	7.	3.0	.43	6.4	10.0		
13	820308	500	480.	7.						
13	820308	800	570.	9.						
13	820421	100	69.	7.		.19	1.8	20.0		
13	820421	500	460.	8.	2.3	.32	3.0	10.0		
13	820421	800	500.	13.	3.3	.20	1.8	10.0		
14	800521	100	128.	17.	3.4	3.30	5.9	18.0		
14	800521	1200	95.	17.	3.7	.52	57.0	20.0		
14	810519	100	100.	16.						
14	810519	500	120.	16.						
14	810519	1000	100.	16.						
15	800521	100	120.	14.	3.7	.62	4.1	20.0		
15	800521	400	118.	17.	2.7	.65	5.3	19.0		
15	800521	800	115.	18.	3.4	.49	10.9	21.0		
15	800521	1200	98.	17.	3.4	.42	5.2	16.0		
15	800521	2000	103.	18.	3.5	.71	7.1	19.0		
15	810519	100	100.	21.						
15	810519	500	110.	14.						
15	810519	1000	110.	16.						
15	810519	1500	110.	14.						
15	810729	100	100.	12.	1.3	.31	5.8	10.0		
15	810729	500	100.	12.	2.0	.43	6.3	10.0		
15	810729	1000	112.	13.	4.6	.38	5.3	10.0		
15	810729	1500	81.	16.	2.0	.29	3.2	10.0		
15	810729	1900	120.	17.	2.8	.30	4.3	10.0		
15	810908	100	140.	10.	1.0	M .10	4.1	M 10.0		
15	810908	500	130.	10.	1.5	.14	2.9	M 10.0		
15	810908	1000								
15	810908	1500	110.	16.	2.3	.30	6.7	10.0		
15	810908	1900	140.	16.	2.2	.11	4.4	10.0		
15	811006	100	120.	9.	2.4	.33	4.8	M 10.0		
15	811006	500	120.	10.	3.3	.36	9.0	10.0		
15	811006	1000	160.	10.	2.8	.35	4.9	10.0		
15	811006	1500	130.	9.	2.8	.22	10.5	20.0		
15	811006	1900	130.	9.	2.5	.16	2.5	10.0		
15	811104	100	160.	8.	2.1	.23	1.9	M 10.0		
15	811104	500	150.	9.	1.8	.26	3.8	M 10.0		
15	811104	1000	140.	8.	1.9	.23	2.5	M 10.0		
15	811104	1500	120.	9.	1.6	.34	2.4	M 10.0		
15	811104	2000	110.	8.	2.4	.17	2.1	M 10.0		
15	820308	100	100.	10.						
15	820308	500	120.	10.						
15	820308	2000								
15	820421	100	72.	6.	3.8	.24	3.4	20.0		
15	820421	200								
15	820421	300								
15	820421	500	180.	13.	2.2	.29	3.4	20.0		
15	820421	1000	120.	13.	2.0	.49	4.5	20.0		
15	820421	1500	110.	13.	2.2	.17	1.6	20.0		
15	820421	2000	170.	18.	2.4	.21	2.5	20.0		
16	810519	100	100.	13.						
16	810519	500	110.	14.						
16	811007	100	160.	11.		.36	2.4	M 10.0		
16	811007	500	160.	10.		.20	6.0	10.0		
20	820422	100	89.	9.	2.8	.32	30.0	20.0		

FILKODE: HVE NAVN: BEKKER KNYTTET TIL HOVVATN HOVVATN

LOK	Å M D R N G	FE	MN	PB	CD	CU	ZN	S.ACID	W.ACID
1	770608	100.	22.						
1	771013							32.0	19.0
1	781004	90.	18.						
1	790613								
1	791007								
1	800521	113.	19.	2.8	.39	4.2	19.0		
1	810419	110.	16.						
1	810425	120.	14.						
1	810502	120.	13.						
1	810510	100.	14.						
1	810520	140.	13.						
1	810729	140.	13.	1.3	.20	3.7	10.0		
1	811006	170.	9.	1.8	.24	3.7	10.0		
1	811104	100.	8.	1.5	.15	1.8	M 10.0		
1	820308	110.	10.						
1	820320								
1	820404								
1	820417								
1	820422	140.	10.	2.3	.23	110.0	20.0		
2	770608	95.	14.						
2	771013							51.0	82.0
2	781004	145.	10.						
2	810519	220.	13.						
2	810616								
2	810729	220.	7.	.7	.14	2.2	10.0		
2	811006	130.	12.	2.5	.87	5.4	20.0		
2	811210								
2	820308	230.	13.						
3	770608	95.	12.						
3	771013							48.0	61.0
3	781004	120.	11.						
3	790613								
3	791007								
3	800521	115.	7.	2.6	1.15	5.3	14.0		
3	810519	200.	18.						
3	810616								
3	810729	240.	13.	1.1	.14	2.6	10.0		
3	810907	350.	14.	1.3	.12	4.2	M 10.0		
3	811006	150.	12.	2.3	1.80	9.5	20.0		
3	811104	120.	6.	1.3	.16	1.6	M 10.0		
3	811210								
3	820308	280.	21.						
4	770607	260.	9.						
4	771013							39.0	41.0
4	781004	90.	9.						
4	790613								
4	791007								
4	800521	260.	13.	3.3	.27	3.2	19.0		
4	810419	220.	13.						
4	810425	190.	11.						
4	810502	310.	11.						
4	810510	280.	11.						
4	810516	230.	9.						
4	810520	220.	10.						
4	810616	110.	10.	3.4	.32	3.6	20.0		
4	810730	250.	10.	2.6	.30	8.9	10.0		
4	811006	150.	10.	3.1	.26	1.3	40.0		
4	811104	140.	9.	2.8	.30	2.7	M 10.0		
4	820308	100.	11.						
4	820422	75.	9.	3.8	.21	150.0	10.0		
5	770608	60.	19.						
5	770817								
5	781004	70.	16.						
6	810519	140.	8.						
6	810616								
6	810729								
6	810907	320.	8.	2.4	.38	7.1	10.0		
6	811006	130.	12.	2.4	.24	5.2	20.0		
6	811104	85.	8.	1.9	.39	2.2	M 10.0		
6	811210								
6	820308	110.	13.						
7	810519	240.	11.						
7	810616								
7	810730								
7	810908								
7	811007	190.	13.	8.0	.30	6.6	20.0		
7	811104	140.	7.	1.2	.21	1.7	M 10.0		
7	820308	210.	13.						
7	820421	61.	14.	1.3	.17	13.0	10.0		
8	810519	210.	9.						
8	810616								
8	810730								
8	810908	670.	12.	2.3	.35	6.3	10.0		
8	811007	160.	12.	2.1	.25	5.2	10.0		
8	811104	160.	7.	1.2	.19	1.6	M 10.0		
8	811210								
8	820308	190.	13.						
3	820421	210.	8.	2.7	.25	50.0	10.0		