ALASKA POWER AUTHORITY
SUSITNA HYDROELECTRIC PROJECT

TASK 3 - HYDROLOGY
GLACIAL LAKES STUDIES
INTERIM REPORT

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ACKNOWLEDGMENTS

Many individuals assisted in the development of the field program at Eklutna Lake. Instrumentation was installed by permission of the State of Alaska Division of Parks, Chugach District, with special assistance from Rangers Eugene Scott, John Harris, Bill Darwin, and Ed Barrett. Eklutna Lake outflow data were provided by Stan Sieczkowski of the Alaska Power Administration. Transmissivity instrumentation and discussion were provided by Jeff Koenings of the Alaska Department of Fish and Game. Sediment analysis was provided by Particle Data Laboratories of Elmhurst, Illinois. Participants in data collection include Wayne Dyok and David Crawford of Acres American, and Bob Butera, Steve Bredthauer, Jeff Coffin, Lisa Fotherby, Carol Larson, Carl Schoch and Brett Jokela of R&M Consultants. Computer graphics were developed by Mark Holmstrand for the Hewlett Packard System 45 and processed by Lisa Fotherby, Carol Larson, and John Martinisko. John Martinisko and Rey Liwanag drafted the figures in this report. Word processing was performed by Kyin-Kyin Chen and Joyce Shuman. Brett Jokela was responsible for field program coordination, data compilation, and is the principal author of this report.

1 - STUDY PURPOSE AND OBJECTIVES

The creation of reservoirs at Devil Canyon and Watana damsites for hydroelectric generation entails new problems to be faced regarding fisheries management in the Susitna River. Major concerns include the project's effects on turbidity and temperature regimes both in the reservoirs and in the downstream reaches. Existing literature regarding the physical limnology of reservoirs fed in part of steams of glacial origin is sparse. Relevent literature has been reviewed and compiled in the bibliography tabulated for the Reservoir Sedimentation report published by R&M Consultants in January, 1982.

Reservoir temperature modelling is being utilized to answer questions regarding the reservoir temperature regime. The Dynamic Reservoir Model (DYRESM) developed at the University of Western Australia represents the state of the art in one-dimensional reservoir temperature models. However, application of such a model for cold regions has required verification of the model on an existing system, plus expansion of the model's capabilities to account for thermodynamics of ice formation in order to adequately describe the winter temperature regime.

The dynamics of sediment transport in the proposed reservoir are also difficult to evaluate without study of the annual variation in reservoir turbidity in a similar environment.

Eklutna Lake, twenty five miles northeast of Anchorage Figure 1.1, was chosen for concentrated study to verify the DYRESM model and to calibrate the ice formation model additions. A simultaneous effort monitoring movement of sediment in Eklutna Lake was proposed for comparison with turbidity projections for the Watana Reservoir. Eklutna Lake was chosen because it has bulk residence time, climatological conditions, and glaciated drainage area comparable to the Watana Reservoir (Table 1.1).

The data collection was designed to:

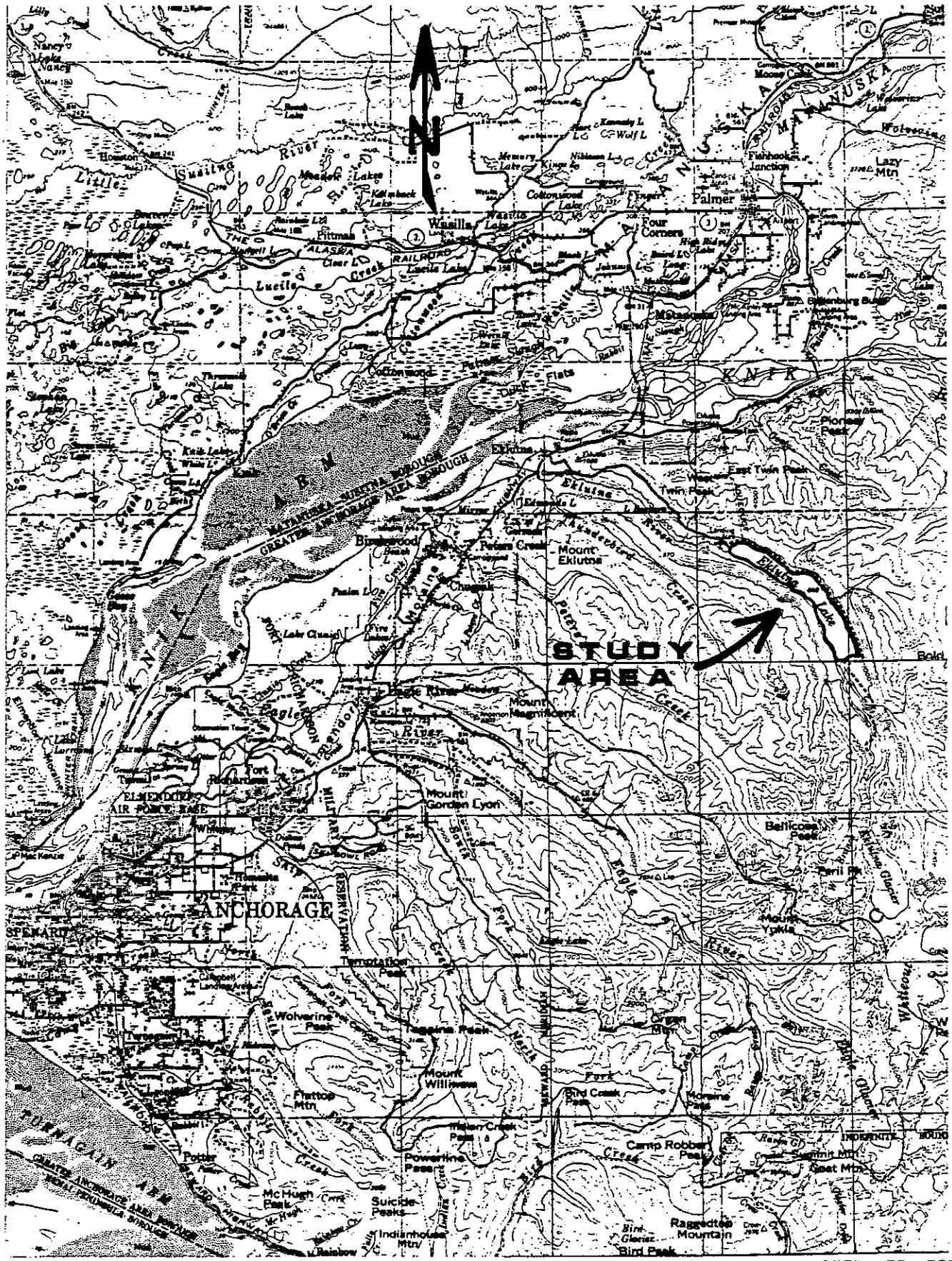
1) Provide input data for the DYRESM model.

2) Provide lake temperature data for verification of the DYRESM model.

3) Provide documentation the lake's mixing environment and sediment dynamics.

TABLE 1.1

	Watana Reservoir	Eklutna Lake
Surface Area	37,800 acres	3427 acres
Maximum Depth	860 feet	208 feet
Drainage Area	5,180 sq. mi.	111 sq. mi.
Average Annual Inflow	5,880,000 acre-ft	234,300 acre-ft
Average Residence Time	1.65 years	1.77 years
% Glaciated Drainage Area	5.9%	5.2%



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EKLUTNA LAKE LOCATION MAP

FIG. 1.1

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2 - SUMMARY AND RECOMMENDATIONS

Studies of the temperature and suspended sediment regime of Eklutna Lake have taken place since April of 1982. Studies have included lake temperature, conductivity, and turbidity profiling from 15 moored stations distributed around the lake. Simultaneous monitoring of inflow and outflow discharge and temperature has also been undertaken. This report summarizes data collected at Eklutna Lake in 1982.

The succession of bi-weekly profile data sufficiently demonstrates warming trends in the lake, including the development of a weak thermocline and the introduction of stream inflow via interflow in the period from June through August. September is marked by the disruption of thermal stratification. Deepening of the mixed layer by penetrative convection and the effects of extreme wind shear on the lake are evident from comparison of the data. By mid-October the overturn process dominates the lake; the water column is nearly isothermal, and virtually no turbidity gradient is apparent.

Suspended sediment in Eklutna Lake is composed glacial flour, consisting of flaky and angular particles, principally feldspars, quartz, and muscovite. Typical particle densities range from 2.6 to 2.9 g/ml. The vast majority of sediment particles greater than about 30 microns equivalent diameter are apparently deposited in the delta formed where the Eklutna river flows into Eklutna Lake. Mean particle size of sediment carried through the lake is on the order of 3 to 4 microns equivalent diameter. Sediment concentration is shown to vary through the lake. A direct correlation between nephelometric turbidity and sediment concentration is demonstrated.

The effect of interflow and underflow of inflow water are evident in seasonal variation in the vertical distribution of suspended sediment.

Large (33 micron) concretions of calcium carbonate-aragonite appear near groundwater seepage areas below the lake's surface at the lake's lower end. These minerals appear to dominate the sediment regime in July in the lower lake hypolimnion. Hardness, as calcium carbonate, of the influent groundwater is thought to be the cause of the appearance of the mineral.

Light extinction varies significantly on a seasonal basis with changes in surface turbidity. Correlations have been developed between the extinction coefficient and turbidity and between the extinction coefficient and secchi disk transparency. The extinction coefficient is highest in early August (2.35 m^{-1}) and lowest (based on surface turbidity) just after ice-melt in late May (0.26 m^{-1}).

While trends in temperature and sediment profile development were well documented by the bi-weekly sampling trips, potential improvements remain regarding the field procedures employed in 1982. The following

improvements are recommended to enhance the continued Eklutna Lake field data efforts.

Two and even three dimensional temperature gradients exist in the lake, and are subject to dynamic response to short-term meteorological effects. Continuous temperature monitoring such as has been attempted with Ryan thermographs would demonstrate the time scale of the response of the lake to the driving forces of wind mixing and surface energy transfer. Installation of several sets of continuous monitors would improve the understanding of the effects of wind setup and subsequent seiching on the lake temperature regime.

As for examining sediment dynamics in the lake, a more complete picture at each sampling date may be of benefit in describing suspended sediment loadings and gradients. Transmissivity profiling is valuable in that local turbid microstrata may be pinpointed with greater accuracy than is possible with retrieval of isolated samples for turbidity measurements.

Verification of particle size and species of Eklutna Lake and Eklutna River sediments with corresponding particle analyses for the Susitna River sediments would enhance the value of comparison of the two watershed systems.

3 - METHODOLOGY

In order to meet the objectives of the study as discussed above, the field data collection program at Eklutna Lake has included acquisition of:

- Weather data
- Lake inflow data
- Lake outflow data
- Light extinction data
- Lake temperature, conductivity, and turbidity profiles.
- Suspended sediment samples and analysis

3.1 - Weather Data

By special permission of the Chugach State Park, a weather station was established on June 3, 1982, at the south end of the lake near an existing gravel airstrip (Figure 3.1). The weather station consists of a "Weather Wizard" monitoring system manufactured by Meteorology Research, Inc. The system measures air temperature, wind speed and direction, relative humidity, solar radiation, and precipitation. Temperature, relative humidity and radiation levels are recorded as instantaneous values every 15 minutes on a magnetic tape cassette. Wind data are processed from 15 second interval readings by the data logger and recorded as average winds and peak gust for each 15 minute interval. An attempt to measure incoming long wave radiation was begun by adding an Eppley Laboratories Precision Infrared Radiometer to the system in late July. Instantaneous values are recorded at fifteen minute intervals.

Raw data from the tapes are edited and summarized in tables and graphs on a monthly basis. Monthly data summaries for June through November are included as an appendix to this report. Data were transferred to Acres American for use as model input after being transcribed and converted to appropriate units by hand. Considerable interpretation was required to correct data gaps in July and August.

3.2 - Lake Inflow Data

Principal inflow into Eklutna Lake is provided by two creeks on the south end of the lake. The creeks, known as East Fork and Glacier Fork of Eklutna River, account for 31% and 22%, respectively, of the lake's 111 square mile watershed area. The two creeks intertwine in braided channels on a broad floodplain before entering the lake. The streams were gaged separately, several miles from the lake head, as the first available usable sections for stream gaging were upstream of their confluence. Very little

groundwater flow is expected to augment the stream discharge downstream of the gaging sites.

Stage discharge relationships were established for both streams. Stevens Type F water level recorders with 16-day charts were utilized to continuously monitor stream discharge. The water level recorders were housed in plywood gage houses on 16" diameter polyethylene pipe stilling wells. The stilling wells were provided with $2\frac{1}{2}$" diameter PVC inlet pipes which extended into the channel.

Inflow temperatures were monitored with Ryan thermograph recording thermometers. These instruments were anchored to rocks placed in the stream such that the sensor would remain submerged. Originally, one thermograph was installed near the inlet to the lake. However, it was determined that this installation was biased in favor of the Glacier Fork. Thereafter, the stream temperatures were independently monitored at the gaging sites.

Suspended sediment samples were obtained at each gaging site for sediment concentration and turbidity analysis. Sediment concentrations in the stream samples were determined by Chemical and Geological Laboratories of Alaska of Anchorage according to standard procedures for detection of Total Nonfiltrable Residue. Turbidity analysis was done in the R&M laboratory using a Hach Model 16800 Portalab Turbidimeter.

3.3 - Lake Outflow Data

The Eklutna Hydroelectric Plant, operated by the U.S. Dept. of Energy, Alaska Power Administration, keeps daily records of lake discharge through the turbines, and monitors penstock water temperatures through the course of each day. These data were made available to R&M for DYRESM input. The power plant personnel also make weekly measurements of lake level. These lake level observations were used in conjunction with R&M's own periodic lake level measurements as lake level/storage input data.

3.4 - Light Extinction

Light extinction is generally considered to be in the form of exponental decay according to the equation:

$$I = I_s e^{-\eta y}$$

Where I is irradiance, I_s is irradiance at the water surface, y is depth below the water surface, and η is an extinction coefficient.

Measurement of irradiance below the water surface was possible using the LiCor Model L1 1925B Underwater Photometer. This

instrument measures photosynthetic photon flux density, or the number of photons incident per unit time on a unit surface at wavelengths comparable to the visible spectrum (400-700 nanometers).

Readout from the sensor is via an analog meter in units of micro-Einsteins per square centimeter per second. (One Einstein equals approximately 6.022×10^{23} photons.) Translation of photon units to the more common radiant energy units is complex and requires knowledge of the spectral distribution of the radiant output from the source. For daylight conditions, a linear approximation of the conversion to within ±8.5% is given by the instrument manufacturer as:

1 watt/square meter = 4.6 micro-Einsteins/square meter/second

Secchi disk transparency measurement utilizing a 20 centimeter diameter weighted steel disk were made to provide back-up data to the light extinction measurements made with the photometer. The disk was painted with alternate glossy quadrants of black and white, to facilitate definition of the reflective disk surface when submerged.

3.5 - Water Quality Profiling

Figure 3.1 shows the locations of fifteen lake stations spanning the surface area of the lake. The stations were marked with international red fluorescent buoys. A temperature profile was taken beneath the ice at the lower end of the lake on April 16, 1982. Bi-weekly sampling of lake temperature, conductivity, transmissivity and turbidity commenced on May 25, 1982. The procedure involved lowering a temperature and conductivity probe from a 15' inflatable Zodiac raft at each of the fifteen station moorings. The number of stations sampled per trip was later reduced for logistical reasons. Early season measurements were performed using a YSI S-C-T meter with a 200-foot cable extension. Inadequate resolution of the instrument and electrical problems with the cable extension forced abandonment of that system in favor of a Martek Mark VII water quality sensor, beginning July 14, 1982. The new instrument, with its LCD readout, improved the precision of the readings, but required vigilance in checking calibration. Recording thermometers were suspended in a string at one station to yield a continuous temperature record. However, the buoy system for the thermometer string was disturbed and the instruments are presumed lost to the lake bottom. No data have been recovered.

Transmissivity was measured only once - on the June 17 and 18 sampling trip - using a Kahlsico No. 269WA150 Turbidity Meter. While the information from transmissivity readings was useful for

yielding a complete profile of light attenuation in the lake's layers, problems with power connections to the instrument and depth limitations of its 100-foot cable forced abandonment of transmissivity readings for the 1982 season.

Turbidity was measured at selected stations for each sampling trip from samples obtained at various depths using a brass Kemmerer type water sampler. The samples were analyzed on board the boat using a Hach Model 16800 Portalab portable turbidimeter. Duplicate readings from each sample were obtained to verify the results.

3.6 - Sediment Sampling and Analysis

Certain samples subjected to turbidity analysis were retained for laboratory analysis of suspended sediment concentration, particle size distribution, and mineralogical analysis, including density and species identification. Sediment concentration was determined by standard procedures for Total Nonfilterable Residue. Particle size distribution was performed using an Electric Zone Fence technique. Microprocessing involved in the technique allows direct computation of statistical parameters associated with the distribution. Density distributions were obtained by immersion in a methylene iodide/xylene gradient column. Visual observations and photomicrographs were utilized for mineral species identification. Lake sediment analysis was performed by Particle Data Laboratories, Inc. of Elmhurst, Illinois.

In addition to the lake sampling, one sample from the Susitna River was subjected to similar analysis for particle size distribution, density distribution, and mineralogical analysis for comparison.

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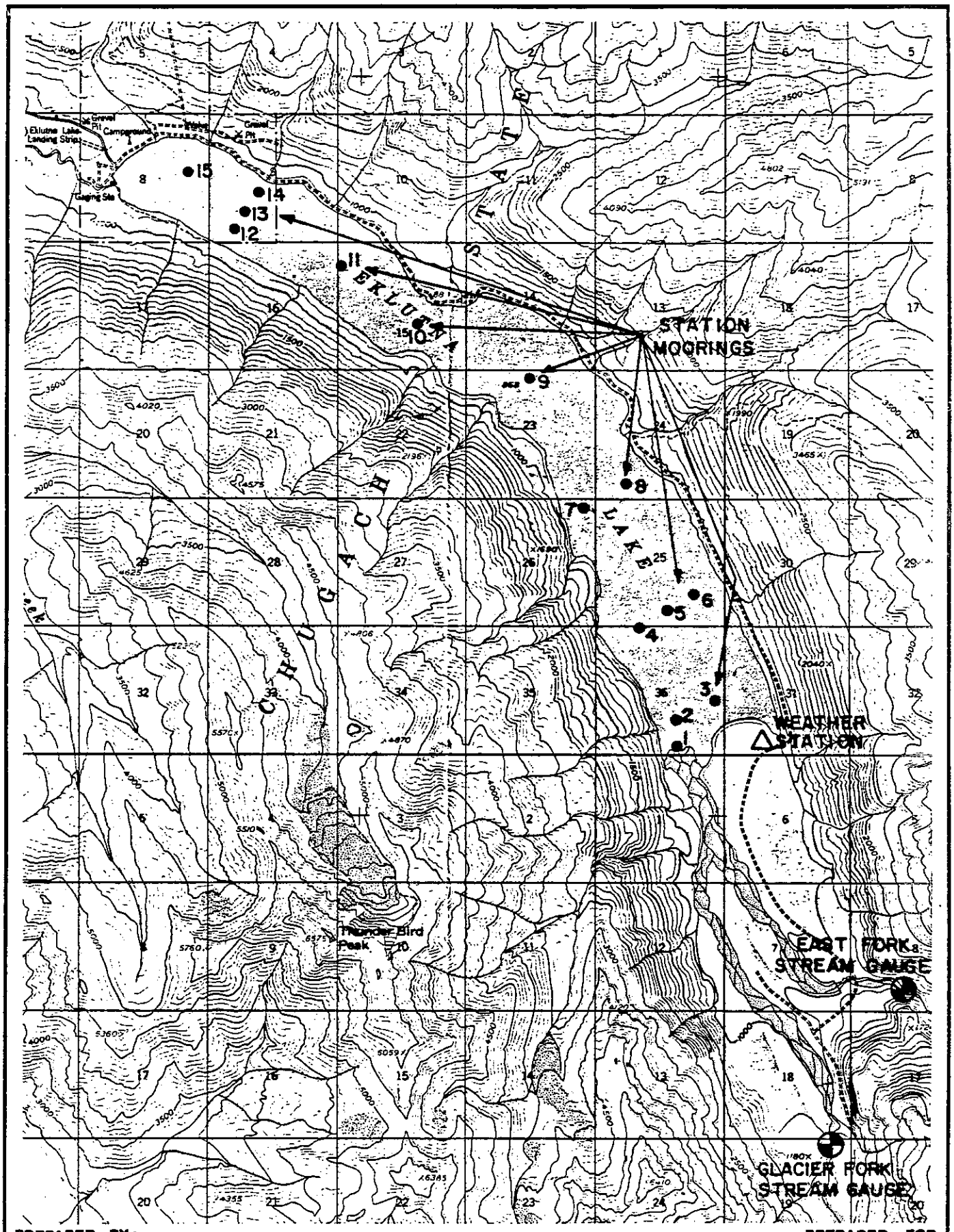

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EKLUTNA LAKE STATION LOCATIONS

FIG. 3.1

4 - RESULTS AND DISCUSSION

4.1 - Lake Temperature

Temperature profiles from the lake sampling are shown in Figures 4.1 and 4.2 for May through November. These profiles reveal the annual cyclic change in the lake's temperature distribution. Near-isothermal conditions exist beneath the ice in April and at breakup in May. The development of a weak thermocline is seen by mid-June, and continues through July until the maximum surface temperature is achieved in August. The highest recorded surface temperature was 14.88°C on August 25, 1982. After this time, wind mixing and surface cooling combine to reduce the temperature stratification until the lake water column is virtually isothermal by September 21. The lake then gradually cools isothermally with vigorous overturn taking place as water at the surface becomes denser due to convective, radiative, and evaporative cooling. The cooled water sinks, to be replaced at the surface by deeper, warmer water. Through the month of October the water column continues to slowly cool isothermally, with overturn continuing. By the first week in November, water temperatures are quite similar throughout the lake, with the overturn continuing as the waters have not reached maximum density at 4°C. The slow cooling is evidence of the large heat content of the lake. While Eklutna Lake was still above 4°C, most of the other lakes in the area had long since frozen.

Temperature comparisons within the lake for selected dates are shown in the temperature isopleths (Figures 4.3 through 4.12.) Temperature variation along the longitudinal section is evident from several dates. The temperature isopleths are "snapshots" of the entire lake compiled from temperature data from the individual stations. The contour lines are drawn from linear interpolation of data from the station. Stations from which data are taken for constructing the isopleth are indicated at the top of each figure. The lake temperature regime is dynamic and constantly changing in three dimensions and with time. The isopleth maps reflect not only the general thermal condition of the lake but also short term effects of wind setup and internal seiching. Thus, individual "snapshots" are not always composed of even strata of constant density. For instance, strong north winds on July 27 caused a pile-up of warm surface waters on the upper end of the lake, whereas south winds are probably responsible for the relatively warm surface waters on the lower end of the lake on September 9. Similarly, fluctuating meteorological conditions may be the chief factor behind the extreme fluctuations in profiles between stations on June 17/18 and on September 21. The complete upset of horizontal density layering is seen from the October and November isopleths during the fall overturn. In these cases there exists only horizontal temperature gradients, based upon differential rates of cooling in various portions of the lake. The effects of wind driven circulation are

probably not as important here because of the breakdown in thermal stratification.

A closer look at other aspects of water quality profiling is shown in the series of station plots shown in Figures 4.13 through 4.23. Conductivity, turbidity, and, on one date, transmissivity profiles are shown for each station and date. The profiles are situated on the sheets in ascending station order, so that trends may be viewed in the course of water movement from the upper end of the lake (upper left) to lake outlet/hydropower intake (lower right).

The first full set of profiles, from May 25, 1982, demonstrate the condition of the lake just after breakup. Temperatures throughout the lake are close to 4°C, approximately the temperatures observed beneath the ice on April 16 (Appendix A). Turbidities are extremely low, generally less than 10 NTU, as a result of quiescent settling in winter. Conductivity profiles show moderate and nearly linear increases with depth.

By June 17 and 18, surface warming has allowed development of a moderate temperature gradient in the upper five meters. The strength of the gradient varies from station to station due to the existing state of continual wind mixing, and to the strengthening of the gradient by interflow, which is the introduction of streamflow as a distinct density layer in the water column. The introduction via interflow of water from the creeks is evident at the upper end of the lake. The turbid inflow from the streams enters the lake at several strata, as evidenced by tongues of low transmissivity and corresponding increases in turbidity at several depths at stations 2, 4, and 8. The evidence of inflow has ceased by mid-lake (Station 9), where the steepness of the upper temperature gradient is markedly reduced. Almost no temperature gradient is evident at the lower end of the lake (Station 15), probably as a result of complete mixing in the shallow water column.

The July 2 data suffers from electrical problems with the profiling instrumentation. All available data represent measurements made at the surface of water samples retrieved from various depths using the brass Kemmerer style sampler.

By July 14, distinct trends in temperature stratification and interflow are apparent. In these profiles, a single turbid stratum of fresh inflow from the inlet stream is evident from both turbidity and conductivity profiles. Just beneath the steep thermocline there appears a marked reduction in conductivity and a sharp increase in turbidity. These occurrences are especially noteworthy near the lake head (Stations 2 and 4), where the most well defined stratification exists with a thermocline layer at 8-10 meters depth. The turbid layer appears to run quite far down the lake basin. Highly turbid water at about 15 meters depth is evident as far down lake as Station 10. Variable levels of conductivity indicate

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active mixing in the upper eighteen meters, especially on the lower end of the lake, away from the influence of the turbid water inflow.

At the end of July the pattern of the previous sampling date is continued. A more distinct thermocline exists on the upper end of the lake, underlain by a broader and denser turbid layer. Turbidities at Station 2 are plotted as 100 NTU for depths of 12, 16 and 20 meters. This value is the upper limit of the instrument range, and the actual value is likely be considerably higher. Evidence of the turbid layer has appeared in the lower basin with a peak turbidity at Station 11 of 35 NTU at 12 m depth.

August 12 data indicate an even more well defined thermocline. The turbidity of the interflow layer appears to be dispersing. Highest turbidity readings from this date are under 90 NTU.

August 25 data begin to reveal a weakening of the thermocline as solar heating diminishes and wind mixing begins to break down the thermal stratification. Correspondingly, turbidity values begin to drop off once again, due to dispersion and to the reduction in streamflow discharge.

In September, inflow starts to taper off, both in terms of volume of water and level of stream turbidity. The lake surface begins to undergo a net loss in surface heat exchange. Surface temperatures drop and the stability of the water column decreases. Turbidity monitoring at Station 2 has indicated no further interflow. Streamflow temperatures indicate that the interflow of July and August has been superceded by a diving underflow of dense influent water Deepwater turbidity measurements were not sufficient to document this occurrence at Stations 2 and 4, but farther down the lake at Station 7, high levels of turbidity are exhibited at 48 meters depth. High levels of turbidity in the 20 to 24 meter depth at Stations 4, 7, 9 and 11 range are probably due to suspended sediment left over from the interflow of July and August. Such turbidity peaks are associated with water temperatures near 7.5°C, while the turbid layer at 48 meters is associated with water temperatures of about 6°.

By lake September, the lake is approaching isothermal conditions at each station, with a tendency toward cooler water temperatures on the upper end of the lake. The cooler isothermal temperatures on the upstream end are indicative of the larger volume of cold water below the thermocline depth in the upper end of the lake, and due to prevailing winds from the southeast forcing warmer surface water to the lake's north end.

The effects of turbid underflow are also apparent from the September 21 profiling, as peak turbidities close to 100 NTU are discovered at or near the lake bottom. Streamflows and stream sediment loads have tapered off somewhat from the associated

mid-summer highs, but turbulence of the dense, cold underflow may be entraining bottom sediment to add to the turbidity found near the lake bottom.

October 14 data show isothermal profiles, with temperatures somewhat warmer at the upper stations. This is likely due to the slower cooling of the upper lake because of the larger volume to surface area ratio in the upper end. That the lake is actively overturning is suggested by the consistency of turbidity measurements throughout the lake. The uniform turbidity verifies the breakdown of stratification. In October, streamflow drops significantly (less than 205 cfs or 500,000 cubic meters/day) and inlet water is running clear and cold (close to 0°), so the generation of any new distinct turbid layer is improbable.

The last set of profiles on November 4 shows isothermal temperatures in a much narrower range, with colder temperatures evident in the lower lake shallow areas. Turbidity measurements are consistent for 3 station readings at the surface and at seven meter depth. It is expected that the active overturn process is maintaining turbidity levels similar to the seven meter value throughout the water column. Surface values of turbidity are uniformly 1 NTU less than the seven meter values. Conductivity is also a few umhos lower at the surface. This is possible evidence of clear, cold buoyant inflow and the addition of fresh snowfall which has not been mixed into the lake.

4.2 - Sediment Studies

A significant portion of the efforts of the program were directed toward characterizing the behavior of sediments in the lake. Suspended sediment samples were taken from depths of peak turbidity and from other selected locations during most profiling trips. Samples were analyzed for gravimetric sediment concentration and particle size. Sediment concentrations in the lake ranged from 0.1 mg/l from the uniformly turbid profile of October 14, to 63.5 mg/l from the peak of the turbid layer at Station 4 on July 28.

As mentioned above in the discussion of temperature stratification, there are pronounced effects of sediment-rich interflow evident from the turbidity profiles. It is from the layer of maximum turbidity at Station 4 that the maximum sediment concentration of 63.5 mg/l was recorded.

Turbidity and sediment concentration are compared in Figure 4.24 for both lake and stream measurements. The least square curve fit shown on the figure has a correlation coefficient of $r^2 = 0.83$. It may be inferred from the plot that most of the stream sediment load

is deposited in the delta at the lake head, and only reduced concentrations of sediment are carried into the lake.

The lake sediment profiles of Figures 4.25 through 4.31 illustrate the distribution of concentrations of sediment and lake mean particle size.

Particle size distribution are given in Figures 4.32 through 4.38. For the most part, suspended sediment particles averaged 3 to 4 microns in equivalent diameter. No relation could be drawn between particle size and lake depth, sediment concentration, turbidity, or station. Notable exceptions to this 3-4 micron trend occur at Station 11 from sampling trips on June 18 and July 15. These show extraordinarily high ranges of particle size, including mean particle equivalent diameter of up to 33 microns on the latter date.

The principal source of sediment is the glacial inlet from East Fork and Glacier Fork. At peak inflow at the end of July, particles as large as 40 microns in equivalent diameter were found at Station 6. Although particle size averaged to 4 microns the coarser portions of the size distribution varied from sample to sample. Typically fewer than 0.1% of the particles in any sample were larger than 25 to 30 microns.

Three lake samples were analyzed to determine the relative density distribution of the minerals present. For comparison, Table 4.1 shows density distribution for one sample from the Susitna River. The densities are shown in the histogram of Figure 4.39.

It appears from a comparison of the densities of the Eklutna and Susitna waters that a specific gravity of 2.8 is an appropriate mean density for the sediment particles of the waters.

In addition to identifying mineral species and densities, the shapes of the particles of lake sediment are also important in determining settling characteristics. Particle shape also affects turbidity. Metal-shadowed photomicrographs of suspended sediment were made at 400x magnification to get a qualitative evaluation of the suspended material. Figure 4.40 shows typical photomicrographs. It appears from the figure that typical sediment particles are flaky and quite angular. The shape of the particles, therefore, are effective in increasing turbidity and reducing sediment fall velocities due to the increased turbulence and viscous effects of the surface area of the particles.

Minerological analysis and photomicrographs of the Station 11, July 15 sample were utilized to account for the large particle sizes discussed above. Photographs demonstrated that the particles were sphereulitic concretions of calcium carbonate in the form of crystal aragonite. These photographs are shown in Figure 4.41. The

occurrence of this mineral at only Station 11 is puzzling. One explanation would be the introduction via springs of hard groundwater which causes precipitation of calcium carbonate in the water near Station 11. Turbulent mixing in the water column prevents deposition of the precipitate, and the crystals grow while circulating in the hard, calcium saturated waters. No water chemistry was provided for in this study, so the lake hardness has not been documented.

A petrographic analysis was conducted on the four samples via polarized light microscopy to determine the relative quantities of the various mineral present. All microscope observations and density determinations were conducted by Mr. M. Bayard of Particle Data Laboratories.

4.3 - Light Extinction

Data collected with the LiCor underwater photometer are summarized in Tables 4.3, 4.4 and 4.5 and plotted in Figure 4.42 through 4.44. The semilog plots of the figures demonstrate exponential decay of the photon flux density (or irradiance) with increasing depth.

Extinction coefficients (η) based on least square curve-fitting techniques for the exponential decay are given in Column 3 of Table 4.6. Coefficients vary from 1.08 to 2.35.

Correlation coefficients (r^2) for the least square linear approximations range from 0.95 to 0.99 as shown in Column 4 of Table 4.6. There is fair agreement between extinction coefficients from different stations for a given date. Seasonal variation is readily apparent. The principal factors affecting the seasonal variation are the formation and subsequent deterioration by mixing of density strata in the lake, and variation of the suspended solids concentration in inflow. Inflow and corresponding suspended sediment loading of the lake are at a peak in early August, after which time the surface light penetration increases until October when the fall overturn creates a uniformly turbid water column.

In several data sets, the effects of layering are apparent. The plots on Figure 4.42 for Stations 4 and 7 of July 27, for example, show different rates of extinction above and below the 1 meter depth.

Also shown on the table are values for secchi disk transparency and inverted secchi disk transparency, of which the latter has units equivalent to extinction coefficient.

Figure 4.45 compares the inverted secchi disk transparencies from Column 6 of Table 4.6 to the extinction coefficients derived from the photometer data in Column 3. It seems that for the range of

light extinction in the glacial lake waters, the secchi disk does an extremely good job of estimating light extinction.

Turbidity values for the surface layers of Eklutna Lake are shown on Table 4.6 and plotted versus extinction coefficients in Figure 4.46. A correlation coefficient of $r^2 = 0.964$ for the linear approximation indicates that turbidity and extinction are closely correlated. It would seem that scattering by suspended particulates appears to be the governing factor in light extinction in Eklutna Lake.

Transmissivity profile measurements were made on one sampling trip only (June 17-18), using a Kahlsico No. 269WA150 Turbidity Meter. Transmissivity readings versus Hach Turbidimeter readings are plotted in Figure 4.47. The inverse relationship between the two parameters is clear, and the available data yield a fair correlation ($r^2 = 0.63$). However, the lack of additional sampling dates and the somewhat limited range of turbidities and transmissivities indicated fail to demonstrate clearly the relative effects of absorption versus scattering on light penetration or extinction.

Practical use of the inexpensive secchi disk was shown to be a good indicator of a light extinction coefficient. Similarly, surface turbidity measurements appear to be adequately correlated to extinction coefficients. The reliability of the second relationship seems to indicate that light extinction in lakes ladened with suspended glacial sediment is dominated by scattering rather than light absorption phenomenon. Further analysis and an expansion of the transmissivity data base are probably required before this conclusion can be effectively upheld.

Seasonal variation in light extinction is extreme in Eklutna Lake, with measured decay coefficients varying from lows of $1.1 m^{-1}$ in July and September to a peak in August of $2.3 m^{-1}$. Utilizing the correlation developed in Figure 4.47 between surface turbidity and extinction coefficient, light extinction may be estimated for the early season as well. Thus, the measured low turbidity value of 5.5 NTU of May 25 would correspond to an extinction coefficient of $0.26 m^{-1}$, an order of magnitude different from the maximum extinction coefficient measured in August. Vertical mixing of turbid strata during the fall overturn cause the surface turbidity and light extinction to again increase in October.

TABLE 4.1
DENSITY DISTRIBUTIONS

Sample	Composition Percentage	Density Range
Eklutna Lake 2 July 82, STA 8, 45M	80%	2.80 - 2.84
	10%	2.90
	10%	2.48 - 2.55
Eklutna Lake 2 July 82, STA 8, 5M	70%	2.85 - 2.90
	15%	2.90 - 3.05
	15%	2.65 - 2.85
Eklutna Lake 12 July 82, STA 8, 15M	70%	2.74 - 2.80
	25%	2.74
	5%	2.8 - 3.0
Susitna River Depth Integrated	60%	2.7 - 2.9
	15%	2.9 - 3.2
	25%	2.6 - 2.7

TABLE 4.2
PETROGRAPHIC ANALYSIS

Mineral Species	% of Total Sediment	
	Susitna River at Gold Greek	Eklutna Lake Composite
Augite	5 - 10	5
Quartz	15 - 20	15 - 20
Diatoms	5	1 - 2
Muscovite	19 - 20	15 - 20
Mixed Feldspars	25 - 30	30 - 35
Iron Oxides	10 - 15	4 - 8
Illmenite	5	3
Calcite	1 - 2	2 - 3
Zircon	1	---
Pyrite	3 - 5	1

TABLE 4.3
EKLUTNA LAKE
LIGHT EXTINCTION
IN-SITU MEASUREMENTS
JULY, 1982

Date:	15 July	15 July	27 July	27 July	28 July
Station:	9	11	7	4	11
Time:	1330	1300	1920	1935	1021
Irradiance (Microeinsteins per square centimeter per second.)					
Sensor in Air:	500	950	540	570	620
Depth (m):					
Surface	380	900	290	480	560
0.5	180	480	110	138	260
1	75	265	34	46	72
1.5	32	130	-	-	-
2	20	70	19	27	16
2.5	-	-	-	-	-
3	7	25	0.9	1.45	3.6
3.5	-		-	-	-
4	2.2	12	-	-	-
4.5	-	-	-	-	-
5.0	0.7	-	-	-	-

Radiation measurements taken with Li-Cor submersible quantum sensor.

TABLE 4.4
EKLUTNA LAKE
LIGHT EXTINCTION
IN-SITU MEASUREMENTS
AUGUST, 1982

Date:	10 August	11 August	11 August	25 August	25 August
Station:	11	7	4	2	9
Time:	1640	1020	1310	-	1645
Irradiance (Microeinsteins per square centimeter per second.)					
Sensor in Air:	192	500	810	340	480
Depth (m)					
Surface	185	480	520	295	480
0.5	46	99	150	109	215
1	14	42	44	54	97
1.5	-	-	-	-	-
2	1.5	4.1	5.3	12.5	22.0
2.5	-	-	-	-	-
3	0.2	0.5	0.7	3.5	5.6
3.5	-	-	-	-	-
4	-	0.04	0.03	1.2	0.65
4.5	-	-	-	-	-
5.0	-	-	-	-	-

Radiation measurements taken with Li-Cor submersible quantum sensor.

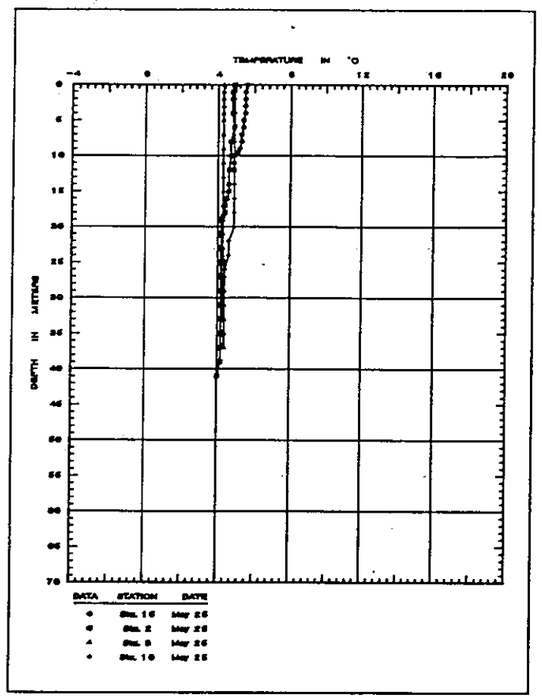
TABLE 4.5
EKLUTNA LAKE
LIGHT EXTINCTION
IN-SITU MEASUREMENTS
SEPTEMBER/OCTOBER 1982

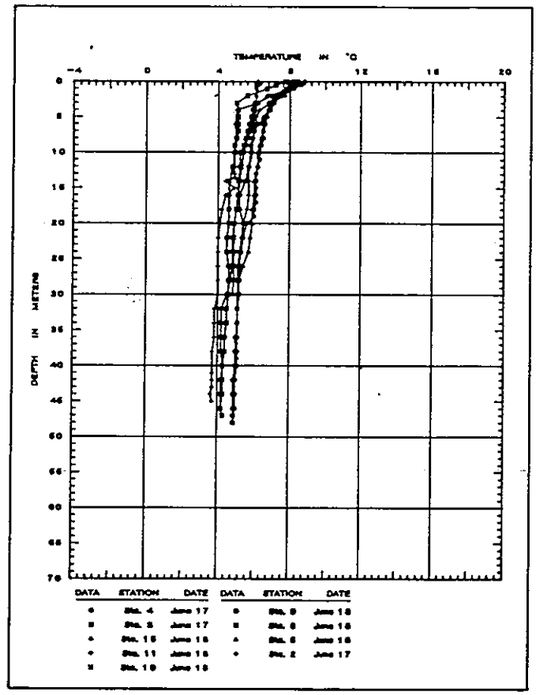
Date:	10 Sept.	10 Sept.	10 Sept.	15 Oct.
Station:	11	9	2	2
Time:	0750	0857	1421	1304
Irradiance (Microeinsteins per square centimeter per second.)				
Sensor in Air:	125	239	385	520
Depth (M)				
Surface	117	155	375	380
0.5	69	64	185	-
1	28	30	82	110
1.5	18	-	-	-
2	11	12.8	28	7.4
2.5	-	-	-	-
3	4.2	4.5	9.6	1.3
3.5	-	-	-	-
4	1.3	1.4	3.4	0.26
4.5	-	-	-	-
5.0	0.5	0.4	0.96	-

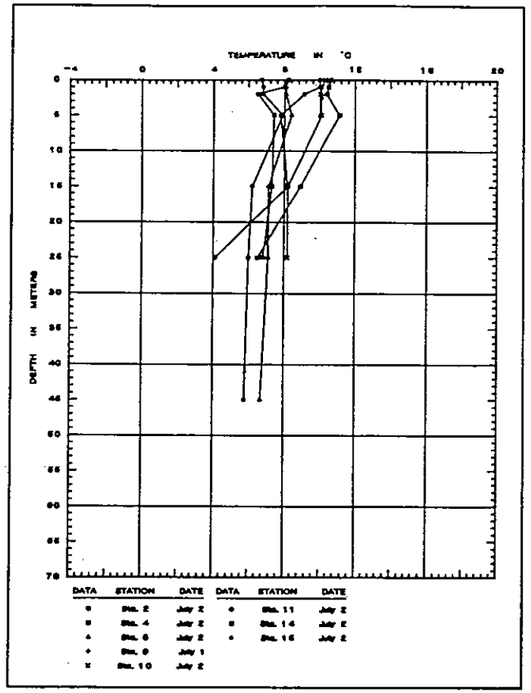
Radiation measurements taken with Li-Cor submersible quantum sensor.

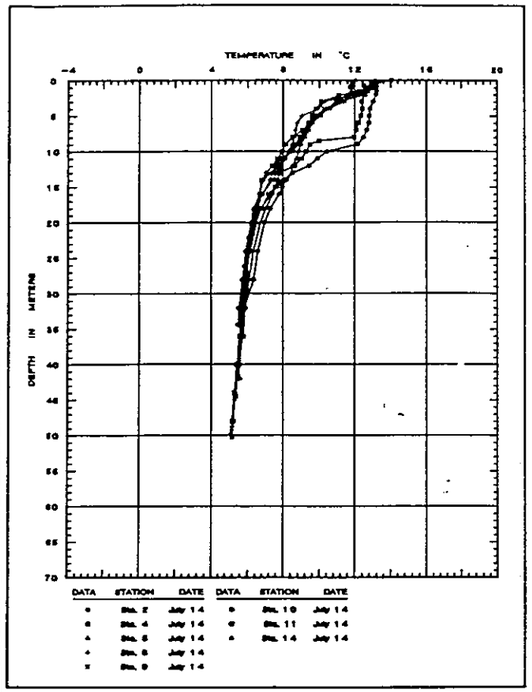
TABLE 4.6
LIGHT PENETRATION DATA COMPARISON

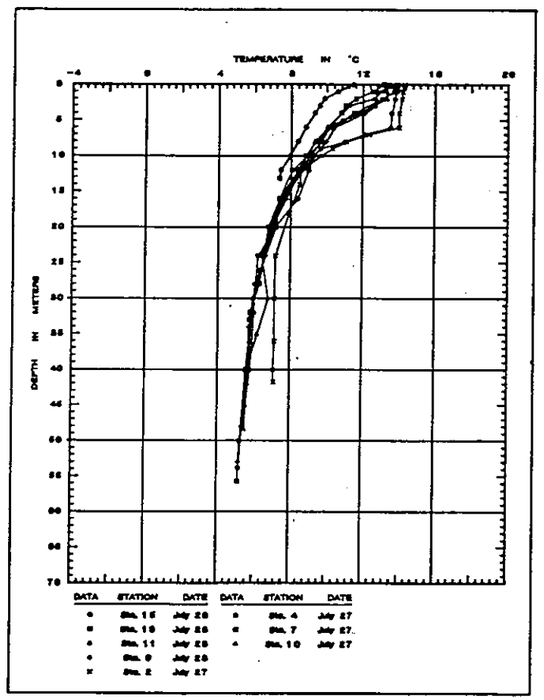
(1) Date	(2) Station	(3) Extinction Coefficient Observed (m^{-1})	(4) Correlation Coefficient (r^2)	(5) Secchi Transparency (m)	(6) Secchi Transparency (m^{-1})	(7) Surface Turbidity (NTU)
15 July	9	1.09	0.95	NA	NA	20.5 (1m)
15 July	11	1.10	0.99	NA	NA	17 (1m)
27 July	7	1.78	0.95	NA	NA	NA
27 July	4	1.75	0.95	0.58	1.73	27 (1m)
28 July	11	1.70	0.99	0.61	1.64	27 (1m)
10 August	11	2.26	0.995	0.43	2.34	38 (1m)
11 August	7	2.28	0.995	0.46	2.19	37 (1m)
11 August	4	2.35	0.99	0.43	2.34	36 (1m)
25 August	2	1.36	0.99	0.64	1.56	NA (1m)
25 August	9	1.60	0.99	0.70	1.43	27 (4m)
10 September	11	1.08	0.995	0.92	1.09	18 (1m)
10 September	9	1.13	0.99	0.92	1.09	18 (1m)
10 September	2	1.16	0.995	0.88	1.13	22 (10m)
15 October	2	1.90	0.99	0.49	2.05	31 (4m)

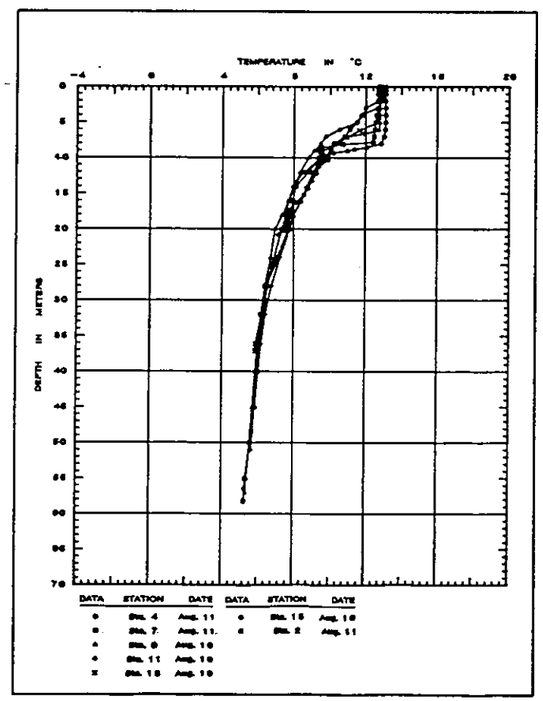


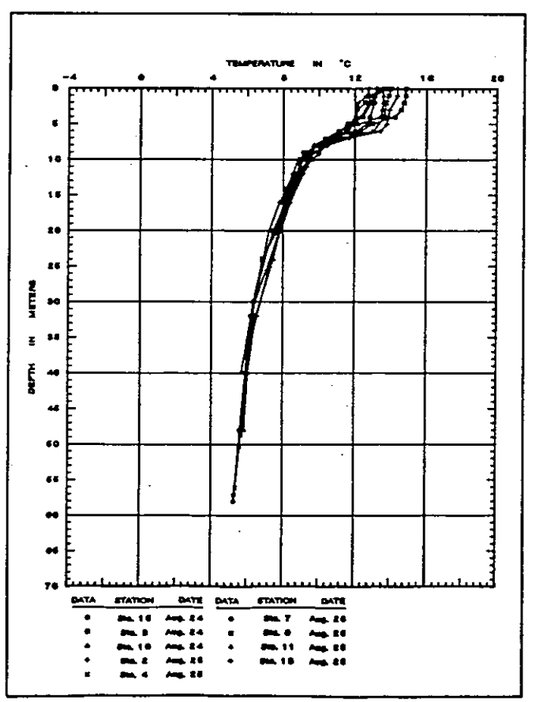












SUSITNA HYDRO

GLACIAL LAKE STUDIES

WATER QUALITY PROFILING AT EKLUTNA LAKE

TEMPERATURE COMPARISONS

FIGURE 4.1

PREPARED BY:

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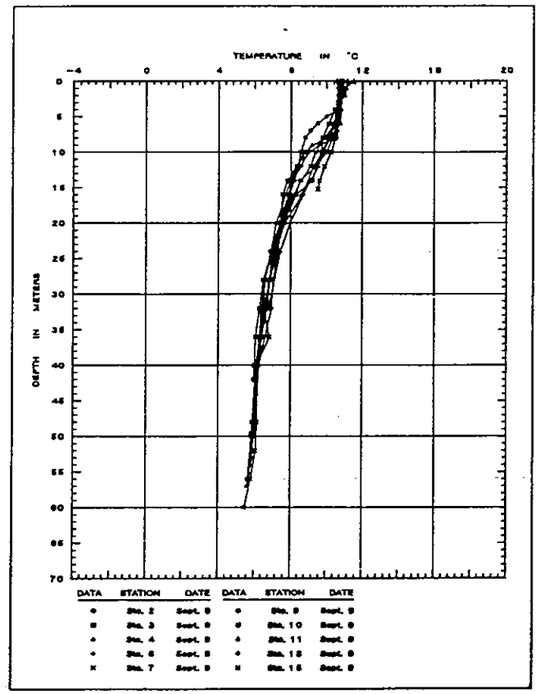

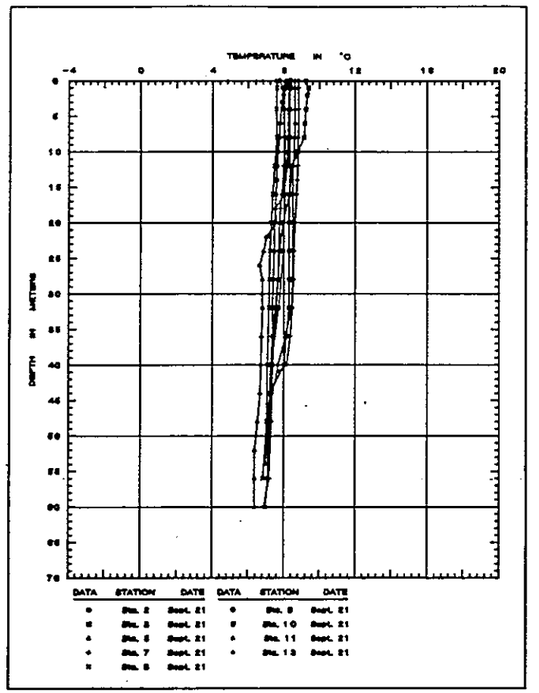

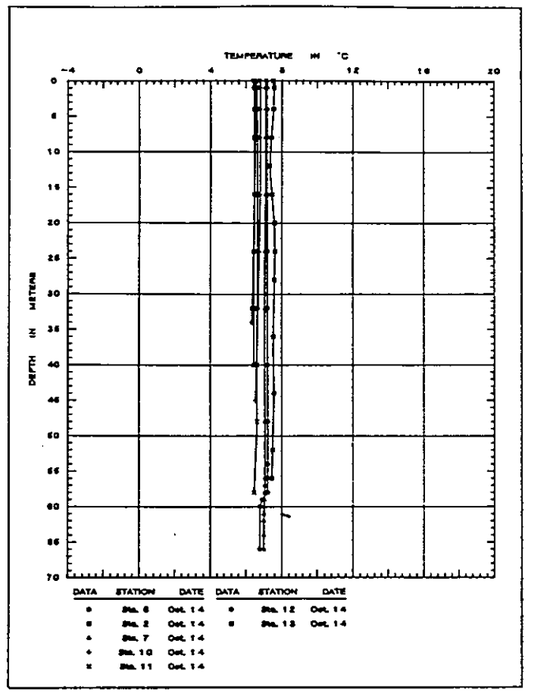

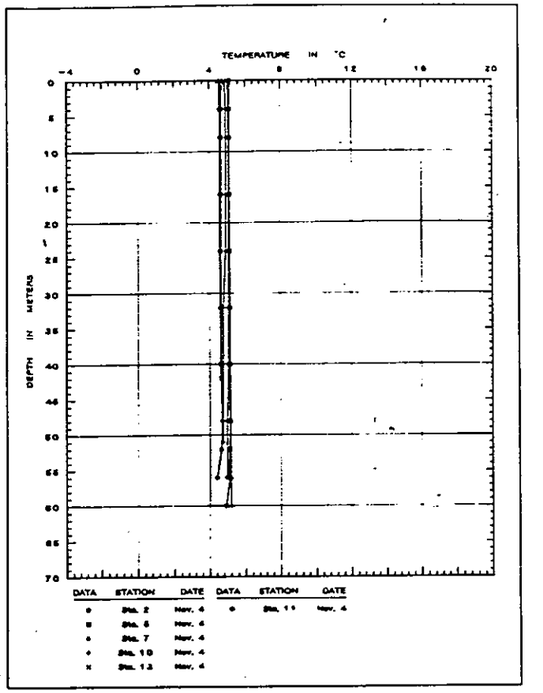

SUSITNA HYDRO

GLACIAL LAKE STUDIES

WATER QUALITY PROFILING

AT

EKLUTNA LAKE

TEMPERATURE COMPARISONS

FIGURE 4.2

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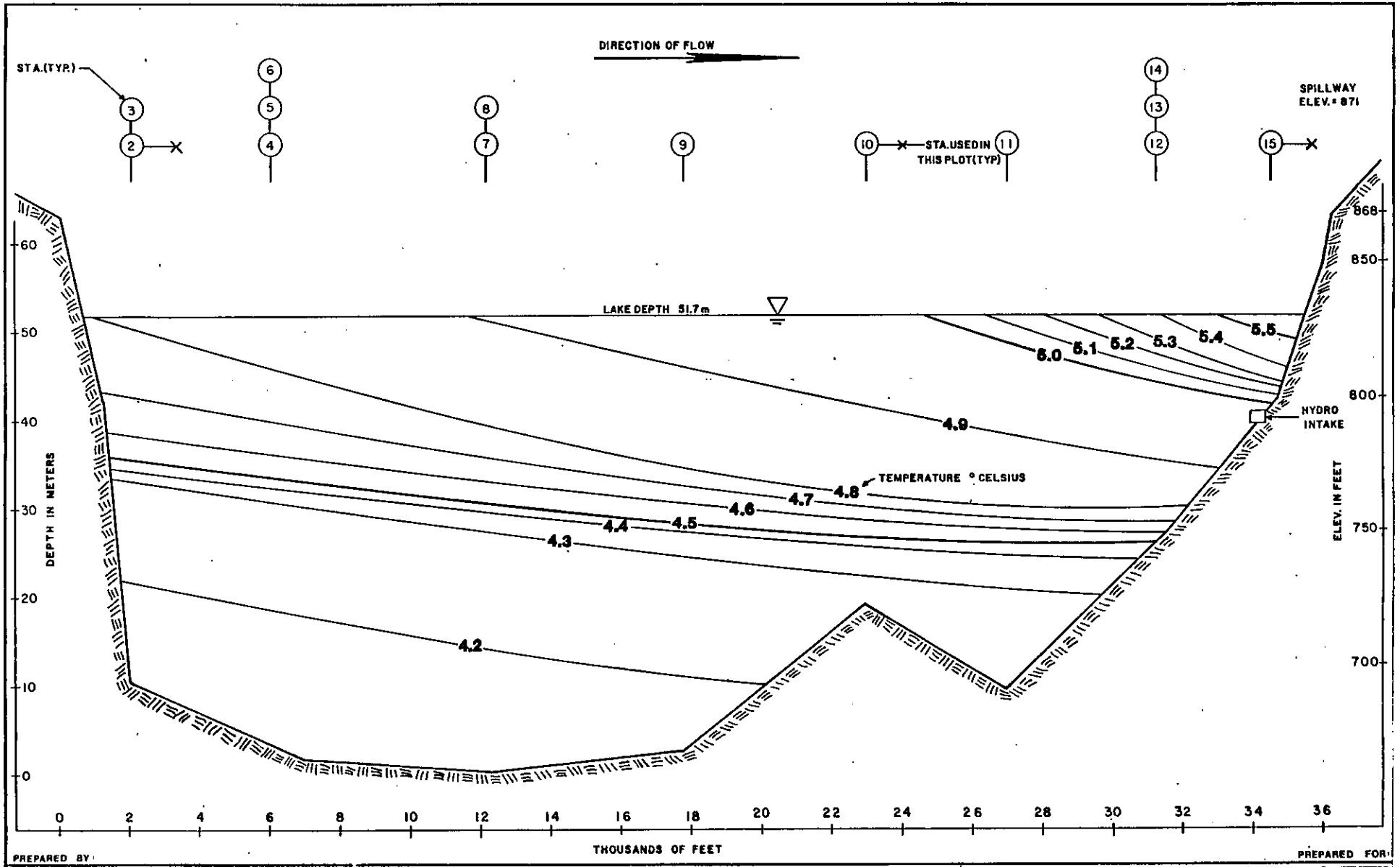
PREPARED FOR

ACES



R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES

EKLUTNA LAKE PROFILE
TEMPERATURE ISOPLETHS FOR MAY 25

ACRES

FIG. 4.3

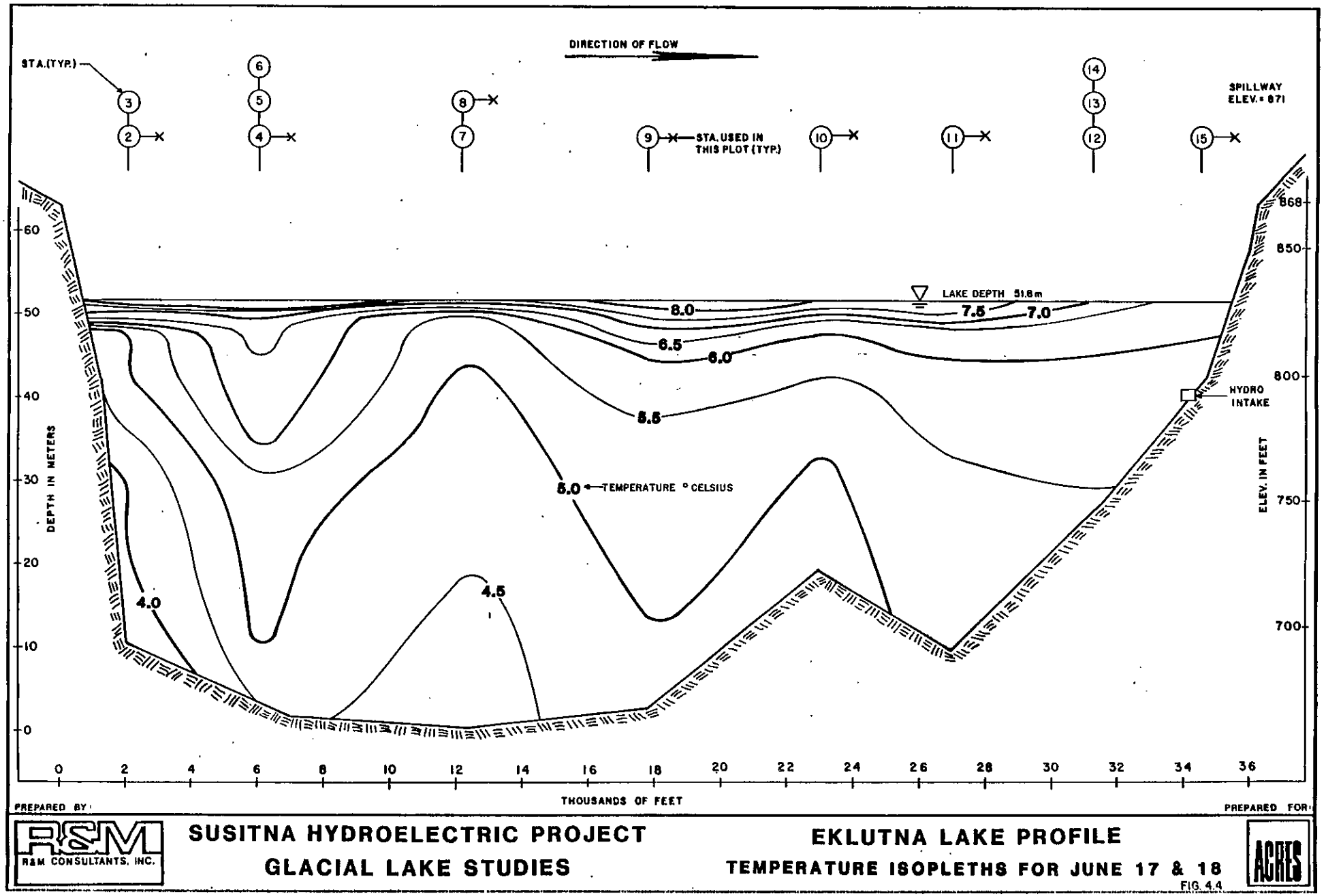
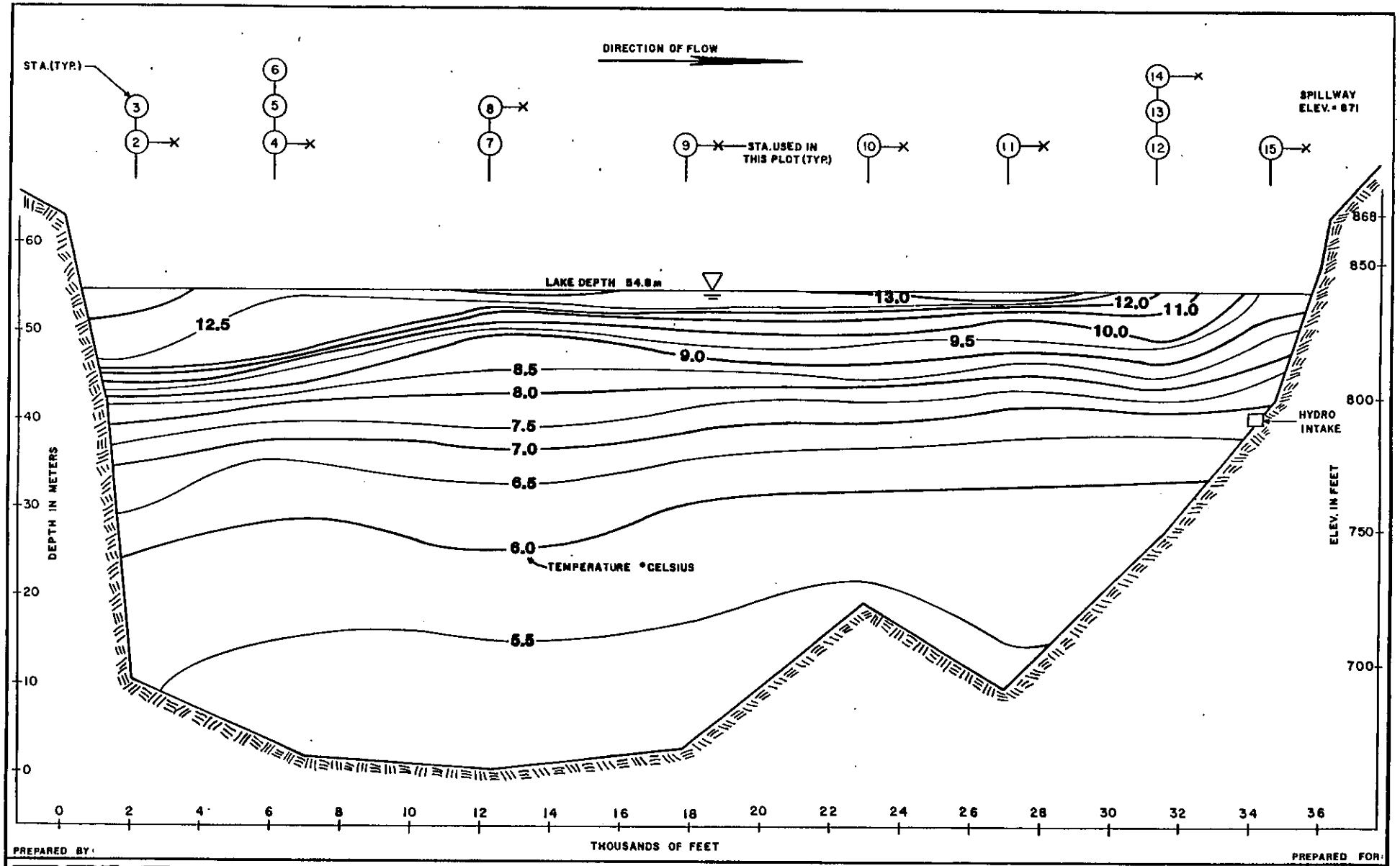

DIRECTION OF FLOW
STA.(TYP.)
STA. USED IN THIS PLOT (TYP.)
SPILLWAY ELEV. = 871
LAKE DEPTH 51.8m
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
TEMPERATURE °CELSIUS
HYDRO INTAKE
DEPTH IN METERS
ELEV. IN FEET
THOUSANDS OF FEET
PREPARED BY:
PREPARED FOR:
R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES
EKLUTNA LAKE PROFILE
TEMPERATURE ISOPLETHS FOR JUNE 17 & 18
ACRES

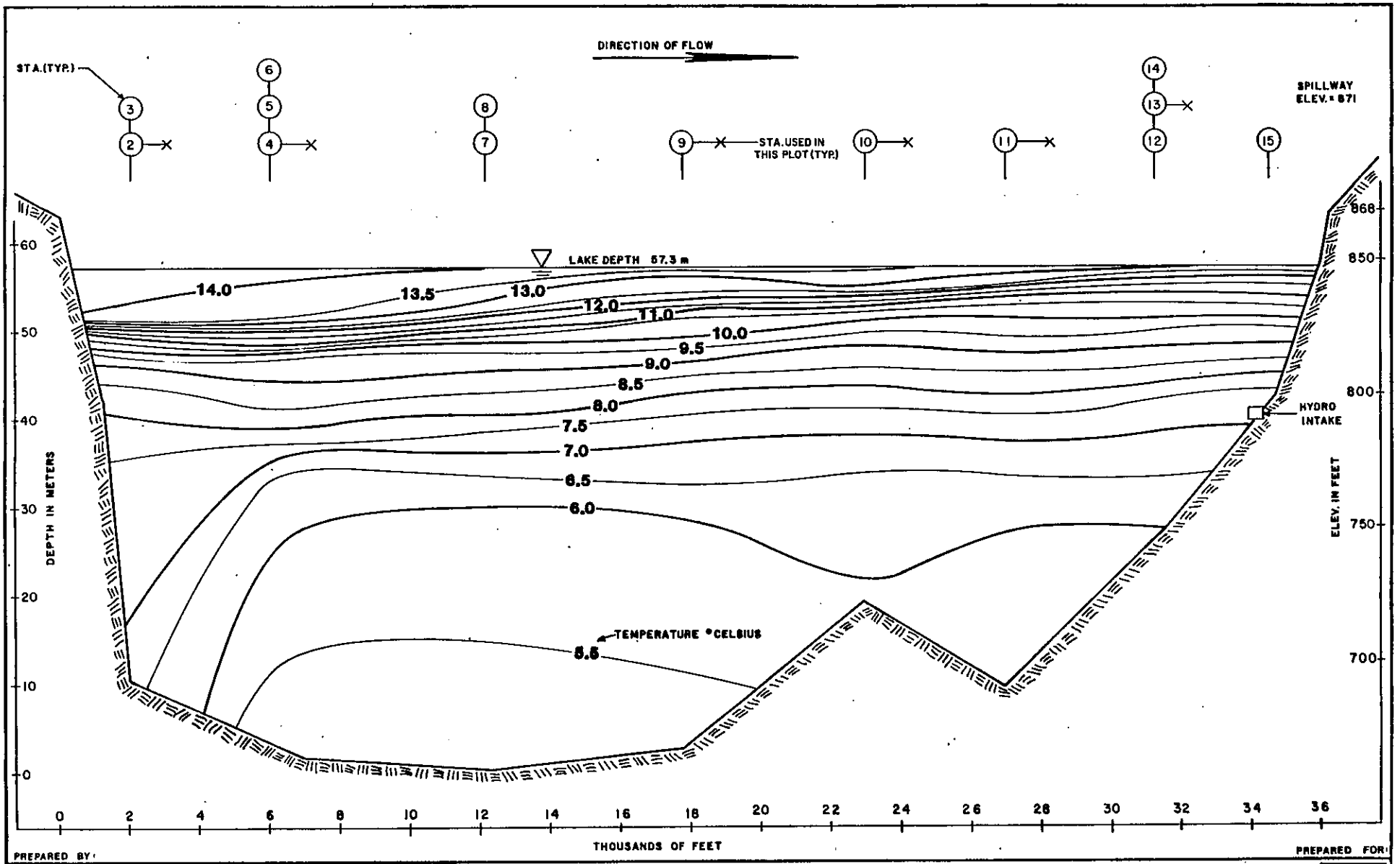
FIG. 4.4



SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES

EKLUTNA LAKE PROFILE
TEMPERATURE ISOPLETHS FOR JULY 14

FIG. 4.5



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SUSITNA HYDROELECTRIC PROJECT

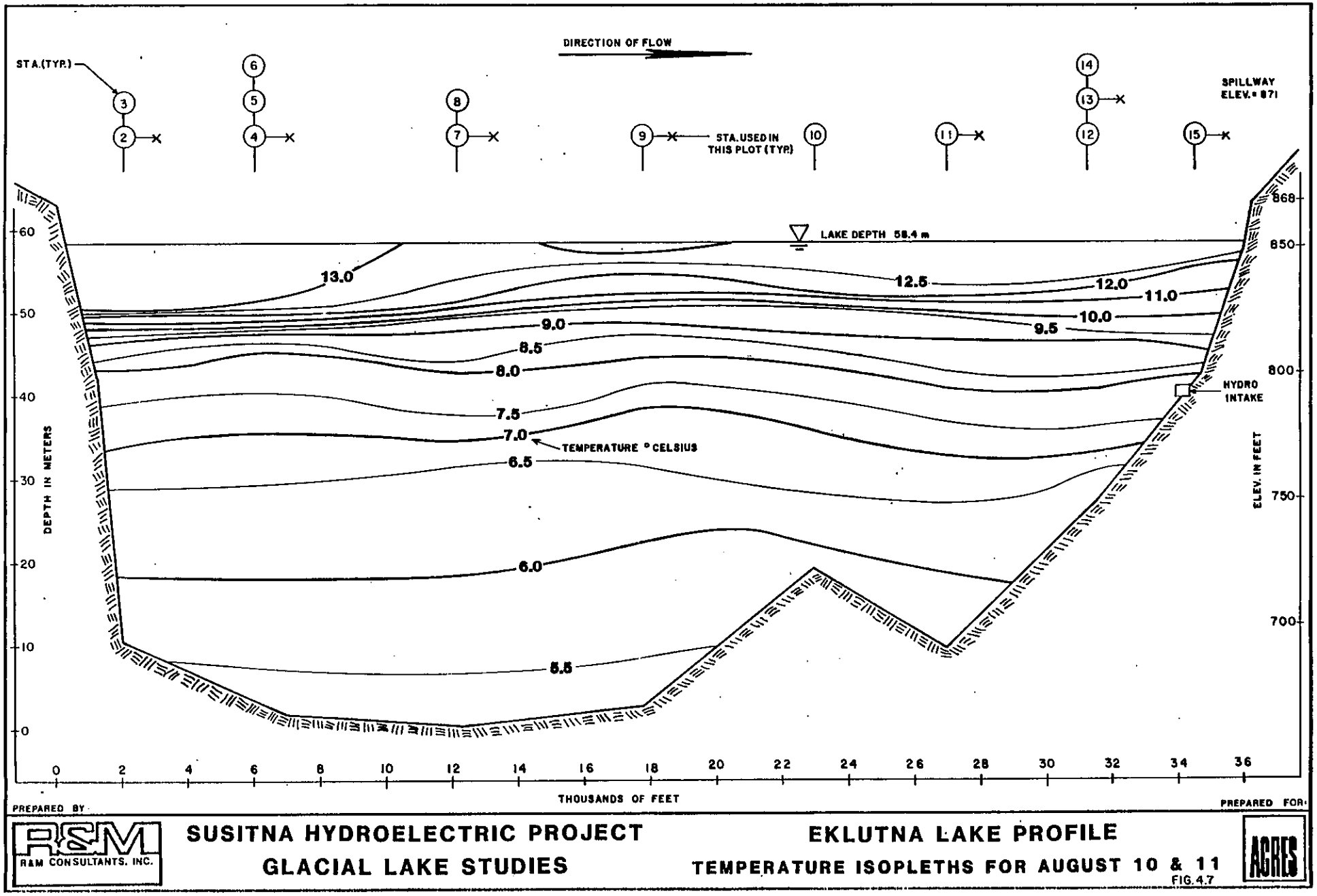
GLACIAL LAKE STUDIES

EKLUTNA LAKE PROFILE

TEMPERATURE ISOPLETHS FOR JULY 27 & 28

ACRES

FIG. 4.6



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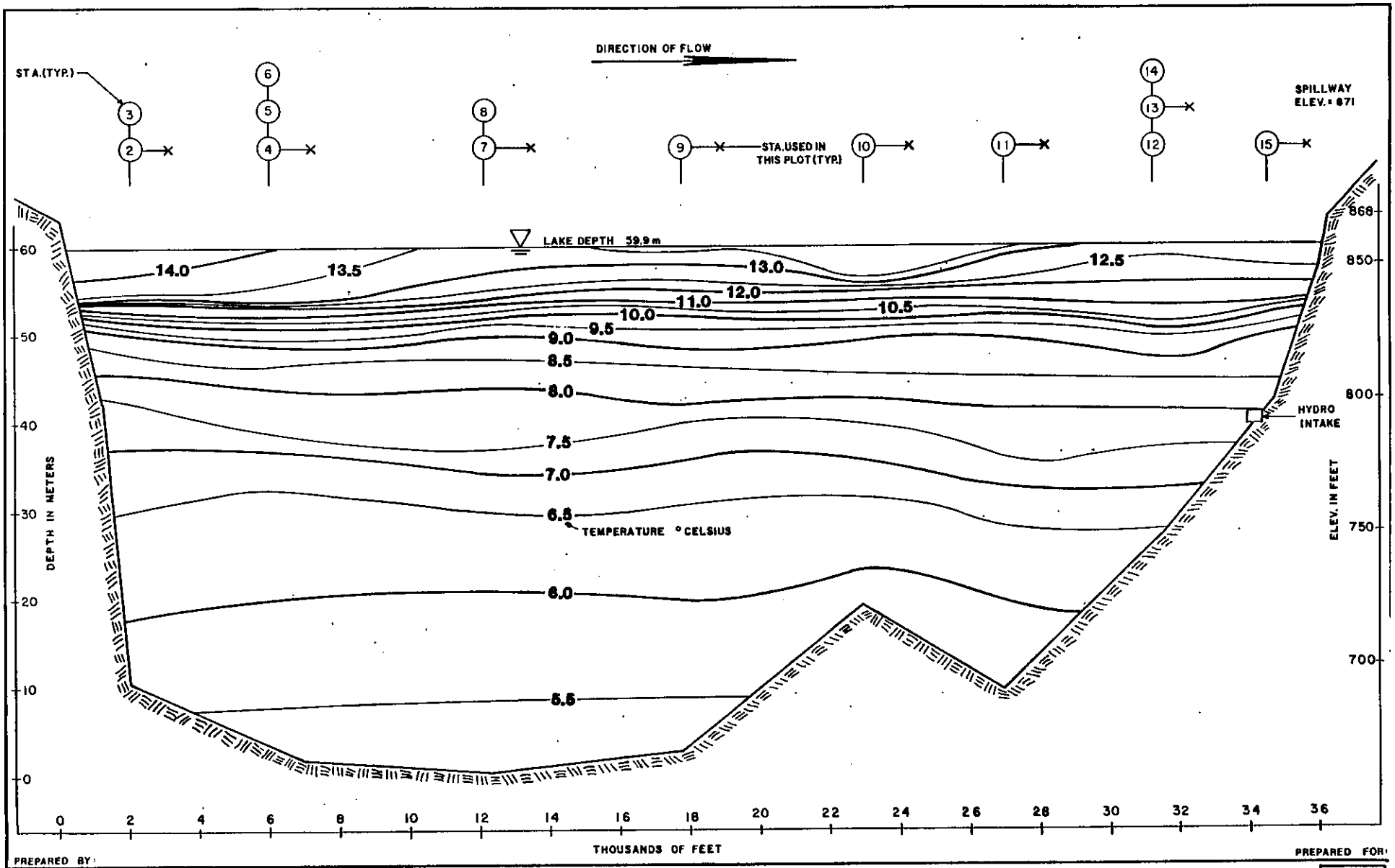
SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES

EKLUTNA LAKE PROFILE
TEMPERATURE ISOPLETHS FOR AUGUST 10 & 11

ACRES

FIG. 4.7


DIRECTION OF FLOW
STA.(TYP.)
STA.USED IN THIS PLOT (TYP.)
SPILLWAY ELEV. = 871
LAKE DEPTH 59.9 m
14.0
13.5
13.0
12.5
12.0
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
TEMPERATURE °CELSIUS
HYDRO INTAKE
DEPTH IN METERS
ELEV. IN FEET
THOUSANDS OF FEET
PREPARED BY:
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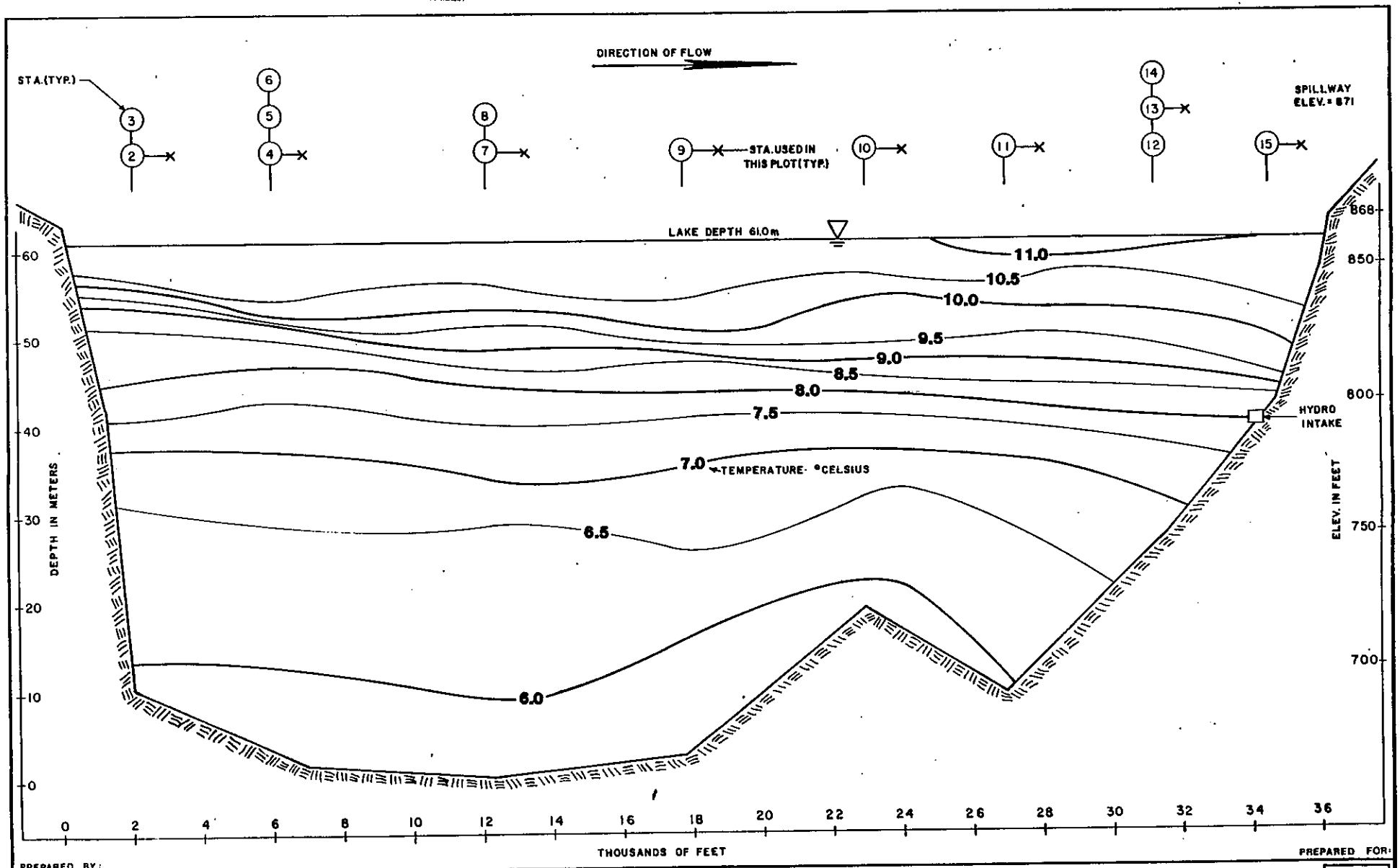
PREPARED FOR:
SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES
EKLUTNA LAKE PROFILE
TEMPERATURE ISOPLETHS FOR AUGUST 24 & 25
ACRES

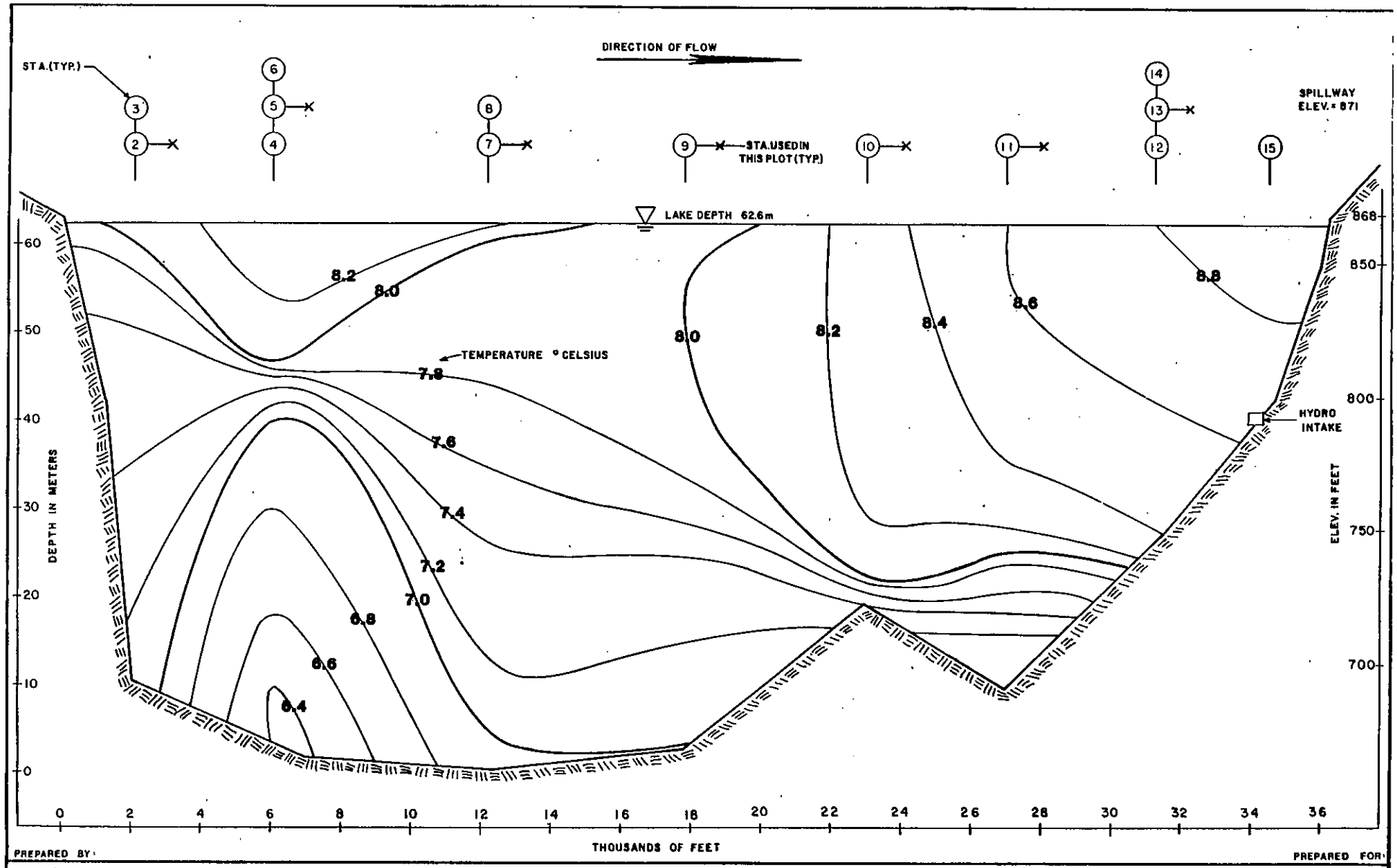
FIG. 4.8



SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES

EKLUTNA LAKE PROFILE
TEMPERATURE ISOPLETHS FOR SEPTEMBER 9

FIG. 4.9


DIRECTION OF FLOW
STA.(TYP.)
SPILLWAY ELEV.= 871
STA.USED IN THIS PLOT (TYP.)
LAKE DEPTH 62.6m
TEMPERATURE °CELSIUS
8.2
8.0
7.8
7.6
7.4
7.2
7.0
6.8
6.6
6.4
8.0
8.2
8.4
8.6
8.8
HYDRO INTAKE
DEPTH IN METERS
ELEV. IN FEET
THOUSANDS OF FEET
PREPARED BY:
PREPARED FOR:
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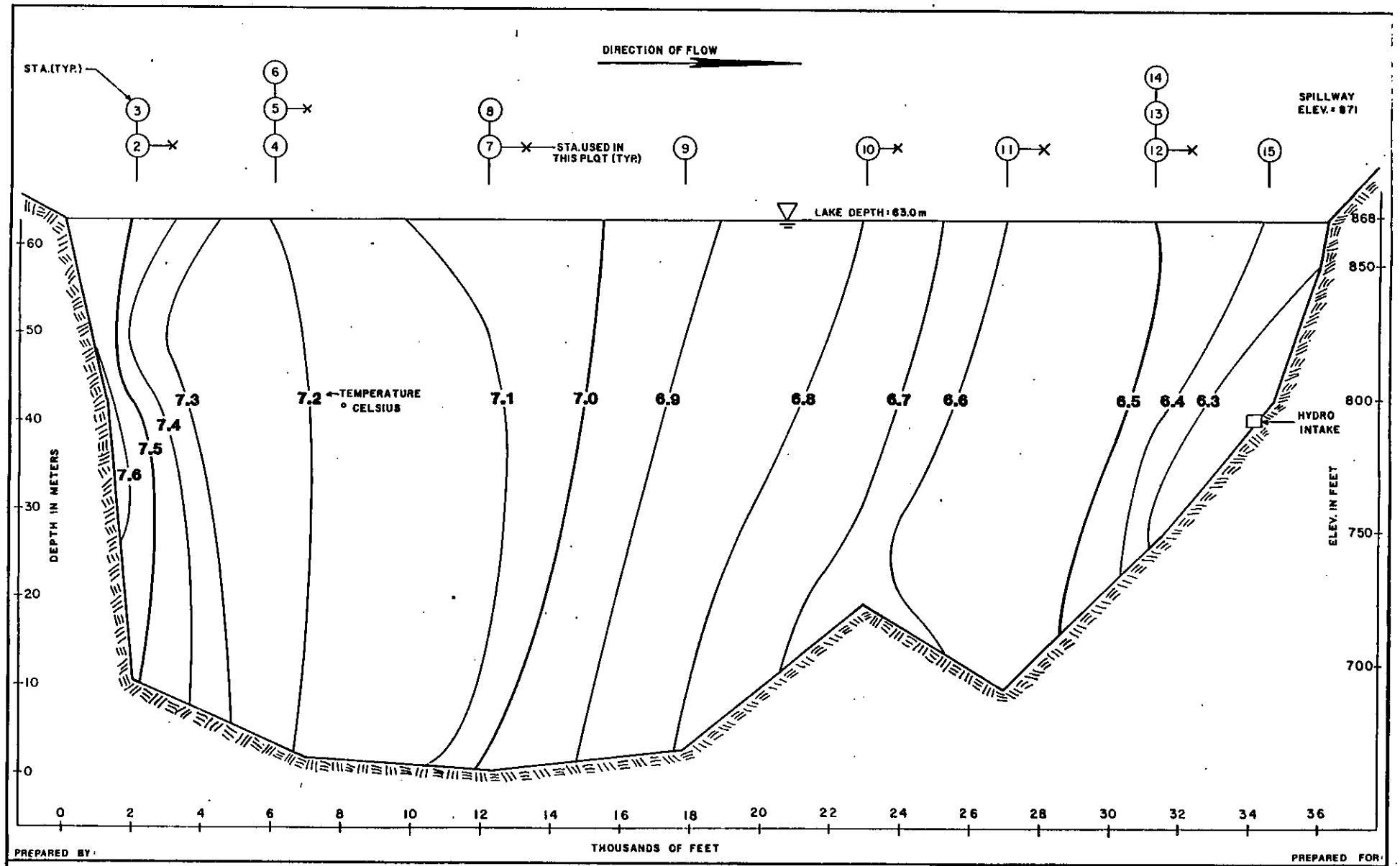
SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES
EKLUTNA LAKE PROFILE
TEMPERATURE ISOPLETHS FOR SEPTEMBER 21
ACRES
FIG. 4.10


DIRECTION OF FLOW
STA.(TYP.)
STA.USED IN THIS PLOT (TYP.)
SPILLWAY ELEV. = 871
LAKE DEPTH: 63.0m
7.6
7.5
7.4
7.3
7.2 ←TEMPERATURE ° CELSIUS
7.1
7.0
6.9
6.8
6.7
6.6
6.5
6.4
6.3
HYDRO INTAKE
DEPTH IN METERS
ELEV. IN FEET
THOUSANDS OF FEET
PREPARED BY:
PREPARED FOR:
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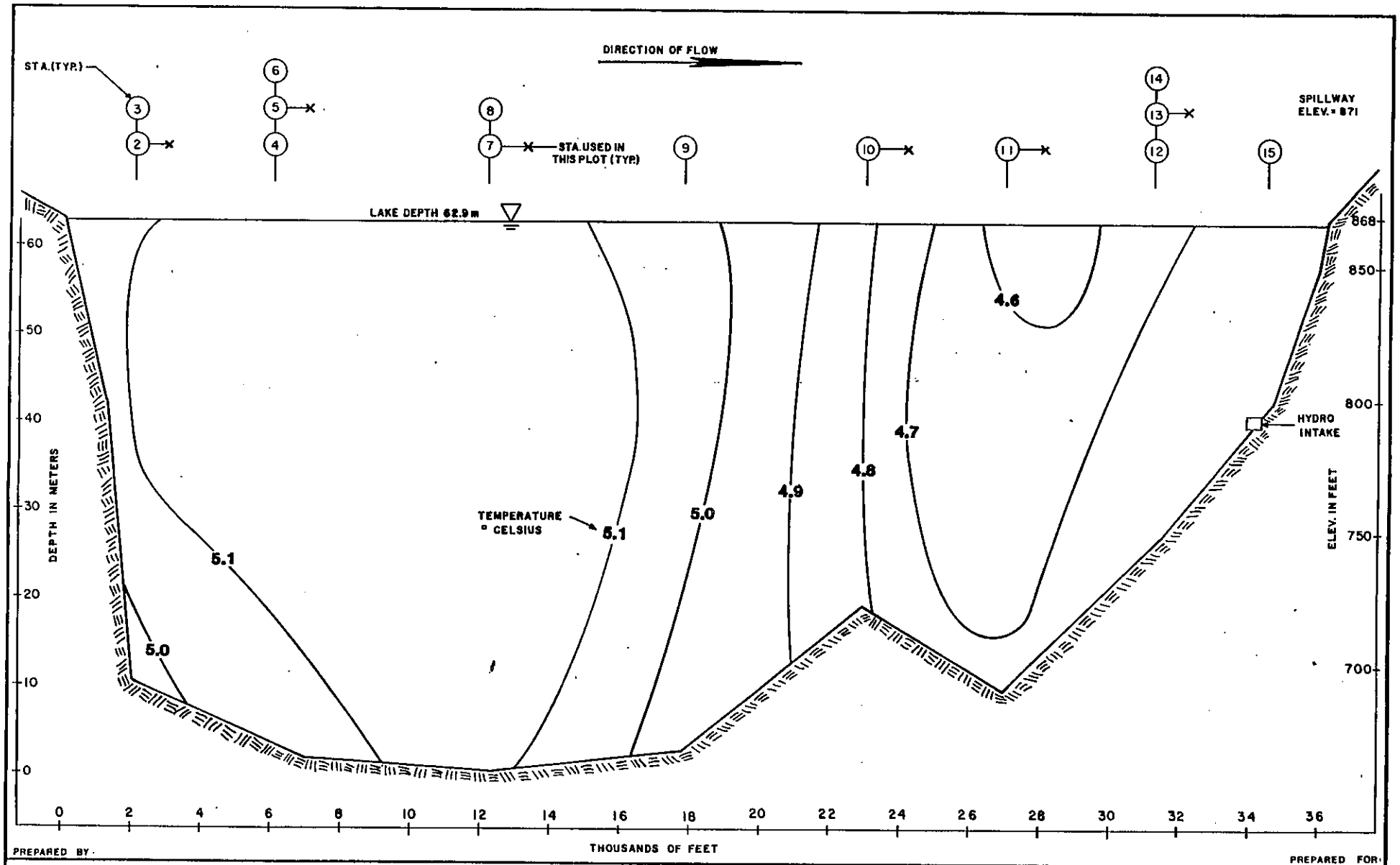
SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES
EKLUTNA LAKE PROFILE
TEMPERATURE ISOPLETHS FOR OCTOBER 14
ACRES

FIG 4.11


DIRECTION OF FLOW
STA.(TYP.)
STA.USED IN THIS PLOT (TYP.)
SPILLWAY ELEV.= 871
LAKE DEPTH 62.9 m
TEMPERATURE ° CELSIUS
5.0
5.1
4.6
4.7
4.8
4.9
HYDRO INTAKE
DEPTH IN METERS
ELEV. IN FEET
THOUSANDS OF FEET
PREPARED BY:
PREPARED FOR:
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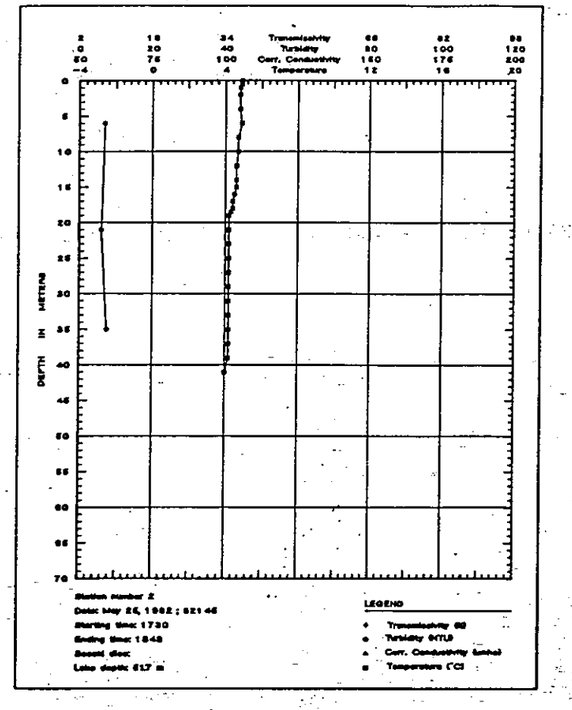
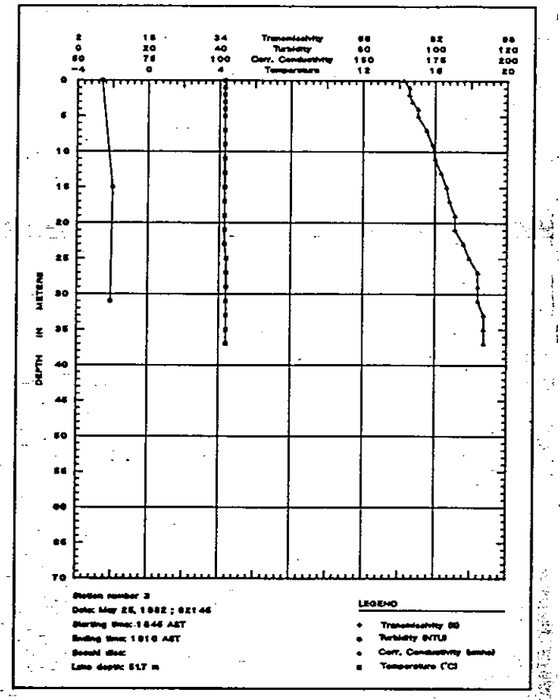
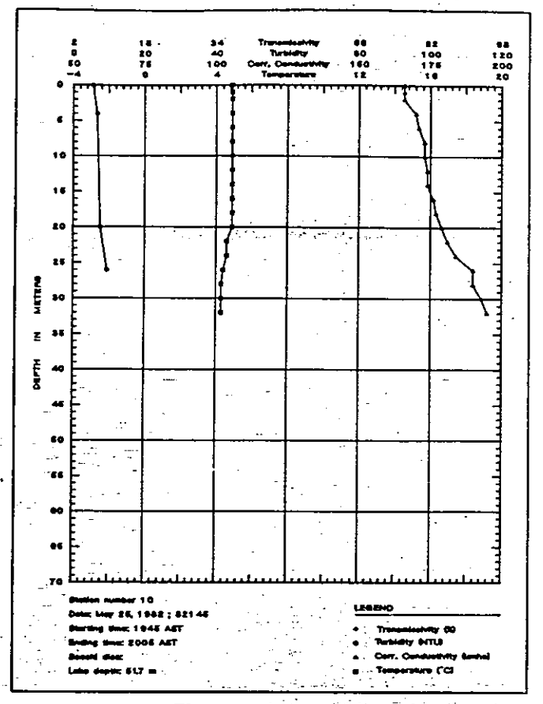
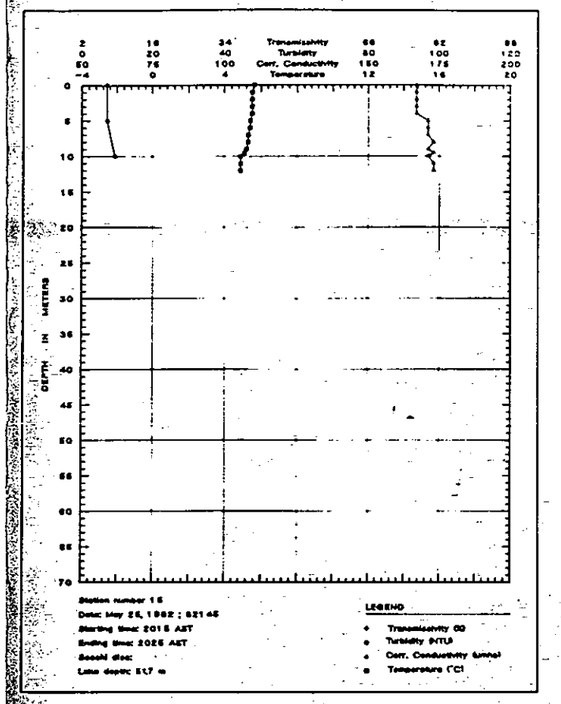
SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES
EKLUTNA LAKE PROFILE
TEMPERATURE ISOPLETHS FOR NOVEMBER 4
ACRES
FIG. 4.12









SUSITNA HYDRO

GLACIAL LAKE STUDIES

WATER QUALITY PROFILING

AT

EKLUTNA LAKE

MAY 25, 1982

FIGURE 4.13

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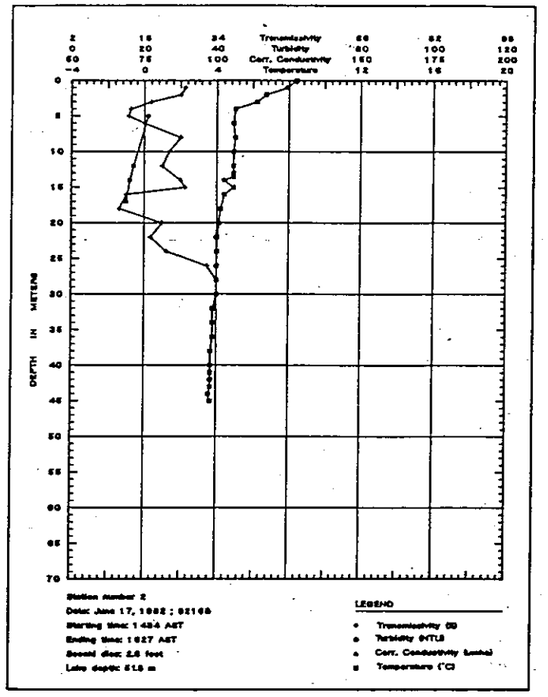
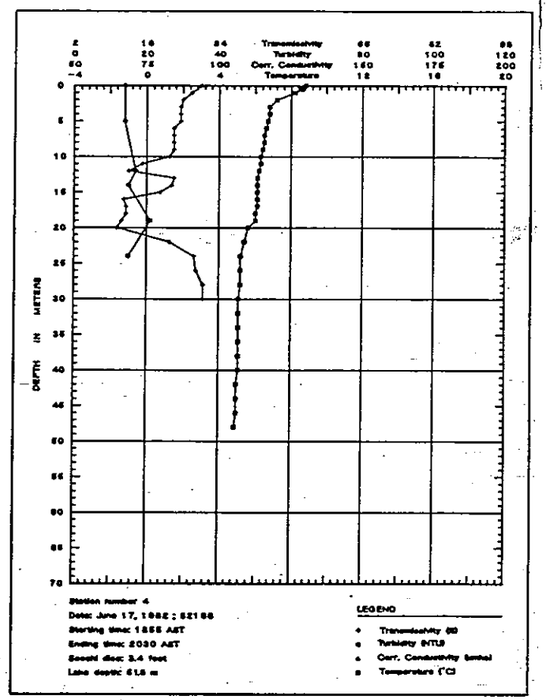
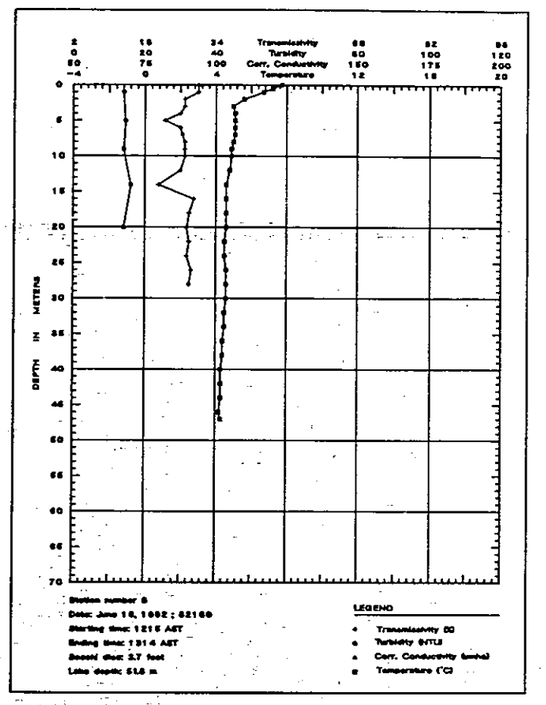
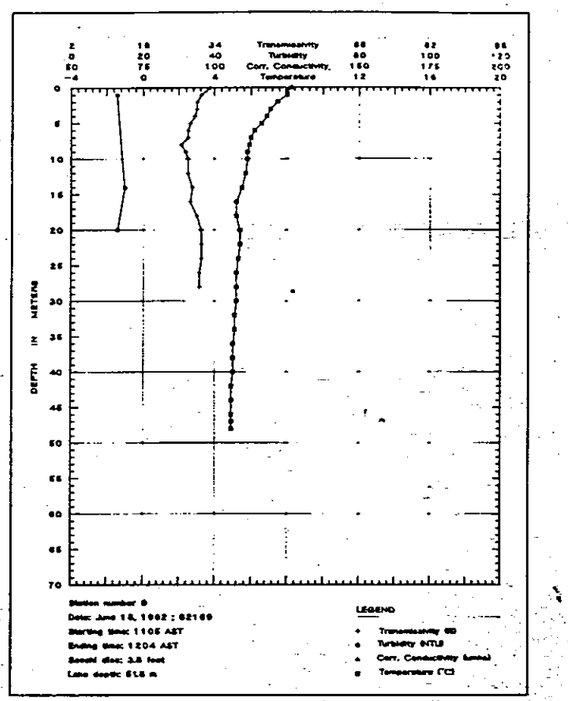
PREPARED FOR:

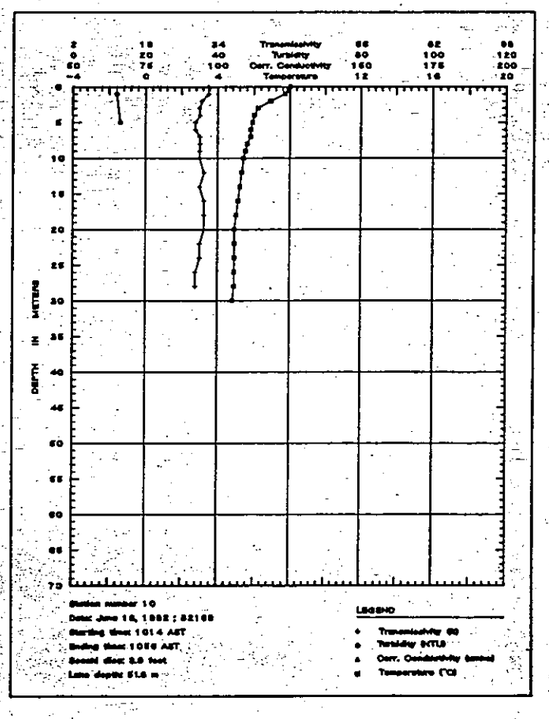
ACRES

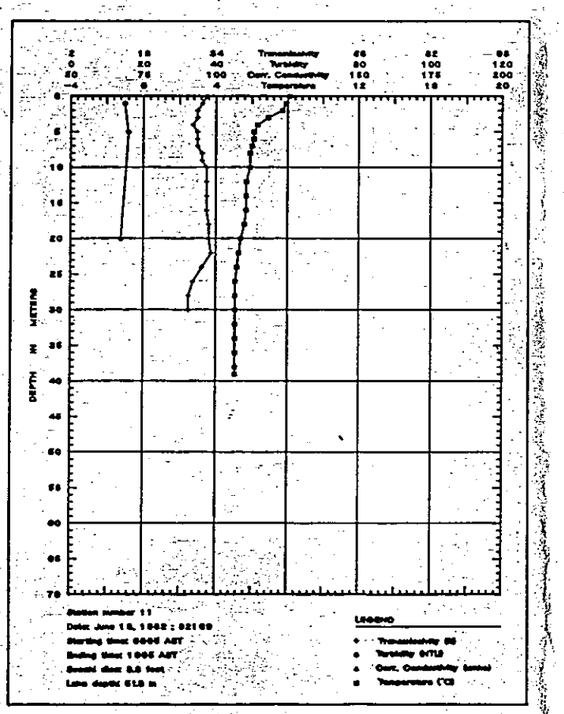


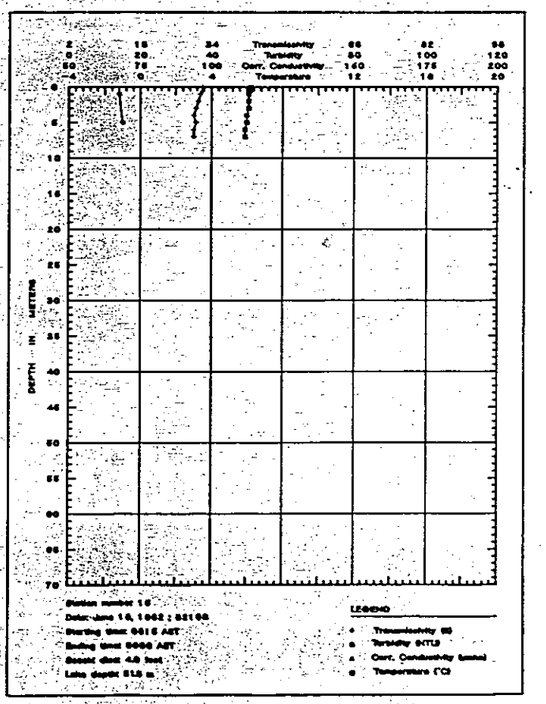












SUSITNA HYDRO

GLACIAL LAKE STUDIES

WATER QUALITY PROFILING

AT

EKLUTNA LAKE

JUNE 17/18, 1982

FIGURE 4.14

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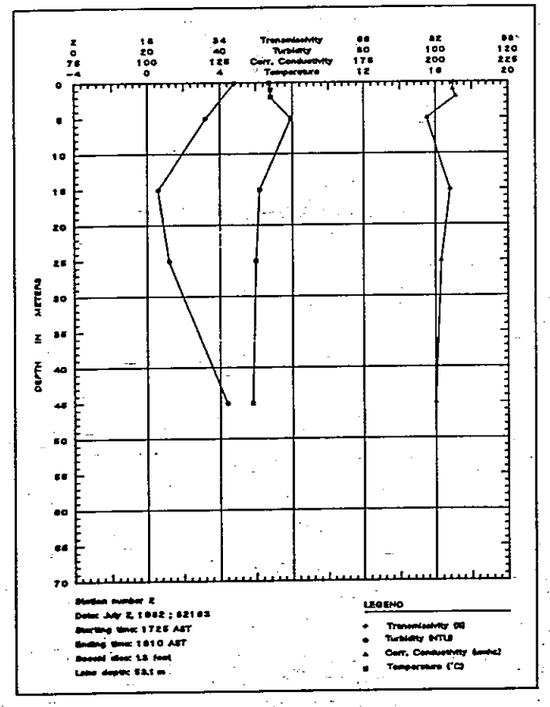
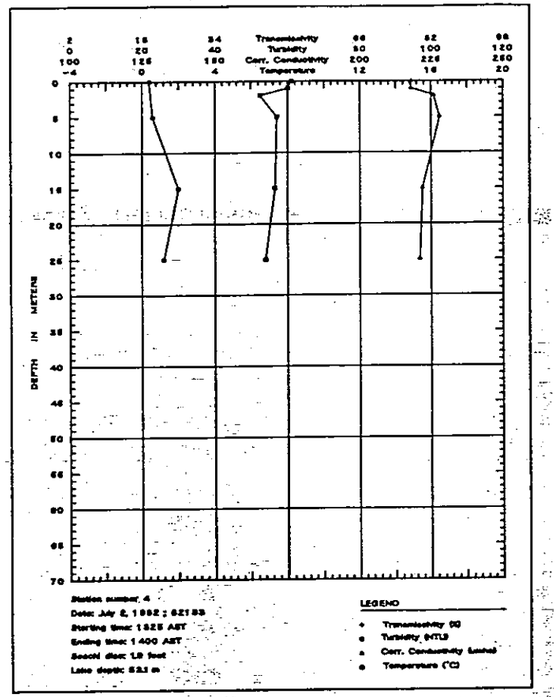
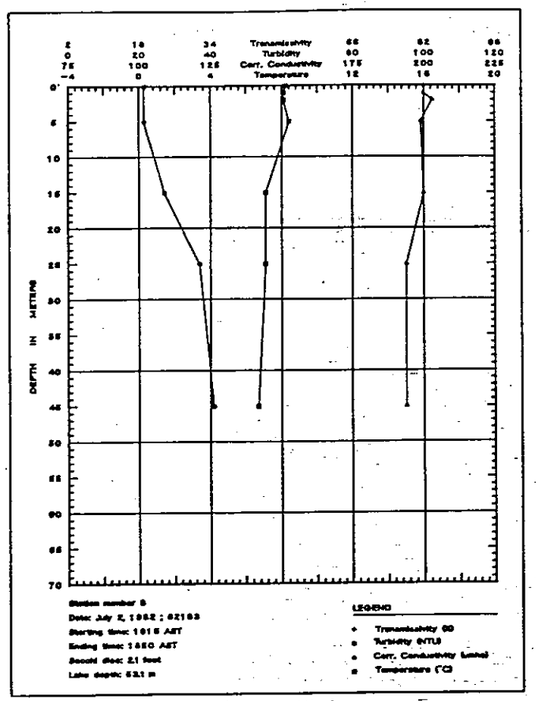
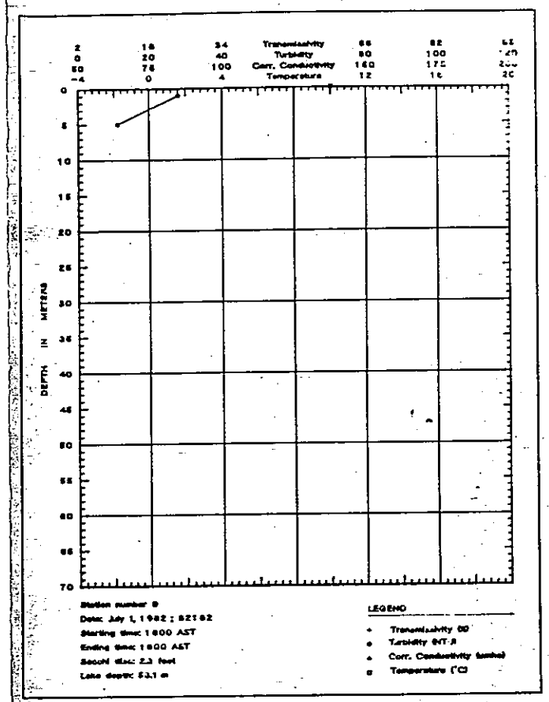
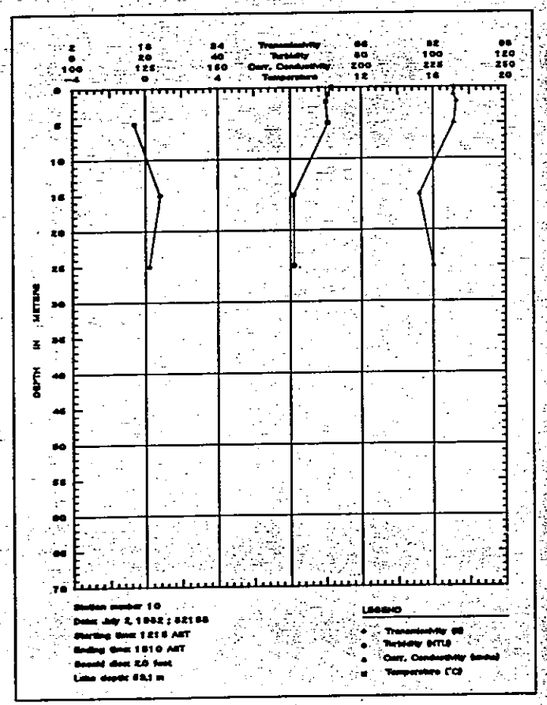
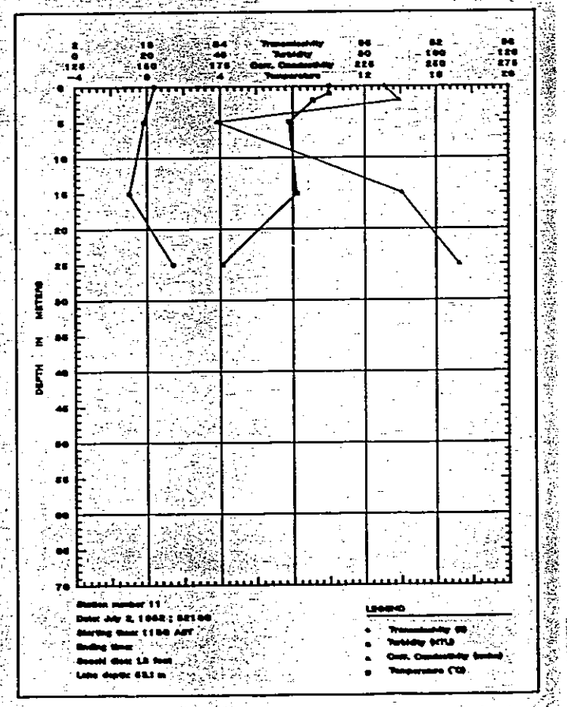


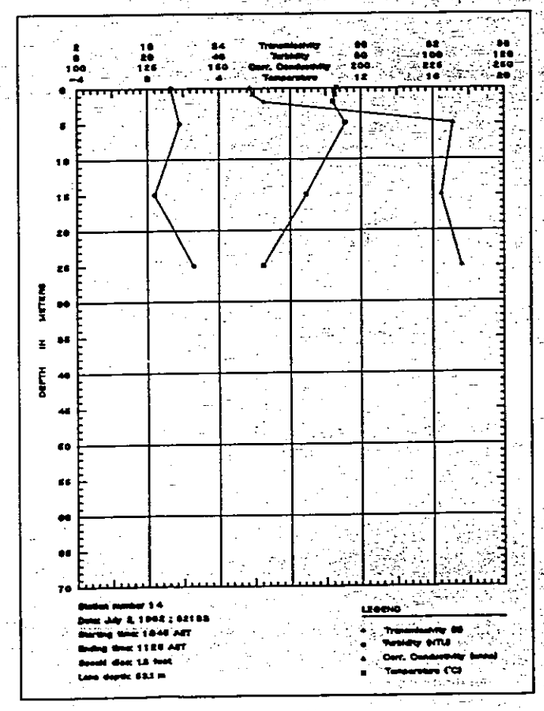












SUSITNA HYDRO

GLACIAL LAKE STUDIES

WATER QUALITY PROFILING AT EKLUTNA LAKE

JULY 1/2, 1982

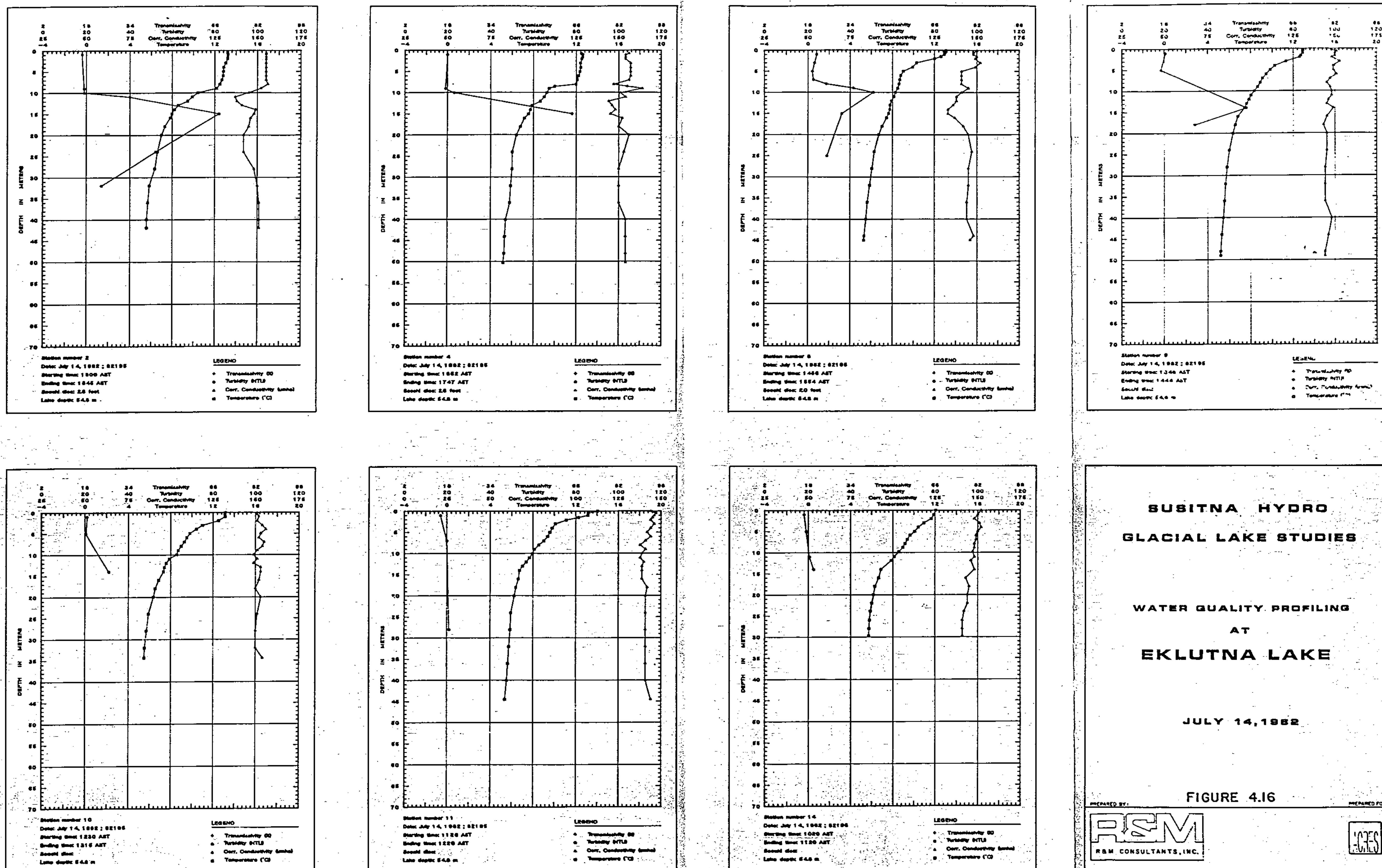
FIGURE 4.15

PREPARED BY:

R&M CONSULTANTS, INC.

PREPARED FOR:

ACRES



SUSITNA HYDRO

GLACIAL LAKE STUDIES

WATER QUALITY PROFILING

AT

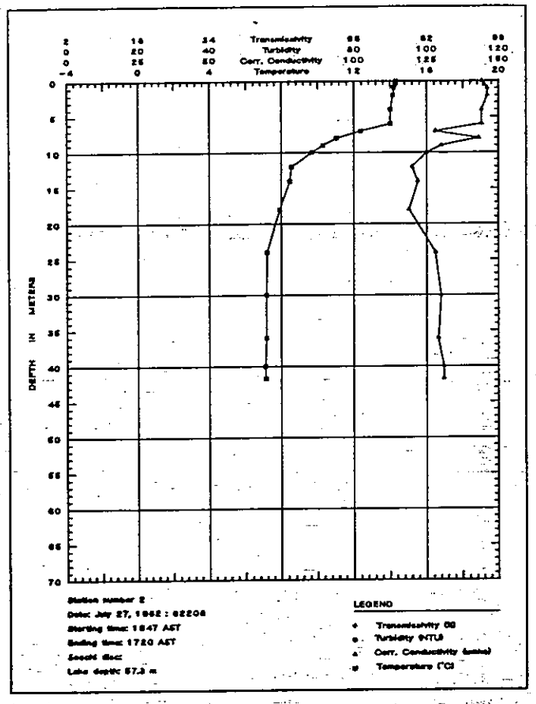
EKLUTNA LAKE

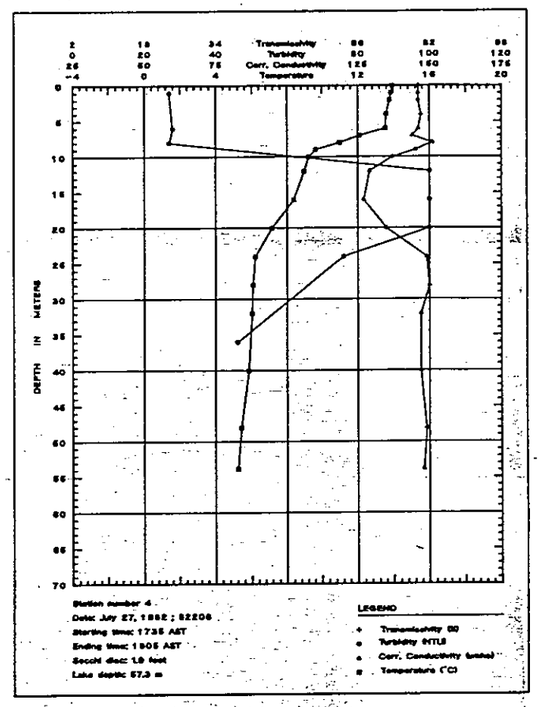
JULY 14,1982

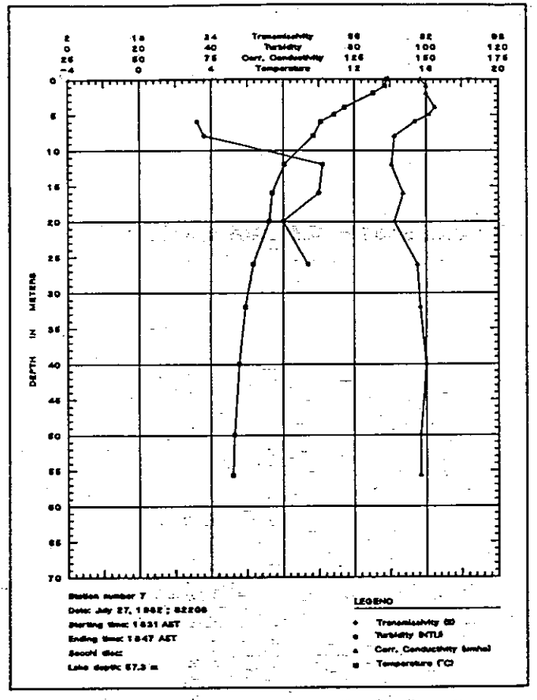
FIGURE 4.16

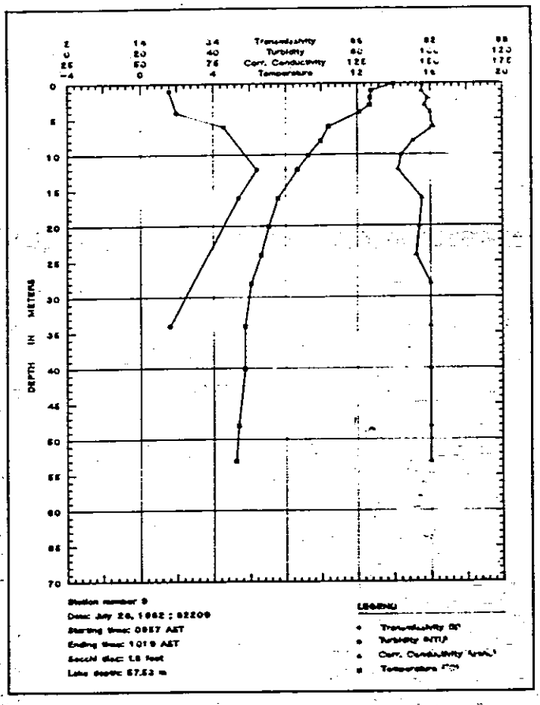
PREPARED BY: R&M CONSULTANTS, INC.

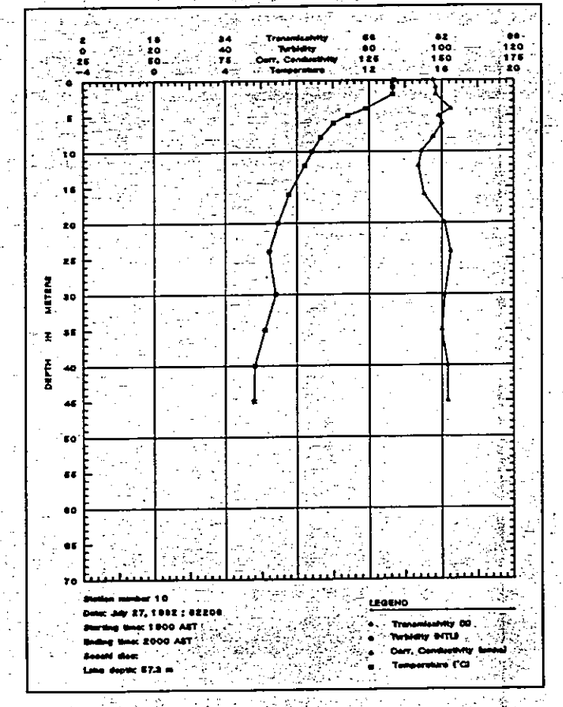
PREPARED FOR: ACRES

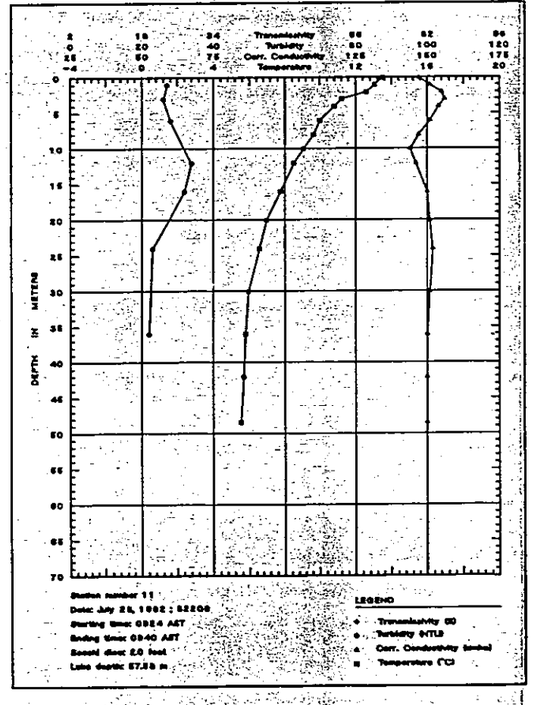


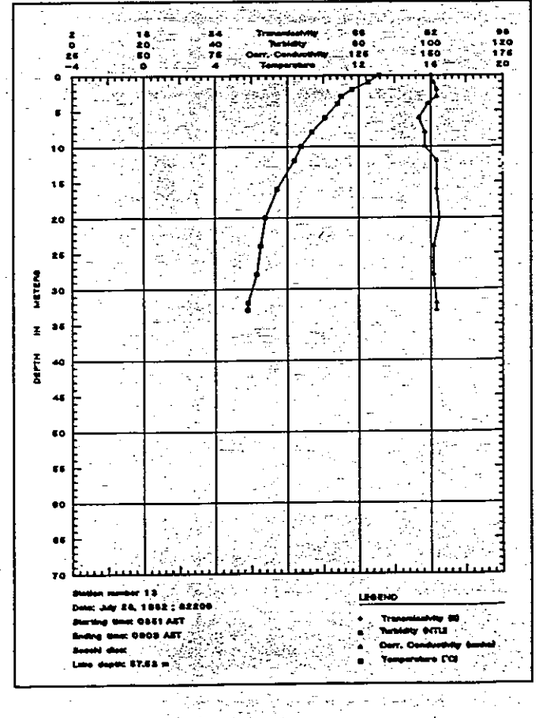












SUSITNA HYDRO

GLACIAL LAKE STUDIES

WATER QUALITY PROFILING

AT

EKLUTNA LAKE

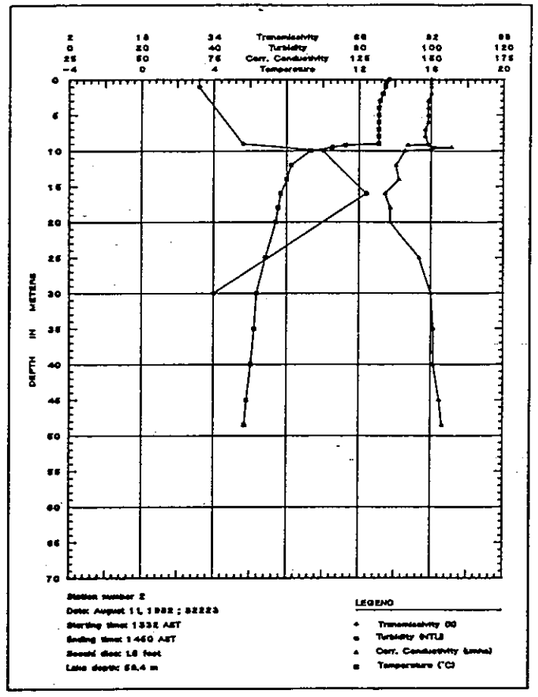
JULY 27/28, 1982

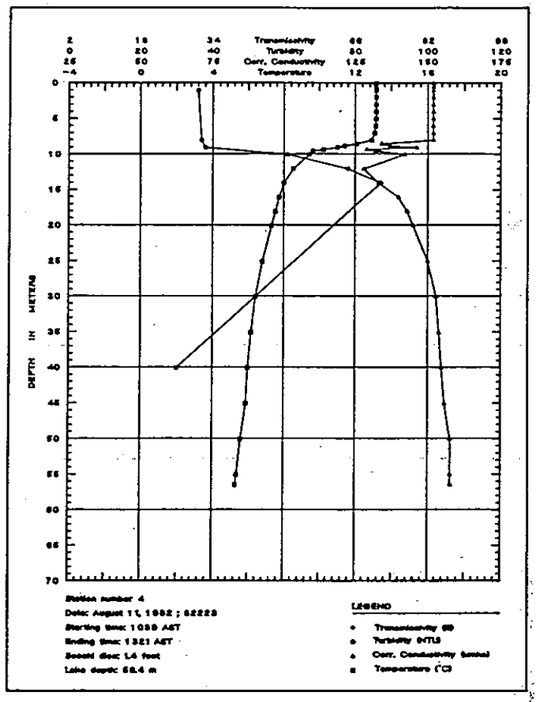
FIGURE 4.17

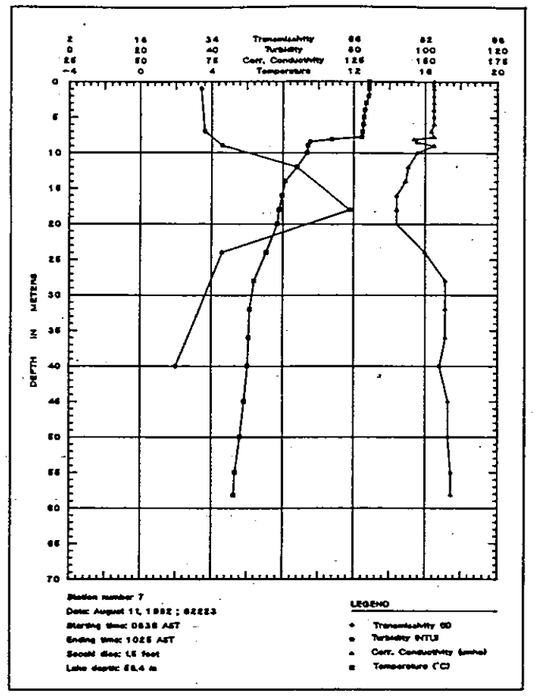
PREPARED BY:

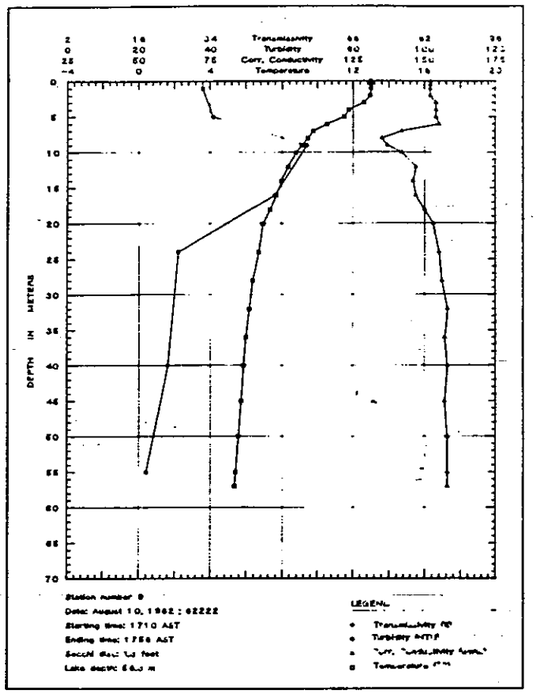
R&M CONSULTANTS, INC.

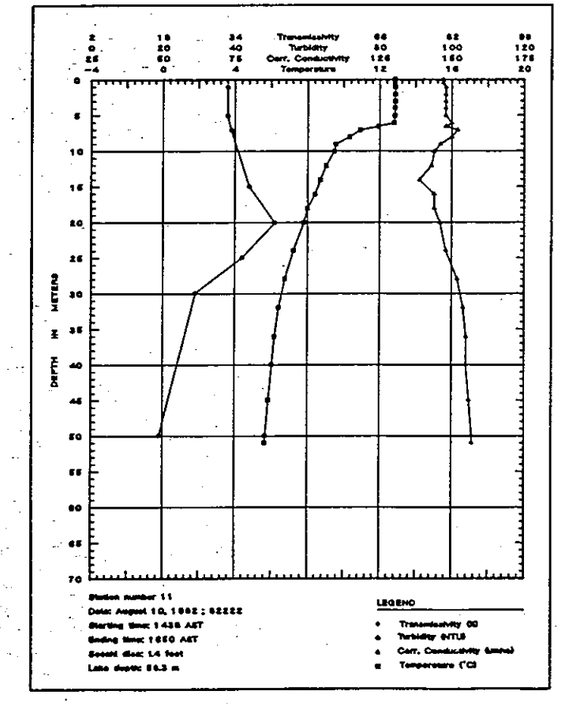
PREPARED FOR:

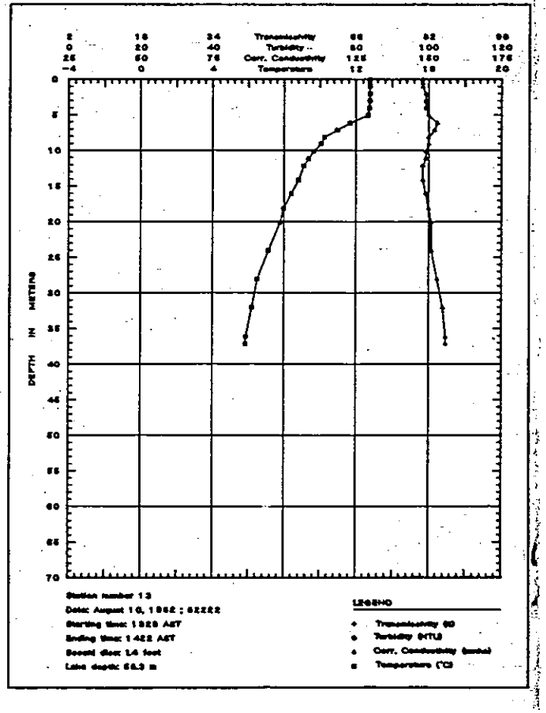


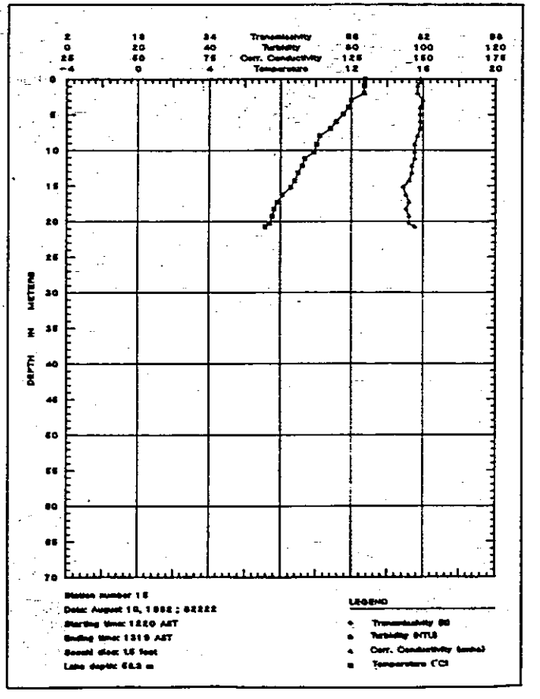












SUSITNA HYDRO

GLACIAL LAKE STUDIES

WATER QUALITY PROFILING

AT

EKLUTNA LAKE

AUGUST 10/11,1982

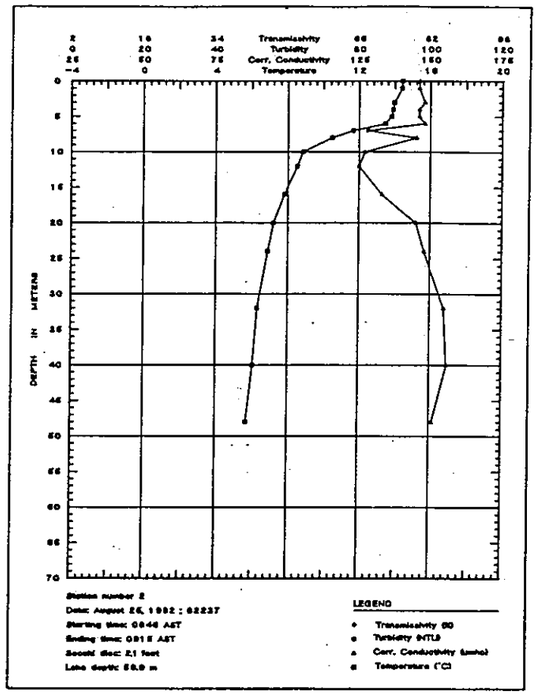
FIGURE 4.18

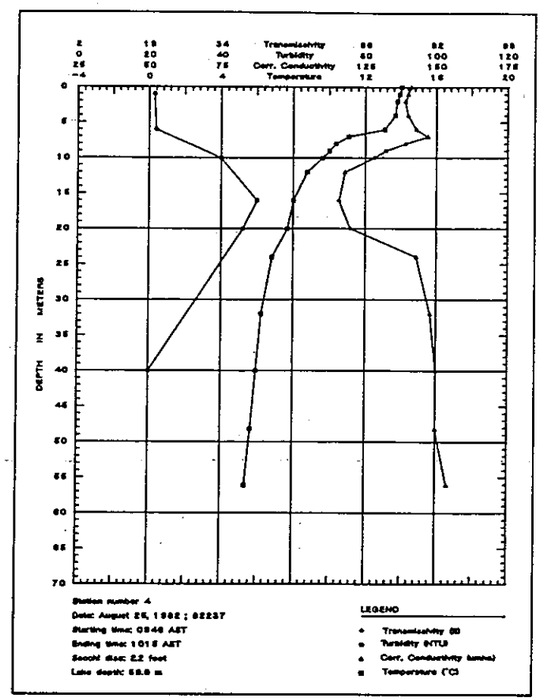
PREPARED BY:

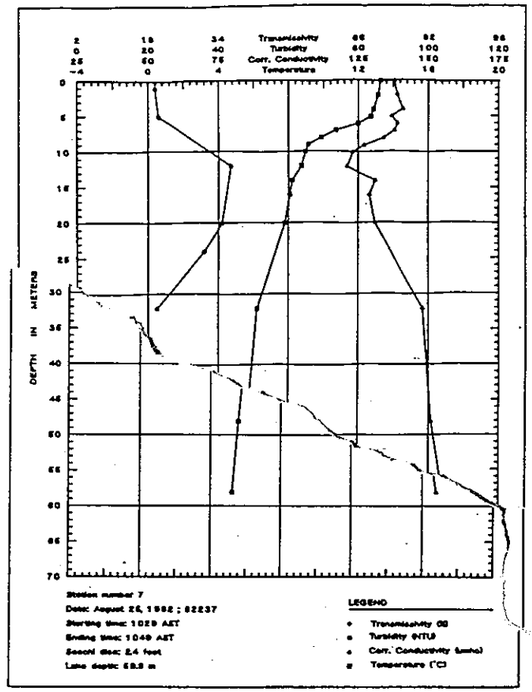
R&M CONSULTANTS, INC.

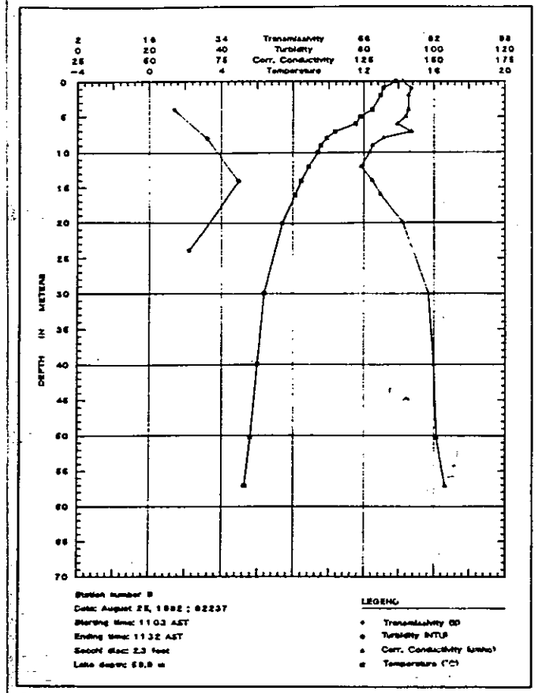
PREPARED FOR:

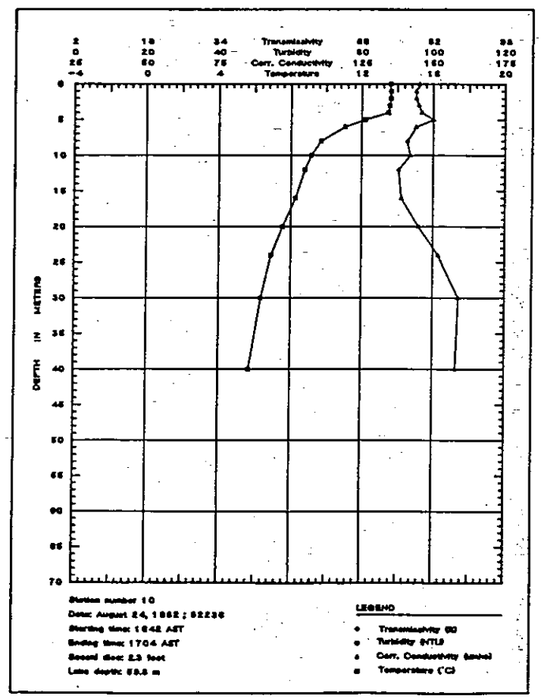
ACRES

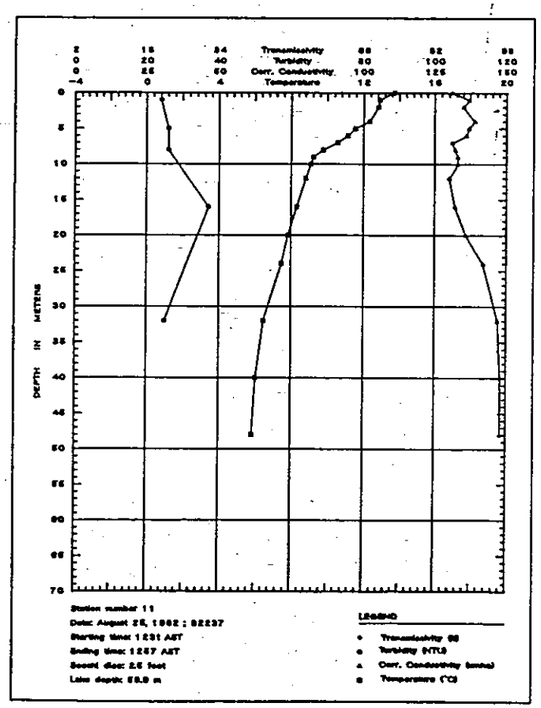


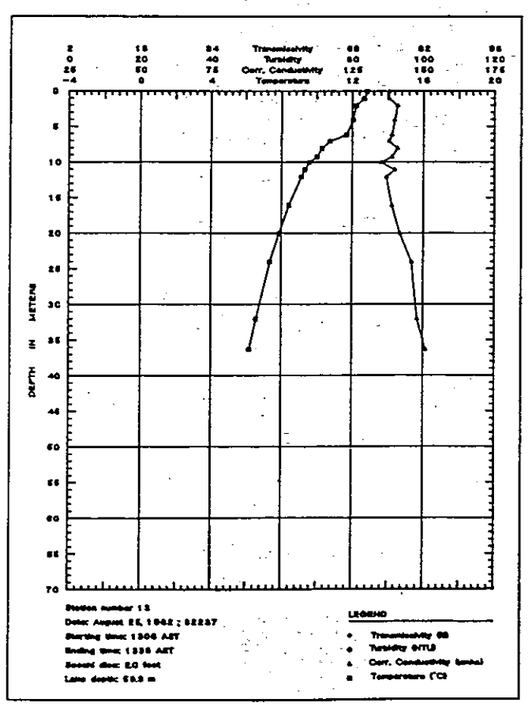












SUSITNA HYDRO

GLACIAL LAKE STUDIES

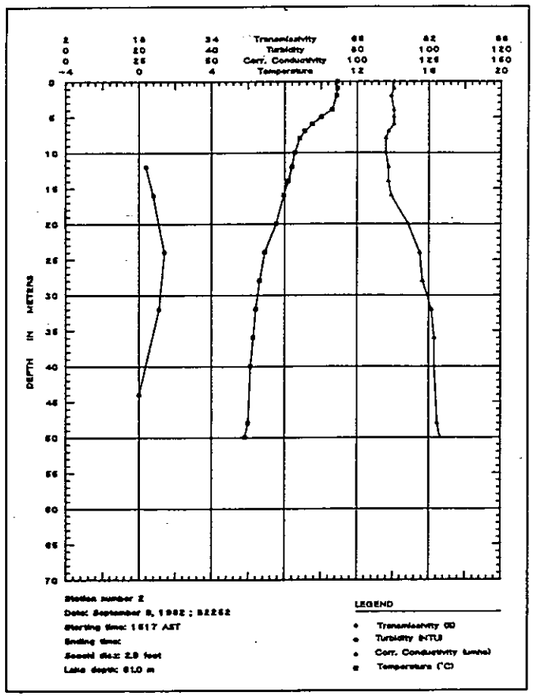
WATER QUALITY PROFILING AT EKLUTNA LAKE

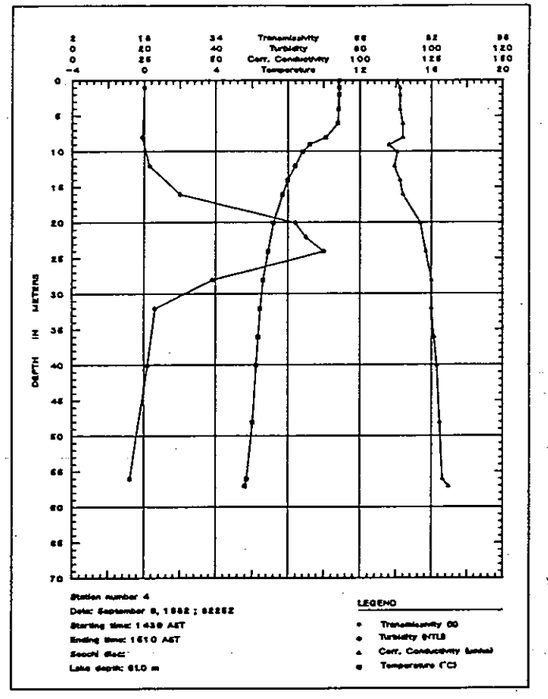
AUGUST 24/25,1982

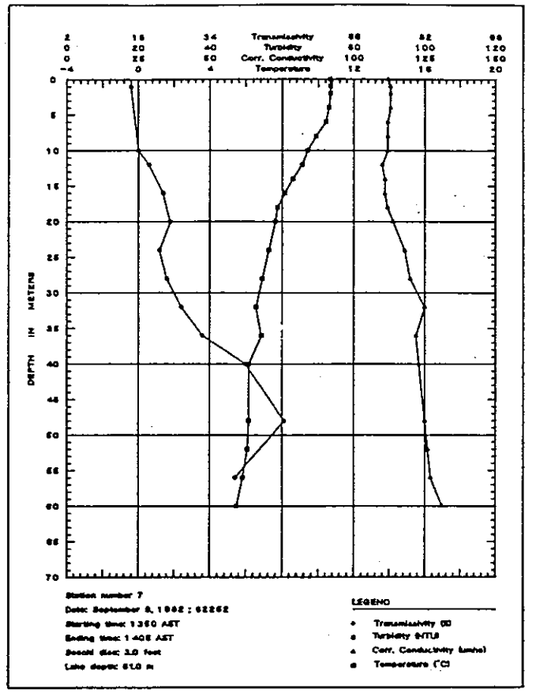
FIGURE 4.19

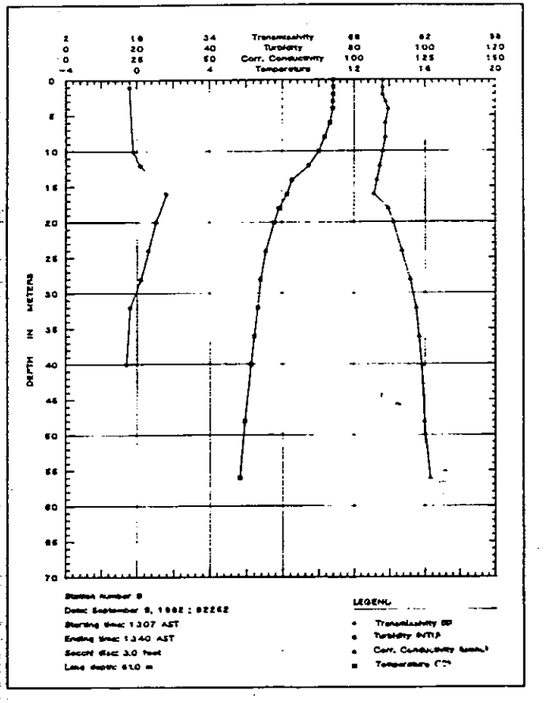
PREPARED BY: R&M CONSULTANTS, INC.

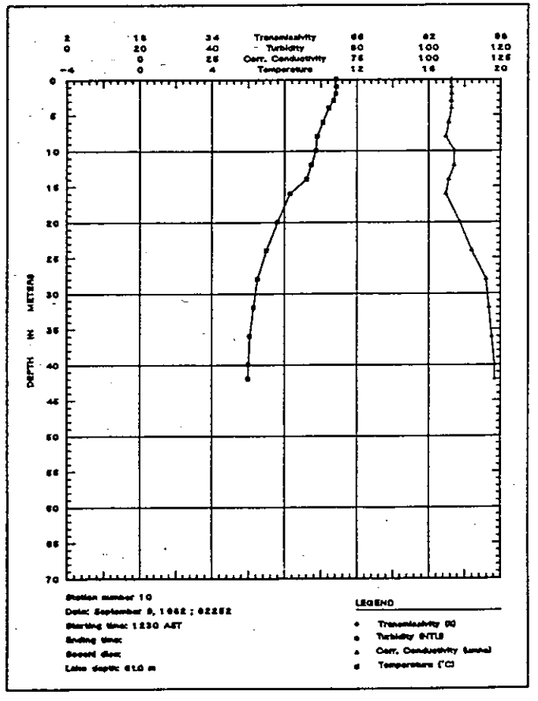
PREPARED FOR: ACRES

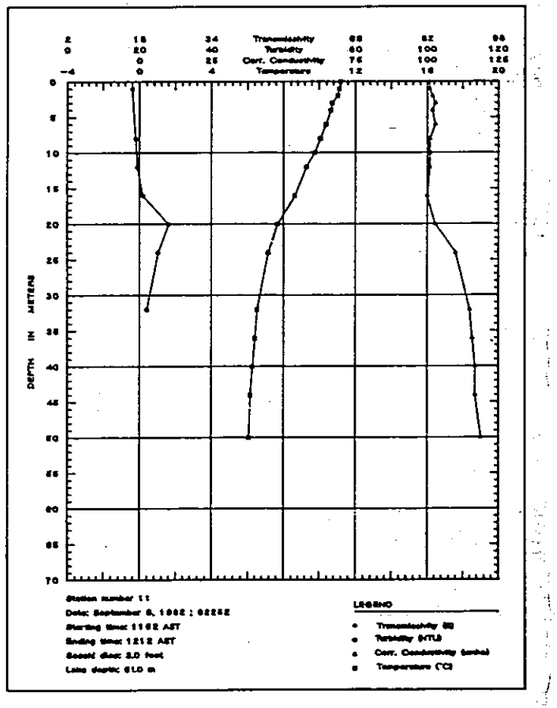


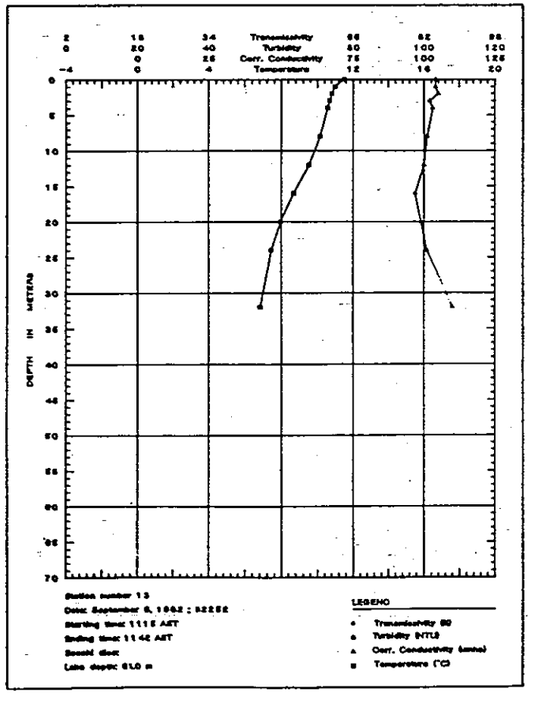












SUSITNA HYDRO

GLACIAL LAKE STUDIES

WATER QUALITY PROFILING

AT

EKLUTNA LAKE

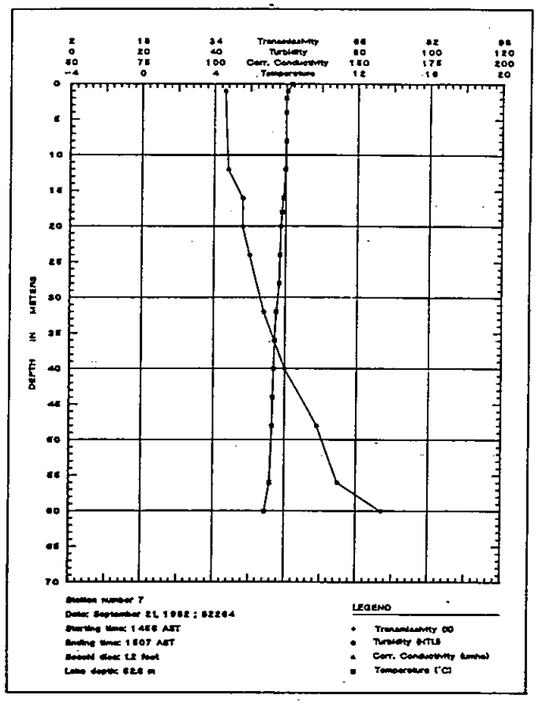
SEPTEMBER 9, 1982

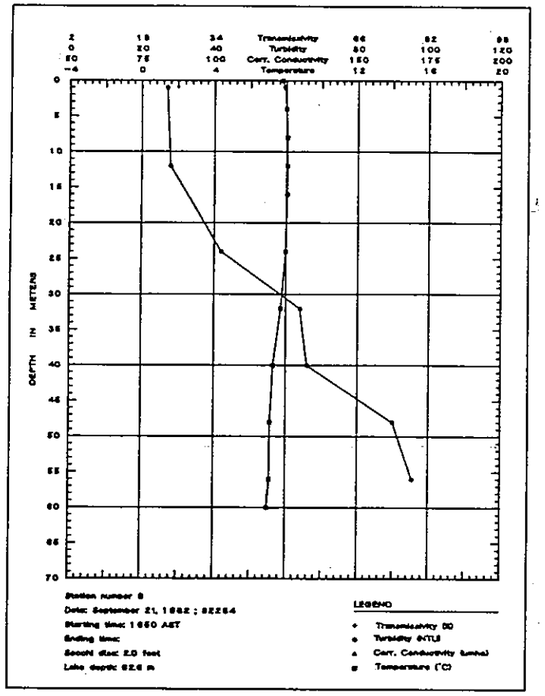
FIGURE 4.20

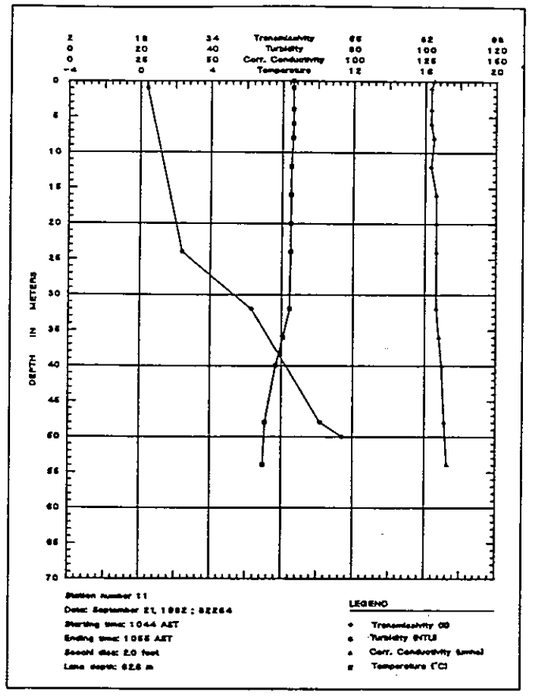
PREPARED BY:

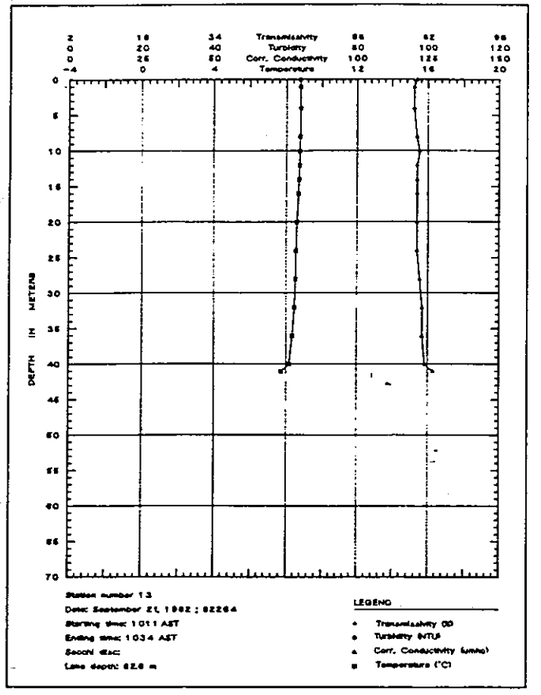
R&M CONSULTANTS, INC.

PREPARED FOR









SUSITNA HYDRO

GLACIAL LAKE STUDIES

WATER QUALITY PROFILING

AT

EKLUTNA LAKE

SEPTEMBER 21, 1982

FIGURE 4.21

PREPARED BY:

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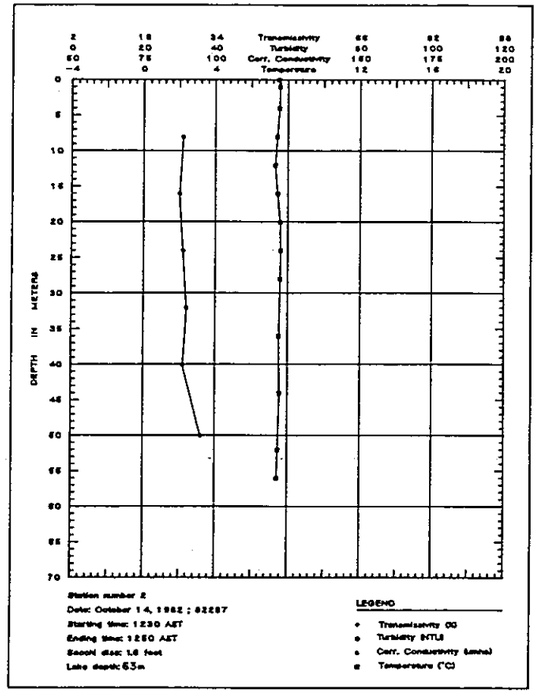
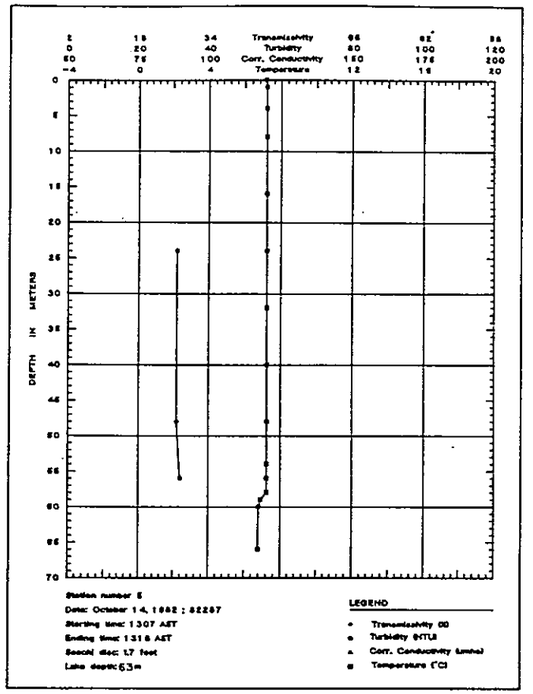
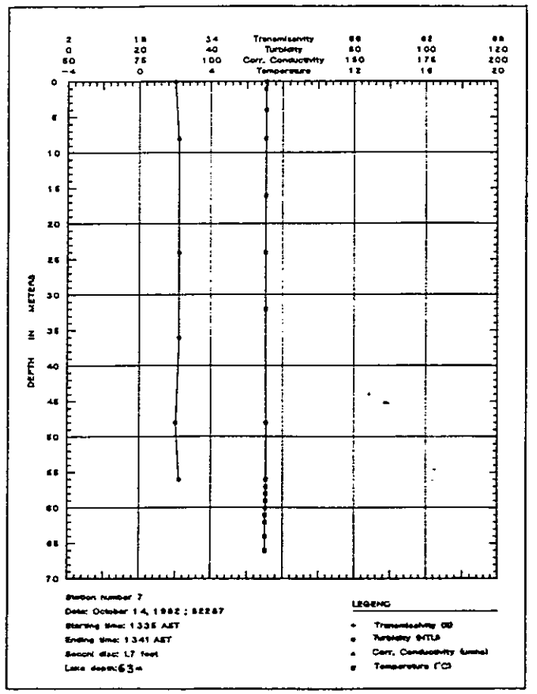
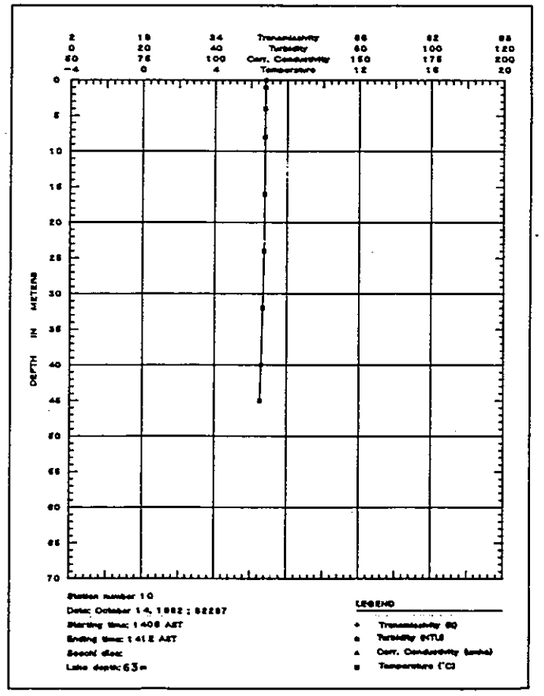
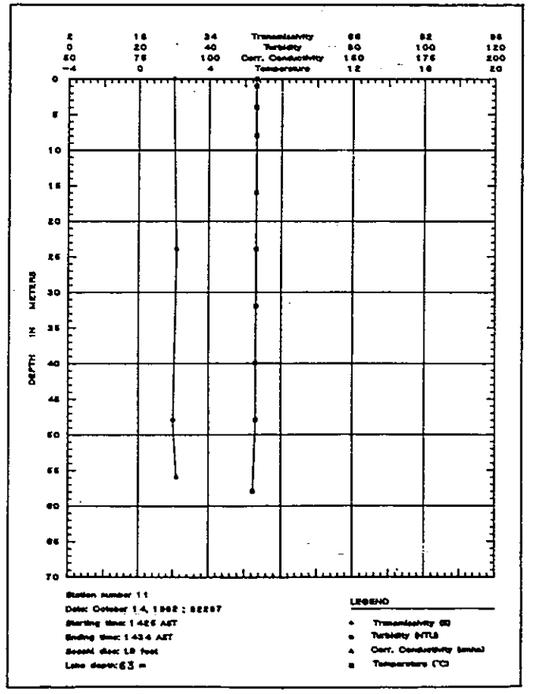
PREPARED FOR











SUSITNA HYDRO

GLACIAL LAKE STUDIES

WATER QUALITY PROFILING

AT

EKLUTNA LAKE

OCTOBER 14, 1982

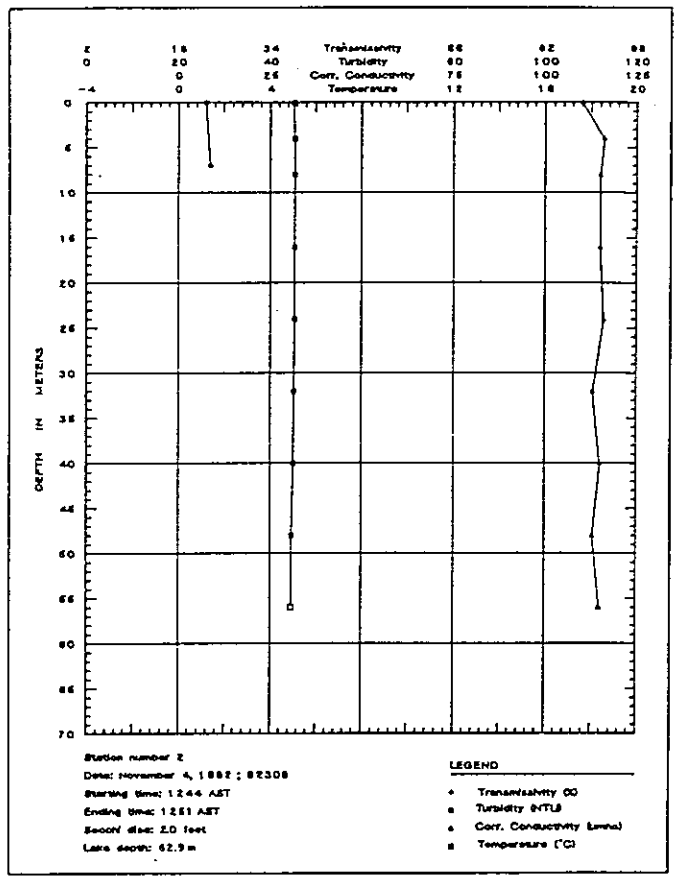
FIGURE 4.22

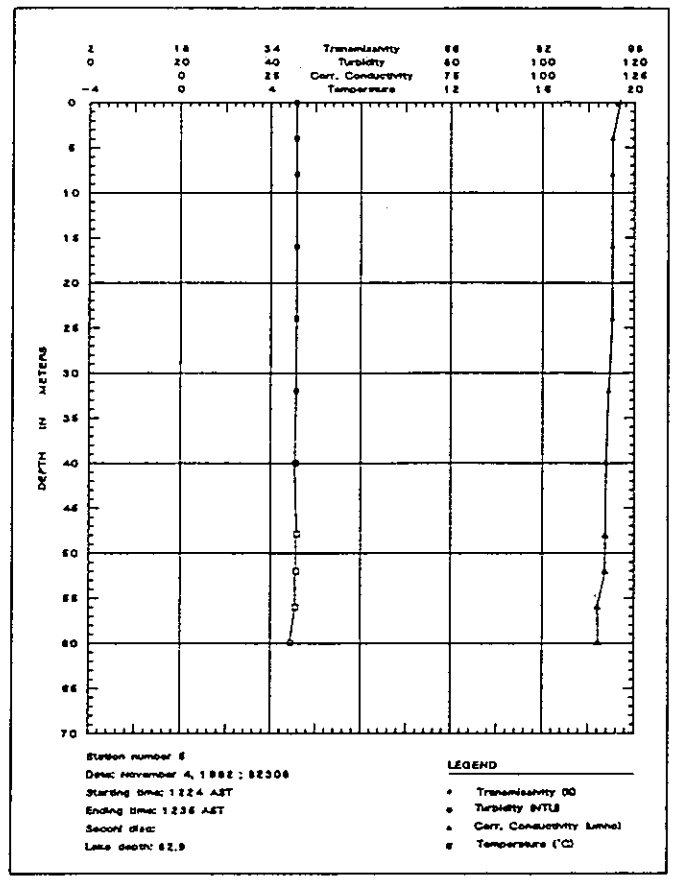
PREPARED BY

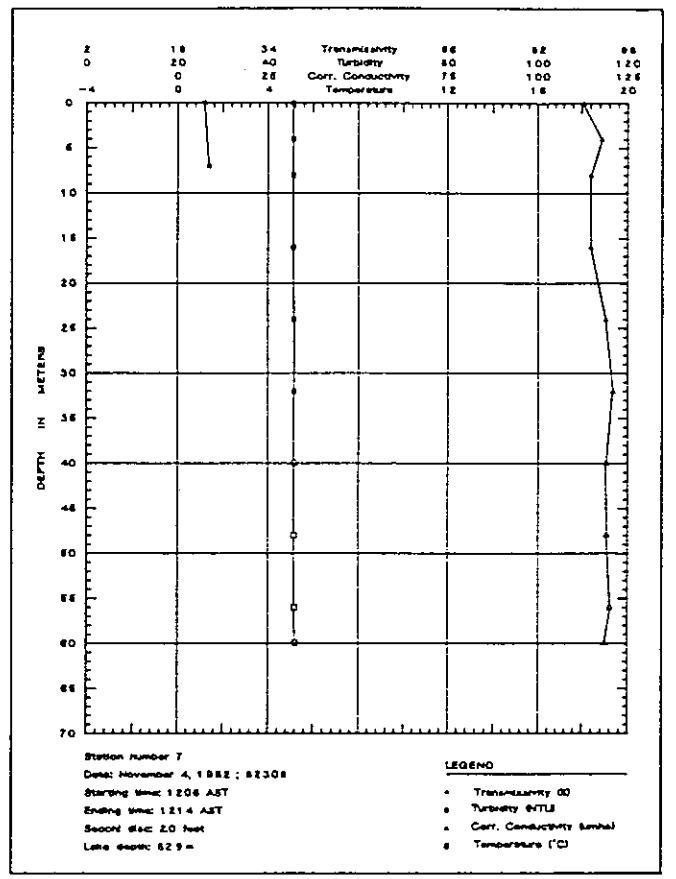
R&M CONSULTANTS, INC.

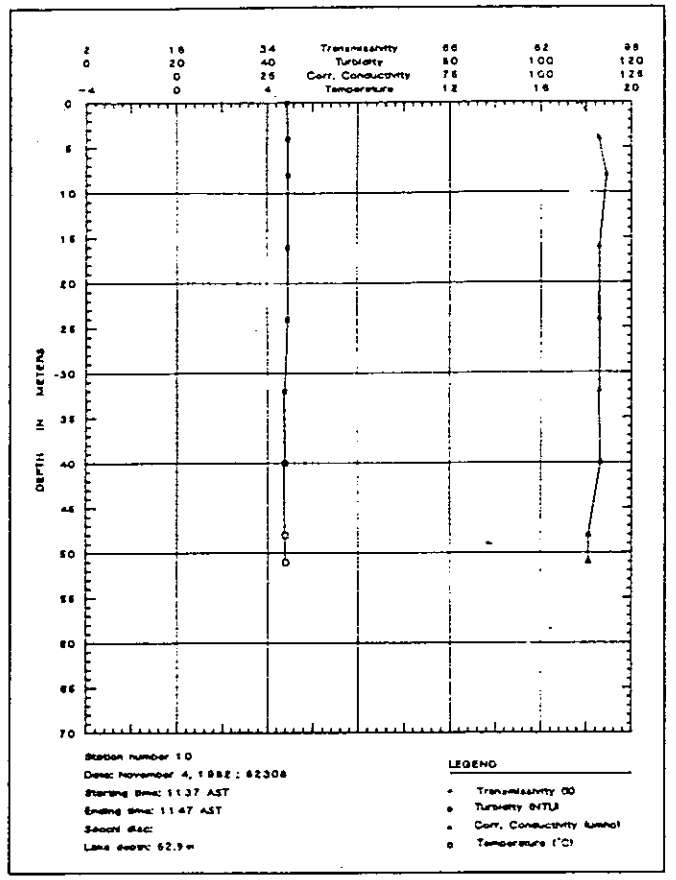
PREPARED FOR

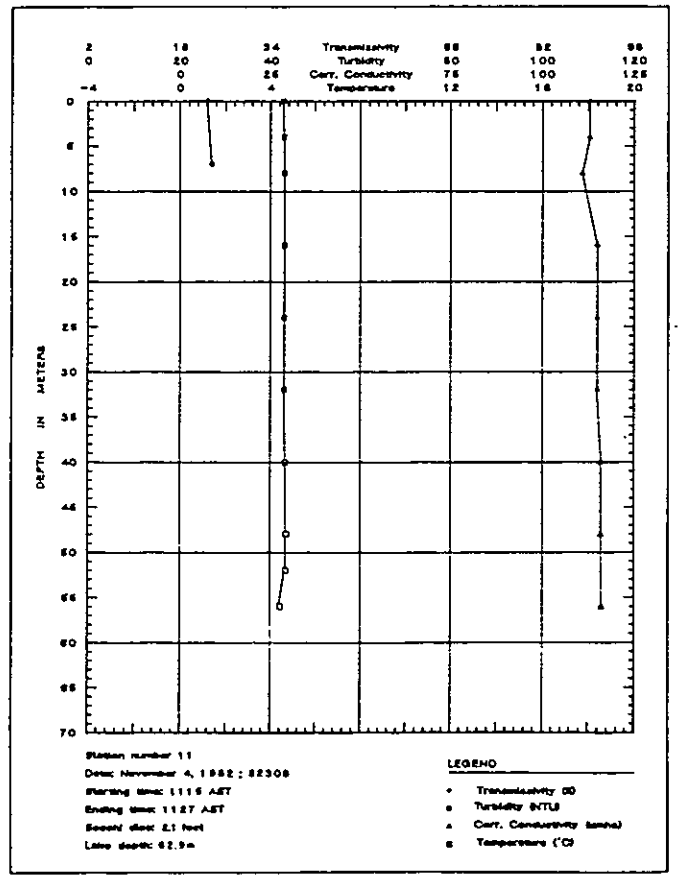
ACRES

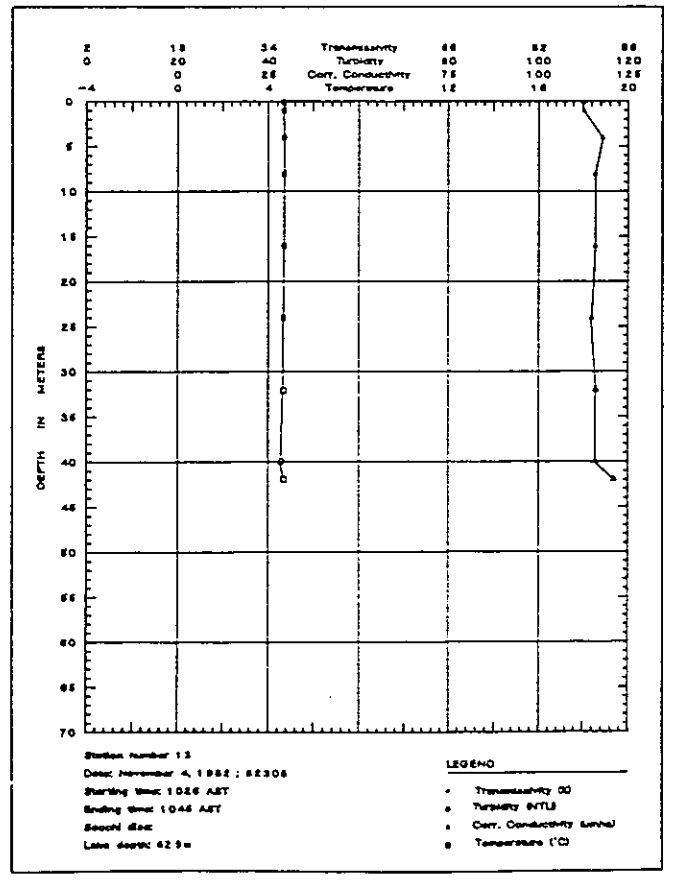












SUSITNA HYDRO

GLACIAL LAKE STUDIES

WATER QUALITY PROFILING

AT

EKLUTNA LAKE

NOVEMBER 4, 1982

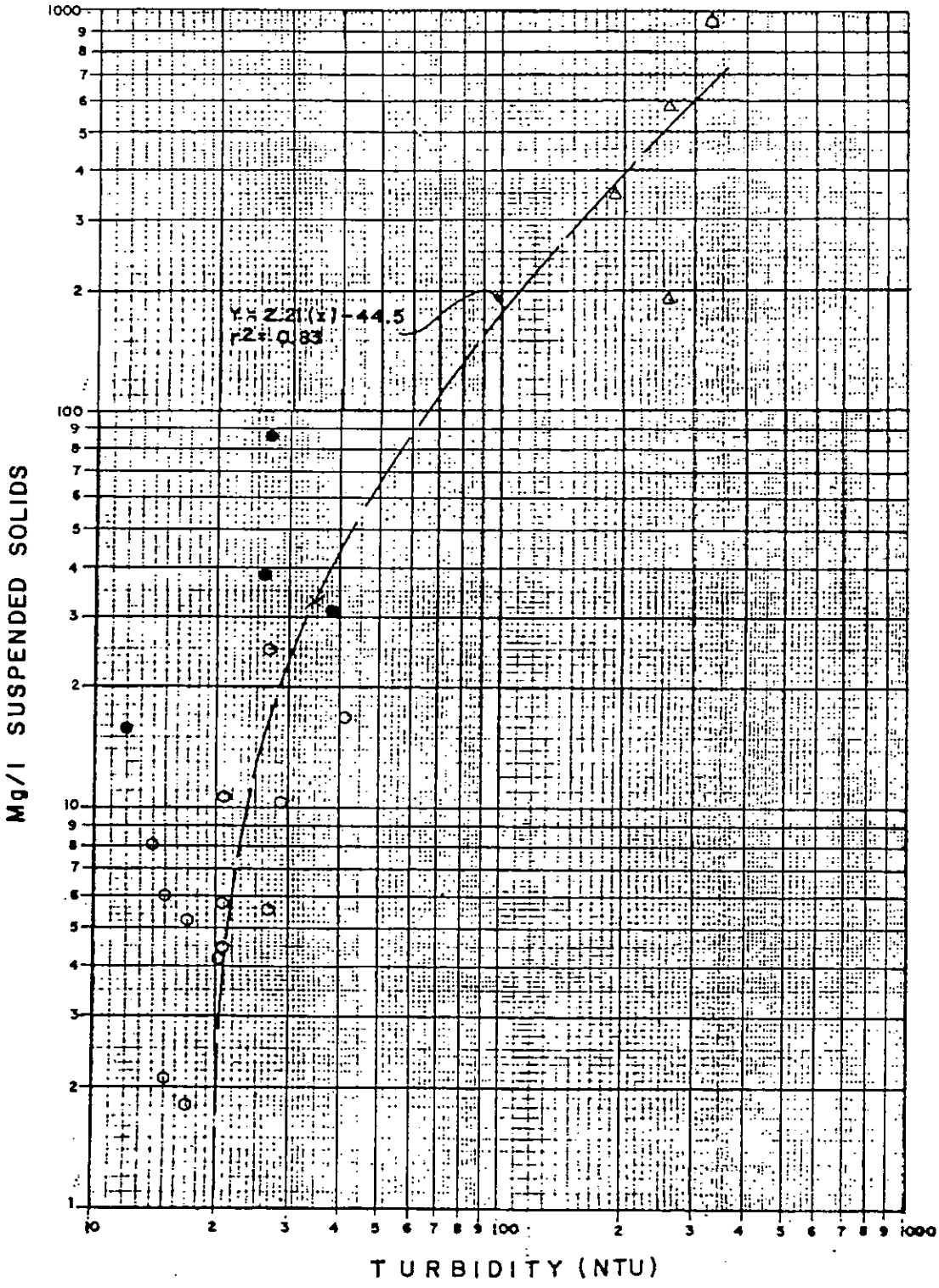
FIGURE 4.23

PREPARED BY:

R&M CONSULTANTS, INC.

PREPARED FOR:

ACRES AMERICAN



LEGEND:

- ○ DATA FROM LAKE SAMPLING
- ● DATA FROM EAST FORK
- △ DATA FROM GLACIER FORK

PREPARED BY:

R&M CONSULTANTS, INC.

PREPARED FO

EKLUTNA LAKE TURBIDITY VERSUS SUSPENDED SOLIDS

FIG. 4.24

ACRE

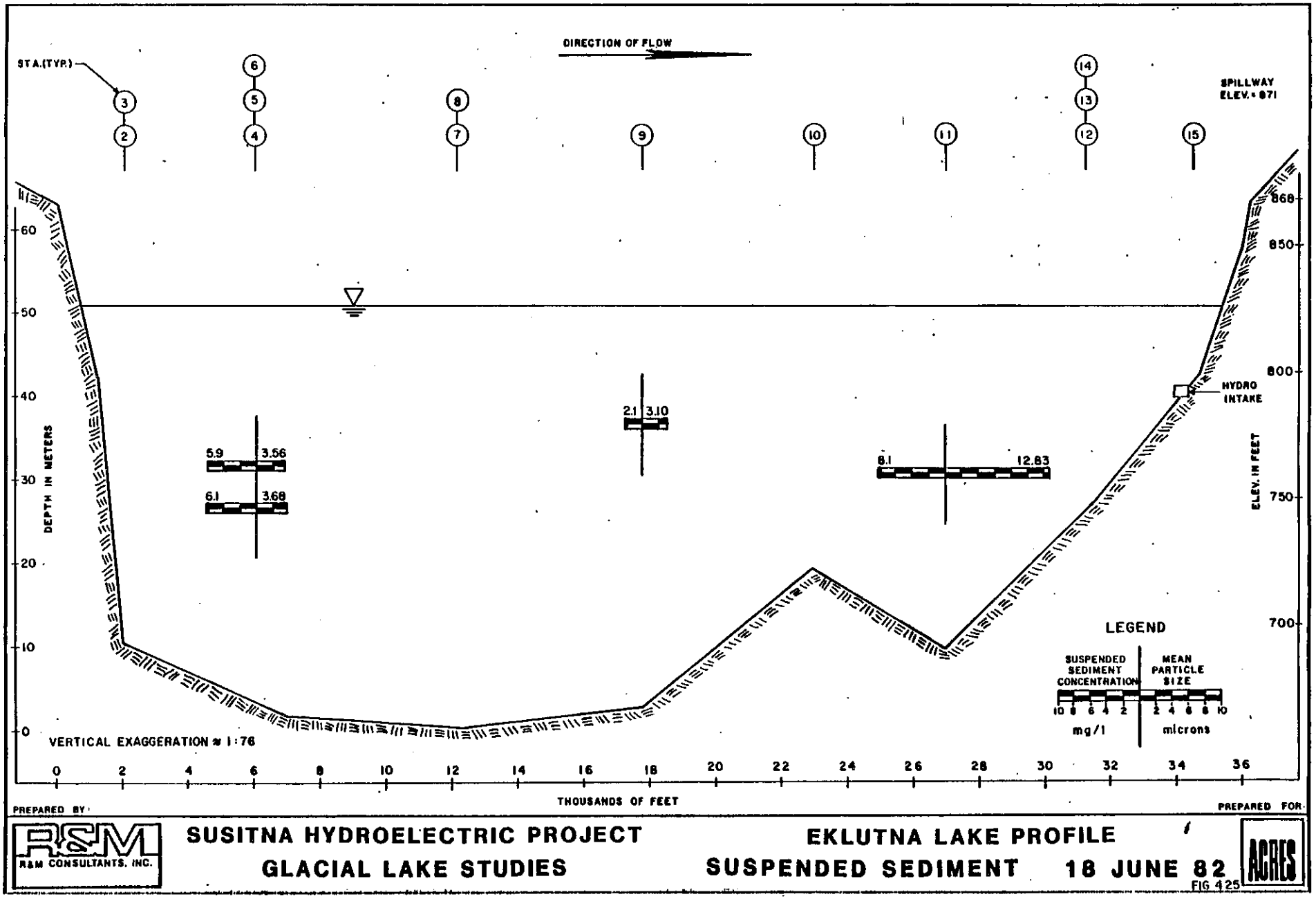
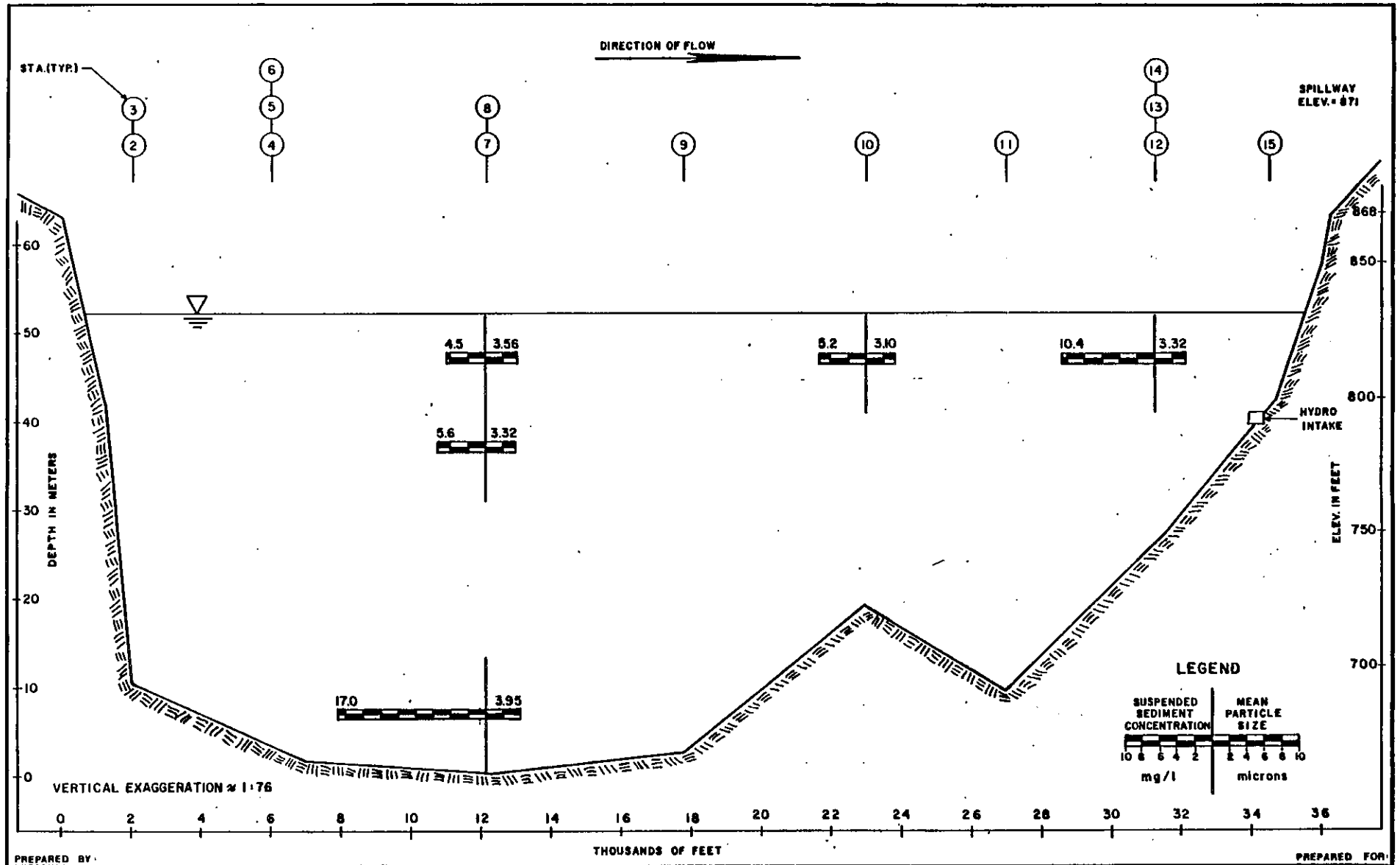

DIRECTION OF FLOW
STA.(TYP.)
SPILLWAY ELEV. = 871
HYDRO INTAKE
DEPTH IN METERS
ELEV. IN FEET
5.9
3.56
6.1
3.68
2.1
3.10
8.1
12.83
LEGEND
SUSPENDED SEDIMENT CONCENTRATION
MEAN PARTICLE SIZE
mg/l
microns
VERTICAL EXAGGERATION ≈ 1:76
THOUSANDS OF FEET
PREPARED BY:
PREPARED FOR:
R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES
EKLUTNA LAKE PROFILE
SUSPENDED SEDIMENT
18 JUNE 82
ACRES

FIG 425



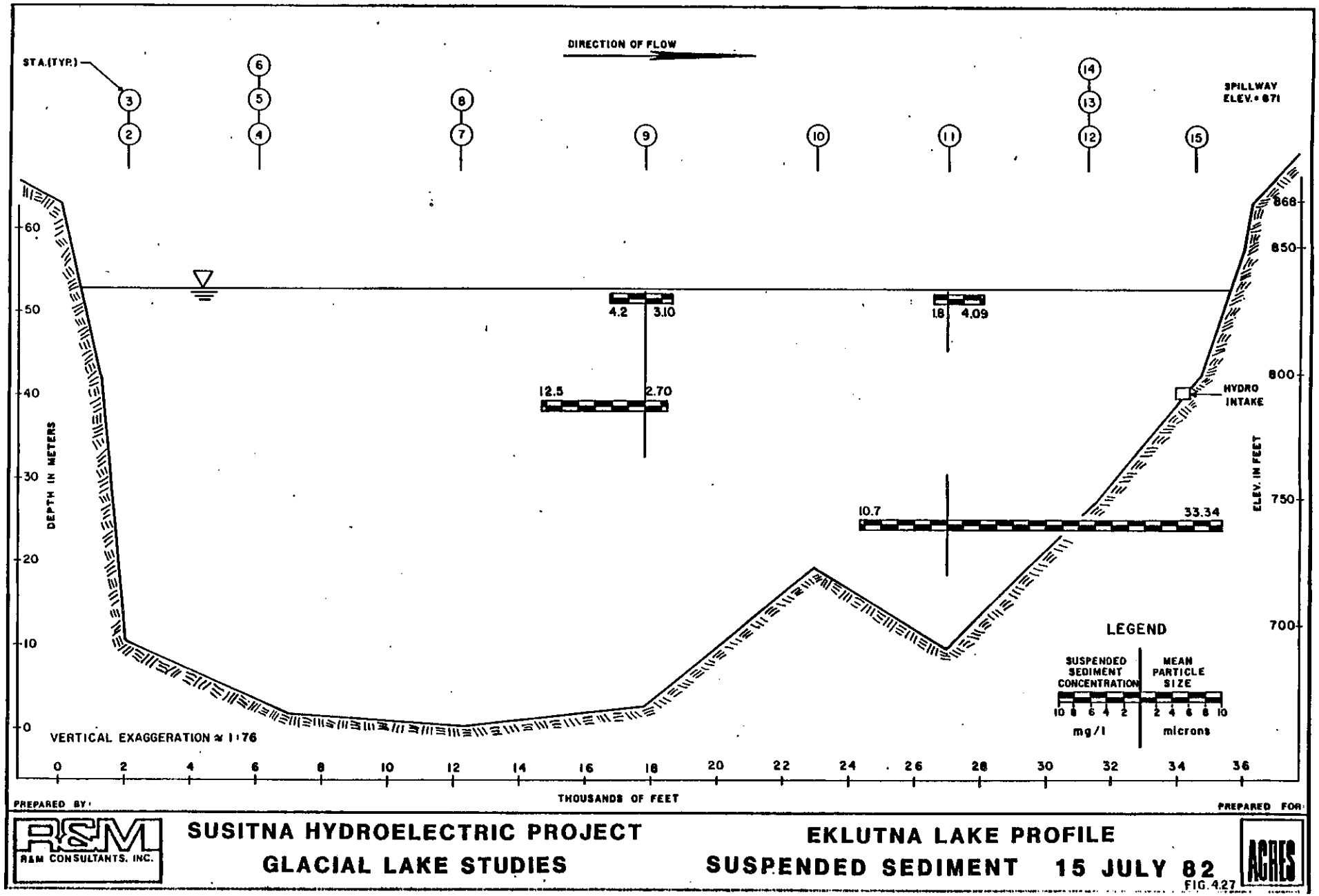
PREPARED BY: R&M CONSULTANTS, INC.

PREPARED FOR: ACRES

SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES

EKLUTNA LAKE PROFILE
SUSPENDED SEDIMENT 2 JULY 82

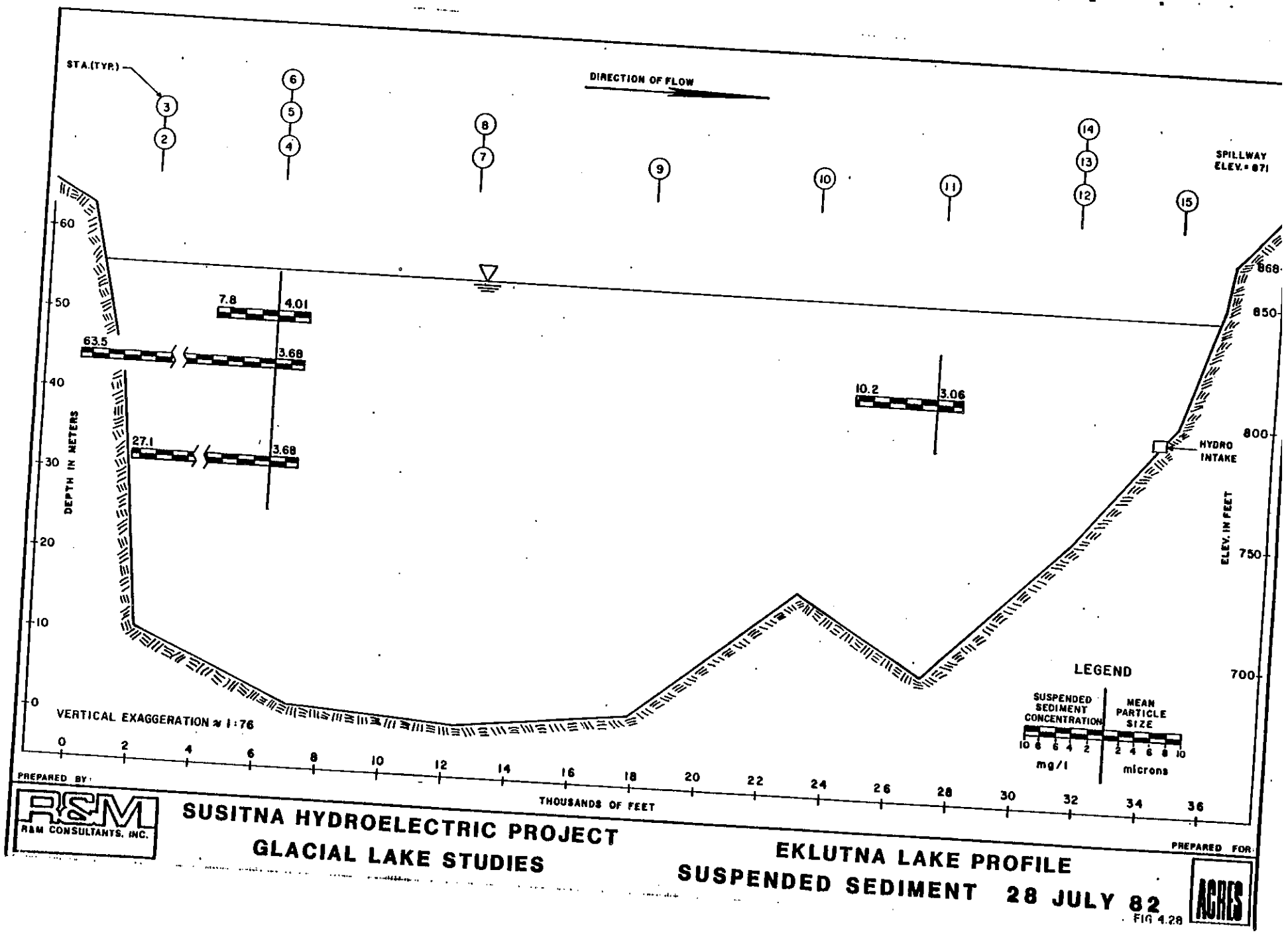
FIG 4.26



SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES

EKLUTNA LAKE PROFILE
SUSPENDED SEDIMENT 15 JULY 82

FIG. 4.27



SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES
EKLUTNA LAKE PROFILE
SUSPENDED SEDIMENT 28 JULY 82

FIG 4.28

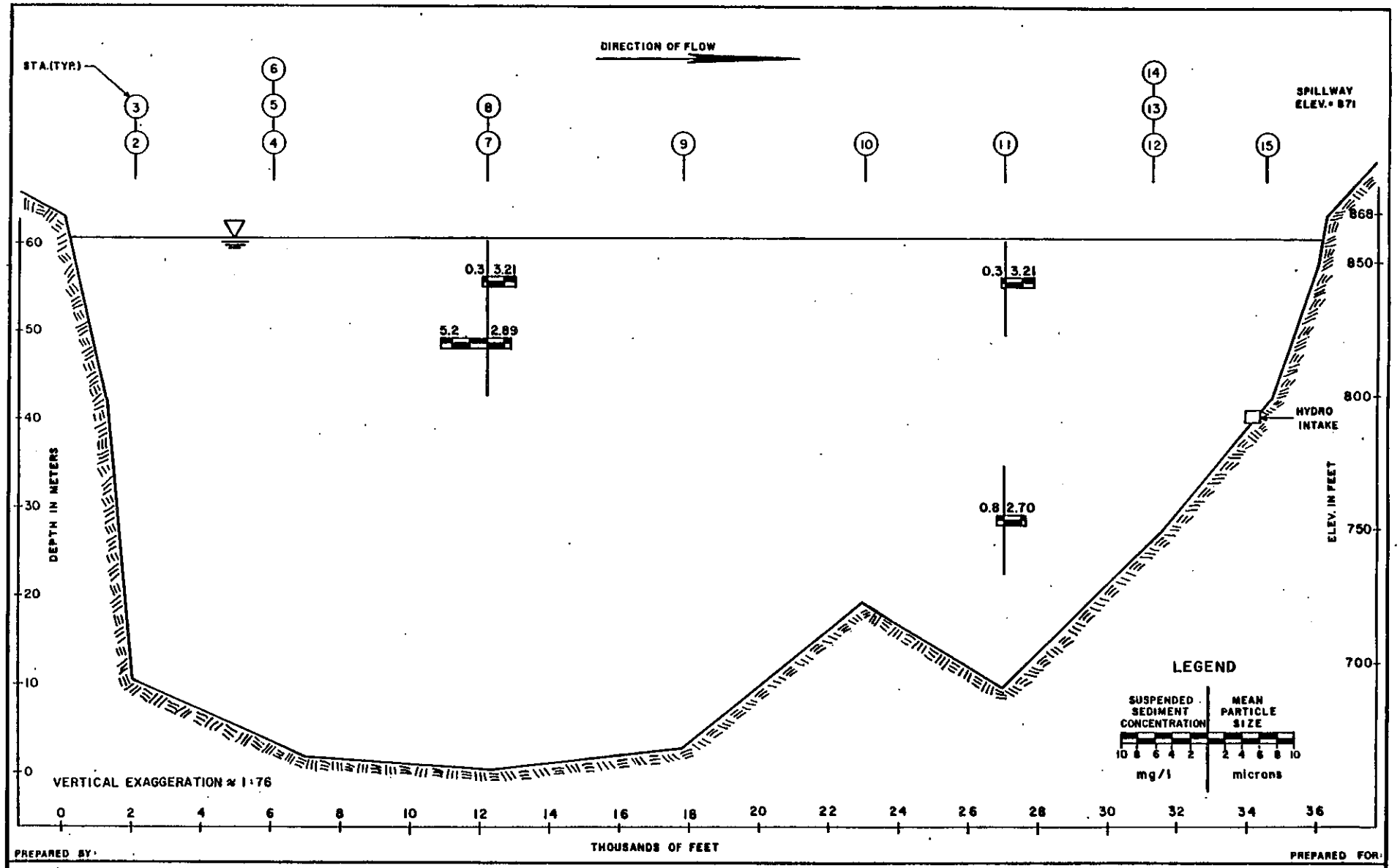
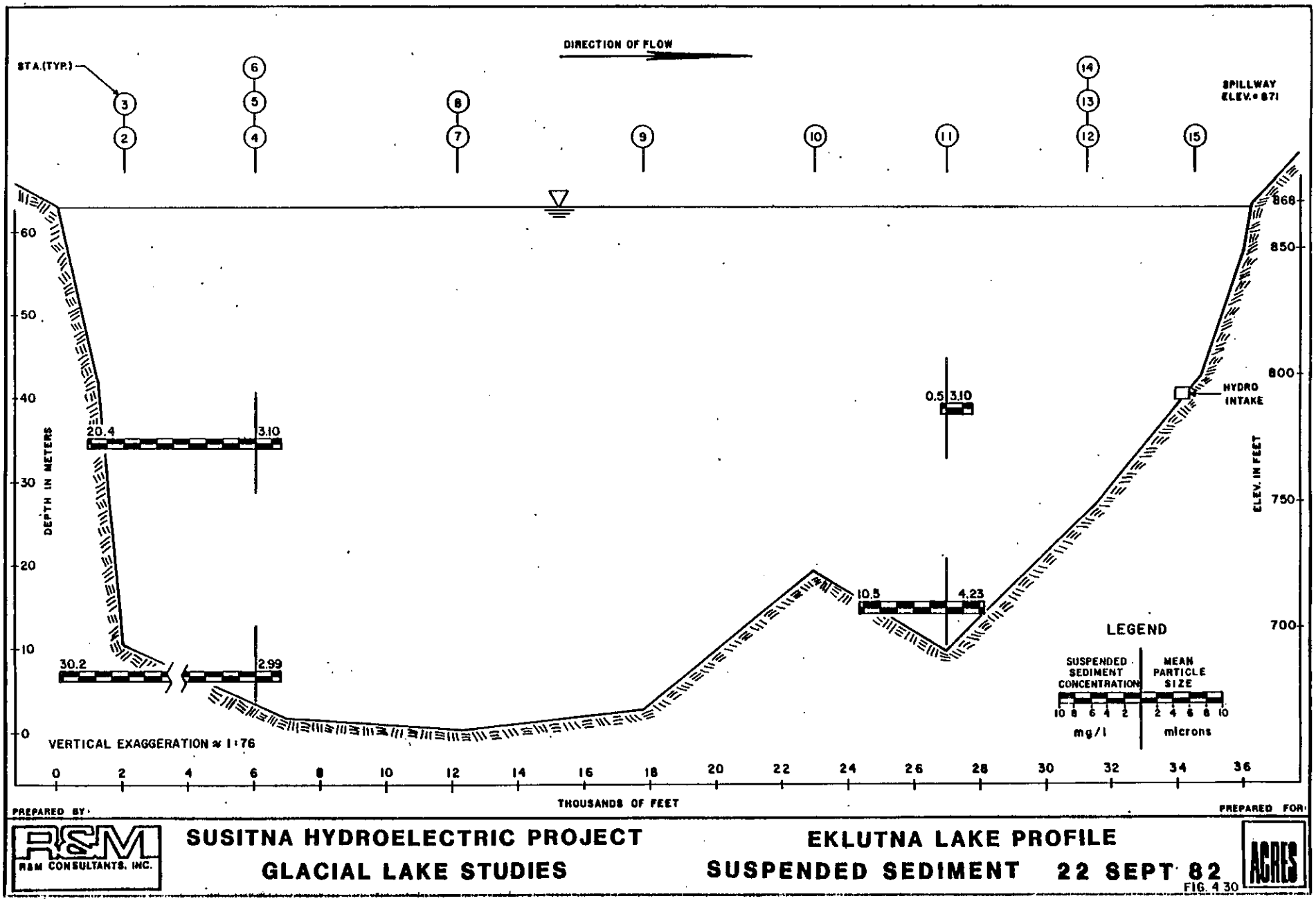
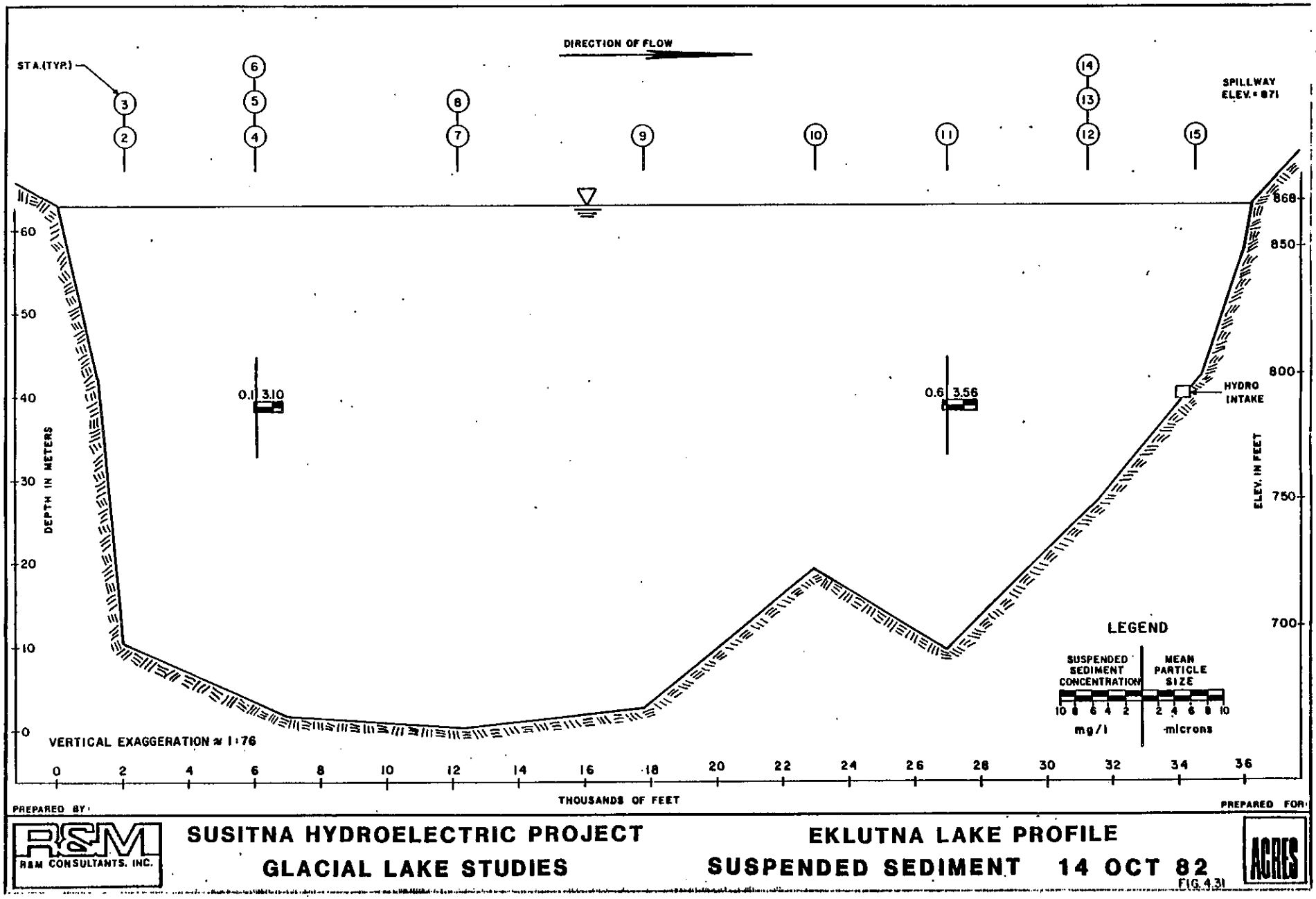

DIRECTION OF FLOW
STA.(TYP.)
SPILLWAY ELEV.= 871
HYDRO INTAKE
0.3 3.21
5.2 2.89
0.3 3.21
0.8 2.70
DEPTH IN METERS
ELEV. IN FEET
VERTICAL EXAGGERATION ≈ 1:76
THOUSANDS OF FEET
LEGEND
SUSPENDED SEDIMENT CONCENTRATION
MEAN PARTICLE SIZE
mg/l
microns
PREPARED BY:
PREPARED FOR:
R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES
EKLUTNA LAKE PROFILE
SUSPENDED SEDIMENT 25 AUG 82
ACRES

FIG. 4.29

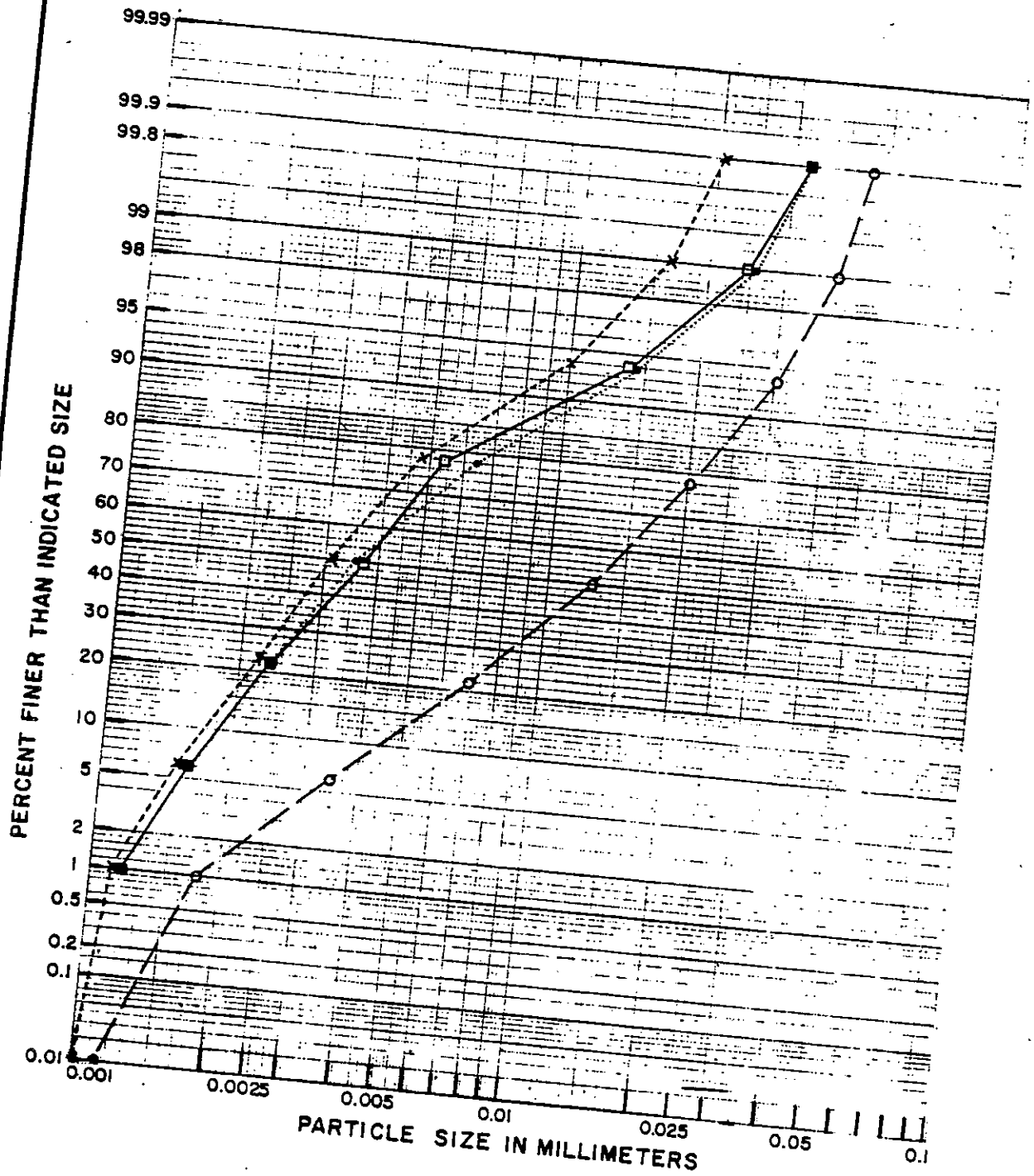

DIRECTION OF FLOW
STA.(TYP.)
SPILLWAY ELEV.= 871
HYDRO INTAKE
DEPTH IN METERS
ELEV. IN FEET
20.4
3.10
30.2
2.99
0.5
3.10
10.5
4.23
LEGEND
SUSPENDED SEDIMENT CONCENTRATION
MEAN PARTICLE SIZE
mg/l
microns
VERTICAL EXAGGERATION ≈ 1:76
THOUSANDS OF FEET
PREPARED BY:
PREPARED FOR:
R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES
EKLUTNA LAKE PROFILE
SUSPENDED SEDIMENT 22 SEPT 82
ACRES
FIG. 4.30



SUSITNA HYDROELECTRIC PROJECT
GLACIAL LAKE STUDIES

EKLUTNA LAKE PROFILE
SUSPENDED SEDIMENT 14 OCT 82

FIG. 4.31



EKLUTNA LAKE

JUNE 17, 1982

LEGEND:

DATA	STATION	DEPTH
---X---------	STA 9	14 m
.....•.....	STA 4	19 m
——□——	STA 4	24m
—○— —	STA II	20 m

PREPARED BY:

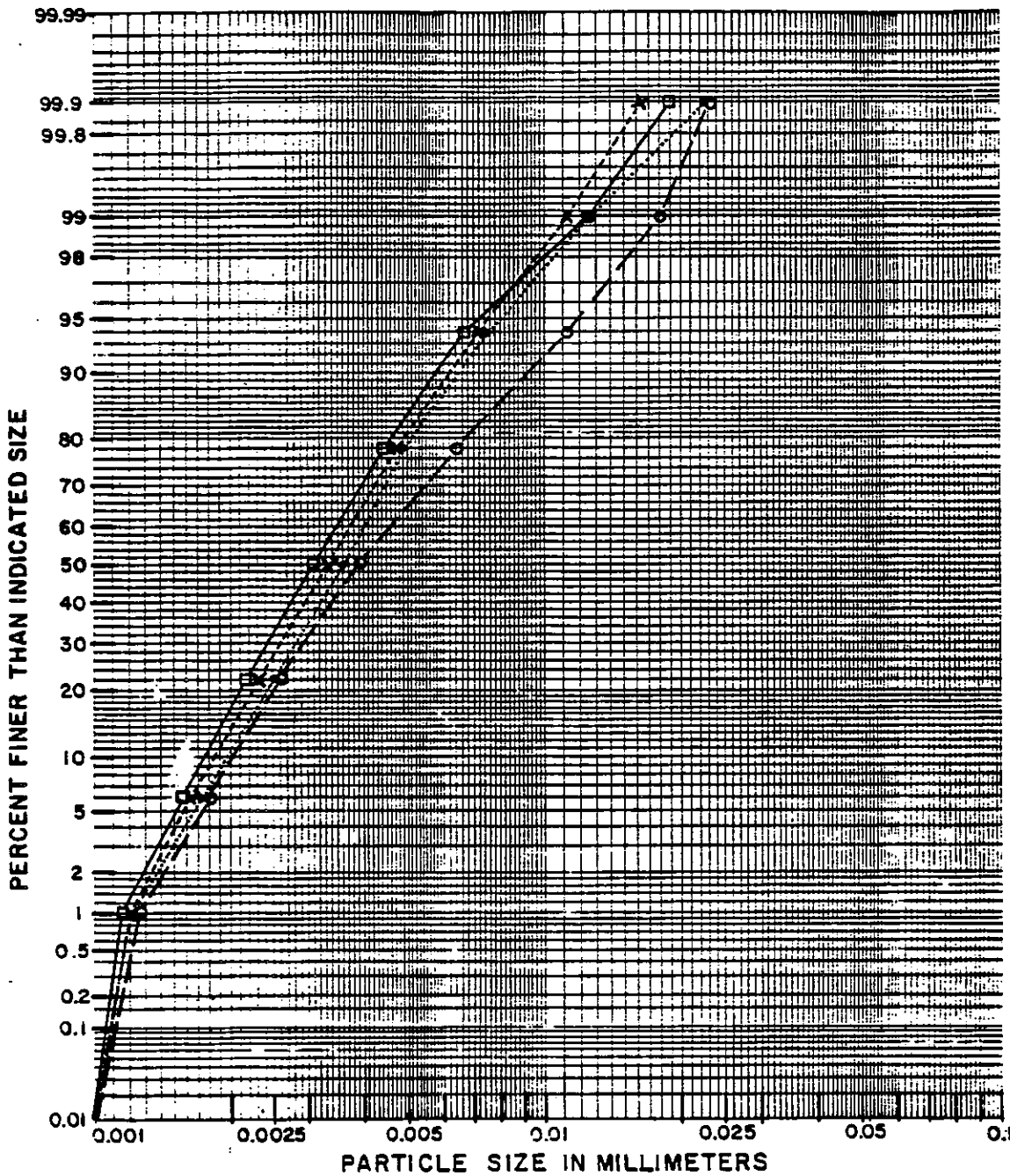
R&M CONSULTANTS, INC.

SUSPENDED SEDIMENT PARTICLE SIZE DISTRIBUTION

PREPARED FOR:

ACRES

FIG. 4.32



LEGEND:

DATA	STATION	DEPTH
---×---	STA 14	5 m
·····•·····	STA 8	5 m
——□——	STA 10	5 m
—○— —	STA 8	45m

EKLUTNA LAKE

JULY 2, 1982

PREPARED BY:

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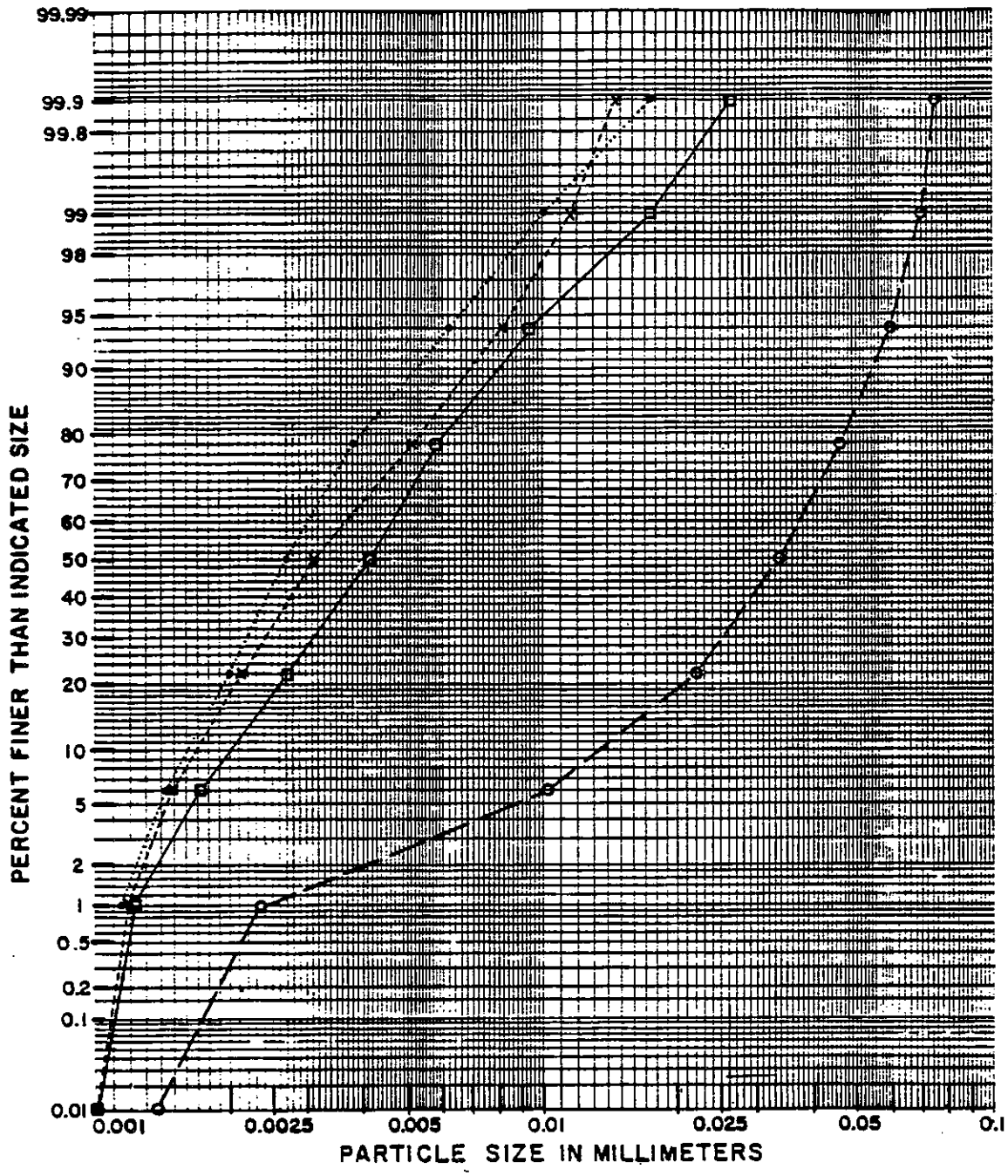
PREPARED FOR:

SUSPENDED SEDIMENT

PARTICLE SIZE DISTRIBUTION

FIG. 4.33



LEGEND:

DATA	STATION	DEPTH
---×---------	STA 9	1 m
.....•.....	STA 9	14 m
——□——	STA 11	1 m
—○— —	STA 11	28m

EKLUTNA LAKE

JULY 15, 1982

PREPARED BY:

R&M CONSULTANTS, INC.

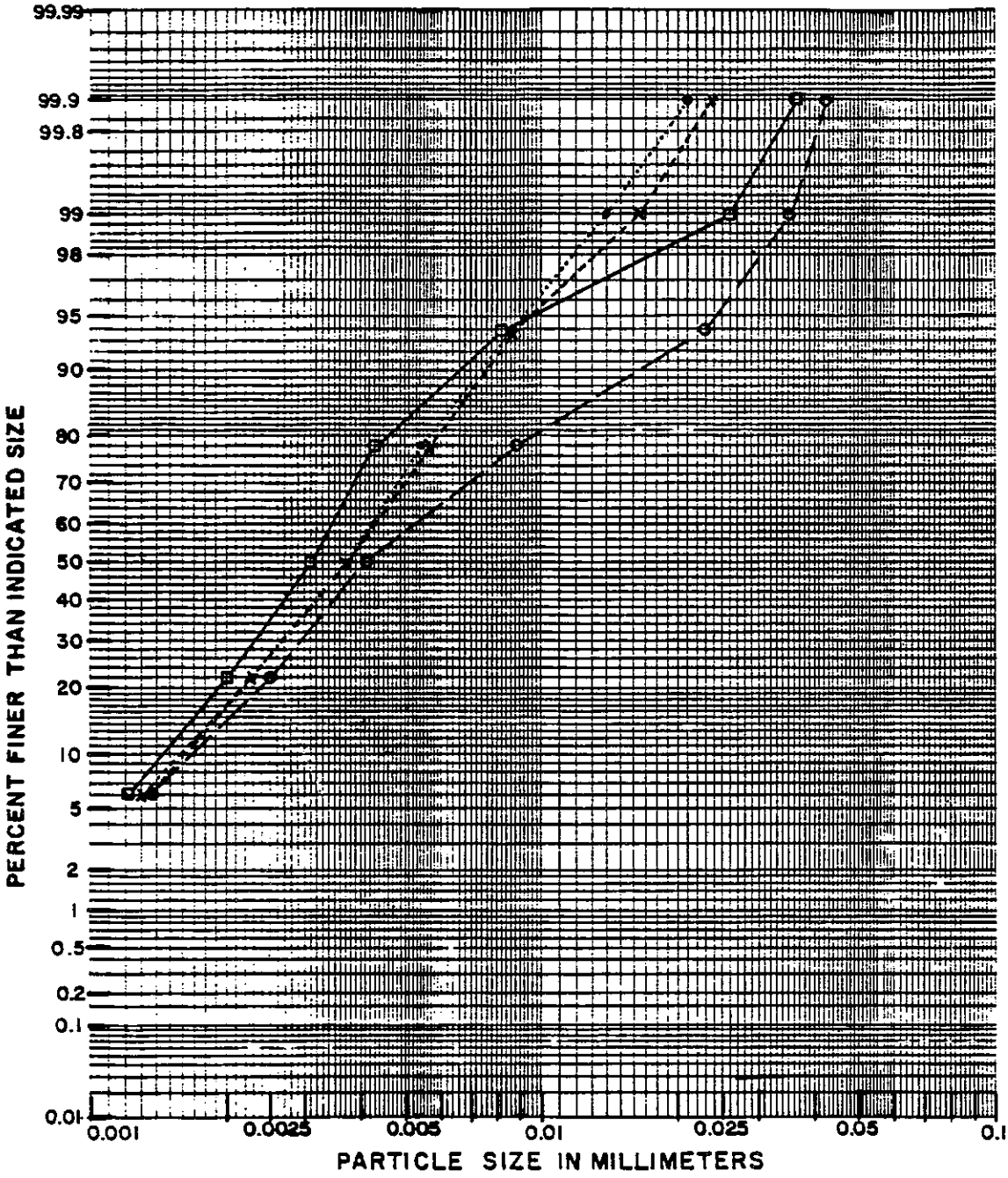
PREPARED FOR:

ACRES

SUSPENDED SEDIMENT

PARTICLE SIZE DISTRIBUTION

FIG. 4.34



LEGEND:

DATA	STATION	DEPTH
---X---------	STA 4	24 m
.....•.....	STA 4	12 m
——□——	STA 11	12 m
—○— —	STA 6	6 m

EKLUTNA LAKE

JULY 28, 1982

PREPARED BY:

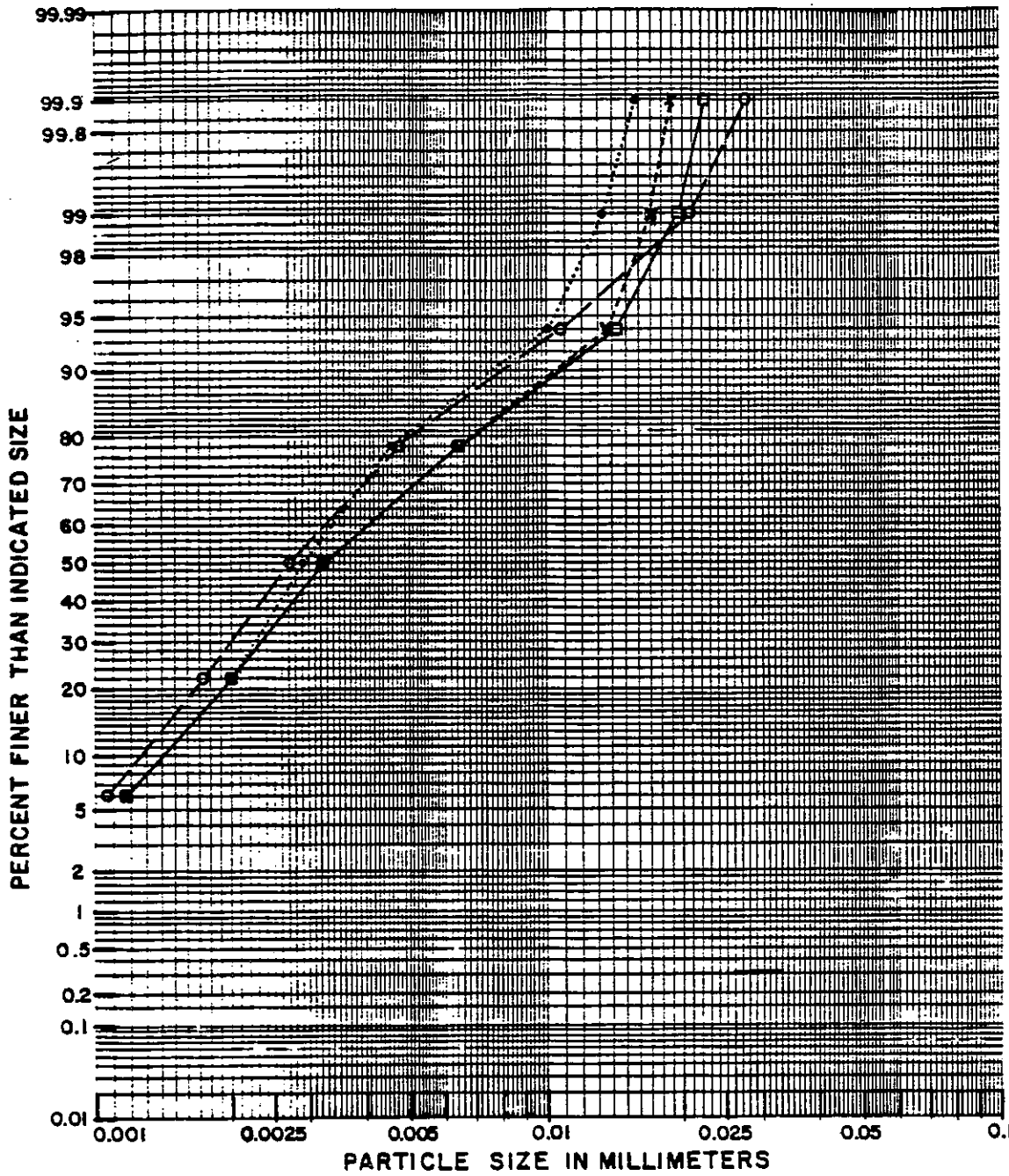
R&M CONSULTANTS, INC.

PREPARED FOR:

ACRES

SUSPENDED SEDIMENT PARTICLE SIZE DISTRIBUTION

FIG. 4.35



LEGEND:

DATA	STATION	DEPTH
---x---	STA II	5 m
·····•·····	STA 7	12 m
—□—	STA 7	5 m
—○— —	STA II	32 m

EKLUTNA LAKE

AUGUST 25, 1982

PREPARED BY:

R&M CONSULTANTS, INC.

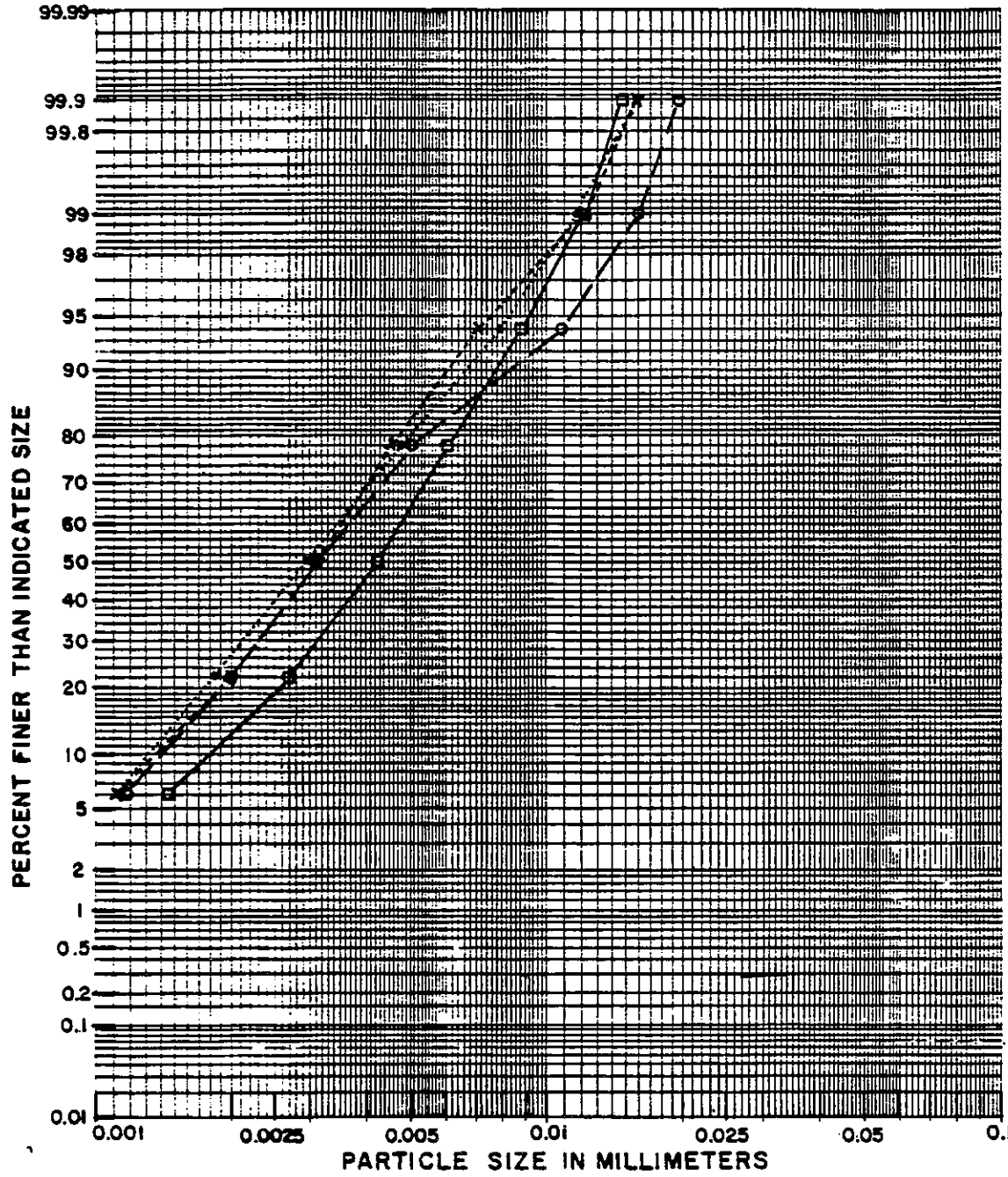
PREPARED FOR:

ACRES

SUSPENDED SEDIMENT

PARTICLE SIZE DISTRIBUTION

FIG. 4.36



LEGEND:

DATA	STATION	DEPTH
---×---	STA 5	28m
·····•·····	STA 5	56m
——□——	STA II	48m
—○— —	STA II	24m

EKLUTNA LAKE

SEPTEMBER 22, 1982

PREPARED BY:

R&M CONSULTANTS, INC

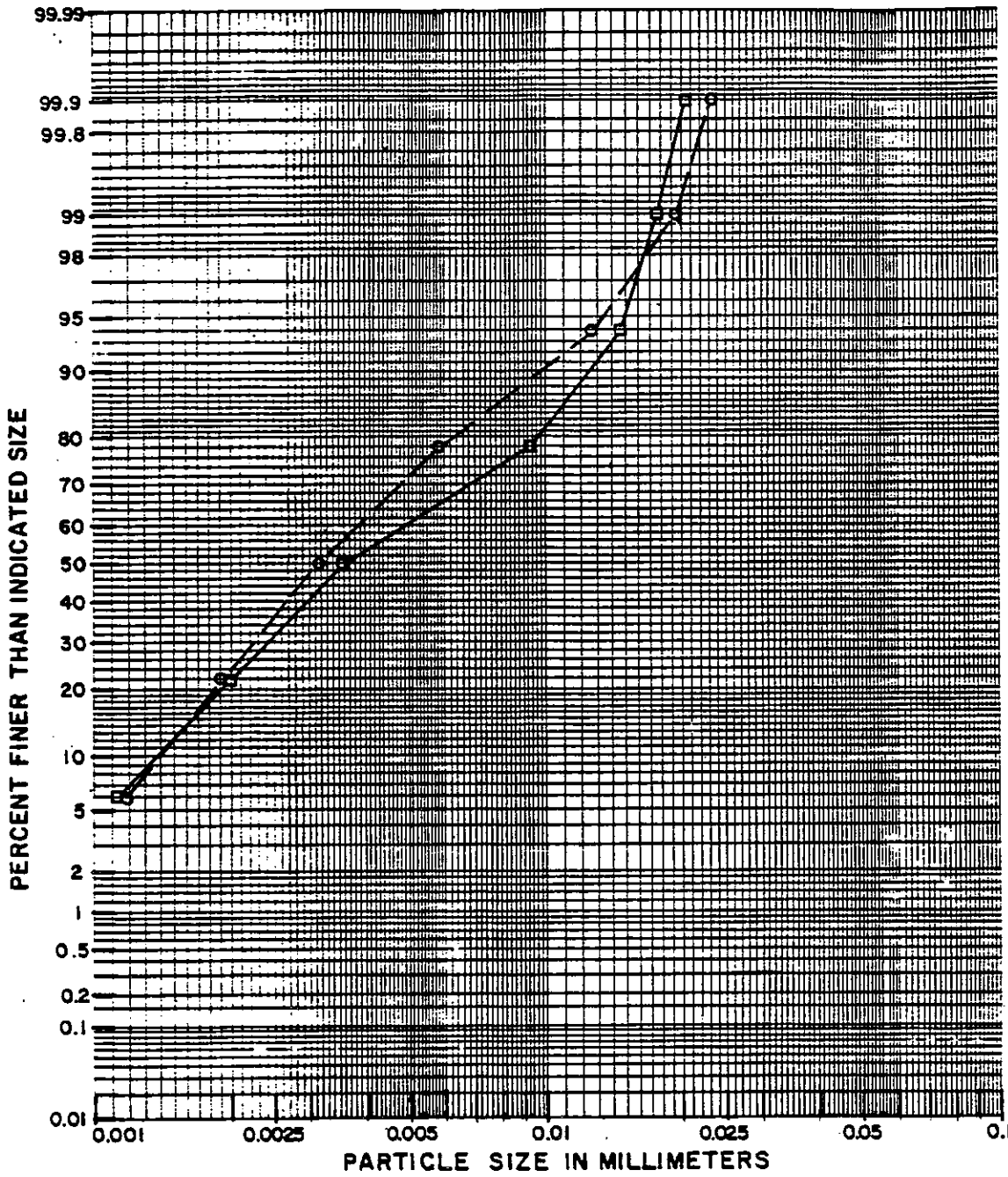
PREPARED FOR:

ACRES

SUSPENDED SEDIMENT

PARTICLE SIZE DISTRIBUTION

FIG. 4.37



LEGEND:

DATA	STATION	DEPTH
—□—	STA 11	24 m
—○— —	STA 5	24 m

EKLUTNA LAKE

OCTOBER 14, 1982

PREPARED BY:

R&M CONSULTANTS, INC.

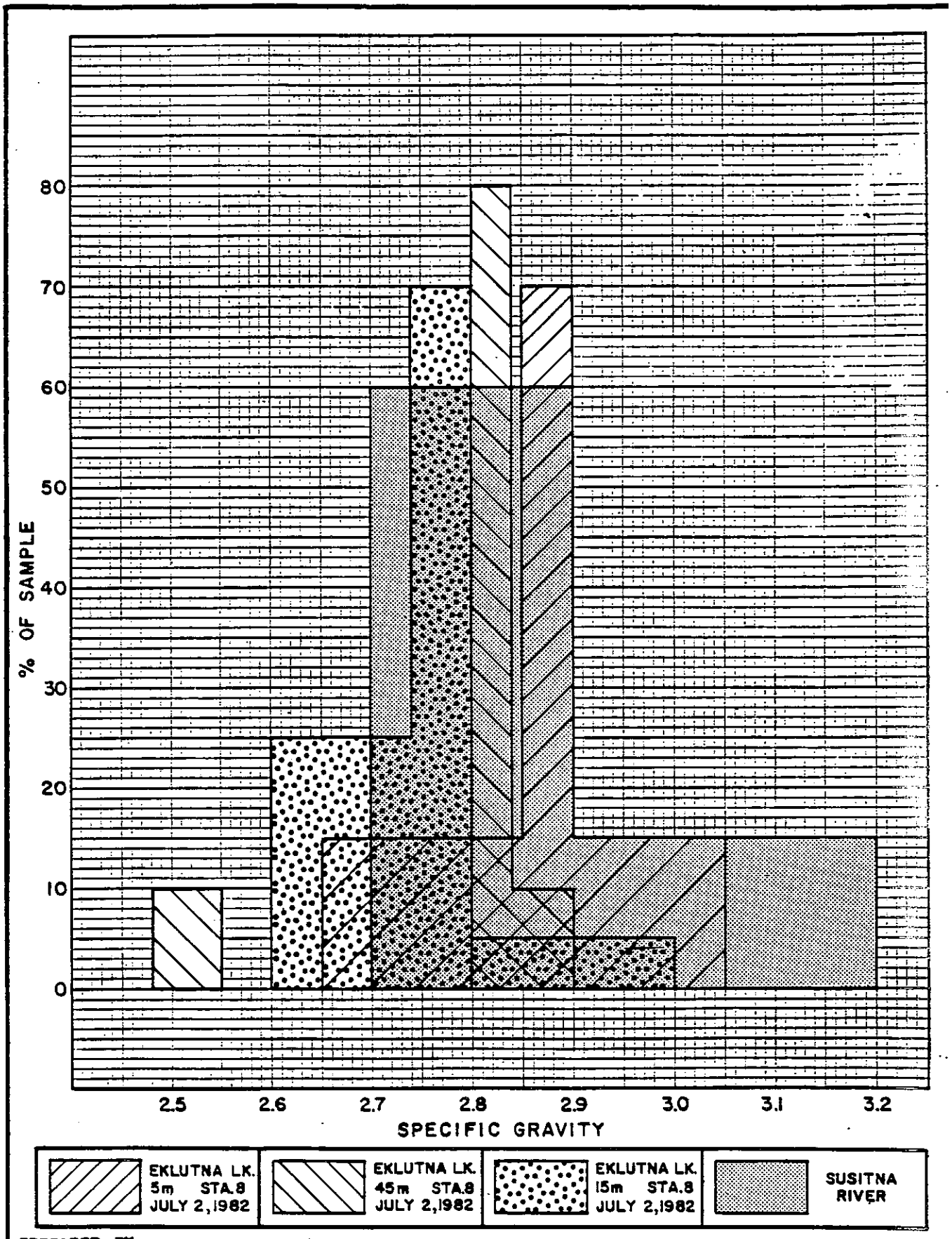
PREPARED FOR:

ACRES

SUSPENDED SEDIMENT

PARTICLE SIZE DISTRIBUTION

FIG. 4.38



PREPARED BY:

R&M CONSULTANTS, INC.

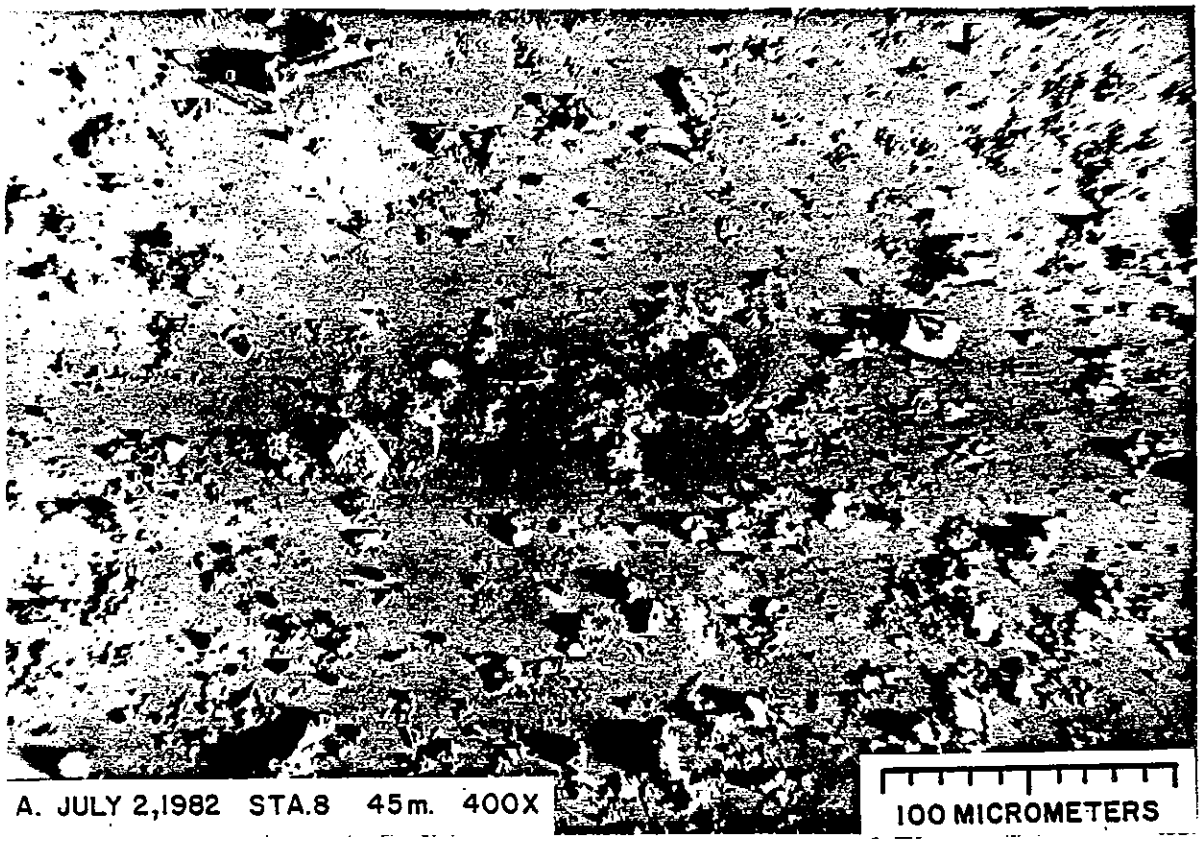
PREPARED FOR

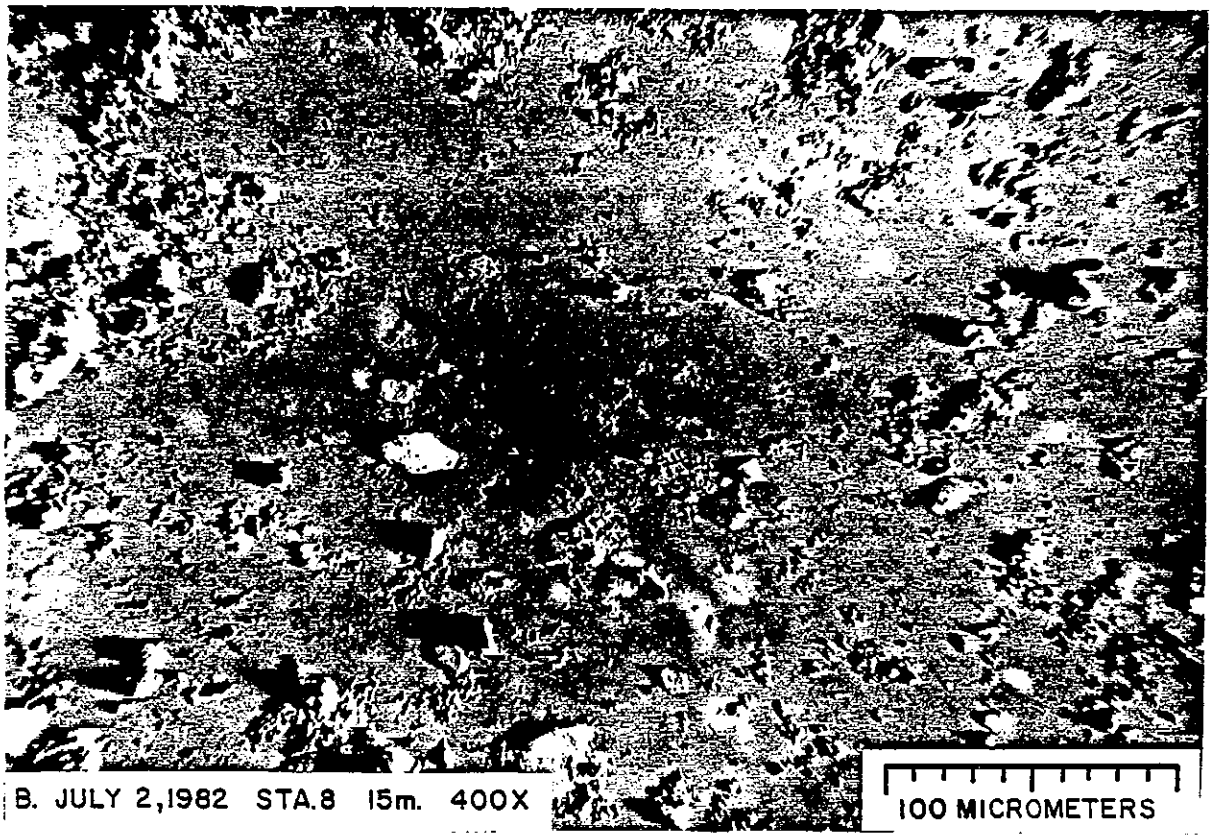
ACRES

SEDIMENT DENSITY DISTRIBUTION

EKLUTNA LAKE & SUSITNA RIVER

FIGURE 4.39





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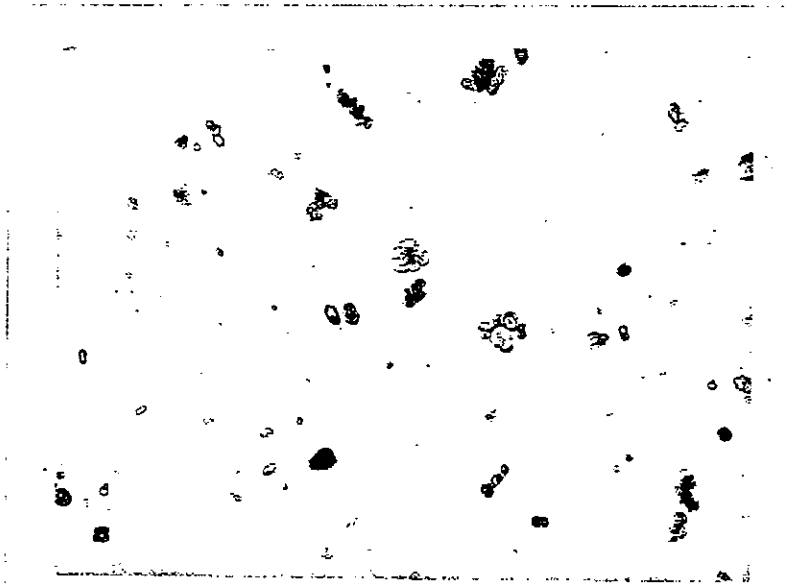
TYPICAL SUSPENDED SEDIMENT PARTICLES

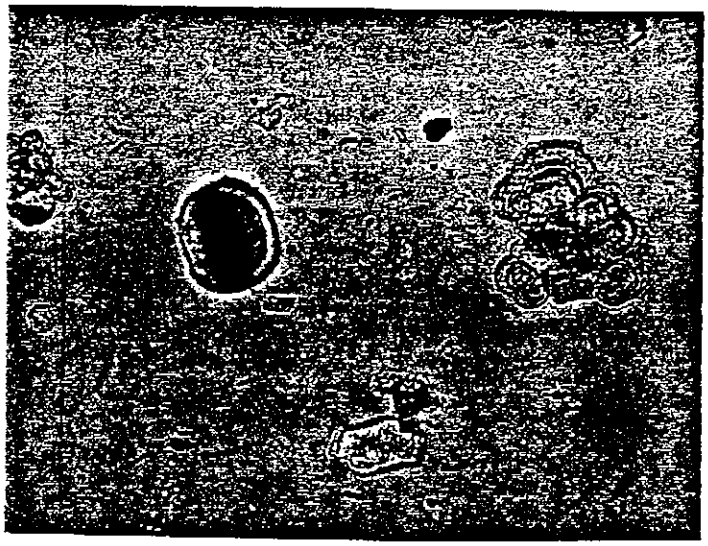
FIG. 4.40

PREPARED FOR:

ACRES



100 MICROMETERS



400 MICROMETERS

PREPARED BY:

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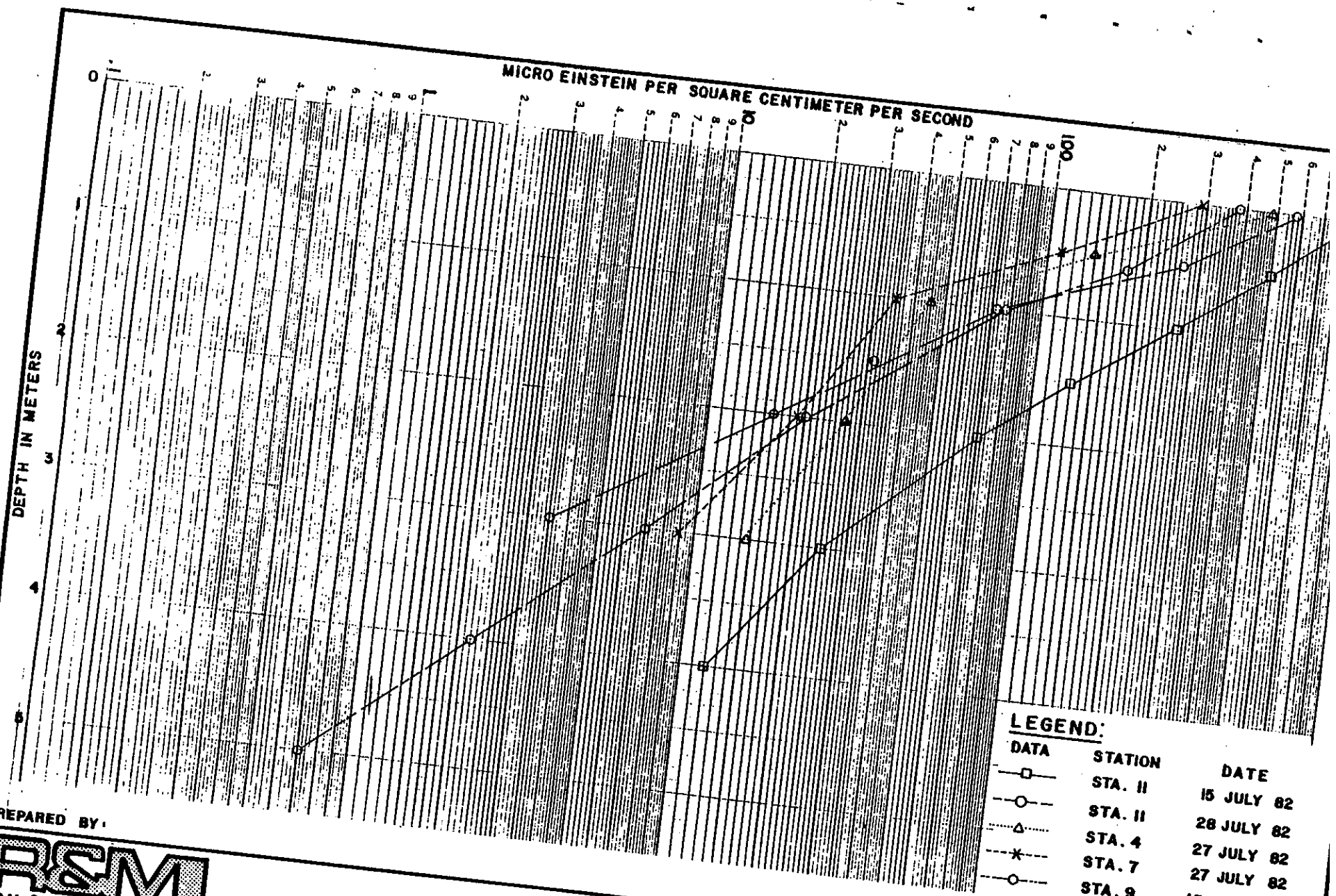
PREPARED FOR:

ACRES

SUSPENDED SEDIMENT

JULY 2, STA.11, 28 m.

FIG. 4.41



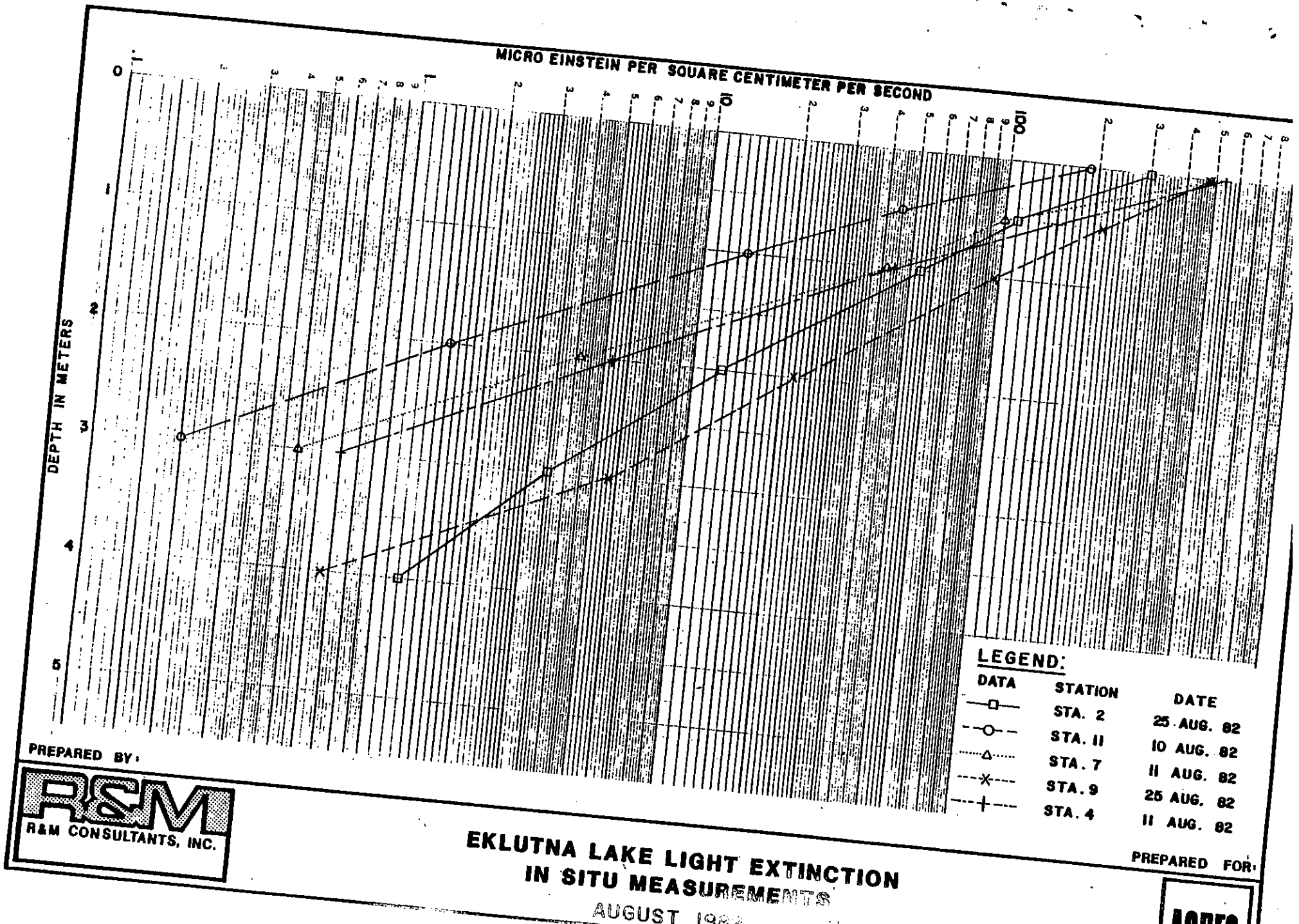
PREPARED BY:

R&M CONSULTANTS, INC.

EKLUTNA LAKE LIGHT EXTINCTION
IN SITU MEASUREMENTS

JULY 1982

PREPARED FOR:



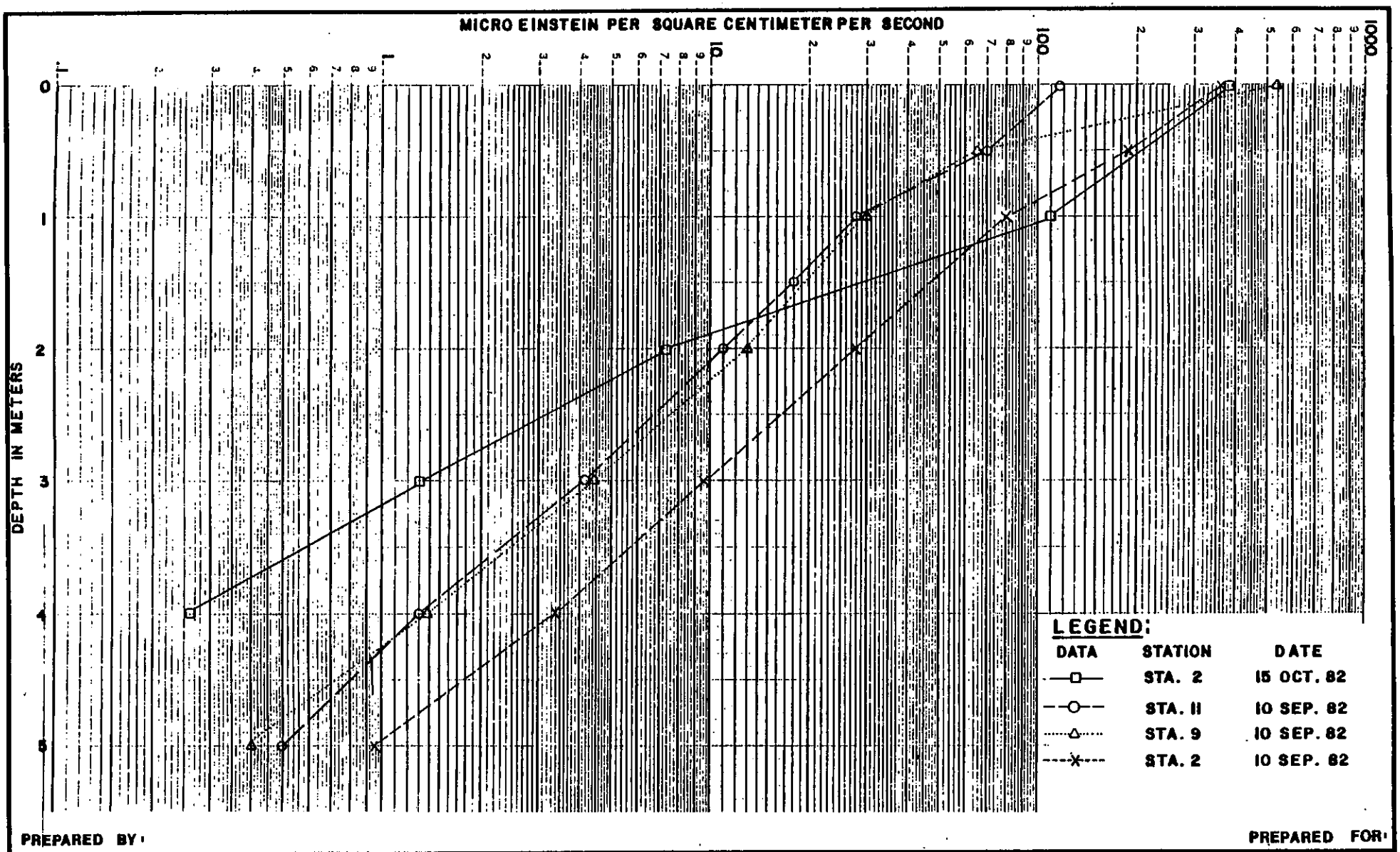
PREPARED BY:

R&M CONSULTANTS, INC.

EKLUTNA LAKE LIGHT EXTINCTION
IN SITU MEASUREMENTS

AUGUST 1982

PREPARED FOR:



PREPARED BY:

R&M CONSULTANTS, INC.

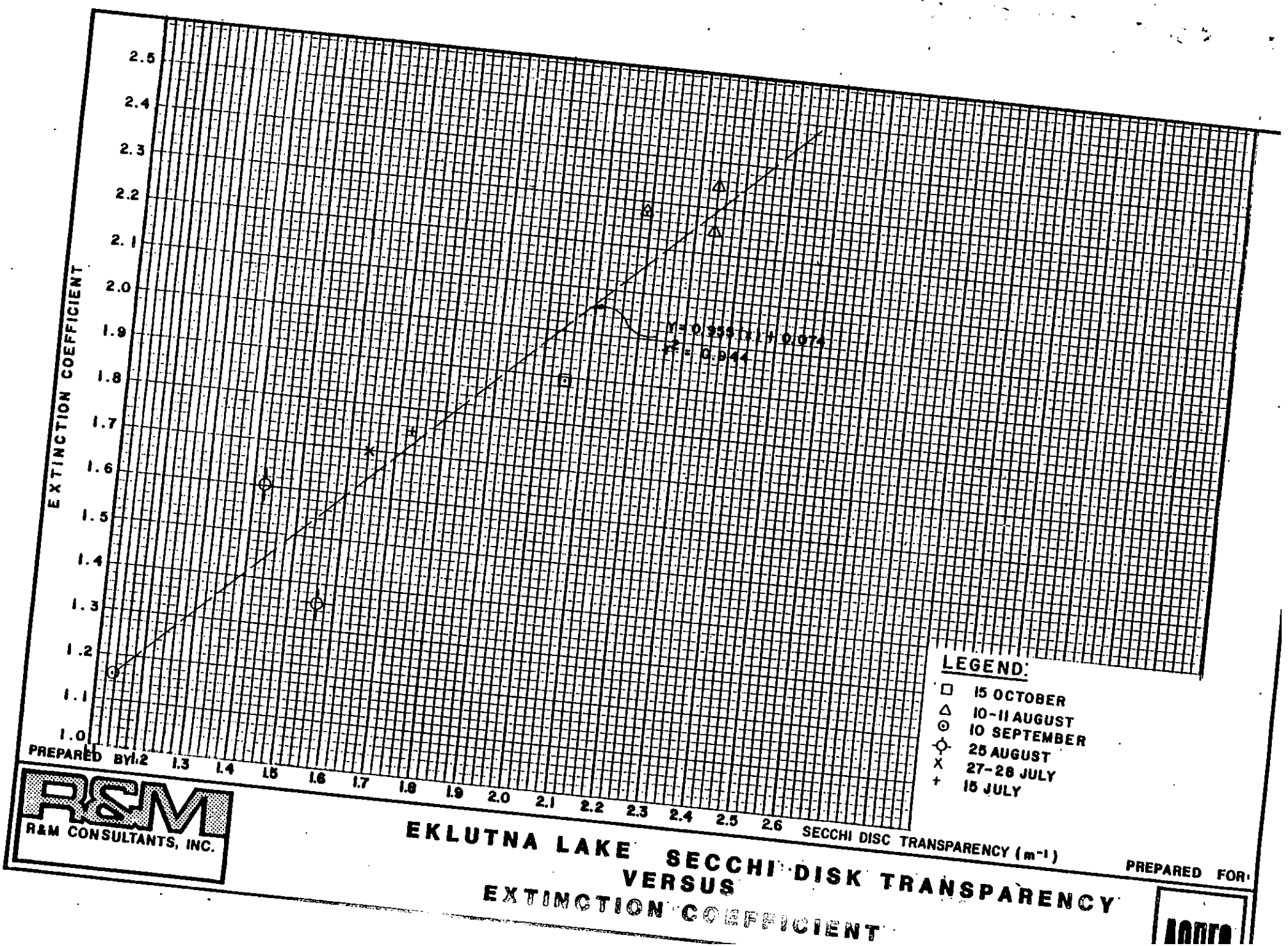
PREPARED FOR:

ACRES

EKLUTNA LAKE LIGHT EXTINCTION
IN SITU MEASUREMENTS

SEPTEMBER, OCTOBER 1982

FIG. 4.44

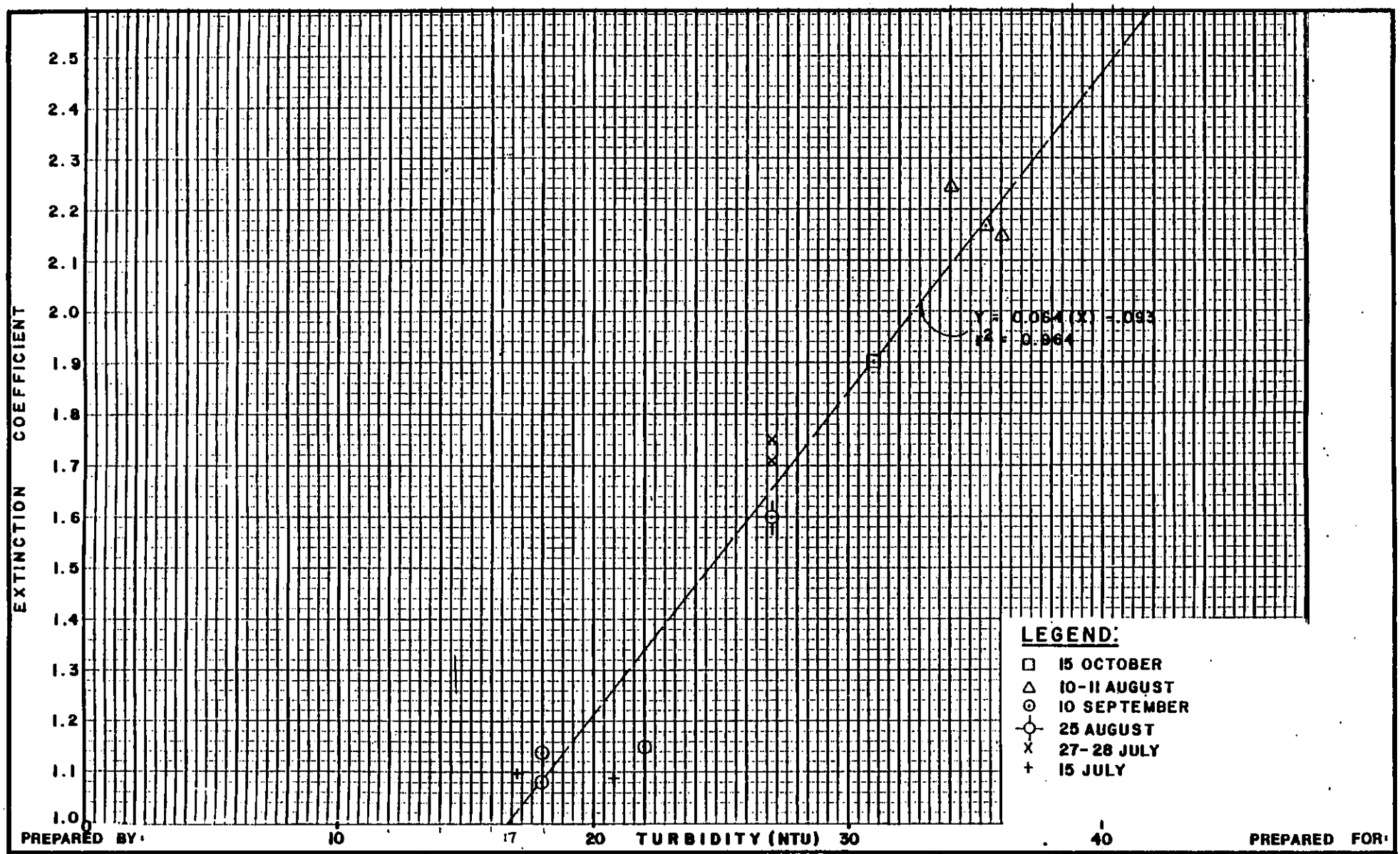


PREPARED BY:

R&M CONSULTANTS, INC.

EKLUTNA LAKE SECCHI DISK TRANSPARENCY VERSUS EXTINCTION COEFFICIENT

PREPARED FOR:

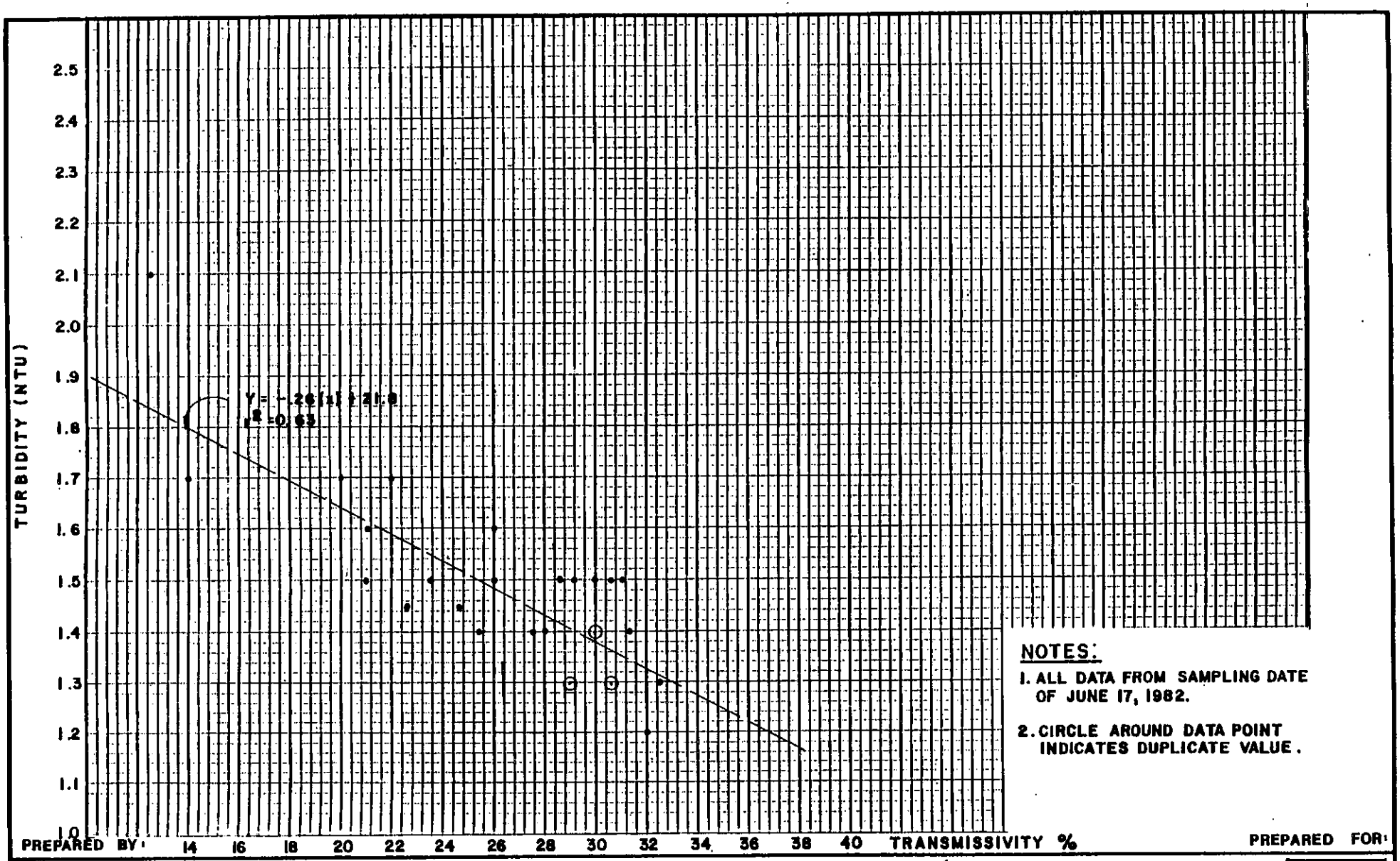


R&M CONSULTANTS, INC.

EKLUTNA LAKE SURFACE TURBIDITY VERSUS EXTINCTION COEFFICIENT

ACRES

FIG. 4.46



NOTES:

1. ALL DATA FROM SAMPLING DATE OF JUNE 17, 1982.
2. CIRCLE AROUND DATA POINT INDICATES DUPLICATE VALUE.

PREPARED BY:

R&M CONSULTANTS, INC.

EKLUTNA LAKE TRANSMISSIVITY (%) VERSUS TURBIDITY (NTU)

FIG. 4.47

PREPARED FOR:

ACRES

APPENDIX A

EKLUTNA LAKE
PROFILING SUPPORT DATA

s9/u1

TEMPERATURE PROFILES ON APRIL 16, 1982
SELECTED GLACIAL LAKES - SOUTHCENTRAL ALASKA

Depth (m)	Kenai L.	Skilak L.	Tustamena L.	Eklutna L.
0.0		0.8	0.9 (@ 0.2 m)	1.0
0.5	1.4			1.6
1.0	2.0	2.3	2.0	2.6
1.5		2.8		3.3
2.0	2.1	2.9	2.0	3.4
2.5				3.5
3.0	2.1	2.9	2.0	3.5
4.0	2.2	2.9	1.9	3.5
5.0	2.0	2.9	1.9	3.6
6.0	2.1	2.9	1.9	3.6
7.0	2.0	2.9	1.9	3.6
8.0	2.0	2.9	1.9	3.6
9.0	2.2	2.9	1.9	3.6
10.0	2.2	2.9	1.9	3.6
12.0	2.2	2.9	2.0	3.6
13.0				3.6
14.0	2.2	2.9	1.9	
16.0	2.2	3.0	2.0	
17.0		3.0		
18.0	2.2	3.0		
19.0		3.1		
20.0	2.2	3.3		
21.0		3.4		
22.0	2.2	3.6		
23.0		3.6		
24.0	2.2	3.6		
25.0		3.6		
26.0	2.2			
27.0	2.2			
27.5	2.8			
28.0	2.8			
29.0	3.0			
30.0	3.3	3.5		
31.0	3.3			
32.0	3.4			
33.0	3.5			
34.0	3.6			
35.0	3.6			
36.0	3.7			
37.0	3.7			
38.0	3.7			
40.0	3.7	3.4		
42.0	3.7			
44.0	3.7			
48.0	3.7			
50.0		3.5		
52.0	3.7			
56.0	3.6			
60.0		3.5		

****

TITLE: EKLUTNA LAKE

DATE: November 4, 1982 ; 82308

STATION NUMBER: 2

STARTING TIME: 1244 AST

ENDING TIME: 1251 AST

SECCHI DISC: 2.0 feet

SURFACE TEMP: 5.1 C

LAKE DEPTH: 62.9 meters

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	5.06	70	110 *		26.0
4.0	5.11	74	116 *		
7.0					27.0
8.0	5.11	73	115 *		
16.0	5.10	73	115 *		
24.0	5.10	74	116 *		
32.0	5.07	72	113 *		
40.0	5.04	73	115 *		
48.0	4.96	72	113 *		

!Overcast, light north wind
!Martek conductivity meter calibrated relative to YSI meter
!E1104B:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: November 4, 1982 ; 82308

STATION NUMBER: 5

STARTING TIME: 1224 AST

ENDING TIME: 1235 AST

SECCHI DISC:

SURFACE TEMP: 5.1 C

LAKE DEPTH: 62.9 meters

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	5.13	77	121 *		
4.0	5.14	76	119 *		
8.0	5.15	76	119 *		
16.0	5.15	76	119 *		
24.0	5.15	76	119 *		
32.0	5.14	75	118 *		
40.0	5.13	75	118 *		
48.0	5.13	75	118 *		
52.0	5.11	75	118 *		
56.0	5.09	74	116 *		

!Overcast, very light north wind, light snow flurries, air temperature 26 C
!Martek conductivity meter calibrated relative to YSI meter
!E1104E:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: November 4, 1982 ; 82308

STATION NUMBER: 7

STARTING TIME: 1206 AST

ENDING TIME: 1214 AST

SECCHI DISC: 2.0 feet

SURFACE TEMP: 5.1 C

LAKE DEPTH: 62.9 meters

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	5.11	72	113 *		26.0
4.0	5.13	75	118 *		
!Suspended sediment sample collected @ 7.0 m					
7.0					27.0
8.0	5.12	73	115 *		
16.0	5.13	73	115 *		
24.0	5.17	76	119 *		
32.0	5.17	77	121 *		
40.0	5.16	76	119 *		
48.0	5.16	76	119 *		
56.0	5.18	77	121 *		

!Overcast, very light north wind, light snow flurries
!Martek conductivity channel calibrated relative to YSI meter
!E1104G:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: November 4, 1982 ; 82308

STATION NUMBER: 10

STARTING TIME: 1137 AST

ENDING TIME: 1147 AST

SECCHI DISC:

SURFACE TEMP: 4.9 C

LAKE DEPTH: 62.9 meters

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	4.89	71	111 *		
4.0	4.94	74	116 *		
8.0	4.95	75	118 *		
16.0	4.94	74	116 *		
24.0	4.92	74	116 *		
32.0	4.78	74	116 *		
40.0	4.77	74	116 *		
48.0	4.73	72	113 *		

!Bottom
!Overcast, light north wind, air temperature 26 C
!Martek conductivity meter calibrated relative to YSI meter
!E1104J:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: November 4, 1982 ; 82308

STATION NUMBER: 11

STARTING TIME: 1115 AST

ENDING TIME: 1127 AST

SECCHI DISC: 2.1 feet

SURFACE TEMP: 4.6 C

LAKE DEPTH: 62.9 meters

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	4.56	72	113 *		26.0
4.0	4.59	72	113 *		
7.0					27.0
8.0	4.62	71	111 *		
16.0	4.61	73	115 *		
24.0	4.61	73	115 *		
32.0	4.61	73	115 *		
40.0	4.65	73	115 *		
48.0	4.69	73	115 *		
52.0	4.64				

!Suspended sediment sample collected @ 7.0 m

!Overcast, light north wind
!Martek conductivity meter calibrated relative to YSI meter
!E1104K:H8,0.1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: November 4, 1982 ; 82308

STATION NUMBER: 13

STARTING TIME: 1026 AST

ENDING TIME: 1045 AST

SECCHI DISC:

SURFACE TEMP: 4.7 C

LAKE DEPTH: 62.9 meters

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	4.66	72	113 *		
1.0	4.68	72	113 *		
4.0	4.71	75	118 *		
8.0	4.70	74	116 *		
16.0	4.70	74	116 *		
24.0	4.66	73	115 *		
32.0	4.66	73	115 *		
40.0	4.59	73	115 *		

!Bottom
!Overcast, light north wind, very light snow flurries
!Martek conductivity meter calibrated relative to YSI meter
!E1104M:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: May 25, 1982 : 82145

STATION NUMBER: 2

STARTING TIME: 1730

ENDING TIME: 1843

SECCHI DISC:

SURFACE TEMP:

LAKE DEPTH: 51.7 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	4.90	104	163 *		
.5	4.90	104	163 *		
1.0	4.80	104	163 *		
2.0	4.80	105	165 *		
4.0	4.80	105	165 *		
6.0	4.90	107	168 *		6.9
8.0	4.70	108	170 *		
10.0	4.70	109	171 *		
12.0	4.60	109	171 *		
14.0	4.60	111	174 *		
15.0	4.60	111	174 *		
16.0	4.50	111	174 *		
17.0	4.40	111	179 *		
18.0	4.40	111	179 *		
18.5	4.30	111	179 *		
19.0	4.20	112	180 *		
21.0	4.20	113	182 *		6.0
23.0	4.20	113	182 *		
25.0	4.20	114	184 *		
27.0	4.20	116	187 *		
29.0	4.20	117	188 *		
31.0	4.20	117	188 *		
33.0	4.20	118	190 *		
35.0	4.20	118	190 *		7.5
37.0	4.20	120	193 *		
39.0	4.20	120	193 *		

!Bottom

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: May 25, 1982 ; 82145

STATION NUMBER: 3

STARTING TIME: 1845 AST

ENDING TIME: 1910 AST

SECCHI DISC:

SURFACE TEMP:

LAKE DEPTH: 51.7 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	4.30	102	164 *		7.0
1.0	4.30	103	166 *		
2.0	4.30	103	166 *		
3.0	4.30	104	167 *		
4.0	4.30	105	169 *		
5.0	4.30	105	169 *		
7.0	4.30	107	172 *		
9.0	4.30	108	174 *		
11.0	4.30	109	175 *		
13.0	4.30	110	177 *		
15.0	4.30	111	179 *		10.0
17.0	4.30	112	180 *		
19.0	4.30	113	182 *		
21.0	4.30	113	182 *		
23.0	4.30	115	185 *		
25.0	4.40	116	187 *		
27.0	4.40	118	190 *		
29.0	4.40	118	190 *		
31.0	4.40	118	190 *		9.5
33.0	4.40	119	192 *		
!Bottom					
!Cloudy, 5 knot wind					
!E0525C:H8,0,1					
35.0	4.40	119	192 *		

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: May 25, 1982 ; 82145

STATION NUMBER: 10

STARTING TIME: 1945 AST

ENDING TIME: 2005 AST

SECCHI DISC:

SURFACE TEMP:

LAKE DEPTH: 51.7 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	4.90	106	166 *		5.5
1.0	4.90	106	166 *		
2.0	4.90	106	166 *		
4.0	4.90	108	170 *		6.7
6.0	4.90	109	171 *		
8.0	4.90	110	173 *		
10.0	4.90	110	173 *		
12.0	4.90	111	174 *		
14.0	4.90	111	174 *		
16.0	4.90	112	176 *		
18.0	4.90	113	177 *		
20.0	4.90	114	179 *		7.6
22.0	4.60	115	181 *		
24.0	4.60	117	184 *		
26.0	4.40	118	190 *		9.5
28.0	4.30	118	190 *		
30.0	4.30	120	193 *		
32.0	4.30	121	195 *		

!Bottom
!Cloudy, 5 knot wind
!Lost sight of Kemmerer @ 1.8 m
!E0525J:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: May 25, 1982 ; 82145

STATION NUMBER: 15

STARTING TIME: 2015 AST

ENDING TIME: 2025 AST

SECCHI DISC:

SURFACE TEMP:

LAKE DEPTH: 51.7 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	5.60	109	167 *		7.2
1.0	5.50	109	167 *		
2.0	5.50	109	167 *		
3.0	5.50	109	167 *		
4.0	5.50	109	167 *		
5.0	5.40	109	171 *		7.2
6.0	5.40	109	171 *		
7.0	5.30	109	171 *		
8.0	5.30	110	173 *		
9.0	5.20	109	171 *		
9.5	5.10	110	173 *		
10.0	4.90	109	171 *		9.4
11.0	4.90	110	173 *		
12.0	4.90	110	173 *		

!Bottom
!Cloudy, 5 knot wind
!E05250:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: June 17, 1982 ; 82168

STATION NUMBER: 2

STARTING TIME: 1434 AST

ENDING TIME: 1627 AST

SECCHI DISC: 2.6 feet

SURFACE TEMP: 8.4 C

LAKE DEPTH: 51.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	8.40				
1.0	7.90			27	
2.0	6.70			26	
3.0	6.20			20	
4.0	5.00			15	
5.0				15	21.0
6.0	4.90			18	
8.0	5.00			26	
10.0	4.90			24	
12.0	4.90	128	201 *	22	17.0
13.0	4.90	127	199 *		
13.5	4.90	127	199 *		
14.0	4.40	130	209 *	26	16.0
15.0	4.90	128	201 *	27	
16.0	4.40	132	213 *	14	
17.0					15.0
18.0	4.20	134	216 *	13	
20.0	4.10	136	219 *	22	
22.0	4.00	138	222 *	20	
24.0	4.00	139	224 *	23	
26.0	4.00	140	225 *	32	
28.0	4.00	140	225 *	34	
30.0	4.00	143	230 *		
32.0	3.80	146	235 *		
34.0	3.80	148	238 *		
36.0	3.80	149	240 *		
38.0	3.70	150	242 *		
40.0	3.70	151	243 *		
41.0	3.70	153	246 *		
42.0	3.70	155	250 *		
43.0	3.70	158	254 *		
44.0	3.60	160	258 *		

!Bottom
!Partly sunny, light breeze from southeast
!Transmissometer path length = 25 cm
!Conductivity recorded with YSI SCT Meter; meter may be malfunctioning - Data
! seems high
!E0617B:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

TITLE: EKLUTNA LAKE

DATE: June 17, 1982 ; 82168

STATION NUMBER: 3

STARTING TIME: 1635 AST

ENDING TIME: 1800 AST

SECCHI DISC: 3.0 feet

SURFACE TEMP: 10 C

LAKE DEPTH: 51.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURB. DIT (NTU)
0.0				29	
1.0	8.3			28	
2.0	8.0			28	14
3.0	7.0			27	
4.0	6.0				
5.0	5.9			26	
6.0	5.8			26	15
7.0	5.7			26	
8.0	5.6			25.5	
9.0	5.5			26.5	
10.0	5.4			27.0	
12.0	5.2			28.5	
14.0	5.2			28	
16.0	5.1			29	
18.0	5.1			30.5	
20.0	5.0			31	
22.0	4.9			32	
24.0	4.8			33	
26.0	4.8			31.5	
28.0	4.8			30.5	
30.0	4.7			30	
32.0	4.5				
34.0	4.2				
36.0	4.2				
38.0	4.2				
40.0	4.2				
42.0	4.3				
44.0	4.2				
46.0	4.2				
	4.2				

14

!Bottom
!Sunny
!Transmissometer path length = 25 cm

```
!YSI SCT Meter malfunctioning; no conductivity data
!E0617C:H8,0,1
```

****

TITLE: EKLUTNA LAKE

DATE: June 17, 1982 ; 82168

STATION NUMBER: 4

STARTING TIME: 1855 AST

ENDING TIME: 2030 AST

SECCHI DISC: 3.4 feet

SURFACE TEMP:

LAKE DEPTH: 51.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBID. (NTU)
0.0	8.8			30	14
0.5	8.6				
1.0	8.2			28	
2.0	7.2			26	
3.0	6.8			25.5	
4.0	6.8			25.5	
5.0	6.7			25.5	14
6.0	6.6			24	
7.0	6.5			24	
8.0	6.5			24	
9.0	6.4			24	
10.0	6.3			23	
11.0	6.3			17	
12.0	6.2			14	17
13.0	6.1			24	
14.0	6.1			23.5	15
15.0	6.1			21	
16.0	6.1			13	
17.0	6.1			13.5	
18.0	6.0			13.5	
19.0	6.0			12.5	21
20.0	5.6			11.5	
22.0	5.4			23	
24.0	5.2			28.5	15
26.0	5.2			29	
28.0	5.2			30.5	
30.0	5.1			30.5	
32.0	5.1				
34.0	5.1				
36.0	5.1				
38.0	5.1				
40.0	5.1				
42.0	5.0				

```
44.0            5.0
46.0            5.0
48.0            4.9

!Bottom
!YSI SCT Meter malfunctioning - No conductivity data
!E0617D:H8,0,1
```

TITLE: EKLUTNA LAKE

DATE: June 18, 1982 ; 82169

STATION NUMBER: 5

STARTING TIME: 1330 AST

ENDING TIME:

SECCHI DISC: 3.8 feet

SURFACE TEMP: 9.5 C

LAKE DEPTH: 51.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURB. UNIT (NTU)
0.0	8.5			30	
0.5	8.4			29	
1.0	8.2			27	13
2.0	7.5			24	
3.0	7.0			24	
4.0	6.8			24.5	
5.0	6.5			23	14.5
6.0	6.5			22	
7.0	6.5			21.5	
8.0	6.4			22	
9.0	6.3			20	
10.0	6.2			20	
12.0	6.2			25	17
14.0	6.0			27.5	
16.0	6.0			28	
18.0	5.9			28	
20.0	5.9			23.5	
22.0	5.8			23.5	
24.0	5.7			26	
26.0	5.4			28	
28.0	5.2				
30.0	5.2				
32.0	5.1				
34.0	5.1				
36.0	5.1				
38.0	5.1				
40.0	5.0				
42.0	5.0				
44.0	5.0				
46.0	5.0				
47.0	4.9				
47.4					

!Bottom
!Overcast, light north wind, light rain
!Transmissometer path length = 25 cm
!YSI SCT Meter malfunctioning - No conductivity data
!E0618E:H8,0,1

TITLE: EKLUTNA LAKE

DATE: June 18, 1982 ; 82169

STATION NUMBER: 8

STARTING TIME: 1215 AST

ENDING TIME: 1314 AST

SECCHI DISC: 3.7 feet

SURFACE TEMP: 7.7 C

LAKE DEPTH: 51.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	7.7			30	
0.5	7.2				
1.0	6.7			30	14
2.0	5.6			27	
3.0	5.0			27	
4.0	5.1			26	
5.0	5.1			22.5	14.5
6.0	5.1			26	
7.0	5.1			26.5	
8.0	5.0			27	
9.0	4,9			27	14
10.0	4.9			27	
12.0	4.8			26	
14.0	4.6			21	16
16.0	4.6			29	
18.0	4.6			28	
20.0	4.6			27.5	14
22.0	4.5			28	
24.0	4.5			27.5	
26.0	4.6			28.5	
28.0	4.6			28	
30.0	4.6				
32.0	4.5				
34.0	4.5				
36.0	4.4				
38.0	4.4				
40.0	4.3				
42.0	4.3				
44.0	4.3				
46.0	4.2				
47.0	4.3				
48.0					

!Bottom
!Overcast, light north wind, light rain
!Transmissometer path length = 25 cm
!YSI SCT Meter malfunctioning - No conductivity data
!E0618H:H8,0.1

****

TITLE: EKLUTNA LAKE

DATE: June 18, 1982 ; 82169

STATION NUMBER: 9

STARTING TIME: 1105 AST

ENDING TIME: 1204 AST

SECCHI DISC: 3.8 feet

SURFACE TEMP:

LAKE DEPTH: 51.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	8.2			33	
0.5	8.0				
1.0	8.0			31	13
2.0	7.5			30	
3.0	7.1			30	
4.0	6.9			29.5	
5.0	6.6			28.5	
6.0	6.2			28	
7.0	6.0			28	
8.0	5.9			26.5	
9.0	5.8			27.5	
10.0	5.8			28	
12.0	5.7			28	
14.0	5.5			29	15
Suspended sediment sample @ 14.0 m					
16.0	5.2			28.5	
18.0	5.2			30	
20.0	5.4			31	13
22.0	5.4			31	
24.0	5.3			31	
26.0	5.2			30.5	
28.0	5.2			30.5	
30.0	5.2				
32.0	5.1				
34.0	5.1				
36.0	5.0				
38.0	5.0				
40.0	5.0				
42.0	4.9				
44.0	4.9				
46.0	4.9				

```
47.0            4.9
48.0            4.9
48.3

!Bottom
!Overcast, calm, raining
!Transmissometer path length = 25 cm
!YSI SCT Meter malfunctioning - No conductivity data
!E0618I:H8,0,1
```

****

TITLE: EKLUTNA LAKE

DATE: June 18, 1982 ; 82169

STATION NUMBER: 10

STARTING TIME: 1014 AST

ENDING TIME: 1056 AST

SECCHI DISC: 3.9 feet

SURFACE TEMP: 9.5 C

LAKE DEPTH: 51.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	8.0			32	
0.5	7.9				
1.0	7.7			32	12
2.0	6.9			30.5	
3.0	6.2			30	
4.0	6.0			30	
5.0	5.9			29	13
6.0	5.8			29	
7.0	5.8			30	
8.0	5.6			30	
9.0	5.5			30	
10.0	5.4			30	
12.0	5.3			31	
14.0	5.2			30	
16.0	5.1			31	
18.0	5.0			31	
20.0	4.9			31	
22.0	4.9			30	
24.0	4.9			30	
26.0	4.9			29	
28.0	4.9			29	
30.0	4.8				
30.2					

!Bottom
!Overcast, calm, raining, air temperature 10 C
!Transmissometer path length = 25 cm
!YSI SCT Meter malfunctioning- No conductivity data
!E0618J:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: June 18, 1982 ; 82169

STATION NUMBER: 11

STARTING TIME: 0905 AST

ENDING TIME: 1005 AST

SECCHI DISC: 3.8 feet

SURFACE TEMP: 8.5 C

LAKE DEPTH: 51.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	8.1			32	
1.0	7.9			31	15
2.0	7.7			30	
3.0	6.9			30	
4.0	6.3			29	
5.0	6.1			30	16
6.0	6.1			30	
7.0	6.0			30	
8.0	5.9			31	
9.0				31	
10.0	5.9			32	
12.0	5.7			32	
14.0	5.7			32	
16.0	5.7			32	
18.0	5.6			32.5	
20.0	5.4			32.5	14
22.0	5.3			33	
24.0	5.2			31	
26.0	5.1			29	
28.0	5.1			28	
30.0	5.1			28	
32.0	5.1				
34.0	5.1				
36.0	5.1				
38.0	5.1				
39.0	5.1				
39.3					

!Bottom
!Overcast, calm, sprinkling, air temperature 10.5 C
!Transmissometer path length = 25 cm
!YSI SCT Meter malfunctioning - No conductivity data
!E0618K:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: June 18, 1982 : 82169

STATION NUMBER: 15

STARTING TIME: 0815 AST

ENDING TIME: 0900 AST

SECCHI DISC: 4.0 feet

SURFACE TEMP: 7.5 C

LAKE DEPTH: 51.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	6.2			32	
0.5	6.2			32	
1.0	6.1			31.5	14
2.0	6.1			31	
3.0	6.1			30.5	
4.0	6.0			30	
5.0	6.0			30.5	15
6.0	5.9			30	
7.0	5.9			30	
7.2					

!Bottom
!Overcast, calm, air temperature 14 C
!Transmissometer path length = 25 cm
!YSI SCT Meter malfunctioning - No conductivity data
!E06180:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: July 2, 1982 : 82183

STATION NUMBER: 2

STARTING TIME: 1725 AST

ENDING TIME: 1810 AST

SECCHI DISC: 1.3 feet

SURFACE TEMP: 6.7 C

LAKE DEPTH: 53.1 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	6.70	138	206 *		44.0
1.0	6.80	138	206 *		
2.0	6.80	139	207 *		
5.0	7.90	136	197 *		36.0
15.0	6.20	134	205 *		23.0
25.0	6.00	132	202 *		26.0
45.0	5.80	131	200 *		42.0

!Overcast, wind from the southeast
! is 8.4 C, @ 15.0 m is 7.3 C, @ 25.0 m is 6.9 C, @ 45.0 m is 6.8 C
!E0702B:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

!Broken bulb in the tranmissometer - No transmissivity data
!E0702B:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: July 2, 1982 : 82183

STATION NUMBER: 4

STARTING TIME: 1325 AST

ENDING TIME: 1400 AST

SECCHI DISC: 1.9 feet

SURFACE TEMP: 8.2 C

LAKE DEPTH: 53.1 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	8.20	150	218 *		22.0
1.0	8.00	150	218 *		
2.0	6.50	152	226 *		
5.0	7.40	153	228 *		23.0
15.0	7.30	149	222 *		30.0
25.0	6.80	148	221 *		26.0

!Sunny, wind from southeast
! is 9.5 C, @ 15.0 m is 8.9 C, @ 25.0 m is 8.0 C
!E0702D:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

TITLE: EKLUTNA LAKE

DATE: July 2, 1982 ; 82183

STATION NUMBER: 8

STARTING TIME: 1815 AST

ENDING TIME: 1850 AST

SECCHI DISC: 2.1 feet

SURFACE TEMP: 8.2 C

LAKE DEPTH: 53.1 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	8.20	138	200 *		21.5
1.0	8.10	138	200 *		
2.0	8.10	140	203 *		
5.0	8.40	137	199 *		
15.0	7.10	134	200 *		21.5
25.0	7.10	130	194 *		27.0
45.0	6.70	130	194 *		37.0
					41.0

!Overcast, wind from the southeast
! is 8.3 C, @ 45.0 m is 7.4 C
!E0702H:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.
! .0 m is 7.4 C
!Broken bulb in the transmissometer - No transmissivity data
!E0702H:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: July 1, 1982 ; 82182

STATION NUMBER: 9

STARTING TIME: 1600 AST

ENDING TIME: 1800 AST

SECCHI DISC: 2.3 feet

SURFACE TEMP: 10.0 C

LAKE DEPTH: 53.1 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	10.0				
1.0					28
5.0					11
49.6					

!Bottom
!Mostly cloudy, southeast wind, air temperature 12.8 C
!Short in the YSI SCT cable - No temperature or conductivity data
!Surface temperature taken with an alchohol thermometer
!Broken bulb in the transmissometer - No transmissivity data
!E0701I:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: July 2, 1982 ; 82183

STATION NUMBER: 10

STARTING TIME: 1215 AST

ENDING TIME: 1310 AST

SECCHI DISC: 2.0 feet

SURFACE TEMP: 10.3 C

LAKE DEPTH: 53.1 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	10.30	168	232 *		
1.0	10.10	168	232 *		
2.0	10.00	169	233 *		
5.0	10.10	168	232 *		17.0
15.0	8.20	152	220 *		24.0
25.0	8.20	155	225 *		21.0
34.0					

!Bottom
!Sunny, strong wind from the southeast (~15 knots)
! is 9.0 C
!E0702J:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.
0 m
is 9.0 C
!Broken bulb in the transmissometer - No transmissivity data
!E0702J:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: July 2, 1982 ; 82183

STATION NUMBER: 11

STARTING TIME: 1130 AST

ENDING TIME:

SECCHI DISC: 1.8 feet

SURFACE TEMP: 10.0 C

LAKE DEPTH: 53.1 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	10.00	168	232 *		22.0
1.0	10.00				
2.0	9.10	168	237 *		
5.0	7.80	120	174 *		19.0
15.0	8.20	164	238 *		15.0
25.0	4.10	160	258 *		27.0

!Partly cloudy, wind from the southeast
!E0702K:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

!Temperature read with an alchohol thermometer @ 25.0 m is 8 C
!Broken bulb in the transmissometer - No transmissivity data
!E0702K:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: July 2, 1982 ; 82183

STATION NUMBER: 14

STARTING TIME: 1045 AST

ENDING TIME: 1125 AST

SECCHI DISC: 1.8 feet

SURFACE TEMP: 10.6 C

LAKE DEPTH: 53.1 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	10.60	119	161 *		26.5
1.0	10.50	120	162 *		
2.0	10.40	120	166 *		
5.0	11.10	172	232 *		29.0
15.0	8.90	162	228 *		22.0
25.0	6.50	158	235 *		33.0
29.0					

!Bottom
!Sunny, wind from the southeast
! is 11.7 C, @ 15.0 m is 10.5 C, @ 25.0 m is 8.3 C
!E0702N:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.
0 m
is 11.7 C, @ 15.0 m is 10.5 C, @ 25.0 m is 8.3 C
!Broken bulb in the transmissometer - No transmissivity data
!E0702N:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: July 2, 1982 ; 82183

STATION NUMBER: 15

STARTING TIME: 1020 AST

ENDING TIME:

SECCHI DISC:

SURFACE TEMP: 10.0 C

LAKE DEPTH: 53.1 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	10.00				26.5
1.0	10.00				
2.0	10.10	170	235 *		
2.5	10.10	170	235 *		

!Sunny, wind from southeast
!Temperatures read with an alchohol thermometer @ 0.0 m and @ 5.0 m are 11.5 C
!Broken bulb in the transmissometer - No transmissivity data
!E07020:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

TITLE: EKLUTNA LAKE

DATE: July 14, 1982 : 82195

STATION NUMBER: 2

STARTING TIME: 1800 AST

ENDING TIME: 1845 AST

SECCHI DISC: 2.6 feet

SURFACE TEMP: 13.3 C

LAKE DEPTH: 54.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDI (NTU)
.6	13.17	120	155 *		18.0
.9	13.21	120	155 *		
1.5	13.20	120	155 *		
2.0	13.18	120	155 *		
3.0	13.00	120	155 *		
4.0	12.82	120	155 *		
5.0	12.79	120	155 *		
6.0	12.76	120	155 *		
7.0	12.65	120	155 *		
8.0	12.47	120	155 *		
9.0	12.16	118	155 *		
10.0	10.43	115	156 *		
11.0	9.89	105	152 *		
12.0	9.42	99	145 *		
13.0	8.54	98	137 *		19.0
14.0	8.18	100	138 *		19.0
15.0	7.97	103	141 *		40.0
16.0	7.79	102	149 *		
18.0	7.28	101	148 *		
20.0	6.95	97	146 *		
24.0	6.56	95	145 *		82.0
28.0	6.32	95	142 *		
32.0	5.83	97	142 *		
36.0	5.70	98	148 *		
40.0	5.58	99	150 *		52.0
42.0	5.58	99	151 *		
		99	151 *		27.0
			151 *		

!Bottom
!Partly cloudy, calm, air temperature 13.5 C
!Turbidity measurements made on July 15 @ 1618 AST
!E0714B:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: July 14, 1982 ; 82195

STATION NUMBER: 4

STARTING TIME: 1652 AST

ENDING TIME: 1747 AST

SECCHI DISC: 2.6 feet

SURFACE TEMP: 12.7 C

LAKE DEPTH: 54.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
.7	12.47	118	156 *		
1.0	12.60	119	154 *		20.0
1.5	12.59	119	154 *		
2.0	12.51	119	154 *		
3.0	12.38	119	157 *		
4.0	12.40	119	157 *		
5.0	12.33	119	157 *		
6.0	12.20	119	157 *		
7.0	12.08	118	156 *		
8.0	11.96	111	147 *		
8.5	9.98	112	155 *		
9.0	9.47	116	164 *		19.0
10.0	9.26	107	151 *		23.0
11.0	9.00	109	154 *		
12.0	8.63	102	144 *		
13.0	7.84	101	146 *		
14.0	7.70	102	148 *		
15.0	7.53	100	145 *		78.0
16.0	7.16	102	152 *		
18.0	6.77	101	150 *		
20.0	6.40	102	156 *		
24.0	6.01	100	153 *		
28.0	6.00	98	150 *		
32.0	5.86	98	150 *		
36.0	5.77	98	150 *		
40.0	5.40	98	154 *		
44.0	5.32	98	154 *		
48.0	5.26	98	154 *		
50.2	5.18	98	154 *		

!Bottom
!Partly cloudy, wind from the northwest, air temperture 14.2 C
!Turbidity measurements made on July 15

!E0714D:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: July 14, 1982 : 82195

STATION NUMBER: 5

STARTING TIME: 1600 AST

ENDING TIME: 1648 AST

SECCHI DISC:

SURFACE TEMP: 12.0 C

LAKE DEPTH: 54.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
.3	11.88	114	150 *		
.5	11.82	114	150 *		
1.0	11.70	114	150 *		
1.5	11.80	114	150 *		
2.0	11.74	114	150 *		
2.5	11.60	114	150 *		
3.0	11.42	113	153 *		
4.0	10.59	112	151 *		
5.0	9.81	108	149 *		
6.0	9.61	108	149 *		
7.0	9.42	108	152 *		
8.0	9.20	107	151 *		
9.0	8.97	106	149 *		
10.0	8.85	102	144 *		
11.0	8.72	99	140 *		
12.0	8.51	98	138 *		
13.0	8.48	97	141 *		
14.0	8.00	98	142 *		
15.0	7.66	98	142 *		
16.0	7.34	97	145 *		
18.0	6.71	98	146 *		
20.0	6.47	99	151 *		
24.0	6.14	100	153 *		
28.0	5.83	98	150 *		
32.0	5.68	99	151 *		
36.0	5.58	98	150 *		
40.0	5.45	97	152 *		
44.0	5.36	97	152 *		
48.0	5.23	97	152 *		

!Bottom
!Partly sunny, wind from northwest, air temperature 15.0 C
!E0714E:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: July 14, 1982 ; 82195

STATION NUMBER: 8

STARTING TIME: 1456 AST

ENDING TIME: 1554 AST

SECCHI DISC: 2.0 feet

SURFACE TEMP: 13.1 C

LAKE DEPTH: 54.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
.1	13.06	116	150 *		
.6	13.00	115	148 *		
1.0	12.90	115	148 *		24.0
1.5	12.60	116	150 *		
2.0	12.00	113	149 *		
3.0	10.30	110	152 *		23.0
4.0	9.92	108	149 *		
5.0	9.03	100	141 *		22.0
6.0	8.78	100	141 *		
7.0	8.68	100	141 *		22.5
8.0	8.62	100	141 *		28.5
9.0	8.49	100	145 *		41.5
10.0	8.27	97	141 *		51.0
11.0	8.13	95	138 *		
12.0	7.90	95	138 *		
13.0	7.75	94	136 *		
14.0	7.73	92	133 *		
15.0	7.61	92	133 *		36.0
16.0	7.42	92	137 *		
18.0	7.01	95	142 *		
20.0	6.70	97	145 *		
24.0	6.30	96	147 *		
25.0					29.0
28.0	6.08	95	145 *		
32.0	5.87	95	145 *		
36.0	5.65	94	144 *		
40.0	5.52	94	144 *		
44.0	5.35	94	148 *		
45.0	5.32	93	146 *		

!Bottom
!Partly cloudy, surface wind from west northwest, clouds moving to west
! northwest, air temperature 16.4 C

!Turbidity measurements made on July 15 @ 1530 AST
!E0714H:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: July 14, 1982 : 82195

STATION NUMBER: 9

STARTING TIME: 1346 AST

ENDING TIME: 1444 AST

SECCHI DISC:

SURFACE TEMP: 13.2 C

LAKE DEPTH: 54.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
.3	12.94	115	148 *		
.6	12.86	117	151 *		
1.0	12.88	116	150 *		20.5
1.6	12.70	116	150 *		
2.0	12.58	115	148 *		
3.0	11.30	113	153 *		
4.0	10.25	108	149 *		
5.0	9.82	108	149 *		18.5
6.0	9.45	107	151 *		
7.0	9.11	104	147 *		
8.0	8.90	103	145 *		
9.0	8.67	104	147 *		
10.0	8.36	102	148 *		
11.0	8.05	102	148 *		
12.0	7.84	101	146 *		
13.0	7.62	100	145 *		
14.0	7.43	100	149 *		58.0
16.0	6.80	97	145 *		
18.0	6.55	96	143 *		34.0
20.0	6.34	95	145 *		
24.0	6.00	95	145 *		
28.0	5.79	94	144 *		
32.0	5.65	94	144 *		
36.0	5.55	94	144 *		
40.0	5.44	94	148 *		
44.0	5.29	93	146 *		
48.0	5.18	92	144 *		
49.0	5.18	92	144 *		

!Bottom
!Partly sunny, moderate breeze from west northwest, air temperature 15.4 C
!Turbidity measurements made on July 15 @ 1820 AST
!Quantum extinction measurements available this station

!E0714I:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: July 14, 1982 ; 82195

STATION NUMBER: 11

STARTING TIME: 1126 AST

ENDING TIME: 1220 AST

SECCHI DISC:

SURFACE TEMP: 13.6 C

LAKE DEPTH: 54.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	14.04	115	144 *		
.5	13.14	114	147 *		
1.0	13.10	113	146 *		17.0
!Suspended sediment sample @ 1.0 m					
1.5	12.24	110	145 *		
2.1	11.10	107	144 *		
3.0	10.09	106	146 *		
4.0	9.80	104	144 *		
5.0	9.59	103	142 *		
6.0	9.38	102	144 *		
7.0	9.04	100	141 *		20.0
8.0	8.53	98	138 *		
9.0	8.13	97	141 *		
10.0	7.94	96	139 *		
11.0	7.66	95	138 *		
12.0	7.37	94	140 *		
13.0	7.03	93	139 *		
14.0	6.75	93	139 *		
16.0	6.64	93	139 *		
18.0	6.40	93	142 *		
20.0	6.24	92	141 *		
24.0	5.93	92	141 *		
28.0	5.86	92	141 *		21.0
!Suspended sediment sample @ 28.0 m					
32.0	5.74	92	141 *		
36.0	5.65	92	141 *		
40.0	5.54	92	141 *		
44.5	5.37	92	144 *		

****

TITLE: EKLUTNA LAKE

DATE: July 14, 1982 ; 82195

STATION NUMBER: 10

STARTING TIME: 1230 AST

ENDING TIME: 1315 AST

SECCHI DISC:

SURFACE TEMP: 13.2 C

LAKE DEPTH: 54.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
.1	13.13	117	151 *		
.5	13.10	117	151 *		
1.0	13.13	118	152 *		21.0
2.0	12.50	117	151 *		
3.1	11.00	114	154 *		
4.0	10.42	113	156 *		
5.0	9.80	111	153 *		20.5
6.0	9.50	110	152 *		
7.0	9.27	110	155 *		
8.0	8.97	109	154 *		
9.0	8.69	107	151 *		
10.0	8.54	106	149 *		
11.0	7.86	104	151 *		
12.0	7.56	103	149 *		
13.0	7.37	103	153 *		
14.0	7.27	103	153 *		31.0
16.0	6.81	102	152 *		
18.0	6.50	101	150 *		
20.0	6.33	100	153 *		
24.0	5.88	99	151 *		
28.0	5.70	98	150 *		
32.0	5.52	98	150 *		
34.4	5.48	98	154 *		

!Bottom
!Overcast, moderate breeze from west northwest, air temperature 15.1 C
!Turbidity measurements made on July 15 @ 1642 AST
!E0714J:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

!Bottom
!Overcast, calm, air temperature 14.2 C
!Turbidity measurements made on July 15 @ 1030 AST
!Quantum extinction data available this station
!E0714K:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

!Turbidity measurements made on July 15 @ 1030 AST
!Quantum extinction measurements available this station
!E0714J:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: July 14, 1982 ; 82195

STATION NUMBER: 14

STARTING TIME: 1020 AST

ENDING TIME: 1120 AST

SECCHI DISC:

SURFACE TEMP: 12.1 C

LAKE DEPTH: 54.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	12.06	115	152 *		
1.0	11.88	114	150 *		18.0
2.0	11.64	112	148 *		
3.0	10.94	112	151 *		
4.0	10.42	110	152 *		
5.0	10.08	109	150 *		19.0
5.9	9.63	108	149 *		
6.9	9.35	106	149 *		
7.9	9.12	105	148 *		
8.8	8.93	105	148 *		
9.8	8.56	104	147 *		
11.0	8.10	102	148 *		20.5
11.9	7.84	101	146 *		
14.0	6.86	99	148 *		22.5
16.0	6.64	96	143 *		
18.0	6.30	95	145 *		
20.0	6.17	94	144 *		
22.0	6.02	94	144 *		
23.9	5.88	93	142 *		
26.0	5.80	92	141 *		
28.0	5.76	92	141 *		
29.7	5.73	92	141 *		

!Bottom
!Overcast, calm
!Salinity @ 0.0 m = 1.03 ppt
!Turbidity measurements made on July 15 @ 1845 AST
!E0714N:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

!E0714N:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: July 15, 1982 ; 82196

STATION NUMBER: 15

STARTING TIME: 0744 AST

ENDING TIME: 0805 AST

SECCHI DISC: 2.5 feet

SURFACE TEMP: 9.5 C

LAKE DEPTH: 55.1 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	9.36	115	162 *		20.0
.5	9.32	115	162 *		
1.0	9.21	116	164 *		
2.0	9.15	116	164 *		
3.0	9.02	116	164 *		
4.0	8.56	115	162 *		
5.0	8.45	114	165 *		
6.0	8.35	113	164 *		
7.0	8.20	113	164 *		23.5
8.0	7.86	112	162 *		
9.0	7.60	112	162 *		
10.0	7.42	111	165 *		
11.0	7.32	110	164 *		
12.0	7.20	110	164 *		
13.0	6.99	109	162 *		
14.0	6.92	109	162 *		

!Bottom
!Partly sunny, calm to light breeze from the northwest, air temperature 11.9 C
!E07150:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: July 27, 1982 : 82208

STATION NUMBER: 2

STARTING TIME: 1647 AST

ENDING TIME: 1720 AST

SECCHI DISC:

SURFACE TEMP: 14.3 C

LAKE DEPTH: 57.3 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	14.29	117	144		
0.5	14.25	117	145		
1.0	14.20	117	146		
2.0	14.15	116	146		
4.0	14.00	118	144		
6.0	14.00	116	144		
7.0	12.36	100	128		
8.0	11.05	110	143		
9.0	10.29	97	130		
10.0	9.67	92	125		
12.0	8.56	85	120		
14.0	8.46	87	122		
18.0	7.90	85	119		
24.0	7.18	89	128		
30.0	7.14	90	130		
36.0	7.15	90	129		
40.0	7.08	91	131		
41.7	7.11	90	131		

!Bottom
!Sunny, very light northwest wind, warm
!Cable depths recorded
!E0727B:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: July 27, 1982 : 82208

STATION NUMBER: 4

STARTING TIME: 1735 AST

ENDING TIME: 1805 AST

SECCHI DISC: 1.9 feet

SURFACE TEMP: 13.9 C

LAKE DEPTH: 57.3 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	13.9	117	146		
1.0	13.83	117	146		27
!Suspended sediment sample @ 1.0 m					
2.0	13.76	116	146		
4.0	13.57	117	147		
6.0	13.52	116	146		28
!Suspended sediment sample @ 6.0 m					
7.0	12.10	112	144		
8.0	10.98	113	151		27
9.0	9.63	107	145		
10.0	9.22	100	137		
12.0	8.96	93	129		100+
!Suspended sediment sample @ 12.0 m					
16.0	8.37	90	127		100+
20.0	7.15	94	135		100+
24.0	6.20	101	149		76
!Suspended sediment sample @ 24.0 m					
28.0	6.06	101	150		
32.0	6.01	99	147		
36.0					46
40.0	5.82	99	147		
48.0	5.41	99	149		
53.8	5.22	99	148		
!Bottom					

```
!Sunny, very light northwest wind, wind shifting to easterly @ 1754 AST
!Cable depths recorded
!Turbidity measurements made on July 28 @ 1615 AST
!Quantum extinction data available this station
!E0727D:H8,0,1
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****

TITLE: EKLUTNA LAKE

DATE: July 28, 1982 ; 82209

STATION NUMBER: 9

STARTING TIME: 0957 AST

ENDING TIME: 1019 AST

SECCHI DISC: 1.8 feet

SURFACE TEMP: 14.0 C

LAKE DEPTH: 57.53 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	14.00	118	147		
1.0	12.76	115	147		28
2.0	12.70	116	149		
3.0	12.68	116	148		
4.0	12.12	116	150		30
6.0	10.41	112	151		43
8.0	9.96	107	144		
10.0	9.26	102	140		
12.0	8.65	101	139		52
16.0	7.59	103	147		47
20.0	7.06	101	146		
24.0	6.63	100	145		
28.0	6.08	101	150		
34.0	5.74	100	150		28
40.0	5.72	101	150		
48.0	5.37	100	150		
53.0	5.22	100	150		

!Bottom
!Partly sunny, wind picking up from west
!Cable depths recorded
!Thermographs were checked; deep thermograph was lost at recovery
!E0728I:H8,0.1

****

TITLE: EKLUTNA LAKE

DATE: July 27, 1982 ; 82208

STATION NUMBER: 10

STARTING TIME: 1900 AST

ENDING TIME: 2000 AST

SECCHI DISC:

SURFACE TEMP: 13.4 C

LAKE DEPTH: 57.3 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	13.37	117	147		
1.0	13.30	117	148		
2.0	13.30	117	148		
4.0	11.81	118	153		
5.0	10.83	114	149		
6.0	10.02	111	150		
8.0	9.30	107	147		
10.0	8.82	104	143		
12.0	8.43	102	142		
16.0	7.53	102	144		
20.0	6.91	104	151		
24.0	6.43	105	153		
30.0	6.78	103	151		
35.0	6.18	102	150		
40.0	5.62	103	152		
45.0	5.57	102	152		

!Bottom
!Partly cloudy, calm, warm
!Martek depth channel experiencing drift; recorded cable depths
!Temperature experiencing some instability; double checked temperatures
! @ 30.0 m and @ 35.0 m and utilized revised measurements
!E0727J:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: July 28, 1982 ; 82209

STATION NUMBER: 11

STARTING TIME: 0924 AST

ENDING TIME: 0940 AST

SECCHI DISC: 2.0 feet

SURFACE TEMP: 13.5 C

LAKE DEPTH: 57.53 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	13.48	118	147		
1.0	13.03	119	151		27
!Suspended sediment sample @ 1.0 m					
2.0	12.58	120	155		
3.0	11.21	119	156		26
4.0	10.80	116	154		
6.0	10.00	111	151		28
!Suspended sediment sample @ 6.0 m					
8.0	9.65	109	147		
10.0	9.05	104	144		
12.0	8.50	105	146		34
!Suspended sediment sample @ 12.0 m					
16.0	7.75	106	150		32
20.0	6.99	106	151		
24.0	6.57	105	152		23
30.0	5.95	102	151		
36.0	5.77	102	150		22
42.0	5.67	102	150		
48.4	5.51	101	150		

!Bottom
!Overcast, calm, air temperature ~ 18.0 C
!Turbidity measurements made July 28 @ 1433 AST
!Quantum extinction data available this station
!E0728K:H8,0.1

****

TITLE: EKLUTNA LAKE

DATE: July 28, 1982 ; 82209

STATION NUMBER: 13

STARTING TIME: 0851 AST

ENDING TIME: 0909 AST

SECCHI DISC:

SURFACE TEMP: 13.1 C

LAKE DEPTH: 57.53 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	13.14	120	150		
1.0	12.53	119	151		
2.0	11.61	118	152		
3.0	11.01	115	152		
4.0	10.79	113	149		
6.0	10.09	110	146		
8.0	9.37	109	148		
10.0	8.77	107	148		
12.0	8.39	109	152		
16.0	7.41	107	152		
20.0	6.76	107	153		
24.0	6.51	104	151		
28.0	6.30	105	151		
32.0	5.81	103	152		
33.0	5.79	104	152		

!Bottom
!Partly sunny, calm, air temperature 15.6 C
!E0728M:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: August 11, 1982 ; 82223

STATION NUMBER: 2

STARTING TIME: 1332 AST

ENDING TIME: 1450 AST

SECCHI DISC: 1.6 feet

SURFACE TEMP: 14.0 C

LAKE DEPTH: 58.4 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	13.64	120	150		
0.5	13.46	122	150		
1.0	13.45	121	150		36
2.0	13.30	120	150		
3.0	13.13	120	149		
4.0	13.08	119	149		
5.0	13.08	119	149		
6.0	13.07	119	149		
7.0	13.06	119	148		
8.0	13.06	119	148		
9.0	13.06	119	149		48
9.2	11.24	107	142		

!Temperature recorded had increased -- sharp thermocline, so highly variable

9.5	10.5	118	157		
10.0	9.30	104	141		70
12.0	8.25	100	138		
14.0	8.00	100	139		
16.0	7.66	97	134		82
18.0	7.52	98	136		
20.0	7.38	98	136		
25.0	6.83	103	146		
30.0	6.35	104	150		40
35.0	6.22	105	151		
40.0	6.04	105	151		
45.0	5.81	105	153		
48.5	5.69	105	154		

!Bottom
!Weakly sunny, calm, slight wind from south, air temperature 14.4 C
!E0811B:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: August 11, 1982 ; 82223

STATION NUMBER: 4

STARTING TIME: 1039 AST

ENDING TIME: 1321 AST

SECCHI DISC: 1.4 feet

SURFACE TEMP: 13.5 C

LAKE DEPTH: 58.4 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	13.13	122	152		
0.5	13.13	122	152		
1.0	13.13	122	152		36
2.0	13.13	122	152		
3.0	13.13	123	152		
4.0	13.14	123	152		
5.0	13.13	122	152		
6.0	13.11	123	152		
7.0	13.06	123	152		
8.0	12.88	122	152		37
8.5	12.08	107	134		
8.8	11.38	108	137		
9.0	11.0	115	146		38
9.3	10.22	98	129		
9.5	9.60	100	132		
10.0	9.42	107	142		61
12.0	8.52	95	128		78
14.0	8.00	96	133		87
16.0	7.73	101	140		
18.0	7.53	103	143		
20.0	7.30	104	145		
25.0	6.80	107	150		
30.0	6.40	108	153		
35.0	6.16	108	154		
40.0	5.98	108	155		30
45.0	5.88	108	156		
50.0	5.59	108	158		
55.0	5.37	108	158		
56.4	5.30	108	158		

!Bottom
!Overcast, strong steady wind from northwest until 1100 AST, wind changed
! and started blowing from southeast at 1230 AST; waves 0.5-1.0 ft.

```
! air temperature 11.7 C
!Quantum extinction data available this station
!E0811D:H8,0,1
```

****

TITLE: EKLUTNA LAKE

DATE: August 11, 1982 ; 82223

STATION NUMBER: 7

STARTING TIME: 0836 AST

ENDING TIME: 1025 AST

SECCHI DISC: 1.5 feet

SURFACE TEMP: 13.1 C

LAKE DEPTH: 58.4 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	12.84	123	153		
0.5	12.85	124	153		
1.0	12.84	124	153		37
2.0	12.82	124	153		
3.0	12.69	123	153		
4.0	12.60	123	153		
5.0	12.55	122	153		
6.0	12.52	121	153		
7.0	12.47	122	152		38
7.8	12.43	121	153		
8.1	10.75	112	146		
8.5	9.52	111	147		
9.0	9.40	117	153		43
10.0	9.36	110	147		
12.0	8.80	107	144		64
14.0	8.13	106	143		
16.0	7.94	103	140		
18.0	7.78	103	140		79
20.0	7.68	103	140		
24.0	7.07	108	150		43
28.0	6.40	110	157		
32.0	6.16	109	157		
36.0	6.10	110	157		
40.0	6.04	109	155		30
45.0	5.84	109	158		
50.0	5.61	110	158		
55.0	5.33	110	159		
58.2	5.26	109	159		

!Bottom
!Cloudy, light drizzle, wind from northwest, air temperature 10.0 C @ 0830 AST,
! 11.7 C @ 1025 AST
!Quantum extinction data available this station

****

TITLE: EKLUTNA LAKE

DATE: August 10, 1982 ; 82222

STATION NUMBER: 9

STARTING TIME: 1710 AST

ENDING TIME: 1756 AST

SECCHI DISC: 1.3 feet

SURFACE TEMP: 13.2 C

LAKE DEPTH: 58.3 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	12.97	122	152		
0.5	12.99	122	152		
1.0	12.99	123	152		38
2.0	12.96	123	152		
3.0	12.61	123	154		
4.0	11.75	121	154		
5.0	11.49	119	154		41
6.0	10.54	119	155		
7.0	9.75	110	142		
8.0	9.46	103	135		
9.0	9.11	102	137		67
10.0	8.79	106	142		
12.0	8.34	108	147		
14.0	7.97	107	146		
16.0	7.69	107	147		58
18.0	7.35	107	150		
20.0	6.95	109	153		
24.0	6.71	109	155		31
28.0	6.38	110	156		
32.0	6.19	111	158		
36.0	5.99	110	157		
40.0	5.86	110	158		28
45.0	5.72	109	157		
50.0	5.56	109	158		
55.0	5.40	109	158		22
57.0	5.35	110	158		

!Bottom
!Overcast, breeze from northwest, rain starting @ 1810 AST, air temperature 11.1 C
!E0810I:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: August 10, 1982 ; 82222

STATION NUMBER: 11

STARTING TIME: 1438 AST

ENDING TIME: 1650 AST

SECCHI DISC: 1.4 feet

SURFACE TEMP: 12.7 C

LAKE DEPTH: 58.3 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	12.82	118	147		
0.5	12.83	117	147		
1.1	12.84	118	148		38
!Suspended sediment sample @ 1.1 m					
2.1	12.83	118	148		
3.1	12.83	118	148		
4.0	12.82	118	148		
5.1	12.81	117	148		38
!Suspended sediment sample @ 5.1 m					
6.1	12.76	118	150		
6.6	11.92	114	148		
7.1	10.9	118	152		39
!Suspended sediment sample @ 7.1 m					
8.1	10.31	113	150		
9.1	9.55	110	146		
10.1	9.46	107	144		
12.1	9.02	106	143		
14.1	8.70	103	139		
15.0					44
16.1	8.40	105	144		
18.1	7.98	105	144		
20.1	7.77	105	146		51
!Suspended sediment sample @ 20.1 m					
24.0	7.22	105	148		
25.0					42

28.0	6.76	107	152	
30.0				29
32.0	6.42	108	154	
36.1	6.20	109	155	
40.0	6.06	108	155	
45.0	5.86	108	156	
50.0	5.69	108	157	19
51.0	5.66	108	157	

!Bottom
!Overcast, wind from the northwest, no rain, air temperature 11.1 C
!Quantum extinction data available this station
!E0810K:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: August 10, 1982 ; 82222

STATION NUMBER: 13

STARTING TIME: 1328 AST

ENDING TIME: 1422 AST

SECCHI DISC: 1.4 feet

SURFACE TEMP: 12.8 C

LAKE DEPTH: 58.3 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	12.76	118	148		
0.5	12.77	118	148		
1.0	12.77	118	148		
2.0	12.77	118	149		
3.0	12.77	119	149		
4.0	12.74	118	149		
5.0	12.67	118	150		
6.1	11.67	119	153		
7.1	10.97	116	152		
8.1	10.25	114	150		
9.0	10.06	112	150		
10.1	9.64	112	149		
11.1	9.36	112	149		
12.1	9.09	110	148		
14.1	8.80	109	148		
16.0	8.4	110	149		
18.1	7.97	108	150		
20.1	7.75	109	151		
24.0	7.10	107	151		
28.0	6.50	107	153		
32.0	6.20	107	155		
36.1	5.87	108	156		
37.1	5.85	108	156		

!Bottom
!Overcast, wind from the northwest, air temperature 12.2 C
!E0810M:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: August 10, 1982 ; 82222

STATION NUMBER: 15

STARTING TIME: 1220 AST

ENDING TIME: 1319 AST

SECCHI DISC: 1.5 feet

SURFACE TEMP: 12.8 C

LAKE DEPTH: 58.3 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	12.72	118	149		
0.5	12.71	118	149		
1.0	12.69	118	148		
2.0	12.68	118	148		
3.0	12.00	118	150		
4.0	11.84	116	149		
5.0	11.54	115	149		
6.0	11.14	114	149		
7.0	10.82	113	149		
8.0	10.20	112	148		
9.2	10.03	111	147		
10.3	9.88	110	147		
11.2	9.38	109	147		
12.2	9.23	109	146		
13.2	8.99	108	146		
14.3	8.79	107	145		
15.2	8.57	104	143		
16.3	8.09	103	144		
17.3	7.82	104	145		
18.3	7.65	104	144		
19.3	7.55	103	145		
20.3	7.40	103	145		
20.8	7.16	103	147		

!Bottom
!Overcast, breeze from the northwest, beginning to rain, fresh snow on top
! of mountain @ lake midpoint, air temperature 12.2 C
!E08100:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: August 25, 1982 ; 82237

STATION NUMBER: 2

STARTING TIME: 0846 AST

ENDING TIME: 0915 AST

SECCHI DISC: 2.1 feet

SURFACE TEMP: 14.4 C

LAKE DEPTH: 59.9 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	14.39	117	146 *		
1.0	14.38	117	146 *		
3.0	13.95	118	148 *		
4.0	13.88	117	146 *		
5.0	13.80	117	146 *		
6.0	13.44	115	148 *		
7.0	11.66	97	128 *		
8.0	10.48	105	145 *		
10.0	8.82	90	127 *		
12.0	8.52	89	125 *		
16.0	7.79	92	133 *		
20.0	7.20	97	145 *		
24.0	6.88	99	148 *		
32.0	6.32	101	155 *		
40.0	6.07	102	156 *		
48.0	5.71	99	151 *		
48.6					

!Bottom
!Overcast, calm
!Quantum extinction data available this station
!Malfunction in Martek channel 5 - No corrected conductivity data
!E0825B:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: August 24, 1982 ; 82236

STATION NUMBER: 3

STARTING TIME: 1525 AST

ENDING TIME: 1602 AST

SECCHI DISC: 2.3 feet

SURFACE TEMP: 14.9 C

LAKE DEPTH: 59.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	14.88	116	142 *		
1.0	14.87	115	140 *		
2.0	14.76	116	142 *		
3.0	14.59	114	139 *		
4.0	14.24	113	141 *		
5.0	13.02	107	138 *		
6.0	12.35	105	139 *		
8.0	10.24	98	135 *		
10.0	9.34	94	133 *		
12.0	8.96	83	117 *		
16.0	8.35	80	116 *		
20.0	7.57	89	129 *		
24.0	6.91	97	145 *		
32.0	6.28	100	153 *		
40.0	5.95	100	153 *		
48.7	5.67	102	156 *		

!Bottom
!Partly cloudy, moderate wind from the northwest
!Malfunction in Martek channel 5 - No corrected conductivity data
!E0824C:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: August 25, 1982 ; 82237

STATION NUMBER: 4

STARTING TIME: 0946 AST

ENDING TIME: 1015 AST

SECCHI DISC: 2.2 feet

SURFACE TEMP: 14.5 C

LAKE DEPTH: 59.9 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	14.02	113	141 *		
1.0	13.90	112	140 *		21.5
2.0	13.77	111	139 *		
4.0	13.65	112	140 *		
6.0	13.07	111	143 *		22.0
7.0	11.09	109	147 *		
8.0	10.38	101	139 *		
9.0	10.01	96	132 *		
10.0	9.62	93	128 *		40.0
12.0	8.77	84	118 *		
16.0	8.01	80	116 *		50.0
20.0	7.67	83	120 *		46.0
24.0	6.83	96	143 *		
32.0	6.25	97	148 *		
40.0	5.96	98	150 *		20.0
48.2	5.67	98	150 *		
56.1	5.35	98	154 *		
57.3					

!Bottom
!Overcast, sun appearing through holes, calm, air temperature ~ 15.0 C
!Turbidity measured August 25 @ 1545 AST
!Malfunction in Martek channel 5 - No corrected conductivity data
!E0825D:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: August 25, 1982 ; 82237

STATION NUMBER: 7

STARTING TIME: 1029 AST

ENDING TIME: 1049 AST

SECCHI DISC: 2.4 feet

SURFACE TEMP: 13.3 C

LAKE DEPTH: 59.9 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	13.26	107	138 *		
1.0					22.0
2.0	13.11	108	139 *		
4.0	12.85	109	141 *		
5.0	12.71	106	137 *		23.0
!Suspended sediment sample @ 5.0 m					
6.0	11.99	105	139 *		
7.0	10.71	102	138 *		
8.0	9.88	97	134 *		
9.0	9.12	90	127 *		
10.0	8.96	87	123 *		
12.0	8.74	86	121 *		43.5
!Suspended sediment sample @ 12.0 m					
14.0	8.21	90	131 *		
16.0	8.07	89	129 *		
20.0	7.78	90	131 *		41.0
!Suspended sediment sample @ 20.0 m					
24.0					36.0
32.0	6.21	97	148 *		22.5
!Suspended sediment sample @ 32.0 m					
48.0	5.59	99	151 *		
58.0	5.25	99	155 *		
59.0					
!Bottom					

!Overcast, light northwest breeze, light drizzle
!Turbidity data collected from 1601 AST to 1635 AST
! 32.0 m to 58.0 m
!Malfunction in Martek channel 5 - No corrected conductivity data
!E0825G:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: August 25, 1982 ; 82237

STATION NUMBER: 9

STARTING TIME: 1103 AST

ENDING TIME: 1132 AST

SECCHI DISC: 2.3 feet

SURFACE TEMP: 13.8 C

LAKE DEPTH: 59.9 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	13.82	111	139 *		
1.0	13.12	110	142 *		
2.0	12.95	109	141 *		
4.0	12.46	107	141 *		27.0
5.0	11.80	106	140 *		
6.0	11.53	104	137 *		
7.1	10.34	103	142 *		
8.0	9.86	96	132 *		36.0
9.0	9.54	93	128 *		
10.0	9.36	90	127 *		
12.0	8.87	88	124 *		
14.0	8.45	88	128 *		45.0
16.0	8.12	90	131 *		
20.0	7.42	93	139 *		
24.0					31.0
30.0	6.38	97	148 *		
40.0	5.98	98	150 *		
50.3	5.59	99	151 *		
57.1	5.28	98	154 *		

!Bottom
!Overcast, light northwest wind, light mist changing to rain @ 1105 AST,
!Malfunction in Martek channel 5 - No corrected conductivity data
!Quantum extinction data available this station
!E0825I:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: August 24, 1982 ; 82236

STATION NUMBER: 10

STARTING TIME: 1642 AST

ENDING TIME: 1704 AST

SECCHI DISC: 2.3 feet

SURFACE TEMP: 13.6 C

LAKE DEPTH: 59.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	13.59	116	145 *		
1.0	13.61	115	144 *		
2.0	13.60	115	144 *		
3.0	13.54	116	145 *		
4.0	13.46	113	146 *		
5.0	12.18	114	150 *		
6.0	11.04	107	144 *		
8.0	9.68	102	141 *		
10.0	9.13	101	142 *		
12.0	8.77	98	138 *		
16.0	8.25	96	139 *		
20.0	7.54	100	145 *		
24.0	6.90	102	152 *		
30.0	6.34	104	159 *		
40.0	5.68	103	158 *		
41.0					

!Bottom
!Partly sunny, northwest wind
!Malfunction in Martek channel 5 - No corrected conductivity data
!E0824J:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.
n: still
experienced drift in depth below 12.0 m
!E0824J:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: August 25, 1982 ; 82237

STATION NUMBER: 11

STARTING TIME: 1231 AST

ENDING TIME: 1257 AST

SECCHI DISC: 2.5 feet

SURFACE TEMP: 13.7 C

LAKE DEPTH: 59.9 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	13.71	105	131 *		
1.0	12.89	106	137 *		24.0
2.0	12.81	105	135 *		
4.0	12.32	105	139 *		
5.0	11.55	104	137 *		26.0
!Suspended sediment sample @ 5.0 m					
6.0	11.14	101	136 *		
7.0	10.57	97	131 *		
8.0	9.76	96	132 *		26.0
!Suspended sediment sample @ 8.0 m					
9.0	9.22	94	133 *		
10.0	9.08	94	133 *		
12.0	8.81	92	130 *		
16.0	8.31	91	132 *		37.0
!Suspended sediment sample @ 16.0 m					
20.0	7.81	94	136 *		
24.0	7.46	95	142 *		
32.0	6.49	96	147 *		25.0
!Suspended sediment sample @ 32.0					
40.0	6.06	97	148 *		
48.0	5.85	97	148 *		
51.1					

!Bottom
!Partly cloudy, northwest wind becoming calm, drizzle tapering off

!Turbidity measured August 25 from 1708 AST to 1740 AST
!Malfunction in Martek channel 5 - No corrected conductivity data
!E0825K:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

51.1

!Bottom
!Partly cloudy, northwest wind becoming calm, drizzle tapering off
!Experienced drift in Martek depth channel; recorded cable depths below 9.0 m
!Malfunction in Martek channel 5 - No corrected conductivity data
!0825K:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: August 25, 1982 ; 82237

STATION NUMBER: 13

STARTING TIME: 1308 AST

ENDING TIME: 1338 AST

SECCHI DISC: 2.0 feet

SURFACE TEMP: 12.8 C

LAKE DEPTH: 59.9 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	12.81	107	138 *		
1.0	12.65	107	138 *		
2.0	12.21	107	141 *		
4.0	12.04	106	140 *		
6.1	11.66	105	139 *		
7.0	10.73	102	138 *		
8.0	10.28	102	141 *		
9.2	10.00	101	139 *		
10.0	9.56	98	135 *		
11.0	9.30	99	140 *		
12.0	9.11	97	137 *		
16.0	8.41	96	139 *		
20.0	7.87	98	142 *		
24.0	7.35	98	146 *		
32.0	6.56	99	148 *		
36.3	6.18	99	151 *		
37.5					

!Bottom
!Partly cloudy, moderate northwest wind, rain on southeast end of lake
!Malfunction in Martek channel 5 - No corrected conductivity data
!E0825M:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: August 24, 1982 ; 82236

STATION NUMBER: 15

STARTING TIME: 1225 AST

ENDING TIME: 1252 AST

SECCHI DISC: 2.2 feet

SURFACE TEMP: 13.6 C

LAKE DEPTH: 59.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	13.60	103	129 *		
1.0	12.76	103	133 *		
2.0	12.59	103	133 *		
3.0	12.14	101	133 *		
4.0	12.06	101	133 *		
5.0	11.56	100	132 *		
6.0	11.14	99	134 *		
8.0	9.91	94	130 *		
10.0	9.06	91	128 *		
12.0	8.79	90	127 *		

!Bottom
!Overcast, calm
!Experienced drift in Martek depth channel; recorded cable depths below 4.0 m
!Malfunction in Martek channel 5 - No corrected conductivity data
!E08240:H8,0,1

NOTE: "*" INDICATES COMPUTED CORRECTED CONDUCTIVITY VALUE SHOWN.

****

TITLE: EKLUTNA LAKE

DATE: August 24, 1982 ; 82236

STATION NUMBER: 15

STARTING TIME: 1225 AST

ENDING TIME: 1252 AST

SECCHI DISC: 2.2 feet

SURFACE TEMP: 13.6 C

LAKE DEPTH: 59.8 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	13.60	103			
1.0	12.76	103			
2.0	12.59	103			
3.0	12.14	101			
4.0	12.06	101			
5.0	11.56	100			
6.0	11.14	99			
8.0	9.91	94			
10.0	9.06	91			
12.0	8.79	90			
16.0	8.24	89			

!Bottom
!Overcast, calm
!Experienced drift in Martek depth channel; recorded cable depths below 4.0 m
!Malfunction in Martek channel 5 - No corrected conductivity data
!E08240:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 9, 1982 ; 82252

STATION NUMBER: 2

STARTING TIME: 1517 AST

ENDING TIME:

SECCHI DISC: 2.9 feet

SURFACE TEMP: 11.1 C

LAKE DEPTH: 61.0 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	10.90	86	113		
1.0	10.91	85	113		
2.0	10.87	86	112		
4.0	10.6	85	113		
5.0	10.0	84	113		
6.0	9.5	83	113		
7.0	9.1	81	111		
8.0	8.82	80	110		
10.0	8.55	79	110		
12.0	8.38	79	111		22
14.0	8.20	80	111		
16.0	7.93	80	112		24
20.0	7.51	83	118		
24.0	6.89	84	122		27
28.0	6.61	86	123		
32.0	6.41	86	126		25.5
36.0	6.27	86	127		
40.0	6.12	86	127		
44.0					20
48.0	5.98	87	128		
50.0	5.81	87	129		

!Bottom @ ~ 51.0 m
!Partly sunny, moderate to brisk southeast wind
!Cable depths recorded - Martek depth channel malfunctioning
!Quantum extinction data available this station
!Turbidity and quantum extinction measured September 10 @ 1421 AST
!E0909B:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 9, 1982 ; 82252

STATION NUMBER: 3

STARTING TIME: 1634 AST

ENDING TIME: 1647 AST

SECCHI DISC:

SURFACE TEMP: 11.0 C

LAKE DEPTH: 61.0 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	10.71	85	113		
1.0	10.73	86	113		
2.0	10.73	86	114		
4.0	10.72	86	115		
6.0	10.66	87	114		
8.0	9.88	85	115		
10.0	8.79	80	110		
12.0	8.3	79	108		
14.0	7.8	78	109		
16.0	7.54	78	109		
20.0	7.40	79	112		
24.0	6.94	81	117		
28.0	6.88	84	120		
32.0	6.72	85	121		
36.0	6.42	85	124		
40.0	6.08	87	128		
48.0	5.89	88	131		
49.6	5.85	89	131		

!Bottom
!Partly sunny, light to moderate southeast breeze, air temperature 10.4 C
!Cable depths recorded - Martek depth channel malfunctioning
!E0909C:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 9, 1982 ; 82252

STATION NUMBER: 4

STARTING TIME: 1439 AST

ENDING TIME: 1510 AST

SECCHI DISC:

SURFACE TEMP: 11.0 C

LAKE DEPTH: 61.0 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	10.85	86	113		
1.0	10.85	86	114		20
2.0	10.85	86	114		
4.0	10.82	86	114		
6.0	10.78	86	115		
8.0	10.1	86	115		19.5
9.0	9.2	81	110		
10.0	8.8	81	113		
12.0	8.38	81	112		21.5
14.0	7.97	82	114		
16.0	7.70	82	115		30
20.0	7.20	85	121		62
22.0					65
24.0	6.91	86	123		70

!Suspended sediment sample collected @ 24.0 m

28.0	6.62	87	125		39
32.0	6.46	87	125		23

!Suspended sediment sample collected @ 32.0 m

36.0	6.35	87	126		
40.0	6.23	87	127		21
48.0	6.02	88	128		
56.0	5.70	88	129		16
57.0	5.61	88	131		

!Bottom @ ~ 57.0 m
!Partly sunny, brisk southeast breeze
!Turbidity measurements taken on September 10 @ Station 5 @ 1510 AST:
! Buoy Station 4 missing
!E0909D:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 9, 1982 ; 82252

STATION NUMBER: 6

STARTING TIME: 1656 AST

ENDING TIME:

SECCHI DISC:

SURFACE TEMP: 10.9 C

LAKE DEPTH: 61.0 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	10.54	87	114		
1.0	10.60	87	113		
2.0	10.61	87	114		
4.0	10.62	87	114		
6.0	10.62	88	115		
7.0	10.62	86	115		
8.0	10.56	87	115		
9.0	9.6	86	116		
10.0	9.06	84	113		
11.0	8.74	82	111		
12.0	8.59	80	110		
14.0	8.08	78	108		
16.0	7.85	78	109		
18.0	7.61	77	108		
20.0	7.45	79	110		
22.0	7.38	79	111		
24.0	7.32	79	111		
28.0	7.06	81	116		
32.0	6.97	83	118		
36.0	6.60	84	121		
40.0	6.28	87	127		
48.0	6.04	88	130		
50.0	5.96	89	130		
52.0	5.91	89	130		
53.0	5.88	89	131		
54.0	5.81	89	130		

!Bottom @ ~ 54.0 m
!Partly sunny, moderate southeast wind
!Cable depths recorded - Martek depth channel malfunctioning
!E0909F:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 9, 1982 ; 82252

STATION NUMBER: 7

STARTING TIME: 1350 AST

ENDING TIME: 1405 AST

SECCHI DISC: 3.0 feet

SURFACE TEMP: 11.0 C

LAKE DEPTH: 61.0 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	10.64	84	112		
1.0	10.68	85	113		18
2.0	10.68	84	113		
4.0	10.58	85	113		
6.0	10.42	85	112		
8.0	9.86	83	112		
10.0	9.40	82	112		20
12.0	9.10	80	110		23
14.0	8.59	80	111		
16.0	8.13	79	111		27
18.0	7.73	80	112		
20.0	7.60	81	114		29
24.0	7.24	82	118		26
28.0	6.89	84	120		28
32.0	6.56	86	125		32

!Suspended sediment sample collected @ 32.0 m

36.0	6.85	85	122		38
40.0	6.18	83	123		50
48.0	6.17	87	125		60.5

!Suspended sediment sample collected @ 48.0 m

52.0	6.09	85	126		
56.0	5.82	86	127		47
60.0	5.47	89	131		

!Bottom @ ~ 60.0 m
!Partly cloudy, brisk southeast wind
!Cable depths recorded - Martek depth channel malfunctioning
!Turbidity measurements made September 10 from 1017 AST to 1137 AST
!E0909G:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 9, 1982 ; 82252

STATION NUMBER: 9

STARTING TIME: 1307 AST

ENDING TIME: 1340 AST

SECCHI DISC: 3.0 feet

SURFACE TEMP: 11.0 C

LAKE DEPTH: 61.0 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	10.81	83	110		
1.0	10.82	83	110		18
2.0	10.81	84	110		
3.0	10.78	83	111		
4.0	10.78	83	112		
6.0	10.63	83	111		
8.0	10.33	82	111		
10.0	10.00	81	110		19
12.0	9.44	80	109		21
14.0	8.52	77	108		
16.0	8.26	77	107		28
!Suspended sediment sample collected @ 16.0 m					
18.0	7.84	78	112		
20.0	7.58	80	114		25
24.0	7.10	80	117		23
!Suspended sediment sample collected @ 24.0 m					
28.0	6.80	83	120		21
32.0	6.63	83	122		18
!Suspended sediment sample collected @ 32.0 m					
36.0	6.43	84	123		
40.0	6.24	84	124		17
48.0	5.90	85	125		
56.0	5.64	85	127		
58.3					

!Bottom
!Sunny, brisk southeast wind

****

TITLE: EKLUTNA LAKE

DATE: September 9, 1982 ; 82252

STATION NUMBER: 10

STARTING TIME: 1230 AST

ENDING TIME:

SECCHI DISC:

SURFACE TEMP: 11.1 C

LAKE DEPTH: 61.0 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	10.84	81	108		
1.0	10.86	80	108		
2.0	10.83	81	108		
3.0	10.7	80	108		
4.0	10.44	80	108		
6.0	10.11	79	107		
8.0	9.77	77	106		
10.0	9.71	80	109		
12.0	9.46	79	109		
14.0	9.20	77	107		
16.0	8.3	75	106		
20.0	7.60	77	111		
24.0	6.98	79	115		
28.0	6.49	82	120		
32.0	6.28	82	121		
36.0	6.07	82	122		
40.0	6.00	82	123		
42.0	5.98	82	123		

!Bottom
!Partly cloudy, moderate wind from the southeast
!Cable depths recorded - Martek depth channel malfunctioning
!E0909J:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 9, 1982 ; 82252

STATION NUMBER: 11

STARTING TIME: 1152 AST

ENDING TIME: 1212 AST

SECCHI DISC: 3.0 feet

SURFACE TEMP: 11.5 C.

LAKE DEPTH: 61.0 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. -(umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	11.17	74	101		
1.0	11.10	74	101		18
2.0	11.01	74	102		
3.0	10.71	74	103		
4.0	10.63	74	102		
6.0	10.36	74	103		
8.0	10.06	73	101		19
!Suspended sediment sample collected @ 8.0 m					
10.0	9.75	72	101		
12.0	9.28	72	101		19.5
16.0	8.62	70	100		21
!Suspended sediment sample collected @ 16.0 m					
20.0	7.67	71	103		28
24.0	7.16	75	110		25
!Suspended sediment sample collected @ 24.0 m					
32.0	6.53	76	115		22
36.0	6.40	76	116		
40.0	6.26	77	117		
44.0	6.13	78	117		
50.0	6.05	78	119		
52.6					

!Bottom
!Sunny, brisk southeast wind, air temperature 13.9 C
!Cable depths recorded - Martek depth channel malfunctioning
!Quantum extinction data available this station
!Turbidity and quantum extinction measured September 10 from 0815 AST to

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!Cable depths recorded - Martek depth channel malfunctioning
!Quantum extinction data available this station
!Turbidity and quantum extinction measured September 10 from 0857 AST to
!  0955 AST
!Copepods noted in turbidity sample from 40.0 m
!E0909I:H8,0.1
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!  0845 AST
!E0909K:H8,0,1
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TITLE: EKLUTNA LAKE

DATE: September 9, 1982 ; 82252

STATION NUMBER: 13

STARTING TIME: 1115 AST

ENDING TIME: 1142 AST

SECCHI DISC:

SURFACE TEMP: 11.8 C

LAKE DEPTH: 61.0 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	11.50	77	104		
1.0	10.99	76	104		
2.0	10.81	75	105		
3.0	10.69	74	102		
4.0	10.57	73	103		
8.0	10.14	72	101		
12.0	9.53	70	100		
16.0	8.69	67	97		
20.0	7.96	67	99		
24.0	7.42	68	101		
32.0	6.82	72	110		
36.2					

!Bottom
!Sunny, calm, air temperature 18.9 C (shade), southeast wind picking up 1130 AST
!Cable depths recorded - Martek depth channel malfunctioning
!E0909M:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 9, 1982 ; 82252

STATION NUMBER: 15

STARTING TIME: 1025 AST

ENDING TIME:

SECCHI DISC:

SURFACE TEMP: 11:5 C

LAKE DEPTH: 61.0 m

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	11.04	83	111		
1.0	10.74	81	109		
2.0	10.67	80	109		
3.0	10.60	81	109		
4.0	10.57	80	109		
6.0	10.51	81	109		
8.0	10.49	80	108		
10.0	10.25	80	109		
12.0	9.89	79	107		
14.0	9.61	75	105		
15.2	9.53	74	102		

!Bottom
!Partly cloudy, calm, air temperature 17.0 C (in sun)
!Cable depths recorded - Martek depth channel malfunctioning
!E09090:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 21, 1982 ; 82264

STATION NUMBER: 2

STARTING TIME: 1401 AST

ENDING TIME: 1417 AST

SECCHI DISC: 1.6 feet

SURFACE TEMP: 8.1 C

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	8.1				
1.0	8.1				30
2.0	7.95				
3.0	7.86				
6.0	7.76				
8.0	7.73				
10.0	7.65				
12.0	7.60				32
14.0	7.58				
16.0	7.53				
20.0	7.45				
24.0	7.44				32
28.0	7.38				
32.0	7.34				
36.0	7.35				36
40.0	7.23				58
44.0	7.21				71
46.0					70

!Suspended sediment sample collected @ 46.0 m

48.0	7.22				78
52.0	7.15				
50.4					

!Bottom
!Raining, calm
!Cable depths recorded - Martek depth channel malfunctioning
!Conductivity and corrected conductivity channels malfunctioning - No data
!Turbidity measured September 22 from 0940 to 1010 AST
!E0921B:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 21, 1982 ; 82264

STATION NUMBER: 3

STARTING TIME: 1342 AST

ENDING TIME: 1353 AST

SECCHI DISC:

SURFACE TEMP: 9.2 C

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	9.2				
1.0	9.37				
2.0	9.29				
4.0	9.21				
6.0	9.15				
8.0	9.11				
10.0	8.75				
12.0	8.43				
16.0	8.29				
20.0	7.93				
24.0	7.75				
28.0	7.66				
32.0	7.56				
36.0	7.41				
40.0	7.34				
44.0	7.26				
48.0	7.22				
50.0	7.18				
50.4					

!Bottom
!Raining, light southeast wind
!Cable depths recorded - Martek depth channel malfunctioning
!Conductivity and corrected conductivity channels malfunctioning - No data
!E0921C:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 21, 1982 ; 82264

STATION NUMBER: 5

STARTING TIME: 1427 AST

ENDING TIME: 1443 AST

SECCHI DISC: 1.6 feet

SURFACE TEMP: 8.2 C

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	8.2				
1.0	8.28				30
4.0	8.23				
8.0	8.22				
10.0	8.20				
12.0	8.16				38
16.0	7.99				
18.0	7.50	97	141		
20.0	7.57				42
22.0	7.00	94	139		
24.0	6.84				51
26.0	6.62	82	125		54
28.0	6.78	86	130		52
!Suspended sediment sample collected @ 28.0 m					
30.0	6.77	92	138		
32.0	6.79	91	137		55
36.0	6.73	91	136		
40.0	6.70	94	139		56
!Suspended sediment sample collected @ 40.0 m					
44.0	6.66	92	137		
48.0	6.52	89	133		64
!Suspended sediment sample collected @ 48.0 m					
52.0	6.37	78	125		83
56.0	6.37	80	123		87
!Suspended sediment sample collected @ 56.0 m					
60.0	6.38	77	124		

****

TITLE: EKLUTNA LAKE

DATE: September 21, 1982 ; 82264

STATION NUMBER: 7

STARTING TIME: 1456 AST

ENDING TIME: 1507 AST

SECCHI DISC: 1.2 feet

SURFACE TEMP: 8.3 C

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	8.3				
1.0	8.05				43
2.0	7.98				
4.0	7.98				
8.0	7.99				
12.0	7.96				44
16.0	7.85				48
18.0	7.78				
20.0	7.73				48
24.0	7.69				50
28.0	7.65				
32.0	7.49				54
36.0	7.41				
40.0	7.37				60

!Suspended sediment sample collected @ 40.0 m

44.0	7.31				
48.0	7.29				69
56.0	7.16				75
60.0	6.88				87

!Suspended sediment sample collected @ 60.0 m - Possible bottom sediment contamination

64.8

!Bottom
!Overcast, calm
!Cable depths recorded - Martek depth channel malfunctioning
!Conductivity and corrected conductivity channels malfunctioning - No data
!Turbidity measured on September 22 from 1238 to 1331 AST
!E0921G:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 21, 1982 ; 82264

STATION NUMBER: 8

STARTING TIME: 1604 AST

ENDING TIME: 1616 AST

SECCHI DISC:

SURFACE TEMP: 7.6 C

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	7.60				
1.0	7.58				
4.0	7.56				
8.0	7.57				
12.0	7.44				
16.0	7.34				
20.0	7.25				
24.0	7.19				
28.0	7.16				
32.0	7.13				
40.0	7.05				
48.0	7.01				
56.0	6.82				

!Overcast, mild northwest wind
!Cable depths recorded - Martek depth channel malfunctioning
!Conductivity and corrected conductivity channels malfunctioning - No data
!E0921H:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 21, 1982 ; 82264

STATION NUMBER: 9

STARTING TIME: 1650 AST

ENDING TIME:

SECCHI DISC: 2.0 feet

SURFACE TEMP: 7.8 C

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	7.75				
1.0	7.91				27
4.0	8.0				
8.0	8.05				
12.0	8.05				28
16.0	8.05				
24.0	7.96				42
32.0	7.70				64
40.0	7.28				66

!Suspended sediment sample collected @ 40.0 m

48.0	7.12				90
56.0	7.10				95.5

!Suspended sediment sample collected @ 56.0 m

60.0	6.96				

!Overcast, moderate northwest breeze
!Cable depths recorded - Martek depth channel malfunctioning
!Conductivity and corrected conductivity channels malfunctioning - No data
!Turbidity data collected September 22 from 1350 to 1424 AST
!E0921I:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 21, 1982 ; 82264

STATION NUMBER: 10

STARTING TIME: 1539 AST

ENDING TIME: 1549 AST

SECCHI DISC:

SURFACE TEMP: 8.3 C

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	8.31				
1.0	8.33				
4.0	8.31				
8.0	8.31				
12.0	8.32				
16.0	8.29				
20.0	8.28				
24.0	8.29				
28.0	8.29				
32.0	8.28				
36.0	8.13				
40.0	8.02				
44.0	7.21				

!Overcast, mild northwest wind
!Cable depths recorded - Martek depth channel malfunctioning
!Conductivity and corrected conductivity channels malfunctioning - No data
!E0921J:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 21, 1982 ; 82264

STATION NUMBER: 11

STARTING TIME: 1044 AST

ENDING TIME: 1055 AST

SECCHI DISC: 2.0 feet

SURFACE TEMP: 8.6 C

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	8.58	96	128		
1.0	8.59	95	127		22
4.0	8.60	96	127		
6.0	8.60	96	127		
8.0	8.58	95	128		
12.0	8.50	96	127		
16.0	8.49	96	129		
20.0	8.49	95	129		
24.0	8.49	96	129		32
!Suspended sediment sample collected @ 24.0 m					
32.0	8.44	96	129		51.5
36.0	8.08	96	130		
40.0	7.67	96	131		
48.0	7.07	97	132		71
!Suspended sediment sample collected @ 48.0 m					
50.0					77
54.0	6.95	96	133		

!Mostly cloudy, very brisk southeast wind (Chinook)
!Cable depths recorded - Martek depth channel malfunctioning
!Turbidity measured on September 22 from 1446 to 1528 AST
!E0921K:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: September 21, 1982 ; 82264

STATION NUMBER: 13

STARTING TIME: 1011 AST

ENDING TIME: 1034 AST

SECCHI DISC:

SURFACE TEMP: 8.8 C

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	8.78	90	121		
1.0	8.79	88	120		
4.0	8.81	88	120		
8.0	8.78	88	121		
10.0	8.76	89	122		
12.0	8.75	90	121		
14.0	8.72	89	121		
16.0	8.69	88	121		
20.0	8.61	89	121		
24.0	8.56	89	121		
28.0	8.54	89	122		
32.0	8.47	90	123		
36.0	8.35	90	123		
40.0	8.16	91	124		
41.0	7.72	91	127		

!Bottom
!Mostly cloudy; gusty strong southeast wind (Chinook)
!Cable depths recorded - Martek depth channel malfunctioning
!E0921M:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: October 14, 1982 ; 82287

STATION NUMBER: 2

STARTING TIME: 1230 AST

ENDING TIME: 1250 AST

SECCHI DISC: 1.6 feet

SURFACE TEMP: 7.1 C

LAKE DEPTH: 63.0

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	7.49				
1.0	7.56				
4.0	7.53				
8.0	7.41				31
12.0	7.32				
16.0	7.45				30
20.0	7.59				
24.0	7.62				31

!Suspended sediment sample collected @ 24.0 m

28.0	7.59				
32.0					32
36.0	7.53				
40.0					31

!Suspended sediment sample collected @ 40.0 m

44.0	7.57				
50.0					36
52.0	7.49				
56.0	7.45				

!Bottom
!Overcast, mild north wind, snowed all morning, air temperature 2.4 C
!Cable depths recorded
!Conductivity and corrected conductivity channels malfunctioning - No data
!Turbidity and quanta data collected October 15 from 1304 to 1342 AST
!E1014B:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: October 14, 1982 ; 82287

STATION NUMBER: 5

STARTING TIME: 1307 AST

ENDING TIME: 1318 AST

SECCHI DISC: 1.7 feet

SURFACE TEMP: 7.1 C

LAKE DEPTH: 63.0 meters

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	7.12				
1.0	7.17				
4.0	7.18				
8.0	7.18				
16.0	7.19				
24.0	7.21				31

!Suspended sediment sample collected @ 24.0 m

32.0	7.22				
40.0	7.23				
48.0	7.23				31

!Suspended sediment sample collected @ 48.0 m

54.0	7.23				
56.0	7.23				32
58.0	7.23				
59.0	6.91				
60.0	6.80				
66.0	6.78				

!Bottom
!Overcast, moderate north wind
!Cable depths recorded
!Conductivity and corrected conductivity channels malfunctioning - No data
!Turbidity measured on October 15 from 1357 to 1410 AST
!E1014E:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: October 14, 1982 ; 82287

STATION NUMBER: 7

STARTING TIME: 1335 AST

ENDING TIME: 1341 AST

SECCHI DISC: 1.7 feet

SURFACE TEMP: 7.1

LAKE DEPTH: 63.0 meters

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	7.09				30
1.0	7.07				
4.0	7.10				
8.0	7.08				31
16.0	7.08				
24.0	7.06				31

!Suspended sediment sample collected @ 24.0 m

32.0	7.06				
36.0					31
48.0	7.07				30

!Suspended sediment sample collectd @ 48.0 m

56.0	7.07				31
57.0	7.07				
58.0	7.06				
59.0	7.05				
60.0	7.04				
61.0	7.02				
62.0	7.02				
64.0	7.01				
66.0	7.01				

!Mostly overcast, moderate north wind
!Cable depths recorded
!Conductivity and corrected conductivity channels malfunctioning - No data
!Turbidity data collected October 15 from 1425 to 1447 AST
!E1014G:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: October 14, 1982 ; 82287

STATION NUMBER: 10

STARTING TIME: 1406 AST

ENDING TIME: 1412 AST

SECCHI DISC:

SURFACE TEMP: 6.8 C

LAKE DEPTH: 63.0 meters

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	6.82				
1.0	6.80				
4.0	6.80				
8.0	6.79				
16.0	6.79				
24.0	6.76				
32.0	6.69				
40.0	6.60				
45.0	6.54				

!Bottom
!Mostly overcast, moderate north wind
!Cable depths recorded
!Conductivity and corrected conductivity channels malfunctioning - No data
!E1014J:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: October 14, 1982 ; 82287

STATION NUMBER: 11

STARTING TIME: 1425 AST

ENDING TIME: 1434 AST

SECCHI DISC: 1.9 feet

SURFACE TEMP: 6.8 C

LAKE DEPTH: 63.0 meters

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	6.60				30
1.0	6.61				
4.0	6.62				
8.0	6.64				
16.0	6.64				
24.0	6.65				31

!Suspended sediment sample collected @ 24.0 m

32.0	6.64				
40.0	6.63				
48.0	6.63				30

!Suspended sediment sample collected @ 48.0 m

56.0					31
58.0	6.46				

!Bottom
!Mostly overcast, moderate north wind, air temperature 1.9 C
!Cable depths recorded
!Conductivity and corrected conductivity channels malfunctioning - No data
!Turbidity data collected October 15 from 1504 to 1520 AST
!E1014K:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: October 14, 1982 ; 82287

STATION NUMBER: 12

STARTING TIME: 1450 AST

ENDING TIME: 1455 AST

SECCHI DISC:

SURFACE TEMP: 6.5 C

LAKE DEPTH: 63.0 meters

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	6.52				
1.0	6.50				
4.0	6.50				
8.0	6.51				
24.0	6.43				
32.0	6.34				
34.0	6.35				

!Bottom
!Overcast, moderate north wind, light snow flurries
!Cable depths recorded
!Conductivity and corrected conductivity channels malfunctioning - No data
!E1014L:H8,0,1

****

TITLE: EKLUTNA LAKE

DATE: October 14, 1982 ; 82287

STATION NUMBER: 13

STARTING TIME: 1504 AST

ENDING TIME: 1509 AST

SECCHI DISC:

SURFACE TEMP: 6.4 C

LAKE DEPTH: 63.0 meters

DEPTH (meter)	TEMP. (celsius)	CONDUCTIVITY (umho)	CORR.CONDUCT. (umho)	TRANSMISS. (%)	TURBIDITY (NTU)
0.0	6.41				
1.0	6.43				
4.0	6.45				
8.0	6.45				
16.0	6.46				
24.0	6.45				
32.0	6.46				
40.0	6.45				

!Bottom
!Overcast, light to moderate north wind
!Cable depths recorded
!Conductivity and corrected conductivity channels malfunctioning - No data
!E1014M:H8.0,1

APPENDIX B

DYRESM INPUT DATA
EKLUTNA LAKE WEATHER

	1	2	3	4	5	6	7
OCTOBER	82274	6129.	.7	2.8	2.9	0.9	0.0
	82275	6331.	.7	2.7	3.4	1.1	0.0
	82276	4954.	1.	1.7	3.6	1.0	0.0
	82277	8086.	.0	-0.3	2.2	0.4	0.0
	82278	8707.	.0	-2.2	2.1	0.9	0.0
	82279	6353.	.7	-1.2	2.1	0.9	0.0
	82280	2524.	1.	0.4	3.2	1.3	0.5
	82281	4239.	1.	-0.2	2.5	0.7	1.0
	82282	2052.	1.	-0.2	2.9	0.5	2.5
	82283	4090.	1.	-2.7	1.8	0.6	1.0
	82284	2848.	1.	0.7	2.4	1.9	0.0
	82285	6475.	.0	5.2	2.7	2.3	0.0
	82286	1255.	1.	-1.7	2.8	1.1	1.0
	82287	3653.	1.	-2.1	2.8	1.4	0.0
	82288	6790.	.0	-2.1	2.3	1.0	0.0
	82289	2902.	1.	2.0	2.3	3.3	0.0
	82290	3612.	.9	-0.1	2.7	1.1	0.2
	82291	5845.	.0	-1.9	2.1	1.1	0.0
	82292	2727.	1.	0.8	3.0	0.9	0.2
	82293	5440.	.0	-4.3	1.0	1.0	0.0
	82294	4477.	.3	-9.7	0.9	1.0	0.0
	82295	5387.	.0	-9.0	1.0	1.1	0.0
	82296	5157.	.3	-9.1	1.1	1.1	0.0
	82297	3469.	.7	-9.0	1.2	1.1	0.5
	82298	3442.	.7	-11.3	0.8	1.4	0.2
	82299	5178.	.0	-15.1	0.6	1.3	0.0
	82300	5130.	.0	-16.0	0.4	1.2	0.0
	82301	1850.	1.	-4.1	1.3	3.0	0.0
	82302	2295.	.9	-7.4	0.9	1.2	0.0
	82303	2592.	.9	-12.7	0.6	1.3	0.2
	82304	1890.	1.	-9.0	0.5	2.9	0.5
NOVEMBER	82305	1584.	1.	2.7	1.3	3.6	8.1
	82306	3862.	1.	-4.3	1.6	0.6	1.0
	82307	2117.	1.	-8.5	1.1	1.9	0.1
	82308	1865.	1.	-5.8	1.3	1.9	1.3
	82309	2243.	1.	-6.4	1.2	1.9	0.1
	82310	1865.	1.	-5.0	1.3	1.9	0.1
	82311	4997.	.8	-11.2	0.7	1.9	1.5
	82312	1577.	1.	-3.2	1.4	4.8	0.
	82313	2657.	.4	-9.7	0.9	1.1	0.
	82314	1764.	1.	-5.3	0.7	2.7	0.
	82315	2970.	.9	0.1	0.9	2.2	0.
	82316	2124.	1.	4.2	0.7	7.2	0.
	82317	2009.	1.	3.5	0.6	4.1	22.9
	82318	3186.	1.	-0.2	1.8	0.7	0.
	82319	1703.	.8	-6.9	1.0	0.7	0.5
	82320	1595.	.5	-11.4	0.8	1.1	0.
	82321	1685.	.0	-17.1	0.5	0.9	0.
	82322	1577.	0.	-19.5	0.4	1.0	0.
	82323	1566.	.9	-17.8	0.4	0.9	0.
	82324	1368.	1.	-7.0	1.0	0.9	0.
	82325	1235.	1.	-1.3	1.4	1.6	0.
	82326	1073.	1.	5.2	0.6	4.4	0.
	82327	1206.	1.	3.1	1.0	2.4	0.
	82328	1847.	.6	-3.7	1.6	0.9	0.
	82329	1595.	1.	-2.6	1.9	0.7	0.
	82330	1253.	.7	0.8	0.8	1.7	0.
	82331	1872.	.6	-0.7	1.6	0.6	0.2
	82332	1589.	.7	-6.0	1.4	0.7	0.
	82333	1206.	1.	-3.5	0.8	0.4	3.0
	82334	1109.	1.	-8.6	1.0	1.3	14.0

LEGEND

1. Date (Year-Julian Day)
2. Insolation (Kilojoules)
3. Cloud Cover (Sky fraction in tenths)
4. Median Air Temperature (Degrees Celsius)
5. Vapor Pressure (Millibars)
6. Average Windspeed (Meters per second)
7. Precipitation (Millimeters)

	1	2	3	4	5	6	7
AUGUST	82213	23000.	.3	10.0	6.7	6.5	1.5
	82214	22000.	.0	12.0	4.8	2.5	0.0
	82215	23000.	1.	14.0	5.5	0.5	0.0
	82216	24000.	.0	14.5	4.0	0.5	0.0
	82217	19000.	.3	15.5	6.1	0.5	0.0
	82218	21000.	.1	14.0	8.7	2.5	0.0
	82219	12000.	.9	15.0	9.3	2.5	0.3
	82220	15000.	.9	12.0	11.6	2.5	0.3
	82221	21000.	.8	12.0	7.5	2.5	0.3
	82222	17000.	1.	12.5	7.9	1.5	1.8
	82223	12000.	1.	12.5	5.0	1.5	5.8
	82224	20286.	0.	10.6	5.9	0.5	0.0
	82225	21000.	0.	13.5	5.3	1.5	0.0
	82226	13000.	.9	15.0	8.4	1.5	0.0
	82227	11000.	1.	11.5	4.7	0.5	2.8
	82228	15000.	.8	11.5	4.7	1.5	0.0
	82229	15000.	.8	12.0	7.5	0.5	0.0
	82230	17000.	.7	12.5	5.0	1.5	0.0
	82231	20000.	.2	13.0	5.2	1.5	0.0
	82232	20000.	.1	14.0	5.5	0.5	0.0
	82233	18000.	.4	13.5	5.3	1.5	0.0
	82234	16000.	.7	13.3	5.3	3.5	0.0
	82235	13000.	1.	16.0	9.8	1.5	0.5
	82236	13000.	.7	15.0	5.9	1.5	0.5
	82237	17000.	1.	14.0	5.5	0.5	0.2
	82238	15000.	1.	13.5	5.3	0.5	1.0
	82239	19000.	.3	13.0	8.1	2.3	0.0
	82240	13536.	1.	13.4	6.5	1.9	0.0
	82241	4806.	1.	11.6	6.4	2.3	2.6
	82242	5447.	1.	9.1	7.3	1.2	10.4
	82243	11873.	1.	9.1	6.5	0.8	1.0
SEPTEMBER	82244	13943.	0.	9.0	5.1	0.9	0.0
	82245	11268.	1.	9.5	5.6	0.8	0.0
	82246	7110.	.9	6.9	5.8	1.0	0.2
	82247	13655.	0.	7.8	3.7	1.6	0.0
	82248	4338.	1.	10.6	5.3	2.3	24.6
	82249	6472.	1.	8.0	4.5	1.2	6.8
	82250	11826.	.1	8.6	5.9	0.8	0.0
	82251	7607.	.9	7.4	5.9	0.7	0.8
	82252	12593.	0.	10.7	3.9	1.7	0.0
	82253	8070.	.3	8.8	5.4	0.9	0.0
	82254	4563.	1.	5.3	5.9	0.8	6.6
	82255	7257.	1.	5.1	3.6	2.3	1.4
	82256	6318.	1.	13.7	5.3	5.0	6.2
	82257	3483.	1.	12.9	5.7	3.8	7.4
	82258	6218.	1.	14.2	5.4	6.9	15.2
	82259	12258.	.1	10.7	4.3	2.3	0.6
	82260	6912.	.9	11.2	2.0	3.9	0.0
	82261	5303.	.9	11.7	2.7	4.1	4.2
	82262	2943.	1.	7.6	6.7	0.6	5.8
	82263	5224.	.9	10.8	1.5	3.9	0.0
	82264	5778.	.9	9.9	3.6	4.7	2.0
	82265	6839.	.7	6.0	2.9	1.1	0.8
	82266	5918.	.9	3.6	3.2	0.9	0.0
	82267	9917.	.4	3.0	2.9	1.0	0.0
	82268	6042.	.1	3.9	3.3	1.2	0.0
	82269	7897.	.3	7.7	2.2	2.5	1.6
	82270	8329.	0.	3.8	3.4	0.9	0.0
	82271	3140.	1.	3.9	1.8	2.8	0.0
	82272	2794.	1.	7.4	3.4	2.0	7.2
	82273	4285.	.8	3.8	3.8	0.9	0.8

LEGEND

1. Date (Year-Julian Day)
2. Insolation (Kilojoules)
3. Cloud Cover (Sky fraction in tenths)
4. Median Air Temperature (Degrees Celsius)
5. Vapor Pressure (Millibars)
6. Average Windspeed (Meters per second)
7. Precipitation (Millimeters)

1	2	3	4	5	6	7
JUNE						
82152	17000	.8	8.0	4.0	0.8	0.
82153	17000	.8	8.0	4.0	0.8	0.
82154	24000	.0	8.3	3.57	3.5	0.
82155	14000	1.0	7.8	3.45	6.1	0.6
82156	14000	1.0	12.3	13.28	5.7	0.
82157	14000	1.0	10.3	4.33	1.3	1.2
82158	14000	1.0	9.6	7.09	2.0	0.
82159	21000	.3	10.2	5.17	2.7	0.
82160	19000	1.0	12.0	5.82	2.7	0.
82161	19000	1.0	12.0	5.82	2.3	0.
82162	19000	1.0	9.8	4.43	2.8	0.
82163	22000	1.0	9.6	4.49	1.9	0.
82164	21000	.9	10.7	3.81	1.0	0.
82165	18000	1.0	8.0	5.41	0.8	0.
82166	13000	.9	8.3	6.39	0.7	0.8
82167	14000	1.0	7.9	6.32	0.9	0.2
82168	24000	.6	10.6	7.58	1.0	0.
82169	17334	1.0	8.8	6.50	1.5	0.8
82170	13799	.9	8.9	5.41	2.2	0.2
82171	19584	.9	7.4	4.38	1.0	0.
82172	18000	.9	10.4	5.61	1.0	0.4
82173	25877	.6	12.8	6.28	1.0	0.
82174	27406	.2	12.4	6.34	0.9	0.
82175	26546	.0	13.0	10.06	1.4	0.
82176	19667	.9	16.6	6.90	2.3	0.
82177	14076	.8	18.2	6.20	4.6	0.
82178	18190	.9	13.4	4.71	2.0	1.6
82179	23670	.7	11.0	4.93	2.4	0.
82180	16481	.9	12.3	4.80	3.2	0.
82181	18792	.9	11.5	3.89	2.2	0.
JULY						
82182	22888	.0	8.6	5.19	3.1	0.
82183	18860	.7	12.1	8.29	1.5	0.
82184	9417	1.0	9.7	10.71	1.6	0.
82185	11534	.9	10.0	6.92	1.0	0.
82186	8258	1.0	12.5	8.6	0.8	0.
82187	7334	1.0	10.1	8.0	2.0	0.
82188	20000	.3	15.4	6.0	0.9	0.
82189	8000	1.0	14.0	7.0	0.5	2.5
82190	8000	1.0	13.0	7.0	0.5	2.5
82191	14000	.9	12.2	6.0	0.3	0.2
82192	10000	.9	12.0	6.0	0.5	2.0
82193	9000	1.0	12.5	6.0	0.3	4.0
82194	15000	.8	13.0	7.0	0.5	0.4
82195	15000	.8	13.0	7.0	0.5	0.4
82196	27000	.1	13.8	8.0	1.4	0.0
82197	15000	.9	11.4	9.0	0.5	3.0
82198	11000	1.0	11.0	9.0	0.5	10.6
82199	15000	.9	13.0	10.0	0.5	5.0
82200	14000	.9	14.0	7.0	0.5	4.0
82201	16000	.7	16.0	8.0	0.5	2.0
82202	20000	.3	14.8	7.0	0.5	0.2
82203	6000	1.0	11.9	9.1	0.9	0.2
82204	6850	1.0	14.1	11.0	2.2	10.2
82205	7500	1.0	13.6	12.0	0.6	2.0
82206	7000	1.0	14.0	11.0	0.5	1.4
82207	24000	0.0	13.6	9.0	0.7	0.0
82208	23000	.1	14.5	9.8	1.2	0.0
82209	9518	.9	12.3	9.7	3.0	0.0
82210	6000	1.0	13.3	12.0	1.0	0.0
82211	8000	.9	14.4	7.0	0.8	3.5
82212	15000	.7	14.5	6.0	1.4	0.0

LEGEND

1. Date (Year-Julian Day)
2. Insolation (Kilojoules)
3. Cloud Cover (Sky fraction in tenths)
4. Median Air Temperature (Degrees Celsius)
5. Vapor Pressure (Millibars)
6. Average Windspeed (Meters per second)
7. Precipitation (Millimeters)

APPENDIX C

DYRESM INPUT DATA
EKLUTNA LAKE
6-HOUR RESULTANT WINDSPEEDS

	WINDSPEED (meters/sec.)			
DATE	0600	1200	1800	2400
82152	0.1	0.1	0.1	0.1
82153	0.1	0.1	0.1	0.1
82154	0.1	0.1	0.1	0.75
82155	0.12	5.45	4.84	3.14
82156	4.99	5.94	7.05	7.53
82157	6.76	5.20	5.74	-0.58
82158	-0.32	-1.65	1.05	0.37
82159	-0.06	0.55	3.74	0.46
82160	-0.36	2.08	4.64	2.90
82161	3.90	3.22	3.50	0.37
82162	1.90	3.50	0.52	-0.80
82163	-0.20	3.75	4.40	2.94
82164	1.02	-1.10	-1.64	-0.45
82165	-0.23	-1.50	-1.30	-0.40
82166	-0.55	-0.76	0.53	0.24
82167	-0.22	-1.34	0.25	0.20
82168	-0.48	-1.50	-0.84	0.01
82169	0.10	-1.25	-0.67	-0.49
82170	-0.48	-0.89	1.93	0.11
82171	0.22	3.09	3.20	0.48
82172	-0.16	-1.80	-1.94	0.43
82173	-0.36	-1.45	-0.20	0.55
82174	0.08	-1.50	-0.21	0.60
82175	0.19	-1.45	-0.80	0.40
82176	0.33	-1.05	2.02	0.65
82177	-0.95	3.18	2.69	4.15
82178	6.19	4.74	3.70	0.96
82179	0.43	2.50	2.75	0.98
82180	1.04	3.03	3.64	2.05
82181	2.94	4.30	3.45	2.18
82182	3.1	3.1	3.1	3.1
82183	1.5	1.5	1.5	1.5
82184	1.6	1.6	1.6	1.6
82185	1.0	1.0	1.0	1.0
82186	0.8	0.8	0.8	0.8
82187	-2.0	-2.0	-2.0	-2.0
82188	0.9	0.9	0.9	0.9
82189	0.5	0.5	0.5	0.5
82190	0.5	0.5	0.5	0.5
82191	0.3	0.3	0.3	0.3
82192	0.5	0.5	0.5	0.5
82193	0.3	0.3	0.3	0.3
82194	0.5	0.5	0.5	0.5
82195	0.5	0.5	0.5	0.5
82196	-1.4	-1.4	-1.4	-1.4
82197	-0.5	-0.5	-0.5	-0.5
82198	0.5	0.5	0.5	0.5
82199	-0.5	-0.5	-0.5	-0.5
82200	0.5	0.5	0.5	0.5
82201	0.5	0.5	0.5	0.5
82202	0.5	0.5	0.5	0.5
82203	-0.9	-0.9	-0.9	-0.9
82204	-2.2	-2.2	-2.2	-2.2
82205	-0.6	-0.6	-0.6	-0.6
82206	-0.5	-0.5	-0.5	-0.5
82207	0.7	0.7	0.7	0.7
82208	-1.2	-1.2	-1.2	-1.2
82209	-3.0	-3.0	-3.0	-3.0
82210	1.0	1.0	1.0	1.0
82211	0.8	0.8	0.8	0.8
82212	1.4	1.4	1.4	1.4

JUNE

JULY

NOTE:

1. Positive values indicate wind blowing generally southerly, or "down" the lake.

2. Negative valves indicate generally northerly winds, or "up" the lake.

3. Absolute values are mean vector resultant windspeeds for values recorded in the preceding six hour interval.

		WINDSPEED (meters/sec.)			
	DATE	0600	1200	1800	2400
AUGUST	82213	-6.5	-6.5	-6.5	-6.5
	82214	2.5	2.5	2.5	2.5
	82215	0.5	0.5	0.5	0.5
	82216	0.5	0.5	0.5	0.5
	82217	0.5	0.5	0.5	0.5
	82218	2.5	2.5	2.5	2.5
	82219	-2.5	-2.5	-2.5	-2.5
	82220	-2.5	-2.5	-2.5	-2.5
	82221	2.5	2.5	2.5	2.5
	82222	-1.5	-1.5	-1.5	-1.5
	82223	1.5	1.5	1.5	1.5
	82224	-0.5	-0.5	-0.5	-0.5
	82225	1.5	1.5	1.5	1.5
	82226	-1.5	-1.5	-1.5	-1.5
	82227	0.5	0.5	0.5	0.5
	82228	1.5	1.5	1.5	1.5
	82229	0.5	0.5	0.5	0.5
	82230	1.5	1.5	1.5	1.5
	82231	1.5	1.5	1.5	1.5
	82232	0.5	0.5	0.5	0.5
	82233	1.5	1.5	1.5	1.5
	82234	3.5	3.5	3.5	3.5
	82235	-1.5	-1.5	-1.5	-1.5
	82236	1.5	1.5	1.5	1.5
	82237	0.5	0.5	0.5	0.5
	82238	0.5	0.5	0.5	0.5
	82239	-2.3	-2.3	-2.3	-2.3
	82240	-1.9	-1.9	-1.9	-1.9
	82241	2.3	2.3	2.3	2.3
	82242	-1.2	-1.2	-1.2	-1.2
	82243	-0.8	-0.8	-0.8	-0.8
SEPTEMBER	82244	0.6	0.3	1.3	0.5
	82245	0.7	-0.6	-0.7	0.6
	82246	0.4	-0.9	1.4	0.5
	82247	0.6	-0.3	0.4	2.9
	82248	4.6	2.7	0.5	0.6
	82249	1.8	0.5	-1.0	0.3
	82250	0.6	0.2	-1.0	0.4
	82251	0.6	-0.5	-0.5	0.4
	82252	0.4	1.2	3.1	2.5
	82253	0.6	0.2	-1.4	0.4
	82254	0.6	1.0	0.2	0.4
	82255	0.2	0.3	1.8	6.0
	82256	6.1	5.4	4.7	3.6
	82257	2.9	4.0	3.4	4.1
	82258	7.2	8.2	8.6	3.2
	82259	0.7	1.3	3.4	-1.0
	82260	0.3	4.2	5.2	3.8
	82261	5.2	5.8	4.2	0.7
	82262	0.2	0.2	0.6	0.5
	82263	2.2	3.4	4.6	5.3
	82264	7.4	7.3	0.6	0.4
	82265	0.7	0.2	-1.6	0.6
	82266	0.6	-0.4	-1.2	0.6
	82267	0.8	0.1	-1.4	0.7
	82268	0.9	0.1	-0.5	1.5
	82269	2.8	4.0	1.4	0.4
	82270	0.8	0.1	0.4	0.8
	82271	0.9	2.8	1.4	5.2
	82272	4.3	0.6	-1.1	0.3
	82273	0.3	-1.4	0.4	0.6

NOTE:

1. Positive values indicate wind blowing generally southerly, or "down" the lake.

2. Negative valves indicate generally northerly winds, or "up" the lake.

3. Absolute values are mean vector resultant windspeeds for values recorded in the preceding six hour interval.

WINDSPEED (meters/sec.)

DATE	0600	1200	1800	2400
82274	0.7	0.4	-1.1	0.6
82275	0.8	0.3	-1.7	0.8
82276	0.4	0.5	-1.8	0.4
82277	0.3	0.5	0.8	0.7
82278	0.4	-0.4	0.4	0.7
82279	0.8	0.5	-0.2	0.7
82280	0.5	-0.3	-2.3	-1.1
82281	-0.3	0.3	-0.4	0.2
82282	-0.2	-0.6	-1.2	0.7
82283	0.4	-0.7	0.5	0.8
82284	0.7	0.4	-1.5	0.7
82285	0.3	3.9	-0.6	-1.3
82286	-1.5	-1.6	-0.4	0.5
82287	0.7	-0.7	-2.2	-1.7
82288	-0.9	0.7	0.8	1.1
82289	0.8	2.2	5.2	0.6
82290	0.2	-0.4	-1.3	0.8
82291	0.8	0.4	0.5	0.8
82292	0.8	0.6	0.9	-0.3
82293	0.0	-0.6	-1.2	1.0
82294	1.0	1.0	0.9	0.9
82295	1.1	0.9	1.1	1.0
82296	1.1	0.9	0.4	0.9
82297	0.9	0.7	-0.9	1.0
82298	1.0	0.4	-1.9	1.2
82299	1.1	1.3	0.8	1.3
82300	1.2	1.3	1.1	0.8
82301	0.8	3.1	2.3	0.5
82302	-0.6	1.0	1.1	-0.6
82303	-1.2	1.2	1.2	1.1
82304	1.2	1.2	2.5	6.4
82305	6.3	6.4	0.2	0.5
82306	0.5	0.8	0.6	1.2
82307	1.9	1.8	1.3	1.2
82308	1.9	-0.2	-0.2	1.2
82309	1.9	1.8	1.3	1.2
82310	1.9	1.8	1.3	1.2
82311	1.9	1.8	1.3	1.2
82312	6.2	7.6	2.9	-0.9
82313	0.7	1.1	1.1	1.1
82314	1.0	1.3	4.6	3.7
82315	3.3	0.5	0.7	2.9
82316	6.5	7.9	9.4	5.1
82317	5.4	5.9	2.7	-0.2
82318	0.6	0.7	0.1	0.5
82319	0.4	0.6	0.8	0.9
82320	1.0	1.1	0.9	1.3
82321	0.9	0.8	0.9	0.9
82322	1.0	1.0	1.0	0.9
82323	1.0	0.9	0.9	0.8
82324	0.7	0.1	0.5	0.9
82325	0.8	0.8	0.8	1.5
82326	4.1	3.8	4.7	4.9
82327	4.2	-0.7	-0.4	0.1
82328	0.9	0.8	0.8	0.9
82329	0.7	0.6	0.4	0.6
82330	0.8	0.6	1.1	2.9
82331	0.5	0.7	0.7	0.8
82332	0.8	0.7	0.4	0.2
82333	0.3	0.4	-0.3	-0.2
82334	-0.5	-1.6	-1.9	-1.2

OCTOBER

NOVEMBER

NOTE:

1. Positive values indicate wind blowing generally southerly, or "down" the lake.

2. Negative valves indicate generally northerly winds, or "up" the lake.

3. Absolute values are mean vector resultant windspeeds for values recorded in the preceding six hour interval.

APPENDIX D

EKLUTNA LAKE
PHYSICAL DATA

EKLUTNA LAKE PHYSICAL DATA

	Meters
Crest Level	64.3
Bottom Offtake Level	40.73
Length at Crest	11,000
Length @ Bottom Offtake	9,800
Width at Crest	1,260
Width at Bottom Offtake	1,005
Bottom Offtake Diameter	2.74

APPENDIX E

EKLUTNA RIVER STREAMFLOW DATA

	DYRESM INPUT DATA								
	EAST FORK			GLACIER FORK			MINOR TRIBUTARIES		
DATE	DISCHARGE 1000 m³	TEMP °C	SALINITY ‰	DISCHARGE 1000m³	TEMP °C	SALINITY ‰	DISCHARGE 1000m³	TEMP °C	SALINITY %
82152	370.0	9.0	0.0	150.0	3.0	0.0	150.0	9.0	0.0
82153	450.0	9.0	0.0	180.0	3.0	0.0	150.0	9.0	0.0
82154	490.0	9.0	0.0	200.0	3.0	0.0	150.0	9.0	0.0
82155	520.0	9.0	0.0	220.0	3.0	0.0	150.0	9.0	0.0
82156	570.0	9.0	0.0	240.0	3.0	0.0	150.0	9.0	0.0
82157	600.0	9.0	0.0	260.0	3.0	0.0	150.0	9.0	0.0
82158	650.0	9.0	0.0	280.0	3.0	0.0	150.0	9.0	0.0
82159	700.0	9.0	0.0	300.0	3.0	0.0	150.0	9.0	0.0
82160	730.0	9.0	0.0	329.0	3.0	0.0	150.0	9.0	0.0
82161	730.0	9.0	0.0	342.0	3.0	0.0	150.0	9.0	0.0
82162	590.0	9.0	0.0	342.0	3.0	0.0	150.0	9.0	0.0
82163	490.0	9.0	0.0	330.0	3.0	0.0	150.0	9.0	0.0
82164	420.0	9.0	0.0	320.0	3.0	0.0	150.0	9.0	0.0
82165	410.0	9.0	0.0	310.0	3.0	0.0	150.0	9.0	0.0
82166	400.0	9.0	0.0	320.0	3.0	0.0	150.0	9.0	0.0
82167	370.0	10.0	0.0	335.0	3.0	0.0	150.0	9.0	0.0
82168	420.0	10.0	0.0	350.0	3.0	0.0	150.0	9.0	0.0
82169	510.0	10.0	0.0	365.0	3.0	0.0	150.0	9.0	0.0
82170	500.0	10.0	0.0	380.0	3.0	0.0	150.0	9.0	0.0
82171	500.0	10.0	0.0	390.0	3.0	0.0	150.0	9.0	0.0
82172	470.0	10.0	0.0	390.0	3.0	0.0	150.0	9.0	0.0
82173	470.0	10.0	0.0	420.0	3.0	0.0	150.0	9.0	0.0
82174	554.0	10.0	0.0	460.0	1.0	0.0	150.0	9.0	0.0
82175	660.0	9.0	0.0	500.0	3.0	0.0	150.0	9.0	0.0
82176	780.0	9.5	0.0	550.0	3.0	0.0	150.0	9.0	0.0
82177	831.0	9.0	0.0	572.0	3.6	0.0	150.0	9.0	0.0
82178	945.0	8.0	0.0	808.0	3.3	0.0	150.0	9.0	0.0
82179	1725.0	7.0	0.0	965.0	3.0	0.0	150.0	9.0	0.0
82180	1140.0	7.0	0.0	657.0	3.1	0.0	150.0	9.0	0.0
82181	945.0	8.0	0.0	613.0	2.9	0.0	150.0	9.0	0.0
82182	830.0	5.7	0.0	555.0	3.1	0.0	150.0	9.0	0.0
82183	614.0	5.7	0.0	493.0	3.2	0.0	150.0	9.0	0.0
82184	543.0	5.7	0.0	479.0	3.0	0.0	150.0	9.0	0.0
82185	563.0	5.7	0.0	479.0	2.8	0.0	150.0	9.0	0.0
82186	583.0	5.7	0.0	465.0	2.6	0.0	150.0	9.0	0.0
82187	592.0	5.7	0.0	470.0	2.4	0.0	150.0	9.0	0.0
82188	727.0	5.7	0.0	534.0	2.2	0.0	150.0	9.0	0.0
82189	945.0	5.7	0.0	607.0	2.0	0.0	150.0	9.0	0.0
82190	871.0	5.7	0.0	589.0	1.8	0.0	150.0	9.0	0.0
82191	830.0	5.7	0.0	544.0	1.8	0.0	150.0	9.0	0.0
82192	830.0	5.7	0.0	544.0	1.8	0.0	150.0	9.0	0.0
82193	859.0	5.7	0.0	601.0	1.4	0.0	150.0	9.0	0.0
82194	930.0	5.7	0.0	670.0	1.4	0.0	150.0	9.0	0.0
82195	1006.0	5.7	0.0	741.0	1.4	0.0	150.0	9.0	0.0
82196	1023.0	5.7	0.0	769.0	1.4	0.0	150.0	9.0	0.0
82197	977.0	5.7	0.0	725.0	1.4	0.0	150.0	9.0	0.0
82198	930.0	5.7	0.0	725.0	1.4	0.0	150.0	9.0	0.0
82199	886.0	5.7	0.0	697.0	1.4	0.0	150.0	9.0	0.0
82200	901.0	6.1	0.0	784.0	1.4	0.0	150.0	9.0	0.0
82201	1124.0	6.1	0.0	984.0	1.4	0.0	150.0	9.0	0.0
82202	1268.0	6.1	0.0	1130.0	1.4	0.0	150.0	9.0	0.0
82203	1212.0	6.1	0.0	1086.0	1.6	0.0	150.0	9.0	0.0
82204	1327.0	6.1	0.0	1446.0	1.6	0.0	150.0	9.0	0.0
82205	1408.0	6.1	0.0	1762.0	1.6	0.0	150.0	9.0	0.0
82206	1368.0	6.1	0.0	1800.0	1.6	0.0	150.0	9.0	0.0
82207	1212.0	6.1	0.0	1800.0	1.6	0.0	150.0	9.0	0.0
82208	1268.0	5.7	0.0	1850.0	1.6	0.0	150.0	9.0	0.0
82209	1408.0	5.7	0.0	1800.0	1.6	0.0	150.0	9.0	0.0
82210	1537.0	5.7	0.0	1628.0	1.6	0.0	150.0	9.0	0.0
82211	1537.0	5.7	0.0	2416.0	1.6	0.0	150.0	9.0	0.0
82212	1307.0	5.7	0.0	2277.0	1.6	0.0	150.0	9.0	0.0

JUNE

JULY

DYRESM INPUT DATA

DATE	EAST FORK DISCHARGE 1000 m³	EAST FORK TEMP °C	EAST FORK SALINITY ‰	GLACIER FORK DISCHARGE 1000m³	GLACIER FORK TEMP °C	GLACIER FORK SALINITY ‰	MINOR TRIBUTARIES DISCHARGE 1000m³	MINOR TRIBUTARIES TEMP °C	MINOR TRIBUTARIES SALINITY ‰
AUGUST									
82213	1124.0	5.0	0.0	1945.0	1.6	0.0	150.0	9.0	0.0
82214	1789.0	5.2	0.0	1694.0	1.6	0.0	150.0	9.0	0.0
82215	977.0	5.4	0.0	1446.0	1.6	0.0	150.0	9.0	0.0
82216	930.0	5.4	0.0	1475.0	1.6	0.0	150.0	9.0	0.0
82217	960.0	5.5	0.0	1446.0	1.6	0.0	150.0	9.0	0.0
82218	960.0	5.2	0.0	1461.0	1.6	0.0	150.0	9.0	0.0
82219	945.0	4.8	0.0	1108.0	1.1	0.0	150.0	9.0	0.0
82220	871.0	4.9	0.0	1024.0	1.1	0.0	150.0	9.0	0.0
82221	791.0	5.1	0.0	928.0	1.1	0.0	150.0	9.0	0.0
82222	705.0	4.4	0.0	909.0	1.1	0.0	150.0	9.0	0.0
82223	636.0	4.5	0.0	840.0	1.1	0.0	150.0	9.0	0.0
82224	592.0	5.5	0.0	800.0	1.1	0.0	150.0	9.0	0.0
82225	668.0	5.8	0.0	840.0	1.1	0.0	150.0	9.0	0.0
82226	916.0	5.3	0.0	928.0	1.1	0.0	150.0	9.0	0.0
82227	945.0	4.7	0.0	946.0	1.1	0.0	150.0	9.0	0.0
82228	766.0	4.6	0.0	928.0	1.1	0.0	150.0	9.0	0.0
82229	659.0	4.7	0.0	849.0	1.1	0.0	150.0	9.0	0.0
82230	624.0	5.4	0.0	824.0	2.0	0.0	150.0	9.0	0.0
82231	659.0	5.6	0.0	849.0	2.0	0.0	150.0	9.0	0.0
82232	693.0	5.5	0.0	849.0	2.0	0.0	150.0	9.0	0.0
82233	705.0	5.1	0.0	883.0	2.0	0.0	150.0	9.0	0.0
82234	693.0	5.1	0.0	857.0	2.0	0.0	150.0	9.0	0.0
82235	778.0	5.1	0.0	1065.0	2.0	0.0	150.0	9.0	0.0
82236	791.0	5.2	0.0	955.0	2.0	0.0	150.0	9.0	0.0
82237	754.0	5.0	0.0	928.0	2.0	0.0	150.0	9.0	0.0
82238	668.0	4.8	0.0	883.0	2.0	0.0	150.0	9.0	0.0
82239	646.0	4.8	0.0	883.0	2.0	0.0	150.0	9.0	0.0
82240	624.0	5.0	0.0	883.0	2.0	0.0	150.0	9.0	0.0
82241	693.0	4.6	0.0	928.0	2.0	0.0	150.0	9.0	0.0
82242	636.0	4.4	0.0	883.0	2.0	0.0	150.0	9.0	0.0
82243	573.0	4.6	0.0	896.0	2.0	0.0	150.0	9.0	0.0
SEPTEMBER									
82244	497.0	4.6	0.0	697.0	1.5	0.0	150.0	9.0	0.0
82245	455.0	4.7	0.0	657.0	1.5	0.0	150.0	9.0	0.0
82246	446.0	4.6	0.0	619.0	1.5	0.0	150.0	9.0	0.0
82247	392.0	4.5	0.0	539.0	1.5	0.0	150.0	9.0	0.0
82248	646.0	4.7	0.0	657.0	1.5	0.0	150.0	8.0	0.0
82249	1470.0	4.5	0.0	1377.0	1.5	0.0	150.0	8.0	0.0
82250	646.0	4.5	0.0	784.0	1.5	0.0	150.0	8.0	0.0
82251	490.0	4.6	0.0	583.0	1.5	0.0	150.0	8.0	0.0
82252	414.0	4.8	0.0	534.0	1.8	0.0	150.0	7.0	0.0
82253	377.0	4.6	0.0	484.0	1.7	0.0	150.0	7.0	0.0
82254	335.0	4.3	0.0	313.0	1.8	0.0	150.0	7.0	0.0
82255	294.0	3.9	0.0	297.0	1.7	0.0	150.0	7.0	0.0
82256	470.0	4.9	0.0	320.0	1.9	0.0	150.0	6.0	0.0
82257	563.0	5.0	0.0	544.0	1.8	0.0	150.0	6.0	0.0
82258	1268.0	5.7	0.0	1024.0	1.6	0.0	150.0	6.0	0.0
82259	668.0	4.6	0.0	1024.0	1.4	0.0	150.0	6.0	0.0
82260	347.0	3.9	0.0	857.0	1.2	0.0	150.0	6.0	0.0
82261	272.0	4.4	0.0	725.0	1.0	0.0	150.0	6.0	0.0
82262	311.0	4.2	0.0	711.0	0.8	0.0	150.0	6.0	0.0
82263	240.0	4.3	0.0	711.0	0.5	0.0	150.0	6.0	0.0
82264	470.0	4.4	0.0	676.0	0.7	0.0	150.0	6.0	0.0
82265	614.0	3.8	0.0	534.0	0.3	0.0	150.0	6.0	0.0
82266	471.0	3.8	0.0	421.0	0.2	0.0	150.0	6.0	0.0
82267	446.0	3.3	0.0	370.0	0.2	0.0	100.0	5.0	0.0
82268	392.0	3.4	0.0	336.0	0.2	0.0	100.0	5.0	0.0
82269	356.0	3.9	0.0	326.0	0.3	0.0	100.0	5.0	0.0
82270	305.0	3.5	0.0	301.0	0.1	0.0	100.0	5.0	0.0
82271	282.0	3.2	0.0	284.0	0.2	0.0	50.0	3.0	0.0
82272	282.0	3.6	0.0	275.0	0.3	0.0	50.0	3.0	0.0
82273	266.0	3.5	0.0	260.0	0.3	0.0	50.0	3.0	0.0

DYRESM INPUT DATA

DATE	EAST FORK DISCHARGE 1000 m³	EAST FORK TEMP °C	EAST FORK SALINITY ‰	GLACIER FORK DISCHARGE 1000m³	GLACIER FORK TEMP °C	GLACIER FORK SALINITY ‰	MINOR TRIBUTARIES DISCHARGE 1000m³	MINOR TRIBUTARIES TEMP °C	MINOR TRIBUTARIES SALINITY ‰
OCTOBER									
82274	240.0	3.1	0.0	245.0	0.5	0.0	50.0	1.6	0.0
82275	230.0	3.1	0.0	235.0	0.5	0.0	50.0	1.4	0.0
82276	221.0	3.0	0.0	224.0	0.5	0.0	50.0	0.9	0.0
82277	207.0	2.4	0.0	211.0	0.5	0.0	50.0	0.5	0.0
82278	199.0	2.0	0.0	199.0	0.5	0.0	50.0	0.5	0.0
82279	194.0	2.2	0.0	189.0	0.5	0.0	50.0	0.5	0.0
82280	190.0	2.2	0.0	184.0	0.5	0.0	50.0	0.5	0.0
82281	185.0	2.0	0.0	177.0	0.5	0.0	50.0	0.5	0.0
82282	180.0	1.5	0.0	177.0	0.5	0.0	50.0	0.5	0.0
82283	175.0	1.0	0.0	170.0	0.5	0.0	50.0	0.5	0.0
82284	170.0	0.5	0.0	168.0	0.5	0.0	50.0	0.5	0.0
82285	165.0	0.5	0.0	178.0	0.5	0.0	50.0	0.5	0.0
82286	160.0	0.5	0.0	171.0	0.5	0.0	50.0	0.5	0.0
82287	160.0	0.5	0.0	162.0	0.5	0.0	50.0	0.5	0.0
82288	155.0	0.5	0.0	157.0	0.5	0.0	50.0	0.5	0.0
82289	150.0	0.5	0.0	165.0	0.5	0.0	50.0	0.5	0.0
82290	150.0	0.5	0.0	158.0	0.5	0.0	50.0	0.5	0.0
82291	150.0	0.5	0.0	154.0	0.5	0.0	50.0	0.5	0.0
82292	145.0	0.5	0.0	146.0	0.5	0.0	50.0	0.5	0.0
82293	145.0	0.5	0.0	144.0	0.5	0.0	50.0	0.5	0.0
82294	140.0	0.5	0.0	140.0	0.5	0.0	50.0	0.5	0.0
82295	140.0	0.5	0.0	138.0	0.5	0.0	50.0	0.5	0.0
82296	135.0	0.5	0.0	136.0	0.5	0.0	50.0	0.5	0.0
82297	135.0	0.5	0.0	134.0	0.5	0.0	50.0	0.5	0.0
82298	130.0	0.5	0.0	133.0	0.5	0.0	50.0	0.5	0.0
82299	130.0	0.5	0.0	132.0	0.5	0.0	50.0	0.5	0.0
82300	130.0	0.5	0.0	132.0	0.5	0.0	50.0	0.5	0.0
82301	130.0	0.5	0.0	131.0	0.5	0.0	50.0	0.5	0.0
82302	130.0	0.5	0.0	131.0	0.5	0.0	50.0	0.5	0.0
82303	130.0	0.5	0.0	130.0	0.5	0.0	50.0	0.5	0.0
82304	130.0	0.5	0.0	130.0	0.5	0.0	50.0	0.5	0.0
NOVEMBER									
82305	130.0	1.3	0.0	130.0	0.0	0.0	30.0	0.5	0.0
82306	130.0	1.3	0.0	130.0	0.0	0.0	30.0	0.5	0.0
82307	130.0	1.1	0.0	130.0	0.0	0.0	30.0	0.5	0.0
82308	130.0	1.1	0.0	130.0	0.0	0.0	30.0	0.5	0.0
82309	130.0	1.1	0.0	125.0	0.0	0.0	30.0	0.5	0.0
82310	130.0	1.1	0.0	125.0	0.0	0.0	30.0	0.5	0.0
82311	130.0	1.3	0.0	125.0	0.0	0.0	30.0	0.5	0.0
82312	130.0	1.4	0.0	125.0	0.0	0.0	30.0	0.5	0.0
82313	125.0	1.0	0.0	125.0	0.0	0.0	30.0	0.5	0.0
82314	125.0	1.2	0.0	125.0	0.0	0.0	30.0	0.5	0.0
82315	125.0	1.6	0.0	125.0	0.0	0.0	30.0	0.5	0.0
82316	125.0	2.0	0.0	120.0	0.0	0.0	30.0	0.5	0.0
82317	125.0	2.0	0.0	120.0	0.0	0.0	30.0	0.5	0.0
82318	125.0	1.9	0.0	120.0	0.0	0.0	30.0	0.5	0.0
82319	125.0	1.4	0.0	120.0	0.0	0.0	30.0	0.5	0.0
82320	125.0	0.5	0.0	120.0	0.0	0.0	30.0	0.5	0.0
82321	125.0	0.5	0.0	120.0	0.0	0.0	30.0	0.5	0.0
82322	125.0	0.5	0.0	120.0	0.0	0.0	30.0	0.5	0.0
82323	125.0	0.5	0.0	120.0	0.0	0.0	30.0	0.5	0.0
82324	125.0	0.5	0.0	115.0	0.0	0.0	30.0	0.5	0.0
82325	125.0	0.5	0.0	115.0	0.0	0.0	30.0	0.5	0.0
82326	125.0	1.0	0.0	115.0	0.0	0.0	30.0	0.5	0.0
82327	120.0	1.5	0.0	115.0	0.0	0.0	30.0	0.5	0.0
82328	120.0	0.6	0.0	115.0	0.0	0.0	30.0	0.5	0.0
82329	120.0	0.6	0.0	115.0	0.0	0.0	30.0	0.5	0.0
82330	120.0	1.4	0.0	115.0	0.0	0.0	30.0	0.5	0.0
82331	120.0	1.4	0.0	115.0	0.0	0.0	30.0	0.5	0.0
82332	120.0	0.1	0.0	110.0	0.0	0.0	30.0	0.5	0.0
82333	120.0	1.1	0.0	110.0	0.0	0.0	30.0	0.5	0.0
82334	120.0	0.9	0.0	110.0	0.0	0.0	30.0	0.5	0.0

APPENDIX F

LAKE DISCHARGE THROUGH EKLUTNA HYDROELECTRIC PLANT

DATE	OUTFLOW 1000m³	TEMP. °C	SALINITY ‰	LAKE LEVEL meters
82152	609.41	5.7	0.0	50.1
82153	609.41	5.7	0.0	50.0
82154	609.41	5.7	0.0	49.9
82155	609.41	6.	0.0	49.8
82156	614.45	6.	0.0	49.9
82157	614.45	6.	0.0	50.0
82158	614.45	6.	0.0	50.1
82159	614.45	6.	0.0	50.1
82160	614.45	6.	0.0	50.2
82161	568.53	6.3	0.0	50.3
82162	432.72	6.3	0.0	50.4
82163	540.98	6.3	0.0	50.4
82164	540.28	6.3	0.0	50.4
82165	614.45	6.3	0.0	50.5
82166	290.47	6.	0.0	50.5
82167	614.45	6.	0.0	50.5
82168	567.00	6.7	0.0	50.6
82169	540.97	7.	0.0	50.6
82170	500.04	6.3	0.0	50.6
82171	449.13	7.	0.0	50.7
82172	337.0	6.7	0.0	50.8
82173	378.71	7.3	0.0	50.9
82174	388.0	7.3	0.0	50.9
82175	371.06	7.	0.0	51.0
82176	337.38	7.	0.0	51.1
82177	531.79	8.	0.0	51.2
82178	548.63	11.	0.0	51.3
82179	372.59	11.	0.0	51.5
82180	507.30	10.3	0.0	51.6
82181	504.24	11.	0.0	51.8
82182	573.12	11.3	0.0	51.8
82183	599.14	11.0	0.0	52.0
82184	564.16	10.7	0.0	52.1
82185	528.26	9.0	0.0	52.2
82186	556.73	10.0	0.0	52.3
82187	567.22	9.3	0.0	52.4
82188	570.28	10.3	0.0	52.6
82189	521.30	9.3	0.0	52.7
82190	410.74	9.5	0.0	52.8
82191	545.12	9.3	0.0	53.0
82192	513.54	10.0	0.0	53.1
82193	535.94	9.0	0.0	53.2
82194	535.94	10.0	0.0	53.3
82195	535.94	9.3	0.0	53.5
82196	535.94	10.3	0.0	53.7
82197	522.37	9.7	0.0	53.8
82198	513.19	9.7	0.0	54.0
82199	498.51	9.0	0.0	54.2
82200	507.38	10.0	0.0	54.4
82201	507.28	9.7	0.0	54.6
82202	556.16	9.0	0.0	54.8
82203	507.28	9.0	0.0	54.9
82204	557.58	10.3	0.0	55.1
82205	589.37	9.3	0.0	55.3
82206	575.59	10.0	0.0	55.5
82207	580.18	10.0	0.0	55.7
82208	580.18	10.0	0.0	55.9
82209	462.87	10.0	0.0	56.1
82210	584.77	9.3	0.0	56.3
82211	537.32	10.0	0.0	56.5
82212	518.03	9.3	0.0	56.7

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DATE	OUTFLOW 1000 m^3	TEMP. °C	SALINITY ‰	LAKE LEVEL meters
82213	509.29	9.0	0.0	56.7
82214	506.33	9.0	0.0	56.9
82215	515.09	9.3	0.0	57.1
82216	532.73	9.3	0.0	57.3
82217	531.20	9.3	0.0	57.5
82218	488.80	9.7	0.0	57.9
82219	512.03	9.0	0.0	58.0
82220	455.36	8.3	0.0	58.1
82221	497.33	10.0	0.0	58.2
82222	501.36	8.7	0.0	58.3
82223	461.26	9.0	0.0	58.4
82224	455.36	9.7	0.0	58.5
82225	435.36	9.3	0.0	58.6
82226	474.59	9.0	0.0	58.7
82227	526.16	9.0	0.0	58.8
82228	526.16	9.3	0.0	58.9
82229	523.20	9.0	0.0	59.0
82230	489.57	9.4	0.0	59.1
82231	529.62	9.4	0.0	59.2
82232	500.00	9.3	0.0	57.3
82233	1000.00	9.3	0.0	59.4
82234	1000.00	9.3	0.0	59.5
82235	1101.94	9.3	0.0	59.7
82236	1122.84	9.9	0.0	59.8
82237	981.66	9.5	0.0	59.9
82238	937.23	9.7	0.0	60.0
82239	739.62	9.5	0.0	60.1
82240	692.89	9.8	0.0	60.1
82241	630.93	11.2	0.0	60.2
82242	561.52	8.4	0.0	60.3
82243	637.11	10.3	0.0	60.4
82244	695.08	9.3	0.0	60.4
82245	731.77	9.8	0.0	60.5
82246	608.71	9.5	0.0	60.6
82247	594.90	9.5	0.0	60.7
82248	594.90	11.0	0.0	60.7
82249	574.16	10.3	0.0	60.8
82250	578.75	8.7	0.0	60.9
82251	562.90	9.7	0.0	61.0
82252	576.28	10.0	0.0	61.1
82253	583.64	10.0	0.0	61.2
82254	579.32	8.3	0.0	61.2
82255	592.53	9.0	0.0	61.2
82256	573.52	10.0	0.0	61.2
82257	583.64	10.0	0.0	61.2
82258	462.86	10.0	0.0	61.4
82259	502.24	9.7	0.0	61.6
82260	592.53	8.7	0.0	61.8
82261	592.53	9.7	0.0	62.0
82262	592.53	9.7	0.0	62.2
82263	592.53	8.7	0.0	62.4
82264	592.53	9.3	0.0	62.6
82265	490.32	8.7	0.0	62.7
82266	507.01	8.7	0.0	62.7
82267	446.44	8.0	0.0	62.7
82268	372.88	8.0	0.0	62.8
82269	366.30	8.7	0.0	62.8
82270	434.70	8.7	0.0	62.9
82271	456.60	8.5	0.0	62.9
82272	431.85	8.3	0.0	62.9
82273	432.91	8.0	0.0	62.9

AUGUST

SEPTEMBER

DATE	OUTFLOW 1000m³	TEMP. °C	SALINITY ‰	LAKE LEVEL meters
OCTOBER				
82274	454.00	8.0	0.0	62.9
82275	588.00	8.0	0.0	62.91
82276	588.00	8.0	0.0	62.92
82277	588.00	8.0	0.0	62.93
82278	588.00	8.0	0.0	62.94
82279	588.00	8.0	0.0	62.95
82280	463.00	7.7	0.0	62.96
82281	315.00	7.7	0.0	62.97
82282	237.00	7.7	0.0	62.98
82283	237.00	7.7	0.0	62.99
82284	493.00	7.3	0.0	63.0
82285	553.00	7.3	0.0	63.0
82286	588.00	7.3	0.0	63.0
82287	588.00	7.0	0.0	63.0
82288	550.00	7.0	0.0	63.0
82289	774.00	7.0	0.0	63.0
82290	563.00	7.0	0.0	62.99
82291	563.00	7.0	0.0	62.98
82292	516.00	7.0	0.0	62.97
82293	545.00	6.3	0.0	62.96
82294	544.00	6.0	0.0	62.95
82295	550.00	6.3	0.0	62.94
82296	588.00	6.0	0.0	62.93
82297	571.00	6.0	0.0	62.92
82298	588.00	5.7	0.0	62.91
82299	560.00	5.3	0.0	62.9
82300	574.00	5.3	0.0	62.9
82301	571.00	5.7	0.0	62.9
82302	573.00	6.0	0.0	62.9
82303	559.00	6.0	0.0	62.9
82304	612.00	5.3	0.0	62.9
NOVEMBER				
82305	561.20	5.0	0.0	62.9
82306	592.30	5.0	0.0	62.9
82307	684.60	5.0	0.0	62.8
82308	587.30	5.0	0.0	62.8
82309	587.30	5.0	0.0	62.8
82310	796.50	5.0	0.0	62.7
82311	525.70	4.0	0.0	62.7
82312	771.50	4.3	0.0	62.7
82313	805.90	4.4	0.0	62.6
82314	904.20	4.6	0.0	62.6
82315	764.80	4.8	0.0	62.6
82316	709.40	4.4	0.0	62.5
82317	589.70	5.0	0.0	62.5
82318	589.70	5.0	0.0	62.5
82319	682.10	5.0	0.0	62.4
82320	671.70	4.3	0.0	62.4
82321	842.30	4.0	0.0	62.4
82322	883.70	4.0	0.0	62.3
82323	866.10	4.0	0.0	62.3
82324	589.70	4.0	0.0	62.3
82325	589.70	4.0	0.0	62.2
82326	586.80	4.0	0.0	62.2
82327	781.00	3.5	0.0	62.2
82328	847.20	3.6	0.0	62.1
82329	707.60	4.0	0.0	62.1
82330	729.60	4.0	0.0	62.1
82331	849.20	4.0	0.0	62.0
82332	786.80	3.5	0.0	62.0
82333	737.10	4.0	0.0	62.0
82334	706.30	4.0	0.0	61.9