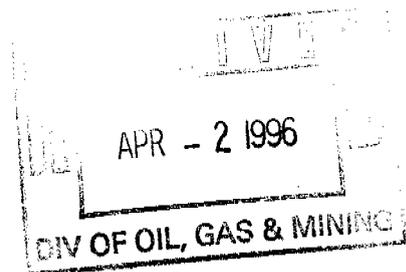


SUNNYSIDE COGENERATION ASSOCIATES

Post Office Box 10
East Carbon, Utah 84520
(801) 888-4476
(801) 888-2538 fax



April 2, 1996

Mr. Lowell P. Braxton
Associate Director, Mining
Division of Oil, Gas and Mining
3 Triad Center - Suite 350
Salt Lake City, UT 84180-1203

**RE: Permit No. ACT / 007 / 035 : Sunnyside Cogeneration Associates
1995 Annual Report**

Dear Mr. Braxton,

Sunnyside Cogeneration Associates is submitting herewith the 1995 Annual Report. The report is comprehensive of the activities that occurred within the SCA Permit Site during 1995.

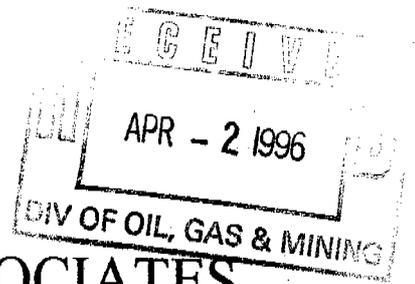
Three copies of the report are provided for the Division.

If you have any questions, please feel free to call me at (801) 888-4476.

Sincerely,

For Danny Mattingly
SCA General Manager

cc: Walt Strotz, B&W
Tom Smith, NRG
Bob Evans, NRG
Doug Burnham, B&W
Alane Boyd, EWP
Bill Malencik, DOGM



SUNNYSIDE COGENERATION ASSOCIATES
ACT/007/035
ANNUAL REPORT
1995

April 1996

Prepared by:

EWP Engineering
1121 East 3900 South, Suite C-100
Salt Lake City, UT, 84124
(801) 261-0090

COAL MINING AND RECLAMATIONS OPERATIONS FOR 1995

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
3 Triad Center, Suite 350
355 West North Temple
Salt Lake City, Utah 84180-1203
(801) 538-5340

Permittee:	<u>Sunnyside Cogeneration Associates</u>
Mine Name:	<u>Sunnyside Cogeneration Associates</u> P.O. Box 10 East Carbon, Utah 84520 (801) 888-4476
Company Representative:	<u>Mr. Danny Mattingly</u>
Resident Agent:	<u>Mr. Danny Mattingly</u>
Permit Number:	<u>ACT/007/035</u>
MSHA ID Number:	42-02093
Date of Initial Permanent Program Permit:	<u>February 4, 1993</u>
Date of Permit Renewal:	<u>February 4, 1998</u>
Quantity of Coal Mined (tonnage) 1995:	<u>413,288 tons</u>

TABLE OF CONTENTS

I. General Information:

Permit Completion Status
Monitoring Changes

II. Summarized Water Monitoring Data:

Surface and Ground Water Monitoring Locations
Table One: Surface and Ground Water Monitoring Locations
UPDES Water Monitoring Locations
Table Two: UPDES Water Monitoring Locations

III. Precipitation and Other Climatological Data:

Climatological Data
Ambient Air Monitoring

IV. Subsidence Monitoring:

Applicable Information

V. Revegetation Efforts (includes interim and final):

Qualitative Description of Interim and Final Vegetation

VI. Impoundment Certification:

Impoundment Certification Reports
Summary of Findings

VII. Annual Overburden, Spoil, and Refuse Data:

Refuse
Spoil

VIII. Ownership and Control Information:

Annual Reports of Officers Submitted to the Department of Commerce

IX. Appendices

LIST OF APPENDICES

- APPENDIX A** 1993-1995 Baseline Water Quality Monitoring Data Summary
- Exhibit 1 Data
 - Exhibit 2 Field Parameters
 - Exhibit 3 Analytical Parameters
 - Exhibit 4 Water Quality Characterization-Stiff Diagrams
 - Exhibit 5 Data Attachments
 - a) Huntingdon Analytical Data and Chain of Custody Documentation
 - b) Huntingdon Field Data Sheets
 - c) EWP Analytical Data And Chain of Custody Documentation
 - d) EWP Field Data Sheets
- APPENDIX B** 1995 Operational and UPDES Water Quality Monitoring Data Summary
- Exhibit 1 Water Quality Sampling Results
 - Exhibit 2 Quarterly Water Quality Stiff Diagrams
 - Exhibit 3 Analytical Data
 - Exhibit 4 UPDES Field Data
- APPENDIX C** Precipitation and Climatological Data for 1995
- APPENDIX D** Quarterly Ambient Air Monitoring Report
- Exhibit 1 First Quarter Ambient Air Monitoring
 - Exhibit 2 Second Quarter Ambient Air Monitoring
 - Exhibit 3 Third Quarter Ambient Air Monitoring
 - Exhibit 4 Fourth Quarter Ambient Air Monitoring
- APPENDIX E** Revegetation and Reclamation Data
- Exhibit 1 Photographs of the Revegetation Areas
 - Exhibit 2 Seed Mixture Used in the Revegetation
 - Exhibit 3 Drawing of the Interim Reseeding Areas
 - Exhibit 4 Mine Sequence Map for 1995
 - Exhibit 5 Report of the Sacco Flats Reclamation Test Plot
- APPENDIX F** Certified Maintenance Inspection Reports for Impoundments
- APPENDIX G** Monthly Quantities Mined and Analytical Results of Refuse Material

LIST OF APPENDICES (continued)

APPENDIX H	Excess Spoils Data
Exhibit 1	Analysis of Excess Spoil Samples
Exhibit 2	Location Map of Soil Samples
Exhibit 3	Analytical Data
APPENDIX I	Annual Reports of Officers (Department of Commerce)
APPENDIX J	3.5" Disk, Water Monitoring Data and Climatological Data

SUNNYSIDE COGENERATION ASSOCIATES 1995 ANNUAL REPORT

I. GENERAL INFORMATION

Permit Completion Status

The last major component of the permit was submitted to the Division in November 1995. SCA continues to wait for a Technical Analysis (TA) from the Division of the completed permit to determine if any deficiencies exist.

SCA has requested termination of violation N93-13-2-1 which required submittal of the completed permit. This NOV is currently in administrative review while the TA is being prepared.

Monitoring Changes

The two-year baseline monitoring period was completed in the second quarter of 1995. An analysis of the baseline data gathered was submitted to the Division along with the detailed program for continued monitoring of the surface and groundwater sites for operational parameters throughout the life of mine.

II. SUMMARY OF WATER MONITORING DATA

Included with this report is a summary of the water monitoring that was accomplished for the Sunnyside Cogeneration Associates (SCA) Permit Site from January to December, 1995. The baseline monitoring was performed by Huntingdon of Salt Lake City, Utah and the operational monitoring was performed by representatives of SCA. EWP also completed a special study of the flows at the Coarse Refuse Seep locations in mid 1995.

A summary of the water monitoring data is included as Lotus (WK1) and Quattro Pro (WQ1) files on the enclosed disk in **Appendix J**.

Surface and Ground Water Monitoring Locations

Table One lists the water monitoring locations along with their corresponding location ID and sampling elevation. These sites are shown on various plates throughout Chapter 7 of the SCA Permit number ACT/007/035 and are marked in the field. **Appendix A** includes a summary and

interpretation of the baseline water monitoring data. The Baseline Water Monitoring Schedule is included in Chapter 7, Appendix 7-8, of the SCA Permit.

Collection of baseline water monitoring data began in June, 1993 and continued through June, 1995. The sites were monitored for operational parameters after June, 1995. **Appendix B** includes a data summary and interpretation for each of these sites. The third and fourth quarter water quality data are displayed in **Exhibits B-1** and **B-2**.

TABLE ONE: SURFACE AND GROUND WATER MONITORING LOCATIONS

SITE	LOCATION ID	SAMPLING ELEVATION
Coarse Refuse Seep at Source	CRS	6,192
Coarse Refuse Seep at Railroad Culvert (EWP Special Study)	CRC	6,163
Coarse Refuse Seep at Boundary	CRB	6,122
Icelander Columbia Dugway Spring 1350 (Whitmore Spring)	F-2	6,182
Icelander Creek	ICE-1	6,032
East Carbon City Well (Dragerton Well) (Municipal Use-Groundwater)	Well	6,402

UPDES Water Monitoring Locations

The UPDES Permit issued to SCA is included in the SCA Permit as Appendix 7-1. *Table Two* lists each of the UPDES monitoring stations and the corresponding outfall number, location, and sampling elevation. These sites are shown on various plates throughout Chapter 7 of the SCA Permit number ACT/007/035. The UPDES Water Monitoring Schedule is included in Chapter 7, Appendix 7-8, of the SCA Permit. None of the UPDES sites within the SCA Permit Area incurred discharge during 1995.

TABLE TWO: UPDES WATER MONITORING LOCATIONS

SITE	OUTFALL NUMBER	LOCATION	SAMPLING ELEVATION
Clear Water Pond	004	Lat: 39°32'52" Long: 110°23'11"	6,520
Rail Cut Pond	007	Lat: 39°32'14" Long: 110°23'48"	6,204
Old Coarse Refuse Pond	008	Lat: 39°32'20" Long: 110°23'03"	6,491
Pasture Pond	009	Lat: 39°32'28" Long: 110°23'58"	6,485
Coarse Refuse Toe Pond	012	Lat: 39°32'28" Long: 110°23'58"	6,165
Coal Pile Sediment Pond	014	Lat: 39°32'45" Long: 110°23'26"	6,474
Borrow Area Pond	016	Lat: 39°32'25" Long: 110°23'45"	6,513

III. PRECIPITATION AND OTHER CLIMATOLOGICAL DATA

SCA has obtained precipitation and climatological data for 1995 from the Sunnyside Weather Station operated by the City of Sunnyside. This data is included as **Appendix C**. The 1995 climatological data is also included as Lotus (WK1) and Quattro Pro (WQ1) files on the enclosed disk. Previous climatological information is included in Appendix 7-2 of the SCA Permit.

Appendix D includes a copy of the Quarterly Ambient Air Monitoring Results at the SCA Facility for 1995. This report was prepared by Maxim, Salt Lake City, Utah.

IV. SUBSIDENCE MONITORING REPORT

No subsidence monitoring is required by the Sunnyside Cogeneration Permit. No material damage or diminution within the Permit Area will be caused by subsidence because no

underground coal resources are available within the permit area which would cause subsidence. No past or future underground coal mining operations have or are likely to occur within the SCA Permit Area.

V. REVEGETATION EFFORTS

During 1995, many different areas were reseeded. Photographs of the areas that have been reseeded during recent years were taken in February of 1996 and are included as **Exhibit E-1**. A list of the Interim seeding schedule used is included as **Exhibit E-2**. **Exhibit E-3** displays the locations of areas reseeded during 1995. Additionally, the Sacco Flats Reclamation Test Plot report is attached as **Exhibit E-4**.

Final reclamation earthwork and reseeded was performed on the Old Coarse Refuse Road (OCRR) during 1994. SCA began revegetation monitoring in 1995 of the OCRR as required for final reclamation. Substantial vegetative growth with an apparent diversity has occurred in the first year. SCA continues to watch over the reclamation for signs which would indicate that special attention is needed for a particular area.

The south embankment of the East Slurry Cell was covered with two feet of soil during 1995. Tests of the soil used found it to be adequate to meet the requirements for vegetative root zone. The area was seeded with the interim seed mixture in 1995. Photos of this area (taken in February of 1996) are included in **Exhibit E-1**.

Spoil materials were placed in the Excess Spoil Disposal Area in 1995. This material placed at the west end to form the outer embankment was adequate for the vegetative root zone. This embankment was seeded with the interim seed mix up to the first terrace. Photos of the area are included in **Exhibit E-1**.

The third and fourth lifts of the Coarse Refuse Pile were covered with two feet of borrow material in 1993. Interim seeding was completed in March 1994. 1996 photographs of the lifts are shown in **Exhibit E-1**. A significant amount of vegetation existed in 1995 and the area is already beginning to green up again for 1996.

Three small areas on the east bank of the East Slurry Cell were reseeded with the interim seed mix during 1995. 1996 photographs are shown in **Exhibit E-1**.

SCA continues to periodically examine the areas treated with the interim seed mix to verify that vegetation is growing adequate to meet the erosion control and weed control needs. Areas which receive final reclamation treatment will be monitored as specified in the permit.

VI. IMPOUNDMENT CERTIFICATION

Each impoundment was inspected as summarized in Table 5 - 1 in the SCA Permit. The quarterly inspection/certification reports are included in **Appendix F**.

No evidence of instability, structural weakness, or hazardous conditions was found during the inspections. All of the impoundments met or exceeded the storage capacity requirements identified in the permit.

VII. ANNUAL OVERBURDEN, SPOIL, AND REFUSE DATA

Refuse

During 1995, SCA mined a combined total of 413,228 tons of coarse refuse and fines in the cogeneration facility. A summary of the monthly mined quantities is identified in **Appendix G**.

During 1995, no mine coal was purchased from outside sources for use in the Cogeneration Facility. Due to cessation of operations at the Sunnyside Coal Mine, no coarse refuse or slurry was delivered to the SCA Permit Area.

Prior to being utilized in the cogeneration facility, the coarse refuse was tested for specific parameters to determine the quality of the material. A summary of the test results is also included in **Appendix G**.

In the summer of 1995, SCA conducted an exploratory drilling program in the existing Coarse Refuse Pile and West Slurry Cell. The purpose of the plan was to assess whether materials in and immediately under the West Slurry Cell and Coarse Refuse Pile were considered potentially toxic and/or acid-forming. Information gathered from this proposed plan assisted in determining the appropriate methods for reclamation.

Appendix 6-7 in the SCA Permit contains a report summarizing the general characterization of the refuse pile. Some of the samples analyzed showed an acidic potential which was slightly greater than the neutralizing potential. The analysis did not provide evidence of potentially toxic materials. Precipitate materials, suspected by DOGM to exist at the interface between the refuse material and the underlying soil material, were not found in the drilling. Water was not found during drilling in a quantity sufficient to take a sample for analysis. The samples of the underlying soil material did not have characteristics which cause concern for special reclamation considerations.

Spoil

Construction in the Excess Spoil Disposal Area continued in 1995 with the placement of approximately 43,000 yards of soil material from the dike of the West Slurry Cell. Materials were placed and compacted in accordance with the design parameters listed in the SCA Permit. The materials were tested and found to be of good quality without concerns of acid or toxic forming potentials. **Appendix H** contains an analysis of excess spoil samples (**Exhibit H-1**), a location map of where the spoil samples were taken (**Exhibit H-2**) and the laboratory analytical data (**Exhibit H-3**). The site selected as the Excess Spoil Disposal Area appears to be adequate to meet the requirements of the regulations. Inspections of the area are being conducted quarterly, as required. Copies of these inspection reports are sent to the Division, and are also included in Appendix F of this report.

VIII. ANNUAL REPORTS OF OFFICERS SUBMITTED TO THE DEPARTMENT OF COMMERCE

The annual reports of officers which were submitted to the Utah Department of Commerce, Division of Corporations and Commercial Code for the corporations are included as **Appendix I**.

LIST OF APPENDICES

APPENDIX A	1993-1995 Baseline Water Quality Monitoring Data Summary
Exhibit 1	Data
Exhibit 2	Field Parameters
Exhibit 3	Analytical Parameters
Exhibit 4	Water Quality Characterization-Stiff Diagrams
Exhibit 5	Data Attachments
a)	Huntingdon Analytical Data and Chain of Custody Documentation
b)	Huntingdon Field Data Sheets
c)	EWP Analytical Data And Chain of Custody Documentation
d)	EWP Field Data Sheets
APPENDIX B	1995 UPDES, Operational Water Quality Monitoring Data Summary
Exhibit 1	Water Quality Sampling Results
Exhibit 2	Quarterly Water Quality Stiff Diagrams
Exhibit 3	Analytical Data
Exhibit 4	UPDES Field Data
APPENDIX C	Precipitation and Climatological Data for 1995
APPENDIX D	Quarterly Ambient Air Monitoring Report
Exhibit 1	First Quarter Ambient Air Monitoring
Exhibit 2	Second Quarter Ambient Air Monitoring
Exhibit 3	Third Quarter Ambient Air Monitoring
Exhibit 4	Fourth Quarter Ambient Air Monitoring
APPENDIX E	Revegetation and Reclamation Data
Exhibit 1	Photographs of the Revegetation Areas
Exhibit 2	Seed Mixtures Used in the Revegetation
Exhibit 3	Drawing of the Interim Reseeding Areas
Exhibit 4	Mine Sequence Map for 1995
Exhibit 5	Report of the Sacco Flats Reclamation Test Plot
APPENDIX F	Certified Maintenance Inspection Reports for Impoundments
APPENDIX G	Monthly Quantities Mined and Analytical Results of Refuse Material
APPENDIX H	Excess Spoils Data
Exhibit 1	Analysis of Excess Spoil Samples
Exhibit 2	Location Map of Soil Samples
Exhibit 3	Analytical Data
APPENDIX I	Annual Reports of Officers (Department of Commerce)
APPENDIX J	3.5" Disk, Water Monitoring Data and Climatological Data

APPENDIX A

1993-1995 BASELINE WATER QUALITY MONITORING
DATA SUMMARY

APPENDIX A BASELINE WATER QUALITY DATA

TABLE OF CONTENTS

DATA

Table 1	Coarse Refuse Seep Monitoring - Field Results (EWP)
Table 2	Coarse Refuse Seep Monitoring - Analytical Results (EWP)
Table 3	Surface and Groundwater Sites - Field Results (Huntingdon)
Table 4	Surface and Groundwater Sites - Analytical Results (Huntingdon)
Table 5	Surface and Groundwater Sites - Statistical Data Summary

FIELD PARAMETERS

Figure 1	Coarse Refuse Seep Flow - (EWP)
Figure 2	Coarse Refuse Seep Flow - (Huntingdon)
Figure 3	Surface and Groundwater Flow - (Huntingdon)
Figure 4	Coarse Refuse Seep Temperature - (EWP)
Figure 5	Coarse Refuse Seep Temperature - (Huntingdon)
Figure 6	Surface and Groundwater Temperature - (Huntingdon)
Figure 7	Coarse Refuse Seep Dissolved Oxygen - (EWP)
Figure 8	Coarse Refuse Seep Dissolved Oxygen - (Huntingdon)
Figure 9	Surface and Groundwater Dissolved Oxygen - (Huntingdon)
Figure 10	Coarse Refuse Seep pH - (EWP)
Figure 11	Coarse Refuse Seep pH - (Huntingdon)
Figure 12	Surface and Groundwater pH - (Huntingdon)
Figure 13	Coarse Refuse Seep Specific Conductivity - (EWP)
Figure 14	Coarse Refuse Seep Specific Conductivity - (Huntingdon)
Figure 15	Surface and Groundwater Specific Conductivity - (Huntingdon)

ANALYTICAL PARAMETERS

Figure 16	Coarse Refuse Seep Total Boron - (EWP)
Figure 17	Coarse Refuse Seep Dissolved Boron - (EWP)
Figure 18	Coarse Refuse Seep Dissolved Boron - (Huntingdon)
Figure 19	Surface and Groundwater Dissolved Boron - (Huntingdon)
Figure 20	Coarse Refuse Seep Total Iron - (EWP)
Figure 21	Coarse Refuse Seep Dissolved Iron - (EWP)
Figure 22	Coarse Refuse Seep Dissolved Iron - (Huntingdon)
Figure 23	Surface and Groundwater Dissolved Iron - (Huntingdon)

APPENDIX A BASELINE WATER QUALITY DATA

TABLE OF CONTENTS (continued)

Figure 24	Coarse Refuse Seep Total Manganese - (EWP)
Figure 25	Coarse Refuse Seep Dissolved Manganese - (EWP)
Figure 26	Coarse Refuse Seep Total Manganese - (Huntingdon)
Figure 26A	Coarse Refuse Seep Dissolved Manganese - (Huntingdon)
Figure 27	Surface and Groundwater Dissolved Manganese - (Huntingdon)
Figure 28	Coarse Refuse Seep Sulfate - (EWP)
Figure 29	Coarse Refuse Seep Sulfate - (Huntingdon)
Figure 30	Surface and Groundwater Sulfate - (Huntingdon)

WATER QUALITY CHARACTERIZATION - STIFF DIAGRAMS

Figure 31	Stiff Diagram - Coarse Refuse Seep at the Source - CRS (HUNT)
Figure 32	Stiff Diagram - Coarse Refuse Seep at the Source - CRS (EWP)
Figure 33	Stiff Diagram - Coarse Refuse Seep at the Culvert - CRC (EWP)
Figure 34	Stiff Diagram - Coarse Refuse Seep at the Boundary - CRB (HUNT)
Figure 35	Stiff Diagram - Coarse Refuse Seep at the Boundary - CRB (EWP)
Figure 36	Stiff Diagram - ICE-1 (Icelander Creek)
Figure 37	Stiff Diagram - F-2 (Whitmore Spring)
Figure 38	Stiff Diagram - Surface and Groundwater Sites - June 1993
Figure 39	Stiff Diagram - Surface and Groundwater Sites - October 1993
Figure 38	Stiff Diagram - Surface and Groundwater Sites - January 1994
Figure 39	Stiff Diagram - Surface and Groundwater Sites - April 1994
Figure 40	Stiff Diagram - Surface and Groundwater Sites - July 1994
Figure 41	Stiff Diagram - Surface and Groundwater Sites - September 1994
Figure 42	Stiff Diagram - Surface and Groundwater Sites - December 1994
Figure 43	Stiff Diagram - Surface and Groundwater Sites - March 1995

DATA ATTACHMENTS

- Attachment A Huntingdon Analytical Data and Chain of Custody Documentation
- Attachment B Huntingdon Field Data Sheets
- Attachment C EWP Analytical Data and Chain of Custody Documentation
- Attachment D EWP Field Data Sheets

INTRODUCTION

For decades the Sunnyside Coal Mine (SCC) has used the area now located within the SCA Permit Boundary as a refuse disposal site. Coarse refuse and slurry have been transported to and placed in and around the West and East Slurry Cells and Slurry Ponds #1 and #2. In January 1994, SCC significantly scaled back production and within a few months ceased operations. The slurry water had long been suspected as being a major contributor to the source of the Coarse Refuse Seep.

Although weirs were not installed to measure flows at the seep until April 1994, there has been a significant reduction of flow measured at the three weirs. Exploratory drilling conducted by SCA on the refuse pile in August 1995 revealed relatively dry conditions throughout and under the refuse pile. These conditions appear to indicate that the water which continues to flow at the CRS, CRC, and CRB are related to a source of groundwater not associated with the slurry dewatering which previously occurred in the East Slurry Cell.

DATA

The Surface and Groundwater Monitoring Locations for the Sunnyside Cogeneration Facility DOGM Permit Water Quality Monitoring Plan which are shown on Plate 7-2 and listed in Appendix 7-8 on Table 7-2A were monitored for two years (June 1993-1995) according to the Baseline parameters listed in Table 7-2B. This appendix consists of a summary and interpretation of the Baseline water quality monitoring data collected.

The monthly field-parameter data collected by Huntingdon during the monitoring period is presented in Table 3. Huntingdon collected quarterly water quality samples which were then sent to the Utah certified Huntingdon laboratory in Billings, Montana. The analytical laboratory results of the water samples taken by Huntingdon are summarized in Table 4.

A copy of the analytical data and the chain of custody documentation is included as Attachment A. A copy of the field data sheets documenting Huntingdon's field parameters is included as Attachment B.

In addition to the Baseline monitoring, Eckhoff, Watson and Preator Engineering (EWP) began a special study of the flows from the Coarse Refuse Seep. Events of the study were coordinated with the Division of Water Quality (DWQ) and DOGM. Three weirs were installed in April 1994 at the "Source" (CRS), Railroad Culvert (CRC), and the Permit Boundary (CRB). The values of flow before this time period were visually estimated by Huntingdon. EWP measured field parameters weekly and took water samples monthly.

The field parameter data collected by EWP is located in Table 1. Laboratory testing on the samples collected by EWP was performed by Mountain States Analytical. The laboratory results are summarized in Table 2. A copy of the analytical data and the chain of custody documentation is included as Attachment C. A copy of the field data sheets is included in Attachment D.

Statistical analysis of the data collected by Huntingdon and EWP is itemized in Table 5. The statistical parameters include minimum, average, maximum, standard deviation, and number of samples available.

INTERPRETATION OF DATA

At the time of report preparation, the data collected from 1993, 1994, and through mid summer of 1995 was available. The trends of the water quality for all locations in 1994 tend to be similar to the water quality of 1993 as well as 1995. This report compares the available parameters of water quality at each of the locations over time. The following evaluations of the Baseline monitoring data were made during this report:

- Different water chemistry types of each location;
- Changes in water chemistry over time for each location;
- A comparison of specific conductivity, dissolved oxygen, total dissolved solids and temperature over time for each location.

Additional evaluations are included using data from the special study of the Coarse Refuse Seep conducted by EWP.

Field data

The field parameter data as well as the laboratory results contain significant trends in the different types of water parameters. Figures 1 through 15 are line graphs which compare the flow, temperature, specific conductivity, dissolved oxygen and total dissolved solids of each of the sites. The following observations can be made from the graphs:

- The decreased flows and temperature and the increased pH at the Coarse Refuse Seep Monitoring sites indicate that previously alleged flows through the refuse pile from slurry dewatering in the East Slurry Cell have either ceased or have been substantially reduced to a negligible amount.
- The temperature measured at the CRS is consistently higher than at the other monitoring sites. The temperature at the CRS, CRC and CRB steadily decreased until December 1994 and has been relatively stable through July 1995.

- The Specific Conductivity of the CRS, CRC and CRB is much higher than the other monitoring sites;
- The dissolved oxygen (DO) of the CRS is significantly lower than at the other monitoring sites;
- The Total Dissolved Solids (TDS) of CRS, CRC and CRB samples was much higher than the other monitoring sites.

The elevated temperature which previously occurred at the CRS may be attributed to previous fires within the refuse material. Those fires are not believed to exist currently at the same extent as previously existed. Temperatures which continue to be higher at the CRS than at the CRB may simply be attributed to the warmer conditions of the groundwater. The low values of DO at the CRS may be related to low turbulence in the ground water. The elevated values of TDS for the Coarse Refuse Seep flows may be the result of water percolating through the Mancos Shale. The high readings of specific conductivity for the Coarse Refuse Seep samples reflect the large amount of dissolved solids and namely the ions present in the discharge.

The frequent monitoring of the Coarse Refuse Seep performed by EWP provided a good look at trends and fluctuations. The flows at the seep were not accurately measured prior to cessation of the operations of the Sunnyside Coal Mine (SCC). The estimates made by Huntingdon during times when SCC was sending slurry into the East Slurry Cell were commonly higher than 100 gpm. In May, after the three weirs were installed, flows were measured at the CRS at less than 13 gpm. By December, flows at the CRS had decreased to less than 3 gpm. Flow measurements at the CRC and CRB have larger fluctuations than at the CRS, and did not necessarily demonstrate decreasing trends as strongly through the runoff season in 1995. Observations into the summer of 1995 appear to show a significant flow decrease which may simply represent seasonal fluctuations.

The pH measured at the CRS, CRC, and CRB has shown a significant increase. This may be a result of elimination of the water flowing through the refuse. None of the measurements performed by EWP or Huntingdon indicated a pH at the CRS of less than 6.5.

Analytical data

To facilitate the evaluation of different water chemistry types present and the changes in water chemistry at each location over time, the major ion data for the quarterly sampling by Huntingdon and the monthly data sampling by EWP were plotted on Stiff diagrams and individual parameters were plotted as line graphs. The line graphs are included as Figures 16-30. The Stiff plots are included as Figures 31 through 43. (See the Table of Contents for this Appendix for a listing of the individual figures and titles.)

A review of the Stiff plots and the line graphs indicates two distinct groupings of water chemistry noted by the following trends:

- The stiff diagrams for the Coarse Refuse Seep monitoring sites indicate that the CRS, CRC, and CRB have similar water quality characteristics. They are rich in sulfate, magnesium, and calcium.
- The stiff diagrams for the Dragerton Well, Icelander Creek and F-2 Whitmore Spring monitoring sites indicate that they have similar water quality characteristics. They have a balanced chemistry of Sodium and Sulfate and moderate amounts of Magnesium. These stiff diagrams also indicate that Icelander Creek has not been significantly affected by the characteristics (such as higher sulfates) at the Coarse Refuse Seep.
- The Total Dissolved Solids (TDS) of CRS, CRC and CRB samples was much higher than at the Dragerton Well, Icelander Creek and F-2 Whitmore Spring.

The total Boron concentration is largely made up of dissolved boron and did not have a major decrease in concentration between the CRS and CRB even though there was a large increase in flow.

Total Iron concentrations exist mostly in particle form and clearly decrease to negligible amounts by the time they reach the permit boundary. It is most probable that this reduction of iron is due to settling. Fluctuations occurred at the CRS and a definite trend is not yet clear in Figure 20.

A significant portion of the total Manganese concentration is in the dissolved form but there is a decrease in the concentration at the CRB when compared to the CRS. This decrease is potentially caused by oxidation/reduction reactions occurring with the increased exposure to oxygen in the surface water.

ANALYTICAL VARIANCES

Two analytical differences between the work by Huntingdon and by EWP should be noted:

- The laboratory work performed on the samples taken by Huntingdon did not include analysis of Potassium
- The laboratory work performed on the samples taken by EWP did not include analysis of Chloride ion

The lack of a value for Potassium in the Huntingdon samples appears to be negligible when

comparing the stiff diagrams of the Huntingdon samples to the stiff diagrams of the EWP samples. The amount of potassium detected in the EWP samples at the Coarse Refuse Seep did not significantly alter the shape of the stiff diagrams.

The Chloride ion was not part of the study performed by EWP because it was already being monitored by Huntingdon. The stiff diagrams for the EWP samples were drawn with Cl^- at zero. The Cl^- measured by Huntingdon was typically between five and ten meq/l. A modification to the EWP stiff diagrams to infer that Cl^- had similar quantities as in the Huntingdon samples could be justified.

Also, the laboratory detection of sulfate in the samples taken by EWP at the Coarse Refuse Seep during the month of November appears to be erroneous when compared to the values for the rest of the year. The sulfate parameter plotted on the stiff diagrams for the EWP samples during the month of November seem to be inconsistent with the other months. There may have been an error in the samples or the analysis for that month.

A few other minor data points which appear to represent sampling or analytical errors were removed from the data set prior to analysis.

EXHIBIT A-1

DATA

SUNNYSIDE COGENERATION ASSOCIATES
SURFACE WATER-BASELINE-COARSE REFUSE SEEP MONITORING performed by EWP

PARAMETER	19-May-94			27-May-94			8-Jun-94			16-Jun-94		
	CRS	CRC	CRB									
Flow gpm	8.5	29	48	12	36	52	8.5	40	48	7.1	29	40
Temperature C	25.50	15.92	15.55	25.80	17.79	16.77	24.40	16.97	15.50	26.97	19.06	19.62
pH	6.8	7.6	8.1	6.6	7.2	7.8	6.6	7.3	7.8	6.6	7.3	7.8
Spec. Cond mS	5.50	5.62	5.18	5.60	5.60	5.07	5.50	5.60	5.30	5.48	5.62	5.28
Disolved Oxygen mg/l	4.20	6.15	7.64	3.60	6.04	6.87	4.00	7.00	8.00	3.80	6.33	7.61
PARAMETER	23-Jun-94			30-Jun-94			8-Jul-94			14-Jul-94		
	CRS	CRC	CRB									
Flow gpm	7.1	29	36	7.1	32	40	7.1	32	40	7.1	32	32
Temperature C	27.92	20.37	22.75	24.32	18.10	15.90	25.61	18.80	17.60	26.01	20.30	19.75
pH	6.6	7.3	7.8	6.7	7.3	7.9	6.8	7.4	8.06	6.6	7.4	7.98
Spec. Cond mS	5.5	5.60	5.29	5.50	5.66	5.40	5.50	5.67	5.40	5.50	5.68	5.40
Disolved Oxygen mg/l	2.6	5.50	6.40	1.10	5.60	7.30	1.20	5.70	7.40	1.90	5.70	7.02
PARAMETER	21-Jul-94			29-Jul-94			4-Aug-94			11-Aug-94		
	CRS	CRC	CRB									
Flow gpm	7.1	29	26	7.1	32	48	8.5	32	36	7.1	32	48
Temperature C	26.6	21.2	22.6	25.3	19.8	17.5	25.5	20.6	18.3	25.2	19.7	18.5
pH	6.8	7.5	7.9	6.9	7.5	8.1	6.9	7.5	8.2	6.9	7.6	8.2
Spec. Cond mS	5.5	5.7	5.4	5.6	5.7	5.5	5.5	5.8	5.5	5.5	5.7	5.6
Disolved Oxygen mg/l	1.5	5.0	6.1	1.0	5.3	7.3	1.1	5.2	6.6	1.4	5.1	6.8
PARAMETER	19-Aug-94			26-Aug-94			31-Aug-94			9-Sep-94		
	CRS	CRC	CRB									
Flow gpm	7.1	32	36	7.1	32	29	5.8	32	26	5.8		48
Temperature C	24.6	19.4	17.2	23.9	19.5	16.1	25.6	20.7	20.3	24.9	20.1	17.6
pH	6.9	7.6	8.2	6.9	7.6	8.2	6.9	7.6	8.2	7.0	7.5	8.3
Spec. Cond mS	5.5	5.7	5.6	5.5	5.7	5.6	5.5	5.8	5.6	5.5	5.2	5.5
Disolved Oxygen mg/l	2.0	5.8	6.9	1.5	5.3	6.9	1.2	5.2	7.4	1.5	4.9	7.2
PARAMETER	16-Sep-94			20-Sep-94			29-Sep-94			6-Oct-94		
	CRS	CRC	CRB									
Flow gpm	5.8		40	8.5		40	7.1	32	40	8.5	32	40
Temperature C	23.3	18.0	14.2	23.9	19.8	16.0	24.3	18.7	15.0	22.8	16.7	12.7
pH	7.2	7.8	8.4	7.1	8.0	8.3	7.2	7.8	8.4	7.2	7.9	8.5
Spec. Cond mS	5.5	5.6	5.50	5.5	5.5	5.5	5.5	5.7	5.5	5.5	5.7	5.5
Disolved Oxygen mg/l	1.6	6.0	7.80	1.6	6.1	7.6	1.4	5.3	7.5	1.4	5.5	8.5
PARAMETER	13-Oct-94			21-Oct-94			28-Oct-94			4-Nov-94		
	CRS	CRC	CRB									
Flow gpm	7.1	32	36	7.1	32.0	40	4.7	29.0	40	4.7	29.0	40
Temperature C	22.7	17.8	13.0	23.1	14.9	12.6	22.1	15.2	9.9	22.3	14.7	9.1
pH	7.3	7.9	8.5	7.3	8.3	8.6	7.4	7.9	8.6	7.3	7.9	8.5
Spec. Cond mS	5.5	5.7	5.50	5.5	5.7	5.4	5.0	5.7	5.5	5.4	5.7	5.4
Disolved Oxygen mg/l	1.6	5.4	7.70	1.5	7.0	8.3	1.6	5.8	8.4	1.5	5.9	8.1
PARAMETER	9-Nov-94			17-Nov-94			22-Nov-94			9-Dec-94		
	CRS	CRC	CRB									
Flow gpm	4.7	29	40	4.7	26	32	4.7	23	29	2.1	21	32
Temperature C	22.4	14.4	9.0	22.4	14.0	9.1	18.1	11.0	7.0	17.9	11.3	5.4
pH	7.4	7.9	8.7	7.4	7.9	8.6	7.5	8.0	8.8	7.7	8.1	8.8
Spec. Cond mS	5.5	5.7	5.5	5.4	5.6	5.6	5.5	5.1	5.2	5.5	5.6	5.4
Disolved Oxygen mg/l	1.6	5.8	8.6	1.8	5.9	8.1	2.3	6.5	7.3	2.7	5.4	7.7

SUNNYSIDE COGENERATION ASSOCIATES
SURFACE WATER-BASELINE-COARSE REFUSE SEEP MONITORING performed by EWP

PARAMETER	15-Dec-94			22-Dec-94			6-Jan-95			12-Jan-95		
	CRS	CRC	CRB									
Flow gpm	2.8	26	40	2.8	21	40	2.1	21	40	2.1	21	40
Temperature C	17.3	12.2	5.9	18.1	13.4	7.0	17.3	11.2	3.7	17.5	11.1	5.2
pH	7.7	8.1	8.9	7.6	8.0	8.9	7.8	8.0	9.1	7.8	8.1	8.9
Spec. Cond mS	N/A	5.5	5.4	5.5	4.5	5.3	5.4	5.6	5.3	5.5	5.4	5.4
Disolved Oxygen mg/l	2.8	4.9	7.5	2.8	5.6	7.6	2.7	5.6	9.0	2.6	5.0	8.0
PARAMETER	21-Jan-95			27-Jan-95			1-Feb-95			9-Feb-95		
	CRS	CRC	CRB									
Flow gpm	2.1	21	40	2.1	26	40	2.1	32	40	2.1	36	43
Temperature C	17.6	11.3	6.0	17.3	11.2	5.8	18.1	11.7	5.2	17.1	11.8	5.7
pH	7.8	8.2	9.1	7.8	8.1	9	7.8	8.3	9.1	7.5	8.1	8.9
Spec. Cond mS	5.4	5.5	5.3	5.5	5.5	5.4	N/A	4.8	5.2	4.9	5.1	5.4
Disolved Oxygen mg/l	2.0	4.5	8.3	2.4	4.4	8.0	2.0	4.4	7.1	2.7	4.5	7.2
PARAMETER	23-Feb-95			28-Feb-95			1-Mar-95			9-Mar-95		
	CRS	CRC	CRB									
Flow gpm	2.1	36	40	2.1	32	40	2.1	32	40	2.8	32	40
Temperature C	18.0	11.2	5.8	19.8	11.9	5.4	19.2	11.3	5.9	18.5	11.8	6.0
pH	7.9	8.0	9.0	8.1	8.3	8.8	8.1	8.0	8.7	7.8	8.1	8.8
Spec. Cond mS	5.1	5.5	5.4	5.6	5.2	5.1	5.4	5.6	5.3	5.0	5.5	5.2
Disolved Oxygen mg/l	2.5	4.8	8.0	2.1	5.1	7.8	2.6	4.9	8.1	2.7	5.6	7.8
PARAMETER	22-Mar-95			30-Mar-95			5-Apr-95			13-Apr-95		
	CRS	CRC	CRB									
Flow gpm	2.1	21	29	2.1	26	29	1.5	26	29	1.5	26	29
Temperature C	18.8	12.1	7.1	18.2	11.8	7.8	18.1	11.7	7.9	18.0	11.9	8.4
pH	8.1	8.5	8.9	8.6	8.1	8.2	8.4	8.0	8.6	7.8	8.1	8.6
Spec. Cond mS	5.4	4.8	5.0	5	4.9	5.3	5.1	5.4	5.1	4.8	5.2	5.4
Disolved Oxygen mg/l	2.2	5.0	8.0	2.7	4.5	8.1	2.1	4.9	7.6	2.5	4.7	7.7
PARAMETER	20-Apr-95			27-Apr-95			4-May-95			11-May-95		
	CRS	CRC	CRB									
Flow gpm	1.0	29	32	1.0	32	32	1.0	32.0	32.0	1.0	29.0	32.0
Temperature C	18.6	12.1	8.1	19.1	13.0	8.5	18.5	12.8	8.1	18.2	13.0	7.4
pH	8.0	8.5	8.5	8.2	8.6	8.7	7.7	8.4	8.3	7.5	8.1	8.5
Spec. Cond mS	5.1	4.8	5.2	5.4	5.0	5.3	5.6	5.1	5.0	5.7	4.9	5.4
Disolved Oxygen mg/l	2.1	5.0	7.5	2.2	4.7	7.8	2.7	4.9	7.2	2.5	4.7	7.6
PARAMETER	19-May-95			25-May-95			2-Jun-95			6/8/95		
	CRS	CRC	CRB									
Flow gpm	1.0	26.0	29.0	1.0	26.0	29.0	1.0	29.0	29.0	1.0	26.0	26.0
Temperature C	18.1	12.7	7.6	17.9	13.1	7.5	18.2	12.9	7.9	17.0	12.8	7.9
pH	7.8	8.0	8.7	7.9	8.2	8.5	7.5	8.3	8.6	7.5	8.0	8.2
Spec. Cond mS	5.4	5.4	5.1	5.0	5.2	5.2	5.6	4.8	5.6	5.0	4.9	5.3
Disolved Oxygen mg/l	2.2	4.9	7.7	2.3	4.5	7.2	2.4	5.2	7.5	2.2	5.0	7.5
PARAMETER	15-Jun-95			22-Jun-95			30-Jun-95			6-Jul-95		
	CRS	CRC	CRB									
Flow gpm	1.0	23.0	26.0	1.0	23.0	23.0	0.7	21.0	23.0	0.7	18.0	21.0
Temperature C	17.5	11.9	7.8	17.8	11.8	7.8	17.2	12.1	7.9	17.9	12.7	8.2
pH	7.1	8.2	8.0	8.0	7.9	8.3	8.4	8.2	8.1	7.4	8.0	8.5
Spec. Cond mS	5.2	5.2	5.2	5.4	5.1	5.6	5.1	5.1	5.4	5.5	5.3	5.1
Disolved Oxygen mg/l	2.3	4.5	7.3	2.1	4.7	7.6	2.5	5.0	7.7	2.5	4.9	7.2

SUNNYSIDE COGENERATION ASSOCIATES
SURFACE WATER-BASELINE-COARSE REFUSE SEEP MONITORING performed by EWP

PARAMETER	13-Jul-95			19-Jul-95								
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
Flow gpm	0.4	18	21	0.4	16	18						
Temperature C	18.1	12.8	8.1	18.0	13.1	8.2						
pH	7.2	8.3	8.2	7.5	8.1	8.3						
Spec. Cond mS	5.3	5.2	5.5	5.2	4.8	5.2						
Disolved Oxygen mg/l	2.3	4.5	7.5	2.7	5.2	7.6						

SUNNYSIDE COGENERATION ASSOCIATES
SURFACE WATER-BASELINE-COARSE REFUSE SEEP MONITORING performed by EWP

PARAMETER	19-May-94			16-Jun-94			21-Jul-94					
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB			
NON-FILTERED SAMPLES												
Boron	1.01	1.01	0.75	1.14	1.06	0.91	1.05	1.04	0.9			
Aluminum	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Calcium	482	447	430	525	479	478	492	441	452			
Copper	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Iron	7.21	2.49	0.12	7.17	2.03	ND	6.73	3.99	ND			
Magnesium	312	312	281	347	333	321	315	308	303			
Manganese	1.32	0.56	ND	1.57	0.56	ND	1.46	0.68	ND			
Nickel	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Potassium	33.1	33.9	25.3	40.3	37.1	30.9	34.8	33.7	28			
Sodium	492	503	437	473	498	486	441	428	440			
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Alkalinity-Bicarbonate	456	382	302	466	390	302	480	394	306			
Alkalinity-Carbonate	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Alkalinity-Hydroxide	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Total Suspended Solids	24	11	ND	21	8	ND	22	28	ND			
Total Dissolved Solids	5170	5110	4360	5580	5500	5170	5280	5550	5190			
Hardness CaCO3	2640	2620	2400	2860	2800	2530	2900	2840	2610			
Nitrogen-Ammonia	0.9	ND	ND	1.3	ND	ND	1.2	ND	ND			
BOD total	<6	<6	<6	ND	ND	ND	<6	<6	<2			
Cyanide	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Phenolics	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Acidity	51	21	7	43	13	3	52	25	8			
Sulfate	2960	3080	2800	3130	3160	2790	3210	3430	3140			
FILTERED SAMPLES												
Aluminum	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Boron	0.99	1.00	0.74	1.16	1.05	0.91	1.12	1.1	0.86			
Calcium	469	451	429	518	465	469	515	466	431			
Copper	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Iron	ND	0.12	ND	0.15	0.14	ND	0.31	0.23	0.13			
Magnesium	301	311	277	344	327	315	334	330	288			
Manganese	1.27	0.52	ND	1.52	0.54	ND	1.49	0.62	ND			
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Nickel	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Potassium	32.6	32.3	24.8	40.4	36.7	30.2	37.4	36.8	26.7			
Sodium	469	490	439	475	490	477	477	468	415			
PARAMETER												
mg/l	25-Aug-94			20-Sep-94					27-Oct-94			
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB			
NON-FILTERED SAMPLES												
Boron	1.03	1.10	0.91	1.01	1.03	1.04	1.08	0.82	0.79	1.1	1.08	0.85
Aluminum	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	473	485	464	471	476	445	453	441	432	500	493	454
Copper	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	7.07	3.47	ND	8.78	8.84	N/A	3.9	ND	ND	8.73	4.48	0.12
Magnesium	301	341	313	297	303	309	320	295	287	316	344	303
Manganese	1.35	0.87	ND	1.43	1.45	1.41	1.13	0.07	0.07	1.45	1.14	0.21
Nickel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	33.9	36.7	28.9	35.7	36.3	36.5	38.2	28.2	27	37	36.6	27.8
Sodium	421	474	448	437	440	441	461	426	406	455	486	428
Alkalinity-Bicarbonate	480	388	314	470	386	322	486	424	348			
Alkalinity-Carbonate	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Alkalinity-Hydroxide	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Total Suspended Solids	18	17	ND	N/A	14	ND	20	29	ND			
Total Dissolved Solids	N/A	5330	5120	5490	5680	5240	5450	5520	5190			
Hardness CaCO3	3000	2850	2730	2650	2950	2550	2850	2860	2740			
Nitrogen-Ammonia	1.2	ND	ND	1.7	ND	ND	1.7	ND	ND			
Acidity	60.4	36.2	20	72	22	12	59	31	2			
Sulfate	3310	3330	3560	3260	3820	3070	4220	2650	2590			
FILTERED SAMPLES												
13-Oct-94												
Aluminum	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Boron	1.06	1.13	0.95	1.13	1.14	0.86	0.96	1.13	0.88			
Calcium	474	487	483	503	483	470	432	473	469			
Copper	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Iron	0.55	0.29	ND	ND	ND	ND	0.18	ND	ND			
Magnesium	304	344	327	318	338	313	274	340	316			
Manganese	1.33	0.56	ND	1.47	1.3	0.19	1.26	1.32	0.22			
Nickel	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Potassium	34.5	37.6	30.2	37.5	39.2	29.2	32	38.1	29			
Sodium	435	487	465	466	491	453	395	485	448			
Iron (total)				8.99	3.5	0.14						
Total Suspended Solids				21	9	ND						

SUNNYSIDE COGENERATION ASSOCIATES
SURFACE WATER-BASELINE-COARSE REFUSE SEEP MONITORING performed by EWP

PARAMETER mg/l	22-Nov-94			22-Dec-94			21-Jan-95		
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
NON-FILTERED SAMPLES									
Boron	1.1	1.10	0.8	1.2	1.1	0.9	1.0	0.9	0.7
Iron	7.19	7.49	ND	7.53	6.45	ND	6.15	3.60	0.12
Manganese	1.46	1.24	0.24	1.49	1.22	0.21	1.37	0.82	0.17
Alkalinity-Bicarbonate	460	420	342	478	422	344	478	392	346
Alkalinity-Carbonate	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alkalinity-Hydroxide	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Suspended Solids	16	18	ND	19	16	ND	6	8	ND
Total Dissolved Solids	5430	5660	5200	5360	5530	5200	5480	5340	5030
Hardness CaCO3	2730	2710	2560	2740	2740	2650	2820	2800	2650
Nitrogen-Ammonia	1.5	0.6	ND	1.7	0.6	ND	1.7	ND	ND
Acidity	101	49.4	12.2	62.2	42.4	9	107	49	6
Sulfate	N/A	N/A	N/A	3240	3320	2860	3340	3480	3070
FILTERED SAMPLES									
Boron	1.2	1.1	0.8	1.2	1.1	0.8	1.0	0.8	0.7
Calcium	542	486	476	521	494	490	468	428	428
Iron	1.36	0.59	ND	1.05	0.19	ND	2.04	0.45	ND
Magnesium	345	349	311	333	357	324	293	297	280
Manganese	1.6	1.34	0.25	1.49	1.15	0.21	137	0.81	0.17
Potassium	40.3	36.5	27.2	39.6	37.7	29.5	32.6	27.2	23.3
Sodium	526	527	475	493	524	470	423	396	377

PARAMETER mg/l	28-Feb-95			22-Mar-95			27-Apr-95		
	CRS	CRC	CRB	CRS	CRC	CRB	CRS	CRC	CRB
NON-FILTERED SAMPLES									
Boron	1.3	1.0	0.9	1.1	0.9	0.7	1.2	1.1	0.8
Iron	8.26	4.19	ND	6.78	5.85	ND	7.67	6.44	ND
Manganese	1.64	0.78	0.11	1.38	0.955	0.071	1.52	1.18	0.042
Alkalinity-Bicarbonate	484	404	330	470	408	314	468	422	312
Alkalinity-Carbonate	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alkalinity-Hydroxide	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Suspended Solids	12	16	ND	16	9	ND	20	19	ND
Total Dissolved Solids	4950	5070	4780	5250	5090	4770	5440	5520	5120
Hardness CaCO3	2960	2760	2580	2760	2710	2620	2760	2780	2540
Nitrogen-Ammonia	1.7	ND	ND	1.7	0.6	ND	1.6	ND	ND
Acidity	63	35.8	5.0	78	52	12	93.1	48.2	10.2
Sulfate	3270	3220	2940	3200	3220	2910	3420	3250	2820
FILTERED SAMPLES									
Boron	1.4	1.1	0.9	1.2	1	0.7	1.1	1.1	0.8
Calcium	545	487	511	490	457	408	488	460	455
Iron	2.43	0.27	ND	1.1	ND	ND	1.16	ND	ND
Magnesium	350	341	342	310	317	265	330	0.337	305
Manganese	1.62	0.97	0.11	1.48	0.93	0.07	1.47	1.12	0.04
Potassium	41.2	33	29.5	36.1	31.8	23.1	33.9	33.1	23.1
Sodium	482	447	427	437	439	366	449	440	403

Sunnyside Cogeneration Associates
Surface and Ground Water Sites - Baseline - Field Parameter Data Performed by Huntingdon

Monitoring Location	Location I.D.	Jun/30/93					Jul/27/93					Aug/26/93				
		Field Parameters					Field Parameters					Field Parameters				
		Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (mg/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)
Icelandier Creek	ICE - 1	29.0	8.08	2200	7.4	185	23.0	8.17	2300	7.2	200	16.0	7.18	2200	7.2	120
Columbia Dugway Spring	F - 2	25.0	8.40	2300	7.8	100	23.0	8.02	1900	5.9	90	15.0	7.18	2150	6.2	100
Coarse Refuse Seep Source	CRS	32.0	6.77	4500	6.2	30	26.0	7.25	3200	2.4	30	25.0	6.81	2800	3.4	40
Coarse Refuse Seep Boundary	CRB	26.0	7.60	4300	8.1	30	21.0	7.87	4600	5.0	30	18.5	6.50	N/A	5.4	50
Draegeron Well	Well - 1	16.0	7.80	1800	7.20	50	17.0	8.18	3100	5.8	50	12.0	6.77	920	4.9	50

Monitoring Location	Location I.D.	Sep/02/93					Oct/27/93					Nov/16/93				
		Field Parameters					Field Parameters					Field Parameters				
		Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)
Icelandier Creek	ICE - 1	20.0	8.23	2150	5.4	150	3.3	8.50	1200	6.0	150	5.0	8.48	1800	5.6	150
Columbia Dugway Spring	F - 2	17.0	7.54	2100	6.4	100	1.5	8.30	1200	7.0	100	5.3	8.49	1300	6.2	100
Coarse Refuse Seep Source	CRS	28.0	7.12	4600	1.9	40	23.0	6.98	4700	3.5	40	23.2	6.86	4850	2.1	50
Coarse Refuse Seep Boundary	CRB	20.0	7.92	4150	4.9	40	8.3	7.50	3400	6.0	40	7.9	7.1	3300	5.5	40
Draegeron Well	Well - 1	15.0	7.10	1450	5.2	45	7.0	8.00	1300	4.5	50	10.0	7.27	1300	4.6	50

Monitoring Location	Location I.D.	Dec/09/93					Jan/13/94					Feb/28/94				
		Field Parameters					Field Parameters					Field Parameters				
		Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)
Icelandier Creek	ICE - 1	4.8	8.49	2471	10.3	300	5.1	8.29	2220	6.4	200*	8.9	8.16	1450	7.3	150*
Columbia Dugway Spring	F - 2	6.0	7.82	1800	12.7	150	5.8	8.51	1820	6.2	90*	7.7	7.62	2180	6.9	35*
Coarse Refuse Seep Source	CRS	23.2	6.93	4306	1.9	30	21.2	7.08	4750	2.4	100*	36.5	6.74	4470	0.9	100*
Coarse Refuse Seep Boundary	CRB	5.9	7.94	3900	8.4	40	5.0	8.17	3100	6.0	200*	15.6	7.90	4370	6.8	120*
Draegeron Well	Well - 1	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Monitoring Location	Location I.D.	Mar/28/94					Apr/19/94					May/31/94				
		Field Parameters					Field Parameters					Field Parameters				
		Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)
Icelandier Creek	ICE - 1	12.9	7.90	2830	6.0	90*	17.2	8.23	2860	6.4	100*	13.1	8.28	2257	9.9	300*
Columbia Dugway Spring	F - 2	13.6	8.01	1500	6.4	28*	15.5	8.4	1800	6.8	36*	12.5	8.16	1650	9.9	35*
Coarse Refuse Seep Source	CRS	23.7	6.51	5400	1.4	100*	26.9	6.83	4550	3.2	10*	23.8	6.64	4650	1.9	8.5*
Coarse Refuse Seep Boundary	CRB	14.6	7.61	3500	6.5	120*	19.3	7.96	4890	7.4	38*	14.1	7.73	4599	9.0	20*
Draegeron Well	Well - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Note:

NA indicates that data is not available due to lack of discharge.
NS indicates that data is not available due to lack of sampling port.
Flow rates were measured as follows:

- * The flow rates were estimated due to a lack of an appropriate measuring location.
- ^ The flow rates were measured using a weir.
- * The flow rates were measured using a calibrated container and a stopwatch.
- * The flow rates were measured using the floating debris method.

Sunnyside Cogeneration Associates
Surface and Ground Water Sites - Baseline - Field Parameter Data Performed by Huntingdon

Jun/23/94																
Field Parameters						Jul/21/1994						Aug/22/1994				
Monitoring Location	Location I.D.	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)
Icelandier Creek	ICE - 1	21.9	8.74	2120	6.5	127*	21.2	8.34	2150	7.1	127*	25.7	8.71	2170	6.3	5*
Columbia Dugway Spring	F - 2	18.7	8.49	2130	7.0	60*	18.9	7.98	3401	7.9	43*	22.4	7.85	3120	8.5	23*
Coarse Refuse Seep Source	CRS	37.2	8.88	5140	1.5	8.51^	25.9	8.96	5480	1.3	8.5^	27.5	7.01	5130	1.2	7.1^
Coarse Refuse Seep Boundary	CRB	20.9	7.99	4950	7.2	40*	20.4	7.82	5200	6.8	40*	24.2	7.50	5130	7.3	36^
Draegerton Well	Well - 1	17.2	7.63	1710	7.2	50*	15.0	8.37	1790	8.8	50*	18.3	7.97	2270	7.9	NA
Sep/27/1994																
Field Parameters						Oct/19/94						Nov/21/94				
Monitoring Location	Location I.D.	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)
Icelandier Creek	ICE - 1	18.2	8.50	2341	15.4	4	9.9	8.59	2491	8.8	120	1.1	8.84	2165	15.5	20
Columbia Dugway Spring	F - 2	19.5	8.26	2218	14.9	7	10.5	8.35	2340	8.6	30	3.4	8.63	2200	13.9	24
Coarse Refuse Seep Source	CRS	26.2	6.58	5450	1.2	8.5	21.1	8.66	5585	2.3	8.5	18.9	7.11	5088	5.3	4.7
Coarse Refuse Seep Boundary	CRB	21.8	7.86	5180	7.8	40	13.0	8.06	5320	7.8	48	6.1	8.44	5083	13.9	40
Draegerton Well	Well - 1	14.7	7.65	1511	8.4	NA	12.2	8.41	644	7.8	NA	7.1	8.10	1215	10.9	NA
Dec/19/94																
Field Parameters						Jan/01/1995						Feb/01/1995				
Monitoring Location	Location I.D.	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)
Icelandier Creek	ICE - 1	3.0	8.08	2392.5	15.4	6.0	3.0	8.32	2738.2	11.5	30.0	6.2	8.36	1972.2	9.0	33.0
Columbia Dugway Spring	F - 2	3.5	8.20	2310.0	15.6	26.0	2.1	8.42	2541	8.7	20.0	8.9	8.31	2068.3	7.6	19.0
Coarse Refuse Seep Source	CRS	20.4	6.77	4986.7	3.5	4.7	18.0	6.89	6305.9	3.3	1.5	20.7	6.82	4991.6	1.2	1.5
Coarse Refuse Center Weir	CRM	6.8	7.92	5214.0	14.9	40.0	na	na	na	na	29.0	na	na	na	na	29.0
Coarse Refuse Seep Boundary	CRB	8.3	7.26	1428.3	8.6	NA	3.9	8.05	8704.1	8.9	32.0	13.0	8.10	4962.4	8.0	32.0
Draegerton Well	Well-1	ND	ND	ND	ND	ND	4.7	8.01	942.0	9.1	na	7.5	8.09	619.9	8.0	na
Mar/27/1995																
Field Parameters						Apr/24/95						May/24/95				
Monitoring Location	Location I.D.	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)	Temp. (C)	pH (s.u.)	SC (umhos)	Dissolved Oxygen (ug/l)	Flow Rate (gpm)
Icelandier Creek	ICE - 1	10.7	9.25	2343	9.2	30	10.1	8.44	2237	9.3	44	12.9	8.43	2390	7.5	72.0
Columbia Dugway Spring	F - 2	10.0	8.4	2251	7.9	20	11.5	8.25	2240	9.5	33.3	12.0	8.38	2390	7.0	70.0
Coarse Refuse Seep Source	CRS	18.8	7.12	5492	2.7	1.5	18.9	6.82	5470	3.5	1.5	19.7	7.08	5456	2.8	1.0
Coarse Refuse Center Weir	CRM	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Coarse Refuse Seep Boundary	CRB	12.6	8.17	5133	8.1	43	14.3	8.00	5193	10.0	26	16.2	8.13	5271	7.7	26.0
Draegerton Well	Well-1	6.9	7.9	791.0	8.7	na	8.8	7.83	755.0	9.1	na	9.2	8.21	677.0	7.9	na

Note:
 NA indicates that data is not available due to lack of discharge. * The flow rates were estimated due to a lack of an appropriate measuring location.
 NS indicates that data is not available due to lack of sampling port. ^ The flow rates were measured using a weir.
 Flow rates were measured as follows: * The flow rates were measured using a calibrated container and a stopwatch.
 * The flow rates were measured using the floating debris method.

Sunnyside Cogeneration Associates
Surface and Ground Water sites - Baseline - Analytical Results (monitoring performed by Huntingdon)

SAMPLE LOCATION		Analytical Parameters															
		Metals (mg/l)											Inorganics (mg/l)				
		Aluminum Dissolved	Arsenic Dissolved	Boron Dissolved	Cadmium Dissolved	Copper Dissolved	Iron Dissolved	Iron Total	Lead Dissolved	Manganese Dissolved	Manganese Total	Molybdenum Dissolved	Selenium Dissolved	Zinc Dissolved	Electrical Conductivity	Oil & Grease	Sulfide as S
ICE - 1	06/93	0.2	<0.002	0.3	<0.003	<0.02	<0.05	0.08	<0.01	<0.02	<0.02	<0.05	<0.002	<0.02	na	<1	<1
	10/93	0.1	<0.002	0.3	<0.001	<0.02	<0.05	<0.05	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	2410	<1	<1
	1/94	<0.5	<0.002	<0.5	<0.001	<0.10	<0.25	0.3	<0.002	<0.1	<0.1	<0.25	<0.002	<0.1	2260	2	na
	4/94	<1.0	<0.002	<1.0	<0.001	<0.2	<0.5	0.35	<0.002	<0.2	0.1	<0.5	<0.002	<0.2	2800	<1	na
	7/94	<0.1	<0.002	0.2	<0.001	<0.02	<0.05	0.07	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	2220	<1	na
	9/94	0.3	<0.002	0.2	<0.001	<0.02	<0.05	0.16	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	2350	<1	na
	12/94	0.2	<0.002	0.2	<0.001	<0.02	<0.05	0.26	<0.002	<0.04	<0.02	<0.05	0.003	<0.02	2500	<1	na
	3/95	<0.1	<0.002	0.2	<0.001	<0.02	<0.05	0.29	<0.002	<0.04	<0.02	<0.05	<0.002	<0.02	2540	8	<1
F - 2	06/93	0.2	<0.002	0.3	<0.003	<0.02	<0.05	0.26	<0.01	<0.02	0.04	<0.05	<0.002	<0.02	na	<1	<1
	10/93	0.2	<0.002	0.3	<0.001	<0.02	<0.05	0.41	<0.002	0.04	0.06	<0.05	<0.002	1.02	2240	3	<1
	1/94	<0.5	<0.002	<0.5	<0.001	<0.10	<0.25	0.3	<0.002	<0.1	0.1	<0.25	<0.002	<0.1	1830	<1	na
	4/94	<1.0	<0.002	<1.0	<0.001	<0.2	<0.5	0.3	<0.002	<0.2	0.1	<0.5	<0.002	<0.2	2280	<1	na
	7/94	<0.1	<0.002	0.2	<0.001	<0.02	<0.05	0.54	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	2280	<1	na
	9/94	0.2	<0.002	0.2	<0.001	<0.02	<0.05	0.54	<0.002	<0.02	0.04	<0.05	<0.002	<0.02	2280	<1	na
	12/94	<0.1	<0.002	0.1	<0.001	<0.02	0.08	0.1	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	1300	<1	na
	3/95	<0.1	<0.002	0.2	<0.001	<0.02	<0.05	<0.05	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	2360	2	<1
CRS (HUNT)	06/93	0.6	<0.002	1.0	<0.003	<0.02	<0.12	8.9	<0.01	1.75	1.5	<0.1	<0.002	0.08	na	<1	<1
	10/93	0.5	<0.002	1.1	<0.001	<0.02	6.3	47	<0.002	1.35	2.2	<0.05	<0.002	0.33	5310	<1	<1
	1/94	<0.5	0.005	1.0	<0.001	<0.10	12	21	<0.002	0.33	0.6	<0.25	<0.002	<0.1	4640	<1	na
	4/94	<1.0	<0.002	<1.0	<0.001	<0.2	4.63	11	<0.002	1.9	1.65	<0.5	<0.002	<0.2	5550	4	na
	7/94	0.1	0.002	1.0	<0.001	<0.02	8.4	9.8	<0.002	0.64	0.69	<0.05	<0.002	<0.02	5520	<1	na
	9/94	0.2	0.002	0.6	<0.001	<0.02	9.5	10.4	<0.002	1.08	1.56	<0.05	<0.002	<0.02	5280	<1	na
	12/94	0.2	<0.002	1.2	<0.001	<0.06	9.2	10.2	<0.002	1.38	1.75	<0.05	<0.002	<0.02	5410	<1	na
	3/95	<0.1	<0.002	0.7	<0.001	<0.02	1.23	1.5	<0.002	0.43	0.78	<0.06	<0.002	<0.02	5210	<2	<1.0
CRB (HUNT)	06/93	0.6	<0.002	0.7	<0.003	<0.02	<0.12	<0.12	<0.01	<0.02	<0.02	<0.1	<0.002	0.1	na	<1	<1
	10/93	0.5	<0.002	1.0	<0.001	<0.02	19.2	*<0.05	<0.002	1.35	*<0.02	<0.05	<0.002	0.35	4860	1	1
	1/94	<0.5	<0.002	0.7	<0.001	<0.10	<0.25	<0.25	<0.002	<0.2	<0.1	<0.25	<0.002	<0.1	4890	<1	na
	4/94	<1.0	<0.002	<1.0	<0.001	<0.2	<0.5	0.01	<0.002	0.2	<0.1	<0.5	<0.002	<0.2	4960	<1	na
	7/94	<0.1	<0.002	0.6	<0.001	<0.02	*<0.25	*<0.15	<0.002	*<0.1	*<0.06	0.07	<0.002	0.03	5160	<1	na
	9/94	0.3	<0.002	0.8	<0.001	<0.02	<0.25	<0.25	<0.002	*<0.1	*<0.06	<0.05	<0.002	<0.02	5460	<1	na
	12/94	0.3	<0.002	0.9	<0.001	<0.06	<0.15	0.18	<0.002	0.12	0.15	<0.05	<0.002	<0.02	5190	<1	na
	3/95	<0.1	<0.002	0.5	<0.001	<0.02	<0.25	<0.05	<0.002	<0.10	<0.02	0.07	<0.002	<0.02	4950	<2	<1.0
WELL	06/93	<0.1	<0.002	0.2	<0.003	<0.02	<0.05	<0.0	<0.01	<0.02	<0.02	<0.05	<0.002	0.02	na	<1	6
	10/93	<0.1	<0.002	0.3	<0.001	<0.02	<0.05	0.14	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	2100	<1	<1
	1/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	4/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	7/94	<0.1	<0.002	0.1	<0.001	<0.02	<0.05	0.1	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	1830	2	nd
	9/94	0.2	<0.002	0.2	<0.001	<0.02	<0.05	0.1	<0.002	<0.02	0.03	<0.05	<0.002	<0.02	1520	<1	nd
	12/94	0.1	<0.002	0.2	<0.001	<0.02	0.28	0.3	<0.002	0.08	0.09	<0.05	0.004	<0.02	2280	<1	nd
	3/95	<0.1	<0.002	<0.1	<0.001	<0.02	<0.05	<0.05	<0.002	<0.02	<0.02	<0.05	<0.002	<0.02	861	<1	<1.0

Note

A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

* - Higher detection limit reported due to the interferences present in the sample.

na - not applicable

nd - no discharge

Sunnyside Cogeneration Associates
Surface and Ground Water sites - Baseline - Analytical Results (monitoring performed by Huntingdon)

SAMPLE LOCATION	Analytical Parameters															
	Inorganics (mg/l)			Anions (mg/l)					Cations (mg/l)				Nutrients (mg/l)			
	Settleable Solids	Dissolved Solids	Suspended Solids	Bicarbonate Alkalinity	Carbonate Alkalinity	Total Alkalinity	Chloride as Cl	Sulfate as SO4	Calcium as Ca	Hardness as CaCO3	Magnesium as Mg	Sodium as Na	Ammonia as N	Nitrite as N	Nitrate as N	Phosphorous Total
ICE - 1	<0.1	1920	8	505	0	414	66	1060	126	944	153	318	0.31	<0.05	1.72	0.02
	<0.2	1600	<2	593	0	486	65	777	90	660	105	340	<0.05	<0.05	0.77	0.05
1/94	<0.1	1780	11	519	0	425	59	943	110	850	140	298	0.13	<0.05	0.69	0.05
4/94	<0.1	1860	71	443	11	382	60	985	108	854	142	294	0.08	na	0.32	0.02
7/94	<0.1	1590	<4	541	11	463	62	782	96	759	126	288	<0.05	<0.05	0.48	0.03
9/94	<0.1	1580	7	509	17	446	67	742	60	618	114	320	0.11	<0.05	0.05	0.02
12/94	<0.1	1780	9	593	14	510	74	770	104	787	128	312	<0.05	<0.05	0.5	0.02
3/95	<0.1	1670	<5	524	11	448	72	830	98	772	128	300	0.09	<0.05	0.2	0.029
F - 2	<0.1	1910	10	569	0	466	64	985	144	965	147	306	<0.05	0.06	1.54	0.02
10/93	<0.2	1500	9	622	0	510	59	700	102	650	96	300	0.11	<0.05	0.88	0.06
1/94	<0.1	1390	<5	605	0	496	44	632	94	690	110	260	<0.05	<0.05	0.97	<0.02
4/94	<0.1	1430	7	553	11	472	56	644	97	712	114	274	<0.05	na	0.75	0.02
7/94	<0.1	1500	<5	593	11	505	56	700	108	738	114	273	<0.05	<0.05	0.94	0.02
9/94	<0.1	1540	8	601	6	502	60	690	96	697	111	256	<0.05	<0.05	0.48	<0.02
12/94	<0.1	894	3	492	0	403	23	290	72	452	66	141	<0.05	<0.05	0.66	<0.02
3/95	<0.1	1600	<5	610	0	500	72	760	108	751	117	306	<0.05	<0.05	0.51	<0.02
CRS	0.2	5210	15	553	0	453	97	3380	570	2945	370	550	1.86	<0.05	0.38	0.23
(HUNT)	<0.2	5200	41	548	0	449	96	2930	558	2800	342	543	1.73	<0.05	0.33	0.68
1/94	0.4	4930	16	570	0	467	97	3180	560	2800	340	530	2.11	<0.05	0.22	0.76
4/94	<0.1	4890	34	553	0	453	101	2960	558	2890	350	515	1.42	na	<0.05	0.27
7/94	<0.1	4910	14	559	0	458	105	3080	597	2980	363	501	1.26	<0.05	0.37	0.17
9/94	<0.1	5410	25	608	0	498	106	2930	546	2630	309	471	1.33	<0.05	0.22	0.15
12/94	<0.1	5300	19	608	0	498	101	2930	561	2710	318	525	1.58	<0.05	<0.05	0.14
3/95	<0.1	5090	24	605	0	496	104	3400	560	2750	328	580	1.78	<0.05	<0.05	0.17
CRB	<0.1	4610	<2	394	0	323	131	3010	513	2638	330	483	0.11	<0.05	1.34	<0.02
(HUNT)	<0.2	4700	<5	384	0	315	116	2710	550	2810	350	555	<0.05	<0.05	1.07	0.05
1/94	<0.1	4320	<5	369	0	302	121	2780	490	2400	290	450	<0.05	<0.05	1.33	<0.02
4/94	<0.1	4620	10	380	0	311	134	2630	494	2666	309	450	<0.05	na	0.73	0.02
7/94	<0.1	4490	<5	398	0	326	166	2820	480	2470	310	475	<0.05	<0.05	0.44	0.04
9/94	<0.1	5230	<5	405	0	332	213	2780	486	2460	303	450	<0.05	<0.05	0.39	0.02
12/94	<0.1	5070	<1	440	0	361	197	2800	570	2780	330	507	0.07	<0.05	0.7	<0.02
3/95	<0.1	4880	<5	398	0	326	217	3000	480	2401	292	564	<0.05	<0.05	0.61	0.05
WELL	<0.1	1250	<2	599	0	491	34	510	93	578	84	231	<0.05	<0.05	0.9	<0.02
10/93	<0.2	1400	<2	599	0	491	47	604	99	590	84	276	<0.05	<0.05	1.21	0.05
1/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
4/94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
7/94	<0.1	1180	<5	593	0	486	33	479	78	515	78	7	<0.05	<0.05	0.85	<0.02
9/94	<0.1	981	<5	463	0	379	30	412	81	511	75	144	<0.05	<0.05	0.8	<0.02
12/94	<0.1	1690	<2	650	14	557	70	740	117	823	129	291	<0.05	<0.05	0.44	<0.02
3/95	<0.1	512	<5	362	0	297	4	150	50	318	47	70	<0.05	<0.05	0.54	0.028
Note																
A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.																
- Higher detection limit reported due to the interferences present in the sample.																
na - not applicable																
nd - no discharge																

SUNNYSIDE COGENERATION ASSOCIATES SURFACE AND GROUND WATER SITES MONITORING - FIELD DATA BASELINE MONITORING - FIELD DATA					
	Minimum	Average	maximum	Sta. Dev.	No. of Samples
ICE-1 (Hunt)					
Flow Rate	4.0	114.3	300.0	86.04	24
Temperature	1.1	12.6	29.0	8.02	24
pH	7.2	8.4	9.3	0.38	24
Spec. Cond	1200	2227	2860	371.8	24
Dissolved Oxygen	5.4	8.6	15.5	3.10	24
F-2, Whitmore Springs (Hunt)					
Flow Rate	7.0	55.7	150.0	38.42	24
Temperature	1.5	12.0	25.0	6.94	24
pH	7.2	8.2	8.6	0.35	24
Spec. Cond	1200	2121	3401	490.4	24
Dissolved Oxygen	5.9	8.6	15.6	2.82	24
CRS (EWP & Hunt)					
Flow Rate*	0.7	4.2	12.0	2.93	56
Temperature	17.0	22.1	37.2	4.75	80
pH	6.5	7.3	8.6	0.55	80
Spec. Cond	2800	5220	5700	628.3	78
Dissolved Oxygen	0.9	2.3	6.2	0.91	80
CRB (EWP & Hunt)					
Flow Rate*	21.0	36.0	52.0	7.25	56
Temperature	3.7	12.1	26.0	5.87	80
pH	6.5	8.3	9.1	0.48	80
Spec. Cond	2450	5149	8704	728.3	80
Dissolved Oxygen	4.9	7.7	14.9	1.38	80
CRC (EWP)					
Flow Rate	18	28.6	40	4.78	53
Temperature	11	14.9	21.2	3.46	56
pH	7.2	7.9	8.6	0.34	56
Spec. Cond	4500	5401	5800	328.0	56
Dissolved Oxygen	4.4	5.3	7	0.62	56
DRAGERTON WELL (Hunt)					
Flow Rate	46.0	49.5	50.0	1.41	8
Temperature	4.7	12.0	18.3	4.32	16
pH	6.8	7.8	8.4	0.45	16
Spec. Cond	620	1349	3100	682.0	16
Dissolved Oxygen	4.5	7.3	9.4	1.71	16

* These numbers are from EWP data only.

**SUNNYSIDE COGENERATION ASSOCIATES
SURFACE WATER SITES
BASELINE MONITORING - LAB DATA**

CRS (Hunt & EWP)	Minimum	Average	Maximum	Sta. Dev.	# of Samples
Aluminum (total)	0.10	0.32	0.60	0.22	5
Aluminum (dissolved)			<0.2		14
Boron (total)	0.60	1.04	1.30	0.16	19
Boron (dissolved)	0.96	1.13	1.40	0.12	12
Calcium (total)	471	532	597	41.14	14
Calcium (dissolved)	432	497	545	33.32	12
Copper (total)			<0.02		6
Copper (dissolved)			<0.02		14
Iron (total)	1.50	10.55	47.00	9.28	20
Iron (dissolved)	0.15	3.62	12.00	3.91	17
Magnesium (total)	297	329	370	23.00	14
Magnesium (dissolved)	274	320	350	23.61	12
Manganese (total)	0.60	1.41	2.20	0.36	20
Manganese (dissolved)	0.33	8.09	137.00	30.34	20
Mercury (total)			<.0005		3
Mercury (dissolved)			<0.0005		3
Nickel (total)			<0.04		6
Nickel (dissolved)			<0.04		6
Potassium (total)	33.10	35.80	40.30	2.59	6
Potassium (dissolved)	32.00	36.51	41.20	3.37	12
Sodium (total)	421	495	580	47.67	14
Sodium (dissolved)	395	461	526	34.93	12
Alkalinity-Bicarbonate	456	514	608	54.52	20
Alkalinity-Carbonate			<1		20
Alkalinity-Hydroxide			<1		12
Total Suspended Solids	6.00	20.15	41.00	7.52	20
Total Dissolved Solids	4890	5254	5580	216.34	19
Hardness CaCO3	2630	2809	3000	112.72	20
Nitrogen-Ammonia	0.90	1.55	2.11	0.28	20
BOD total			<2		3
Cyanide (total)			<0.005		3
Phenolics (total)			<0.01		3
Acidity	43	70	107	20.60	12
Sulfate	2930	3229	4220	292.57	19
Arsenic (total)	0.002	0.003	0.005	0.002	3
Cadmium (total)			<0.001		8
Lead (dissolved)			<0.002		8
Molybdenum (dissolved)			<0.05		8
Selenium (dissolved)			<0.002		8
Zinc (dissolved)	0.08	0.21	0.33	0.18	2
Electric Conductivity	4640	5274	5550	306.21	7
Oil and Grease	<0.9		4.00		1
Sulfide			<1		8
Settleable Solids	0.20	0.30	0.40	0.14	2
Total Alkalinity	449	472	498	22.03	8
Chloride	96	101	106	3.91	8
Nitrite			<0.05		8
Nitrate	0.22	0.30	0.38	0.08	5
Phosphorous (total)	0.14	0.32	0.76	0.25	8

**SUNNYSIDE COGENERATION ASSOCIATES
SURFACE WATER SITES
BASELINE MONITORING - LAB DATA**

CRC (EWP)	Minimum	Average	Maximum	Sta. Dev.	# of Samples
Aluminum (total)			<0.2		6
Aluminum (dissolved)			<0.2		6
Boron (total)	0.90	1.04	1.10	0.07	12
Boron (dissolved)	0.80	1.06	1.14	0.09	12
Calcium (total)	441	465	493	23.15	6
Calcium (dissolved)	428	470	494	19.12	12
Copper (total)			<0.02		6
Copper (dissolved)			<0.02		6
Iron (total)	2.03	4.50	7.49	1.70	12
Iron (dissolved)	0.12	0.29	0.59	0.16	8
Magnesium (total)	308	325	344	16.69	6
Magnesium (dissolved)	0.34	304.28	357.00	97.21	12
Manganese (total)	0.56	0.95	1.41	0.28	12
Manganese (dissolved)	0.52	0.93	1.34	0.32	12
Mercury (total)			<.0005		3
Mercury (dissolved)			<0.0005		3
Nickel (total)			<0.04		6
Nickel (dissolved)			<0.04		6
Potassium (total)	33.70	35.75	37.10	1.53	6
Potassium (dissolved)	27	35	39	3.51	12
Sodium (total)	428	472	503	30.77	6
Sodium (dissolved)	396	474	527	37.69	12
Alkalinity-Bicarbonate	382	403	424	15.96	12
Alkalinity-Carbonate			<1		12
Alkalinity-Hydroxide			<1		12
Total Suspended Solids	8.00	15.54	29.00	6.95	13
Total Dissolved Solids	5070	5408	5680	217.62	12
Hardness CaCO3	2620	2785	2950	86.18	12
Nitrogen-Ammonia	0.60	0.60	0.60	0.00	3
BOD total			<6		3
Cyanide (total)			<0.005		3
Phenolics (total)			<0.01		3
Acidity	13.00	35.42	52.00	13.10	12
Sulfate	2650	3269	3820	285.71	11

**SUNNYSIDE COGENERATION ASSOCIATES
SURFACE WATER SITES
BASELINE MONITORING - LAB DATA**

CRB (Hunt & EWP)	Minimum	Average	Maximum	Sta. Dev.	# of Samples
Aluminum (total)	0.30	0.43	0.60	0.15	4
Aluminum (dissolved)			<.2		14
Boron (total)	0.50	0.80	1.00	0.12	19
Boron (dissolved)	0.70	0.83	0.95	0.08	12
Calcium (total)	430	484	570	39	14
Calcium (dissolved)	408	460	511	30	12
Copper (total)			<.02		6
Copper (dissolved)			<.02		14
Iron (total)	0.01	0.12	0.18	0.06	6
Iron (dissolved)	0.13	9.67	19.20	13.48	2
Magnesium (total)	281	309	350	18.52	14
Magnesium (dissolved)	265	305	342	23.03	12
Manganese (total)	0.04	0.14	0.24	0.07	9
Manganese (dissolved)	0.04	0.27	1.35	0.37	11
Mercury (total)			<.0005		3
Mercury (dissolved)			<.0005		3
Nickel (total)			<.04		6
Nickel (dissolved)			<.04		6
Potassium (total)	25.3	28.2	30.9	1.81	6
Potassium (dissolved)	23.1	27.2	30.2	2.87	12
Sodium (total)	426	471	564	44.05	14
Sodium (dissolved)	366	435	477	37.67	12
Alkalinity-Bicarbonate	302	353	440	40.94	20
Alkalinity-Carbonate			<1		20
Alkalinity-Hydroxide			<1		12
Total Suspended Solids			<4		20
Total Dissolved Solids	4320	4915	5240	309	20
Hardness CaCO3	2400	2589	2810	124	20
Nitrogen-Ammonia			<.5		12
BOD total			<6		3
Cyanide (total)			<.005		3
Phenolics (total)			<.01		3
Acidity	2.00	8.87	20.00	4.91	12
Sulfate	2590	2899	3560	217.97	19
Arsenic (total)	480	508	570	34.24	8
Cadmium (dissolved)			<0.001		8
Lead (dissolved)			<0.002		8
Molybdenum (dissolved)	0.07	0.07	0.07	0.00	2
Selenium (dissolved)			<0.002		8
Zinc (dissolved)	0.03	0.16	0.35	0.17	3
Electric Conductivity	4860	5067	5460	215.07	7
Oil and Grease			<0.9		8
Sulfide			<1		8
Settleable Solids			<0.1		8
Total Alkalinity	302	325	5550	17.62	8
Chloride	116	162	5550	42.10	8
Nitrite			<0.05		8
Nitrate	0.39	0.83	1.34	0.38	8
Phosphorous (total)	0.02	0.04	0.05	0.02	5

**SUNNYSIDE COGENERATION ASSOCIATES
SURFACE WATER SITES
BASELINE MONITORING - LAB DATA**

	ICE-1 (Hunt)					F-2, Whitmore Springs (Hunt)				
	Minimum	Average	Maximum	Sta. Dev.	# of Samples	Minimum	Average	Maximum	Sta. Dev.	# of Samples
Aluminum	0.1	0.2	0.3	0.08	4	0.2	0.2	0.2	0.00	3
Arsenic			<0.002		8			<0.002		8
Boron	0.2	0.23	0.3	0.05	6	0.1	0.22	0.3	0.08	6
Cadmium			<0.001		8			<0.001		8
Copper			<0.02		8			<0.02		8
Iron D			<0.05		8	<0.05		0.08		1
Iron T	0.07	0.22	0.35	0.11	7	0.1	0.35	0.54	0.16	7
Lead			<0.02		8			<0.02		8
Manganese Dissolved			<0.003		8	<0.003		0.04		1
Manganese Total	0.1	0.1	0.1		1	0.04	0.07	0.1	0.03	5
Molybdenum			<0.05		8			<0.05		8
Selenium	<0.001		0.003		1			<0.001		8
Zinc			<0.02		8	<0.02		1.02		1
Electric Conductivity	2220	2440	2800	197.06	7	1300	2078.57	2360	384.55	7
Oil and Grease	2	5	8	4.24	2	3	2.5	3	0.71	2
Sulfide			<1		8			<1		8
Settleable solids			<0.1		8			<0.1		8
Dissolved Solids	1580	1722.5	1920	131.01	8	894	1470.5	1910	282.08	8
Suspended Solids	7	21.2	71	27.88	5	3	7.4	10	2.70	5
Bicarbonate Alkalinity	443	528.38	593	49.03	8	492	580.63	622	42.24	8
Carbonate Alkalinity	0	8	17	6.93	8	0	3.5	11	5.07	8
Total Alkalinity	382	446.75	510	40.61	8	403	481.75	510	35.52	8
Chloride	59	65.625	74	5.37	8	23	54.25	72	14.90	8
Sulfate	742	861.13	1060	118.56	8	290	675.13	985	191.17	8
Calcium	60	99	126	19.15	8	72	102.63	144	20.21	8
Hardness as CaCO3	618	780.5	944	105.88	8	452	706.88	965	140.48	8
Magnesium	105	129.5	153	15.47	8	66	109.38	147	22.61	8
Sodium	288	308.75	340	17.07	8	141	264.5	306	53.73	8
Ammonia	0.08	0.144	0.31	0.09	5	<0.034		0.11		1
Nitrite			<0.05		8	<0.05		0.06		1
Nitrate	0.05	0.59	1.72	0.51	8	0.48	0.84	1.54	0.34	8
Phosphorous	0.02	0.03	0.05	0.01	8	0.02	0.03	0.06	0.02	4

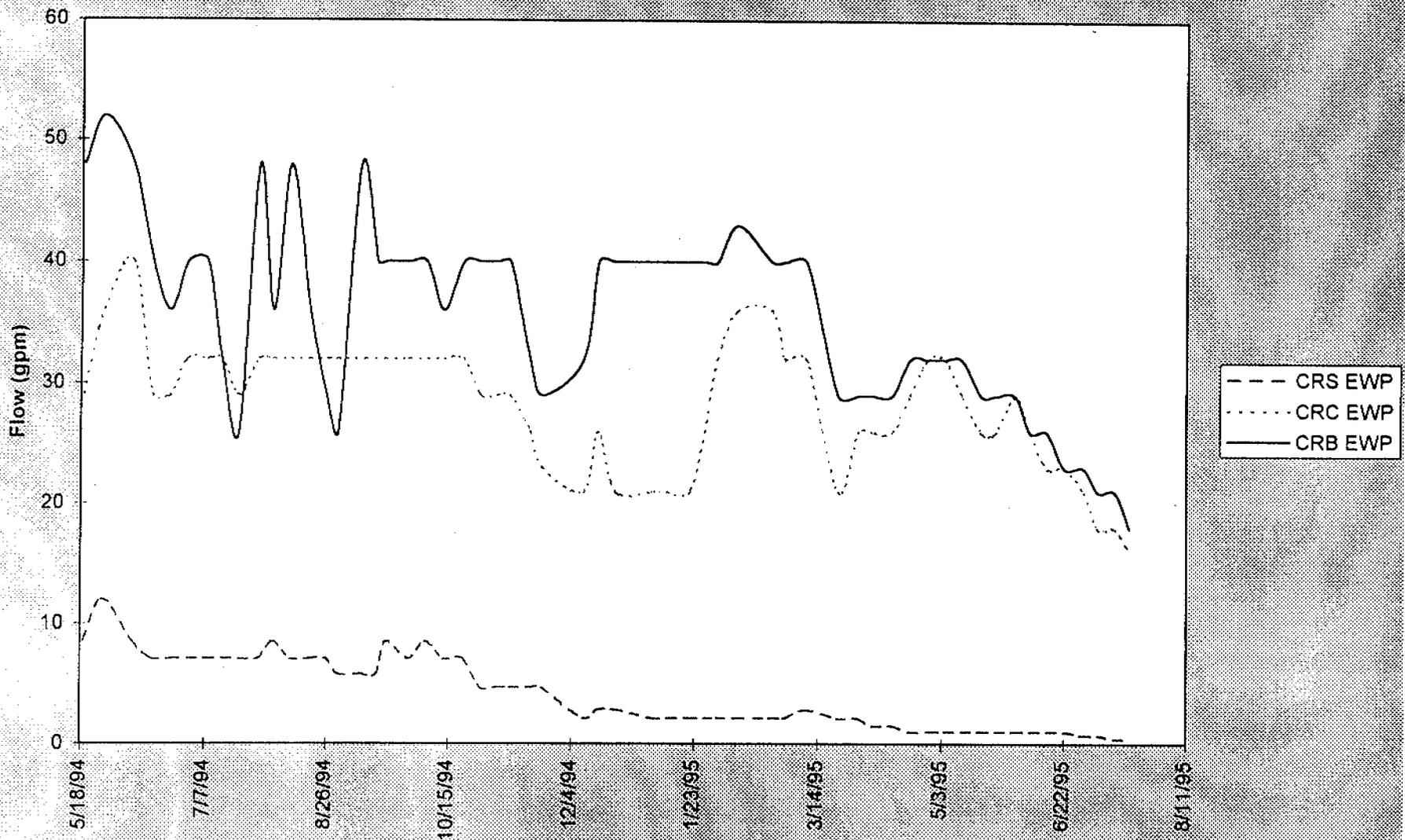
**SUNNYSIDE COGENERATION ASSOCIATES
SURFACE AND GROUND WATER SITES
BASELINE MONITORING - LAB DATA**

	WELL (Hunt)				
	Minimum	Average	Maximum	Sta. Dev.	# of Samples
Aluminum	0.1	0.15	0.2	0.07	2
Arsenic			<0.002		8
Boron	0.1	0.2	0.3	0.07	5
Cadmium			<0.001		8
Copper			<0.02		8
Iron D	<0.05		0.28		1
Iron T	0.1	0.16	0.3	0.10	4
Lead			<0.002		8
Manganese Dissolved	0.08	0.08	0.08		1
Manganese Total	0.03	0.06	0.09	0.04	2
Molybdenum			<0.05		8
Selenium	<0.002		0.004		1
Zinc	0.02	0.02	0.02		1
Electric Conductivity	1520	1718.2	2280	558.56	5
Oil and Grease	<0.9		2		1
Sulfide	<1		6		1
Settleable solids			<0.1		8
Dissolved Solids	981	1169	1690	399.62	6
Suspended Solids			<2		8
Bicarbonate Alkalinity	463	544	650	108.97	6
Carbonate Alkalinity	0	2.33	14	5.72	6
Total Alkalinity	379	450	557	94.40	6
Chloride	30	36.33	70	21.68	6
Sulfate	412	482.5	740	198.68	6
Calcium	78	86.33	117	22.64	6
Hardness as CaCO ₃	511	556	823	163.27	6
Magnesium	75	82.83	129	26.47	6
Sodium	7	170	291	115.62	6
Ammonia			<0.05		8
Nitrite			<0.05		8
Nitrate	0.44	0.79	1.21	0.27	6
Phosphorous	0.05	0.04	0.05	0.02	2

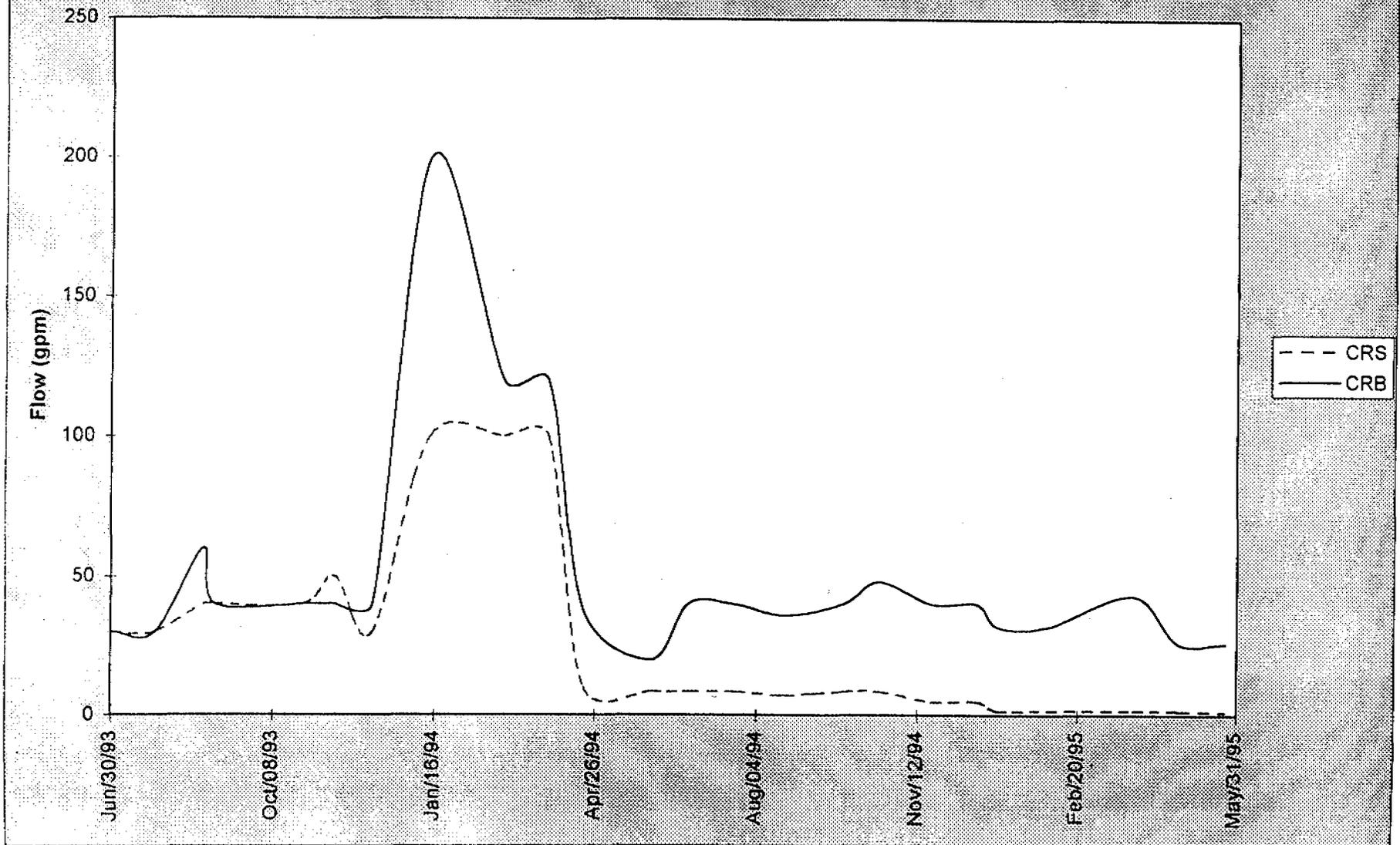
EXHIBIT A-2

FIELD PARAMETERS

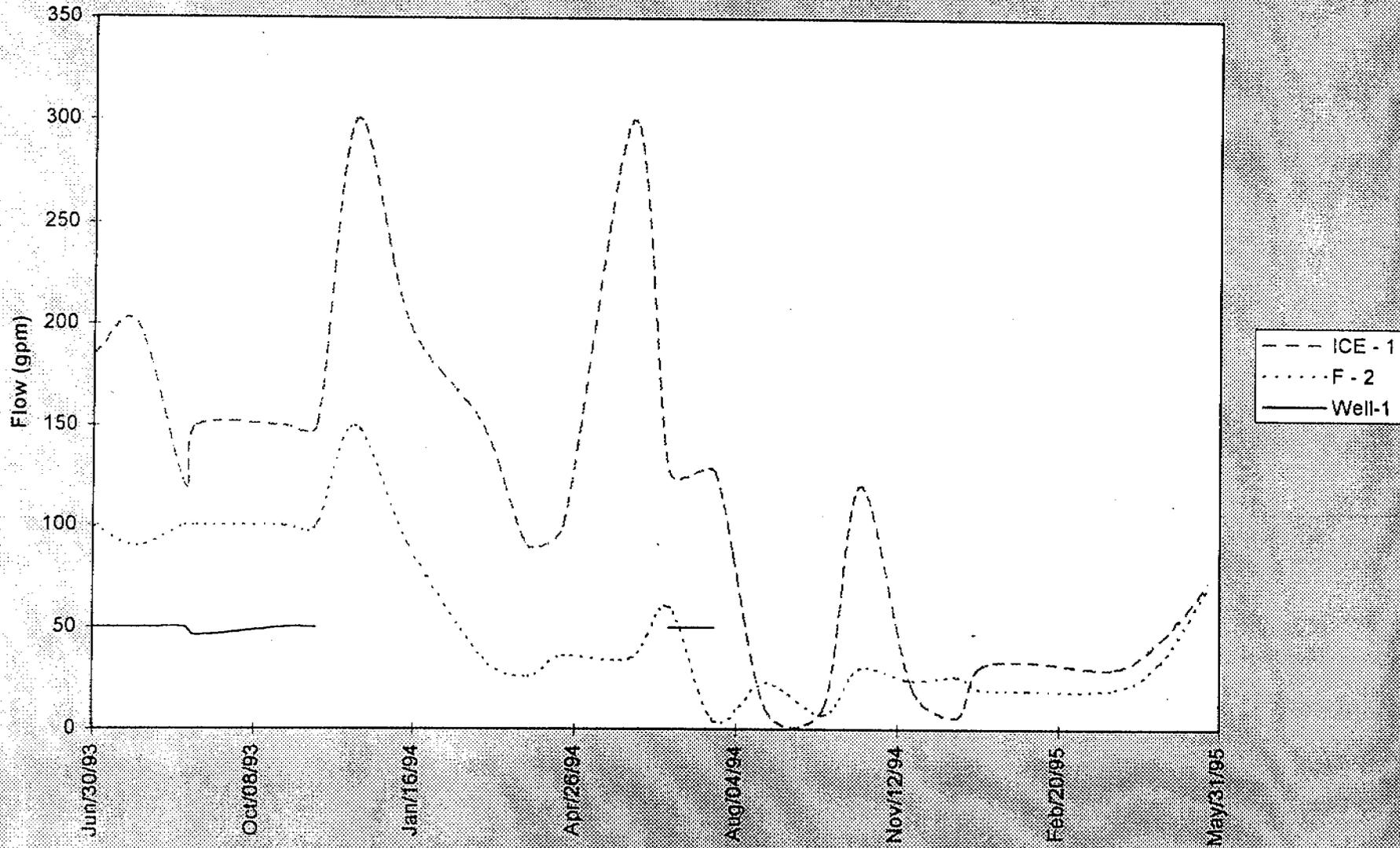
Surface Water Flow (EWP)
Baseline Water Quality Analysis June 1993 - 1995



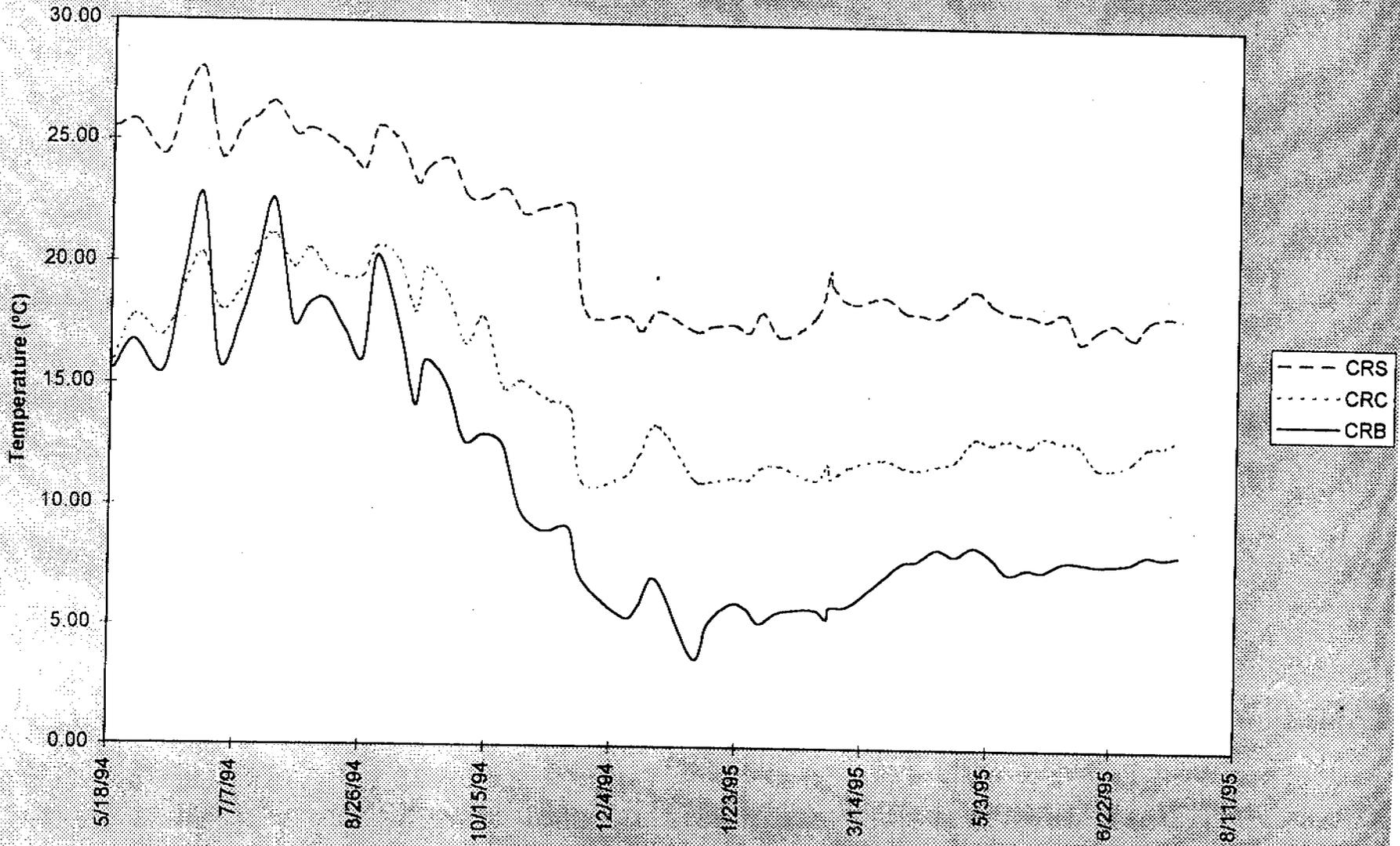
Surface Water Flow (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



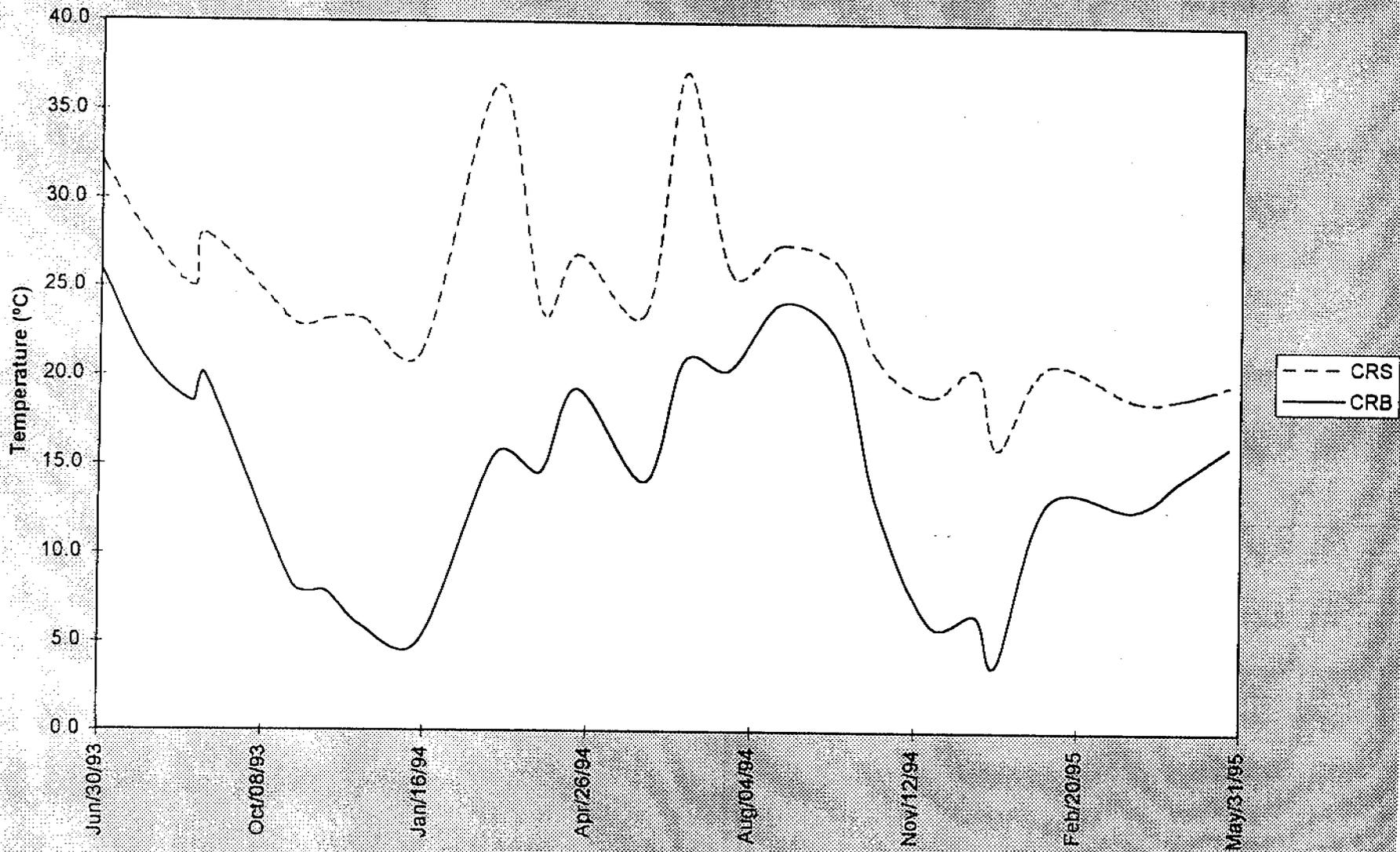
Surface and Ground Water Flow (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



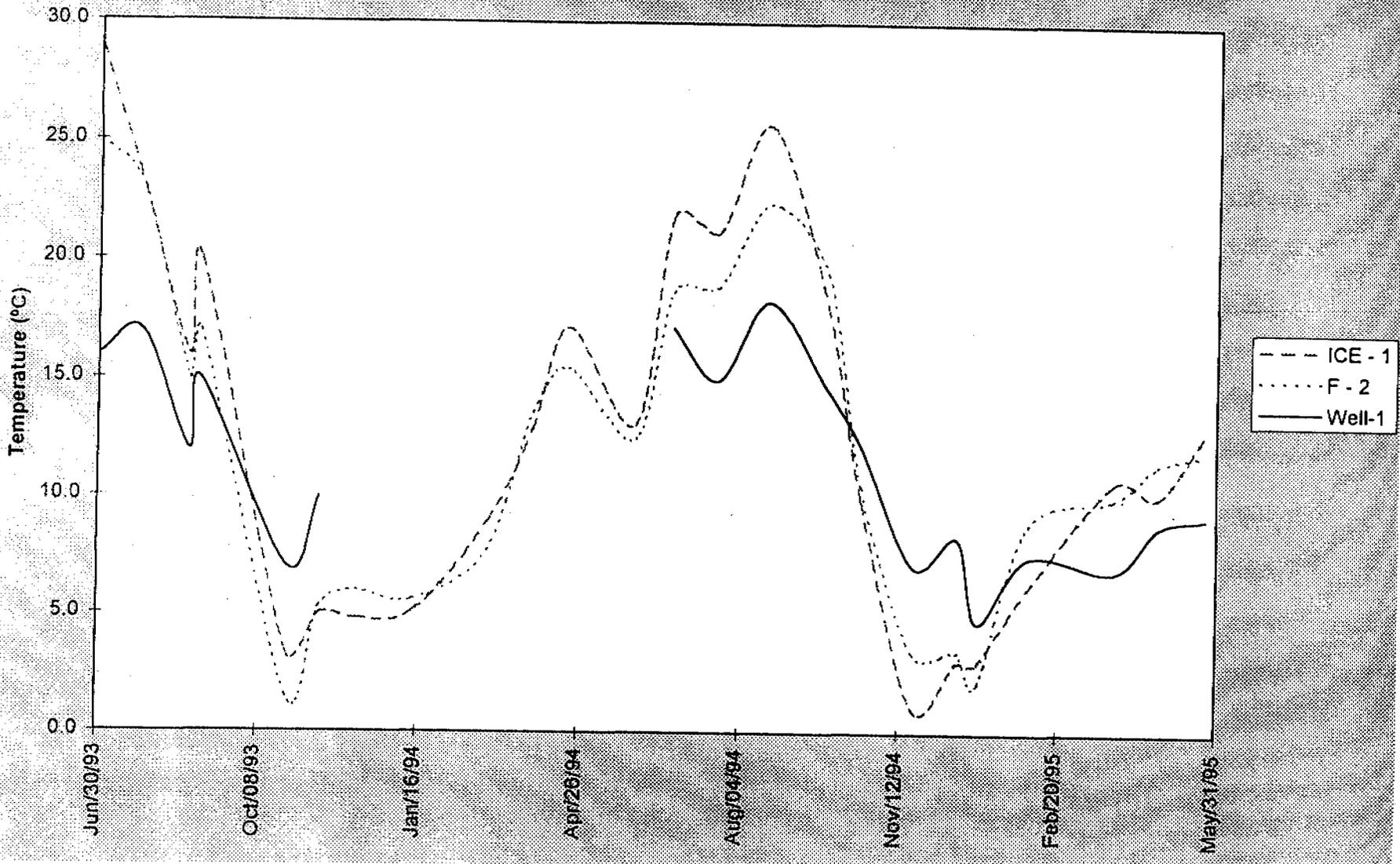
Surface Water Temperature (EWP)
Baseline Water Quality Analysis June 1993 - 1995



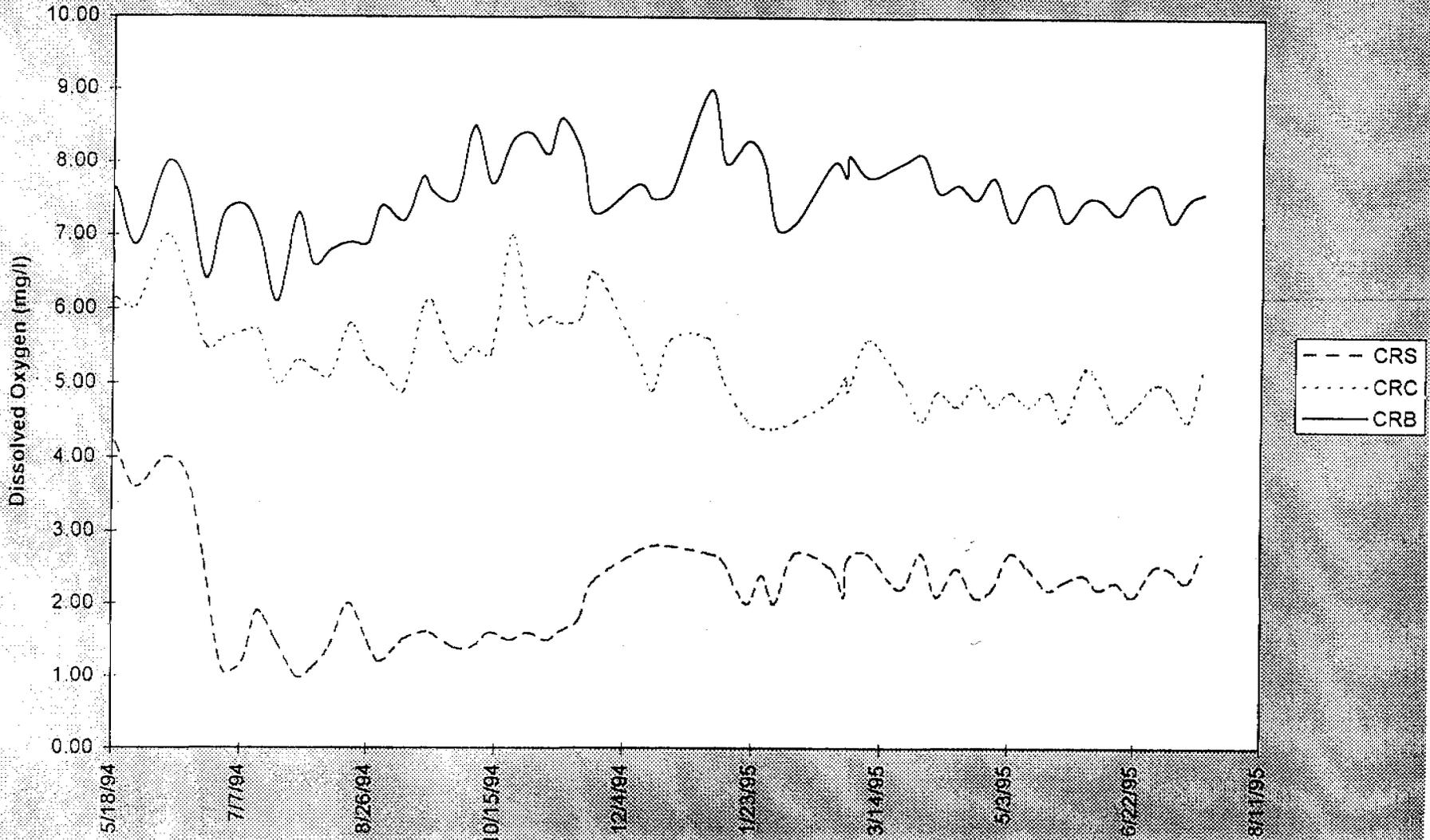
Surface Water Temperature (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



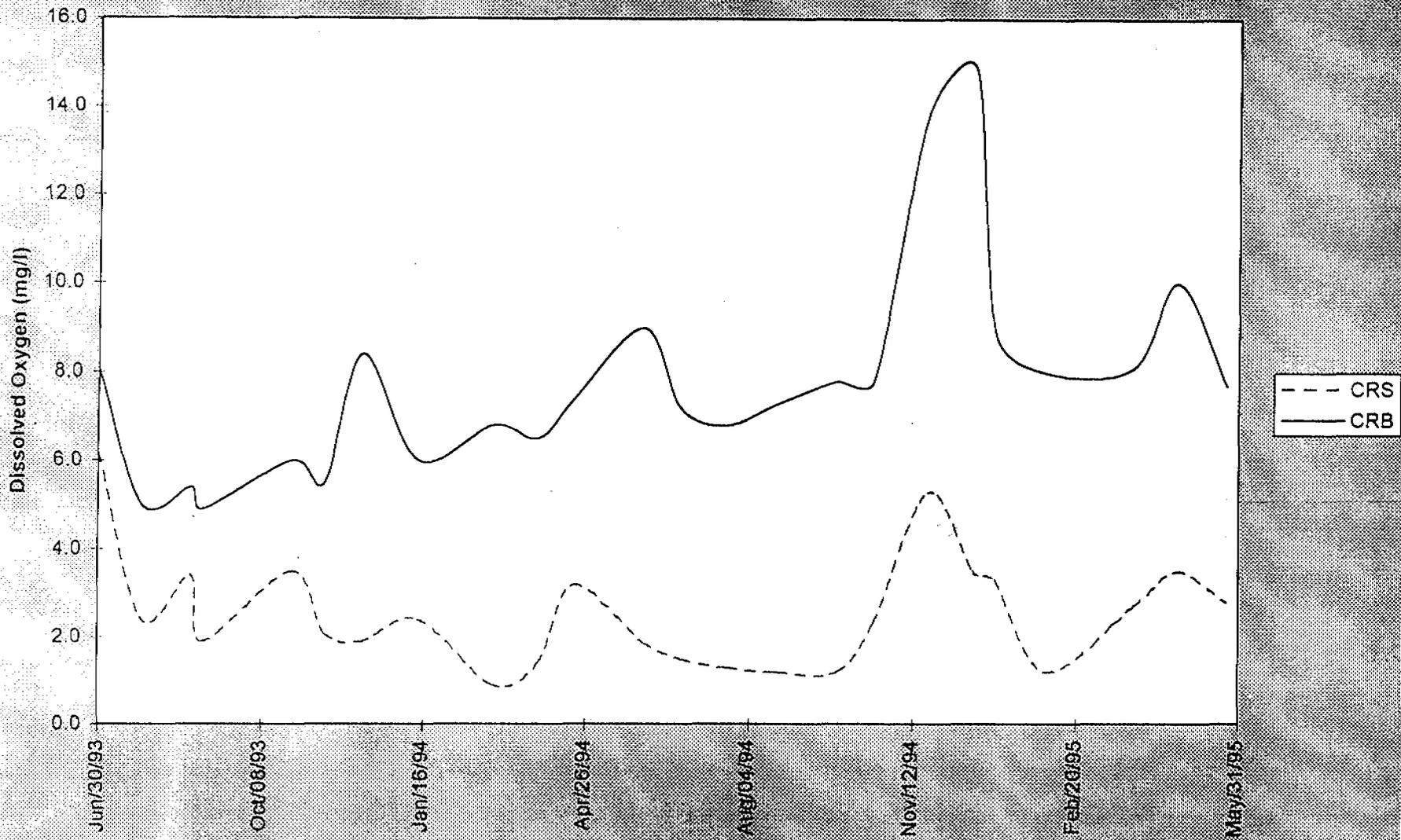
Surface and Ground Water Temperature (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



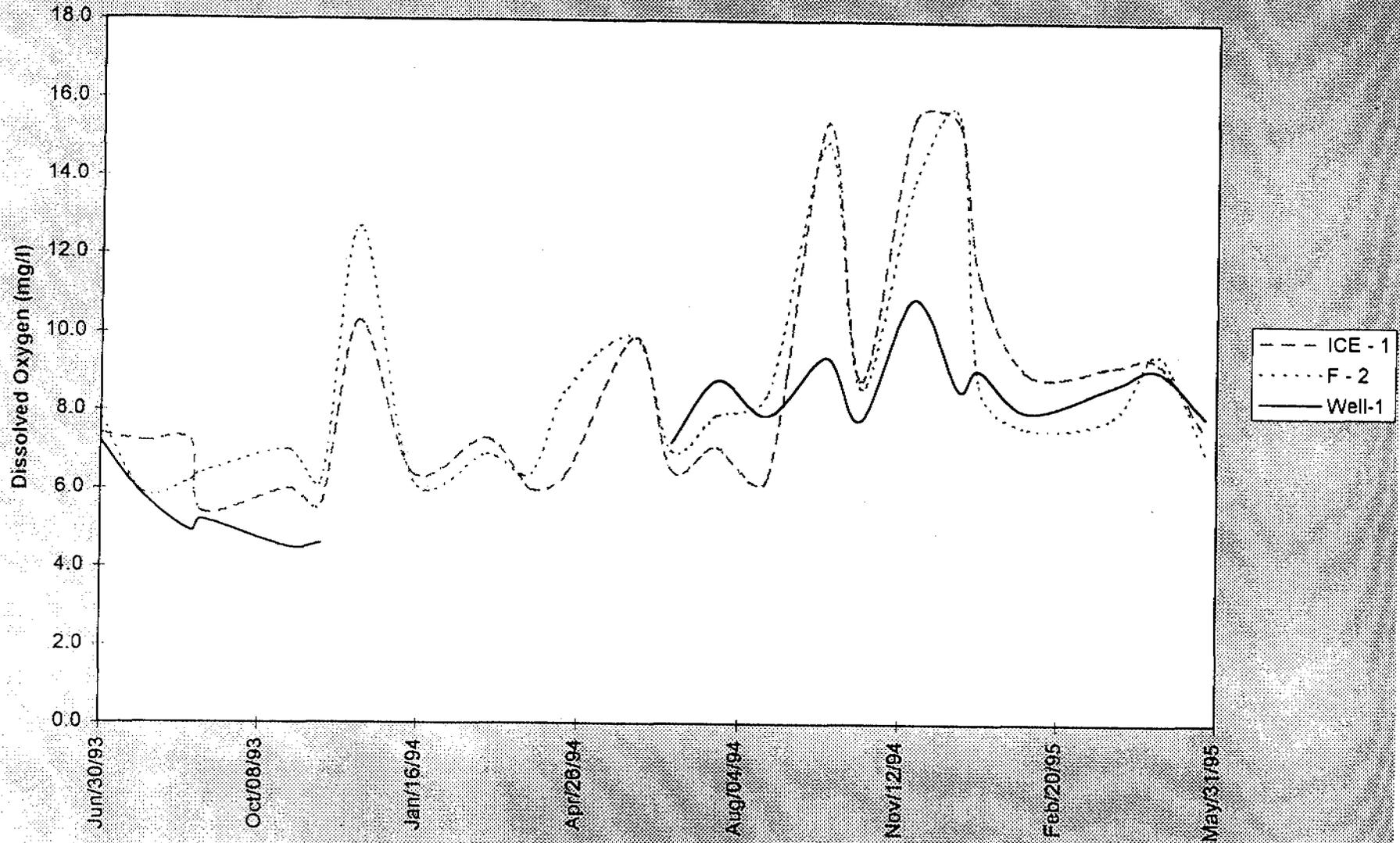
Surface Water Dissolved Oxygen (EWP)
Baseline Water Quality Analysis June 1993 - 1995



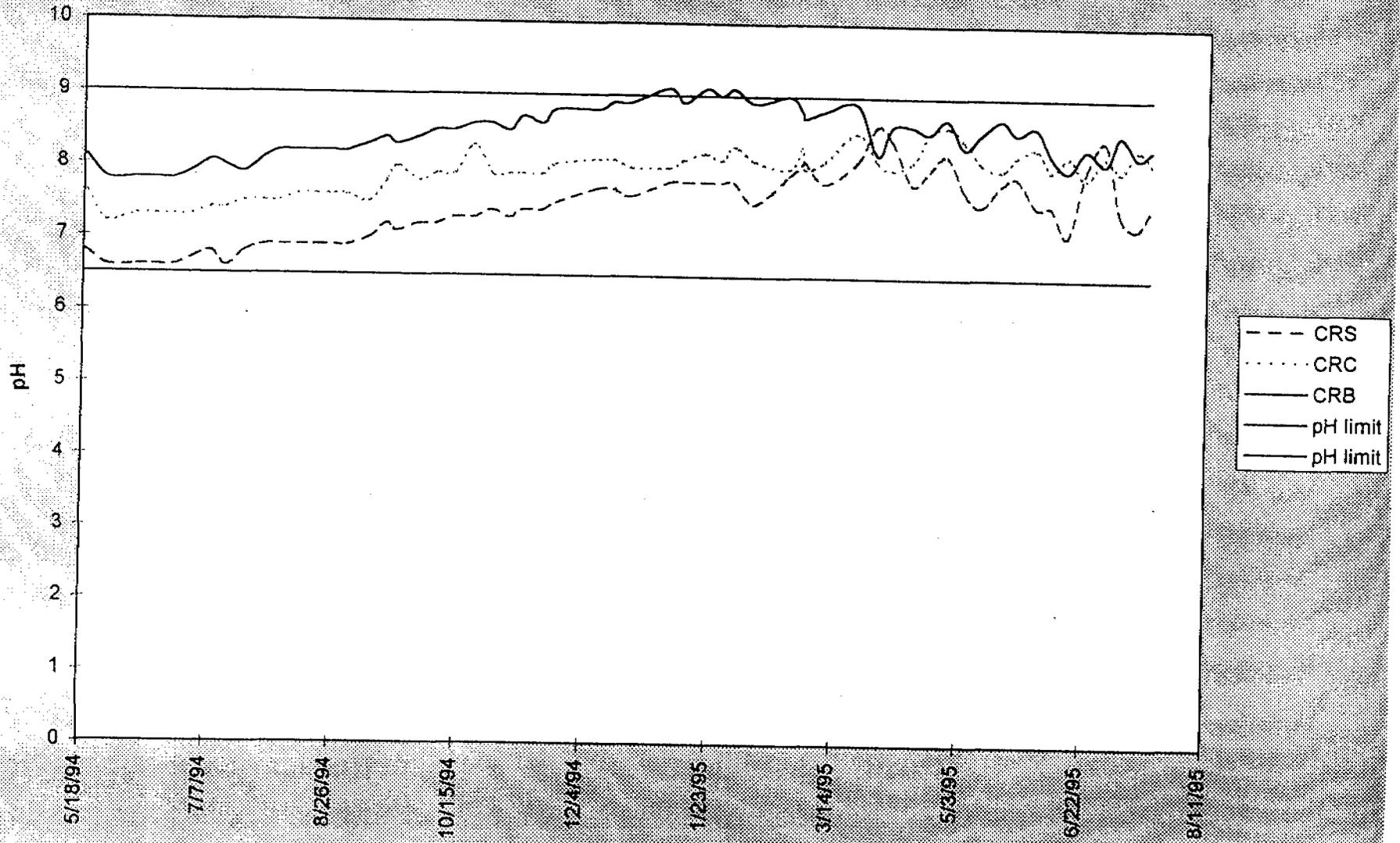
Surface Water Dissolved Oxygen (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



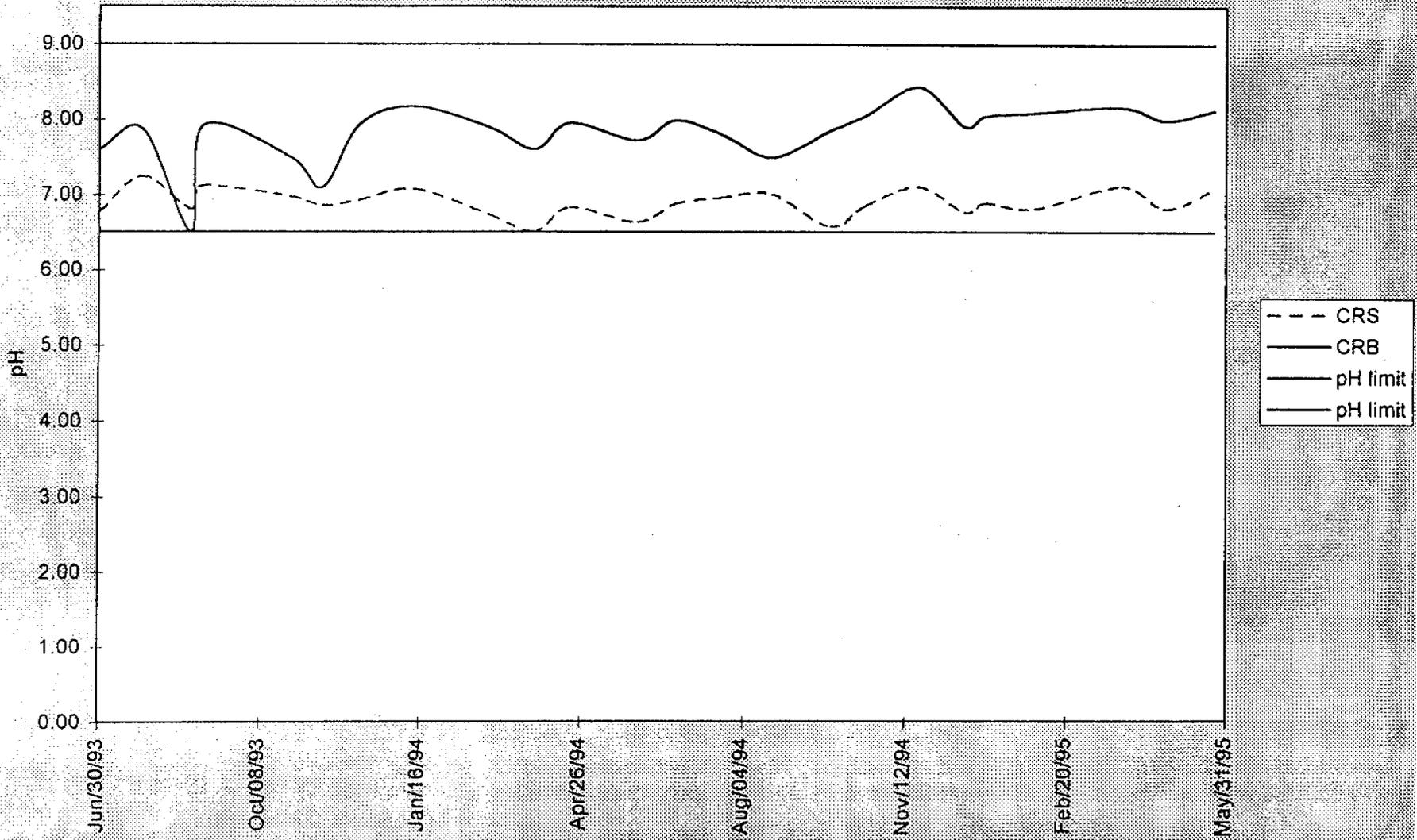
Surface and Ground Water Dissolved Oxygen (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



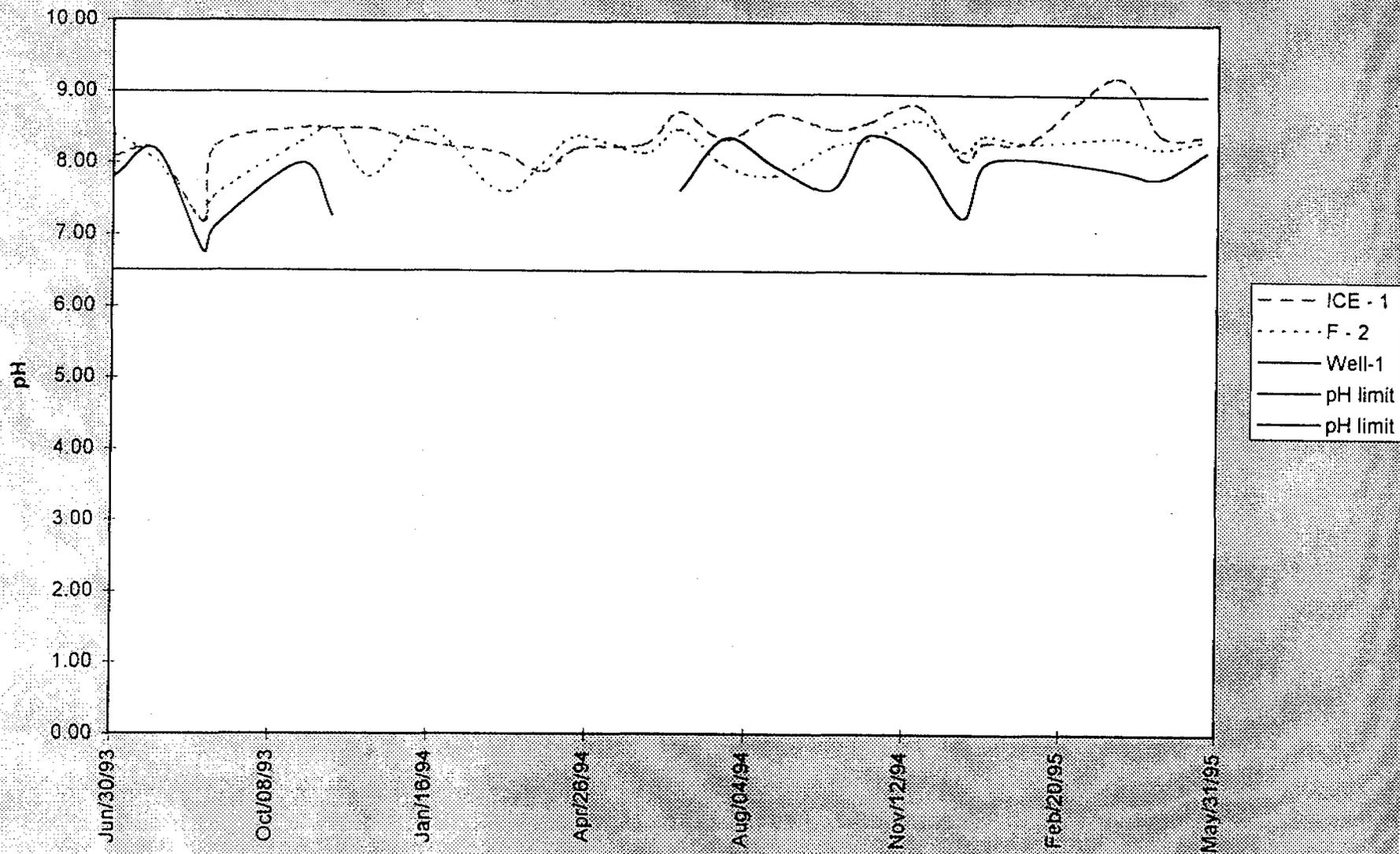
Surface Water pH (EWP)
Baseline Water Quality Analysis June 1993 - 1995



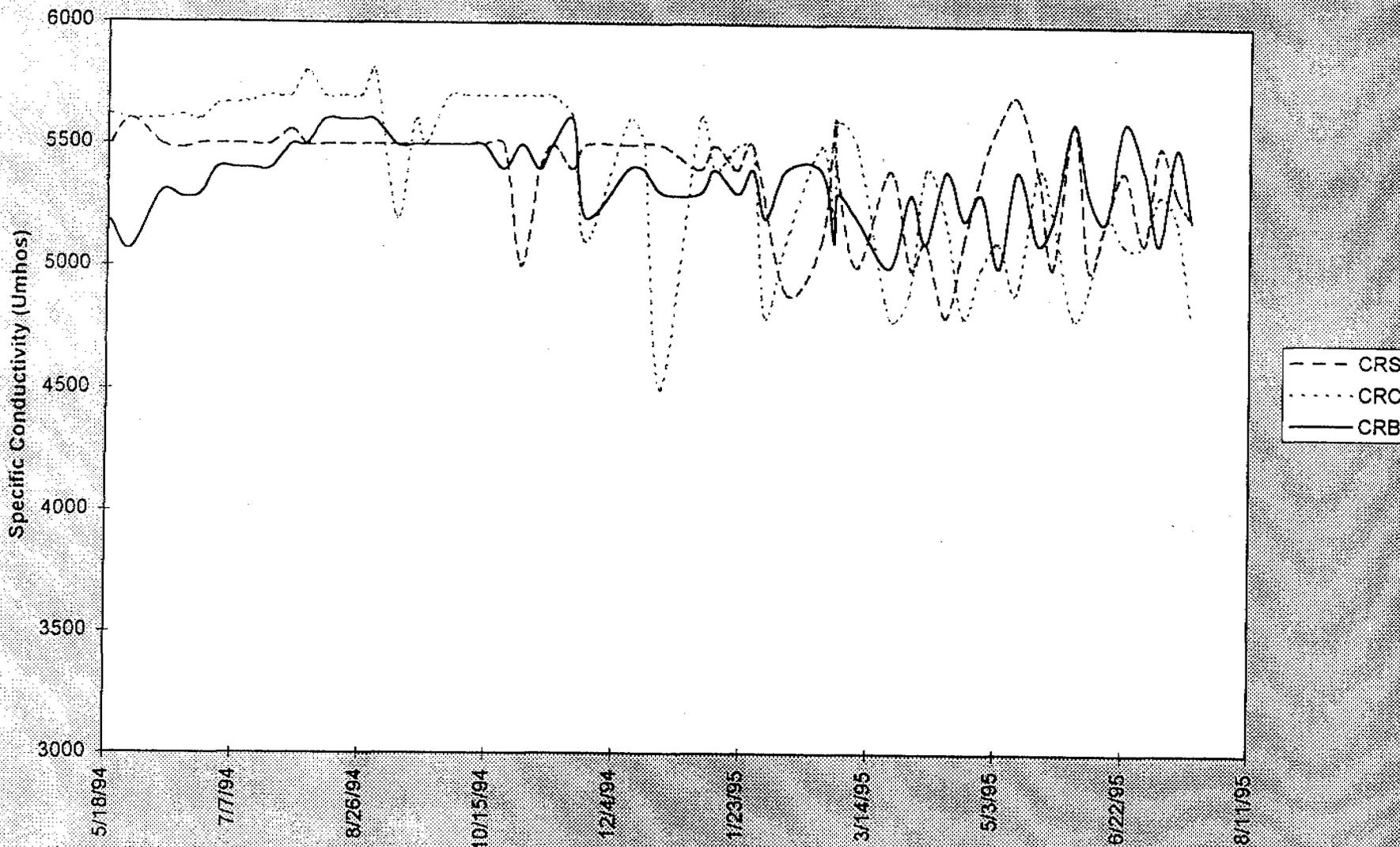
Surface Water pH (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



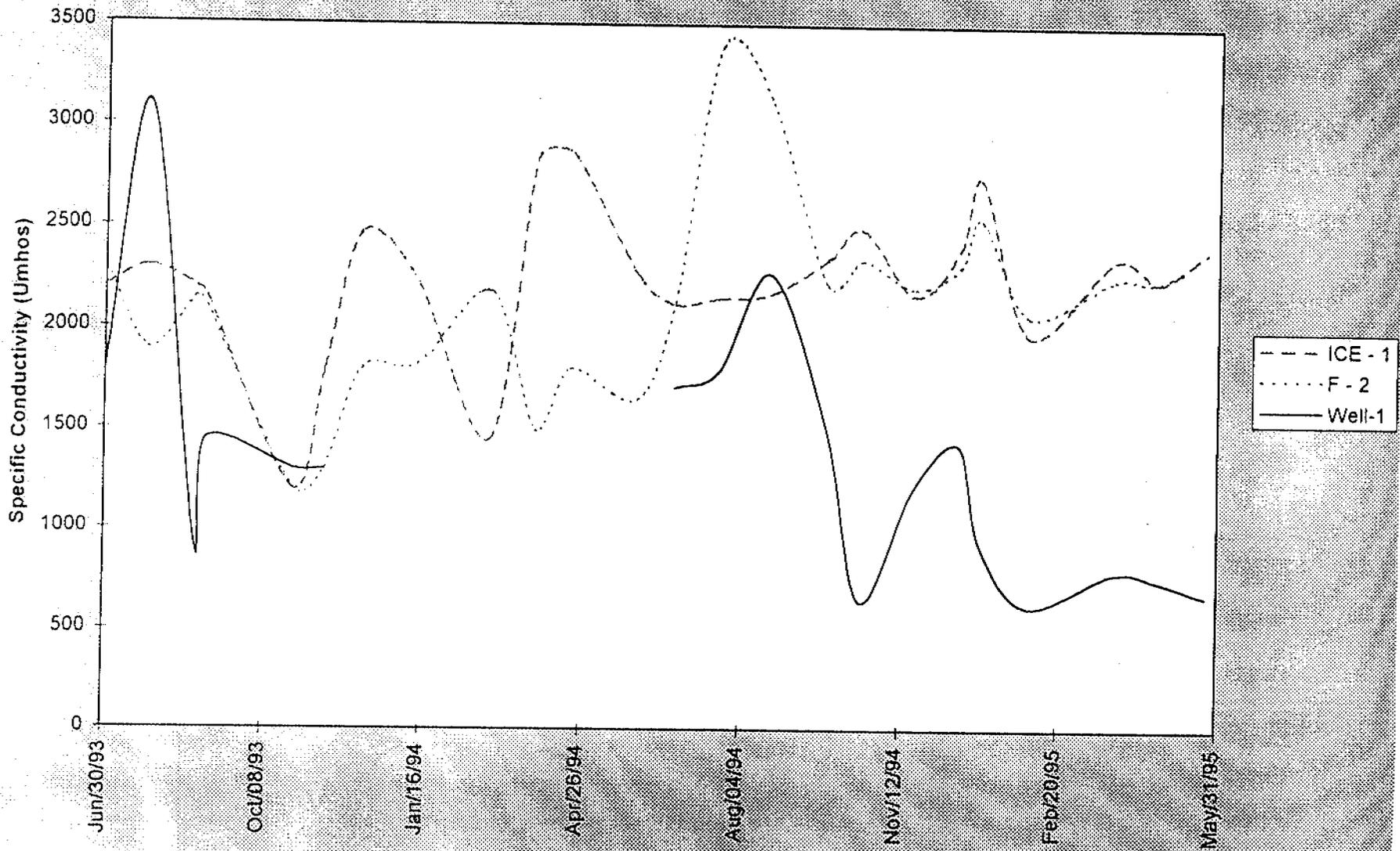
Surface and Ground Water pH (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



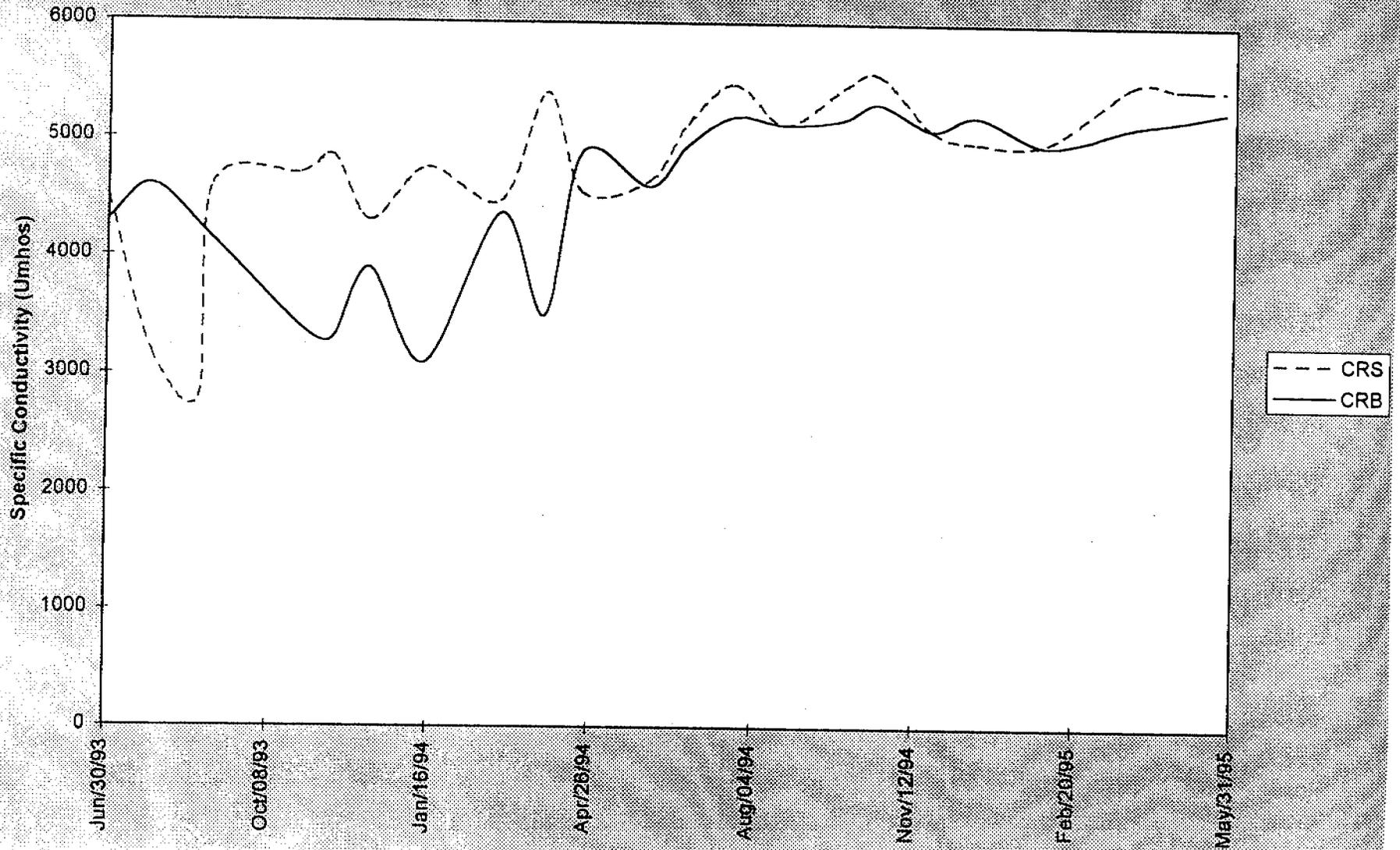
Surface Water Specific Conductivity (EWP)
Baseline Water Quality Analysis June 1993 - 1995



Surface and Ground Water Specific Conductivity (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



Surface Water Specific Conductivity (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



Surface and Ground Water Specific Conductivity (Hunt)
Baseline Water Quality Analysis June 1993 - 1995

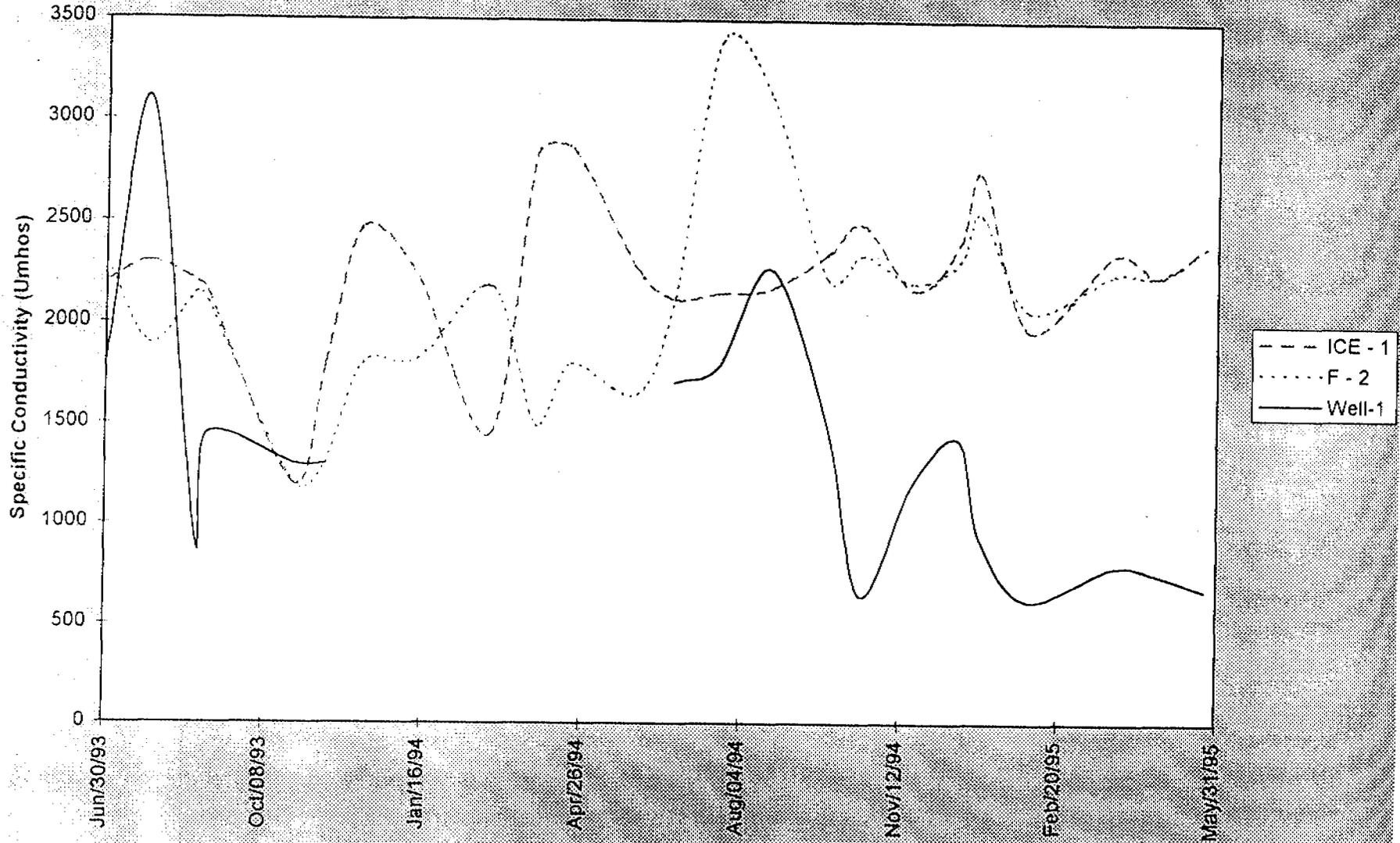
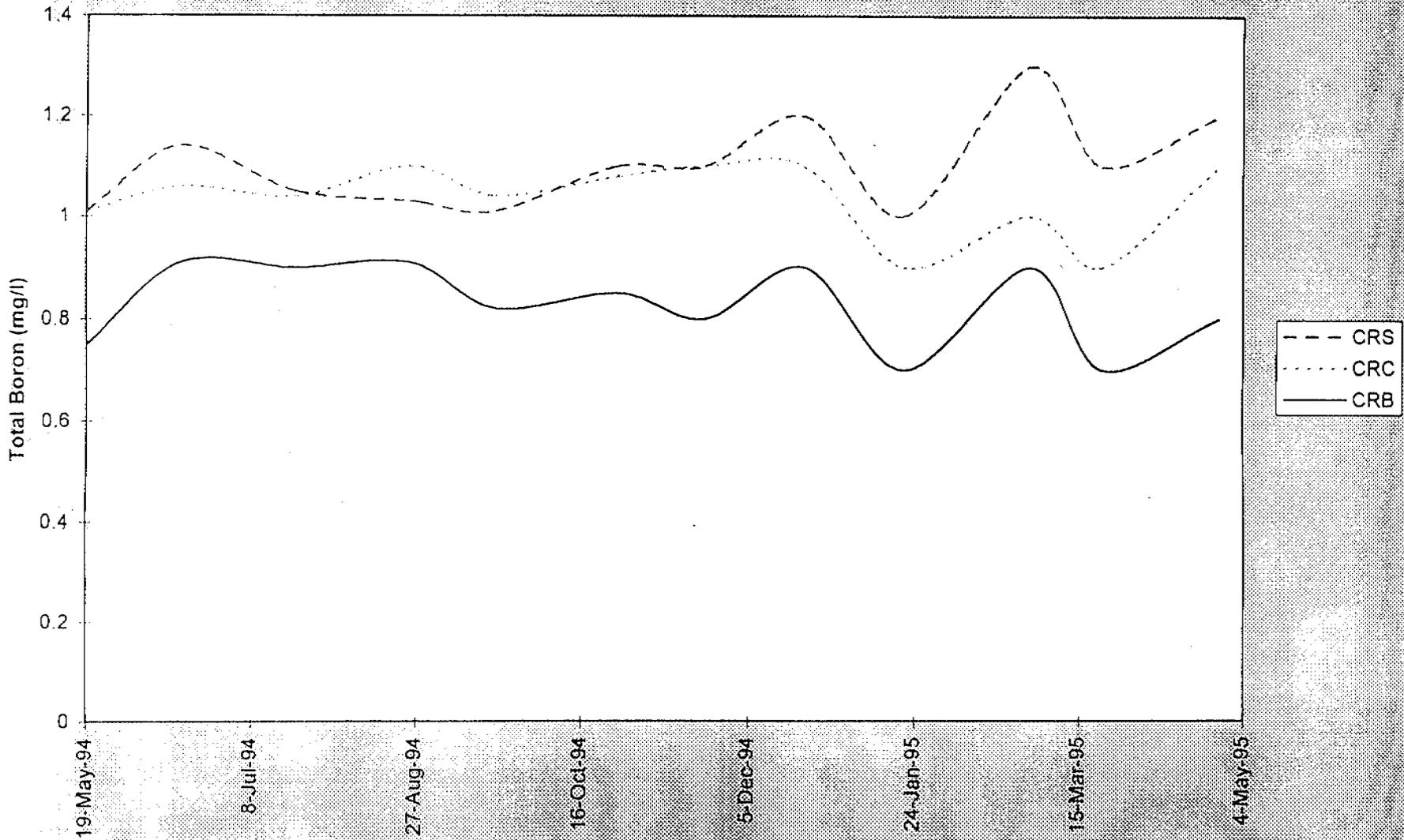


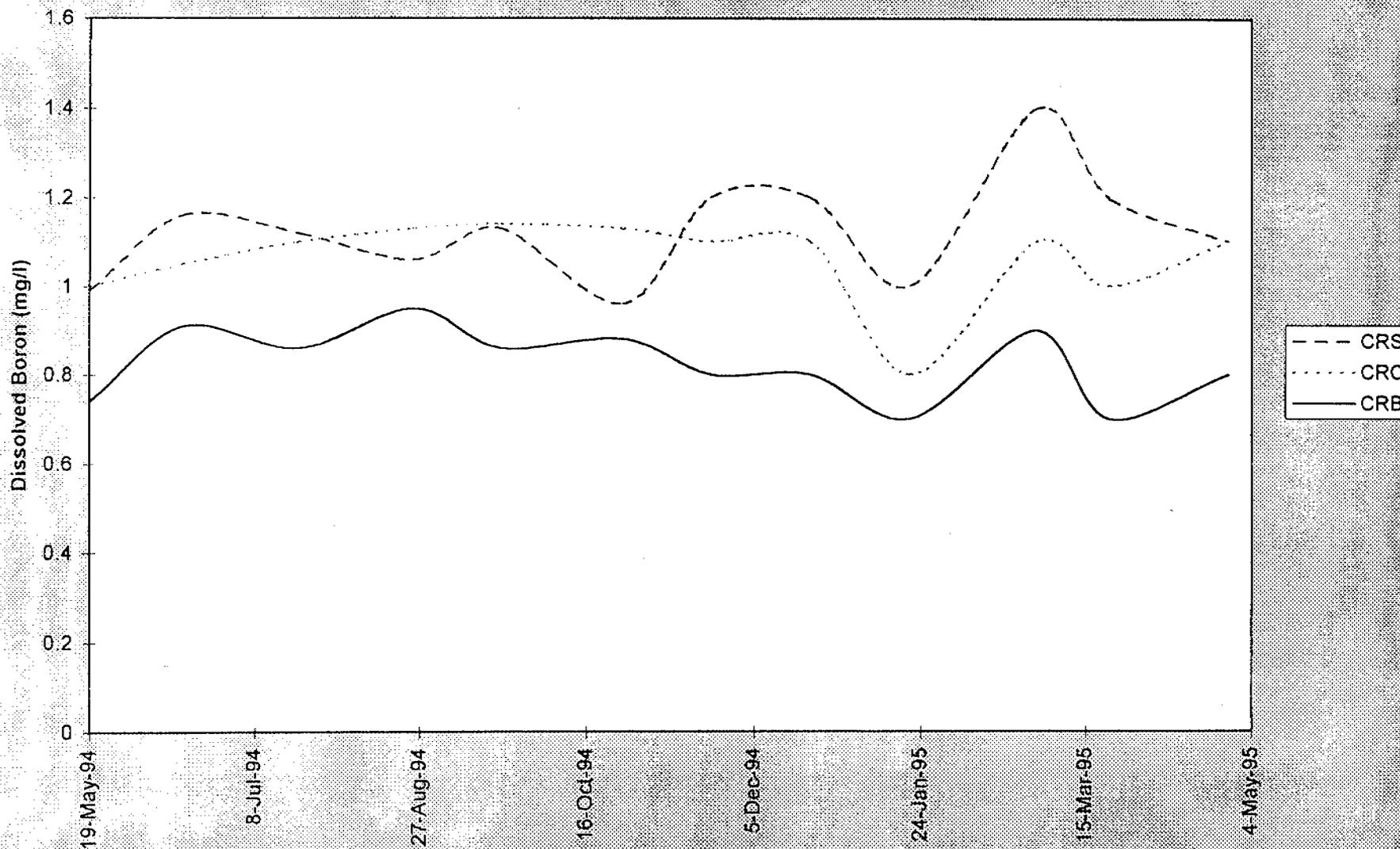
EXHIBIT A-3

ANALYTICAL PARAMETERS

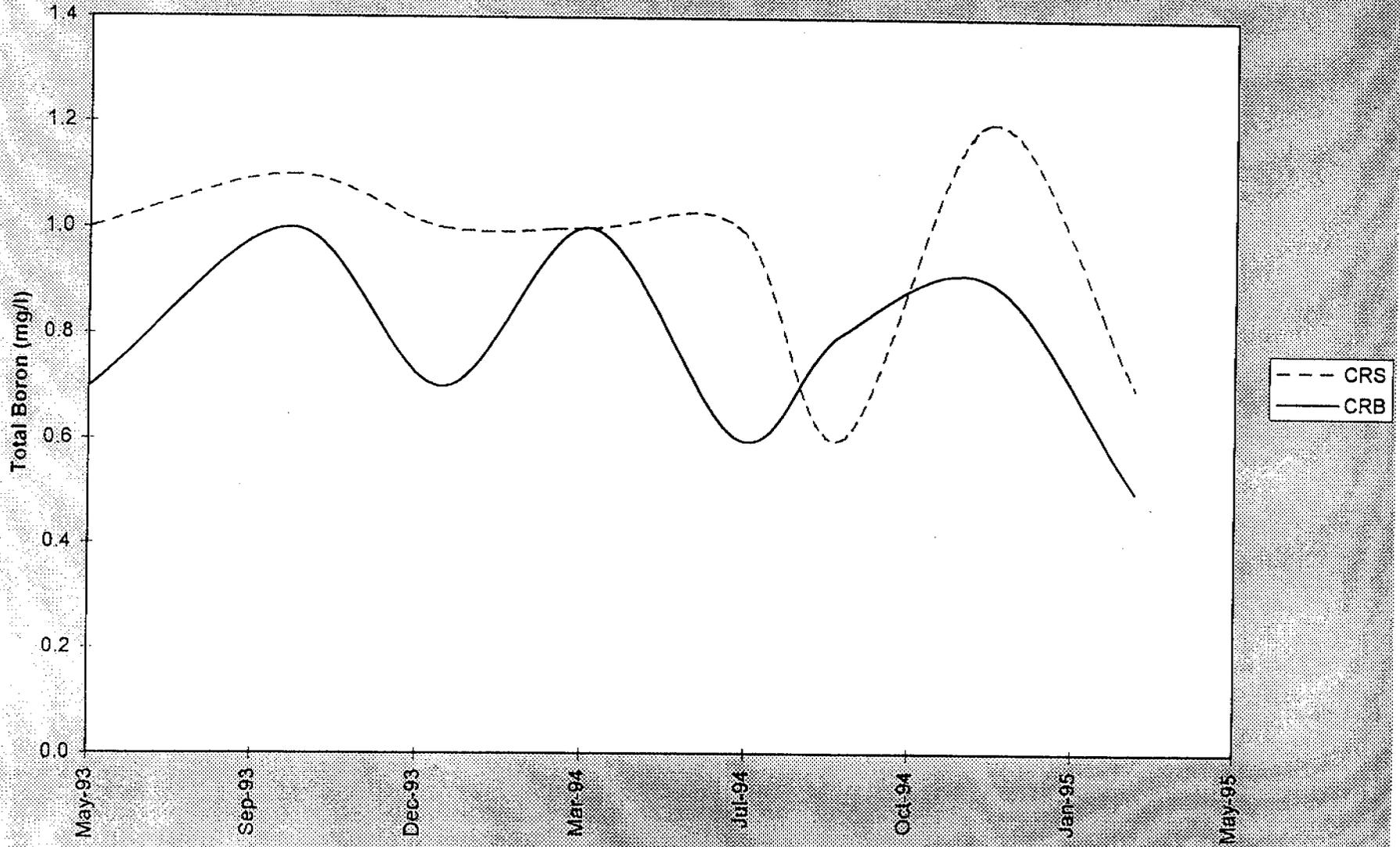
Surface Water Total Boron (EWP)
Baseline Water Quality Analysis June 1993 - 1995



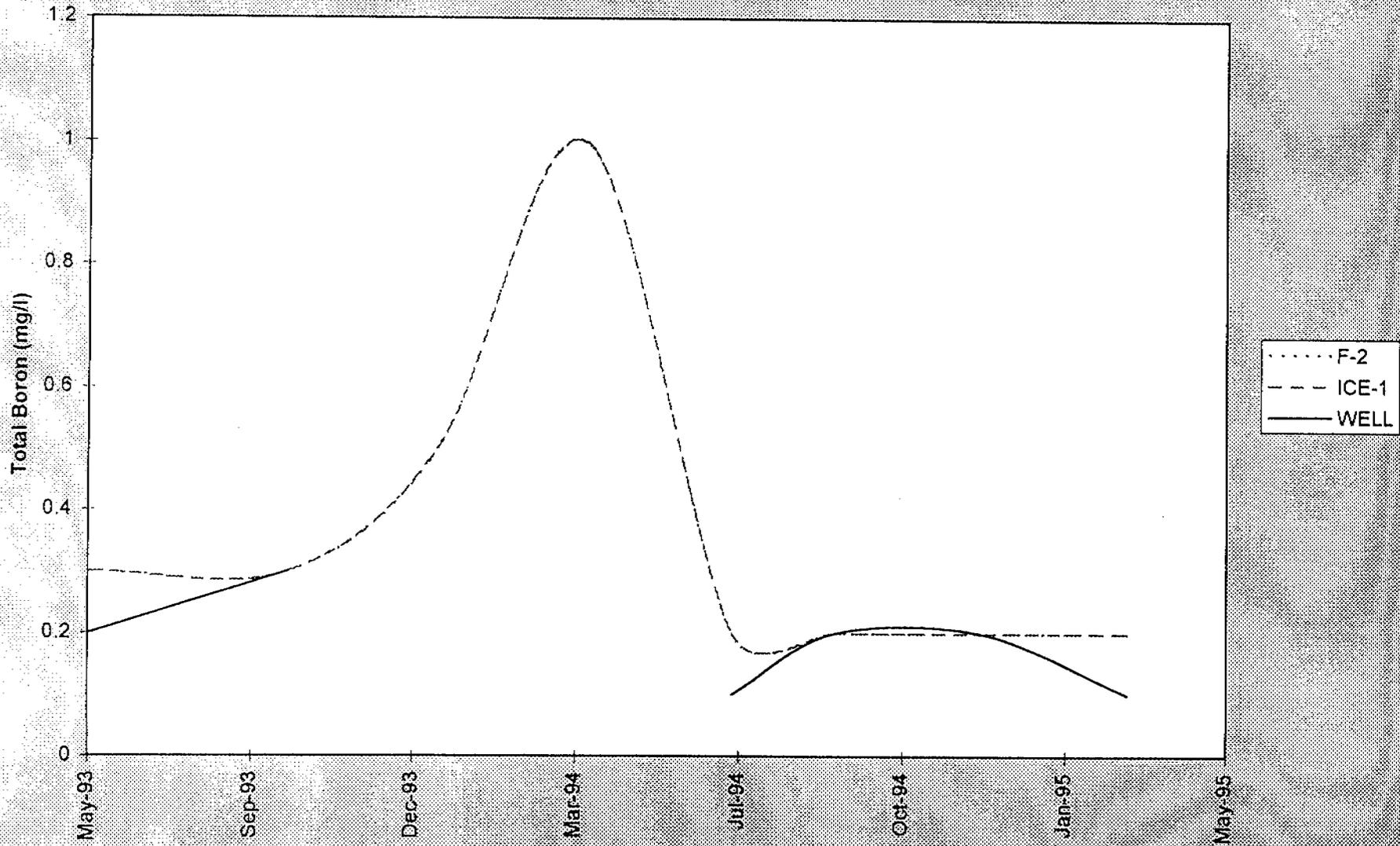
Surface Water Dissolved Boron (EWP)
Baseline Water Quality Analysis June 1993 - 1995



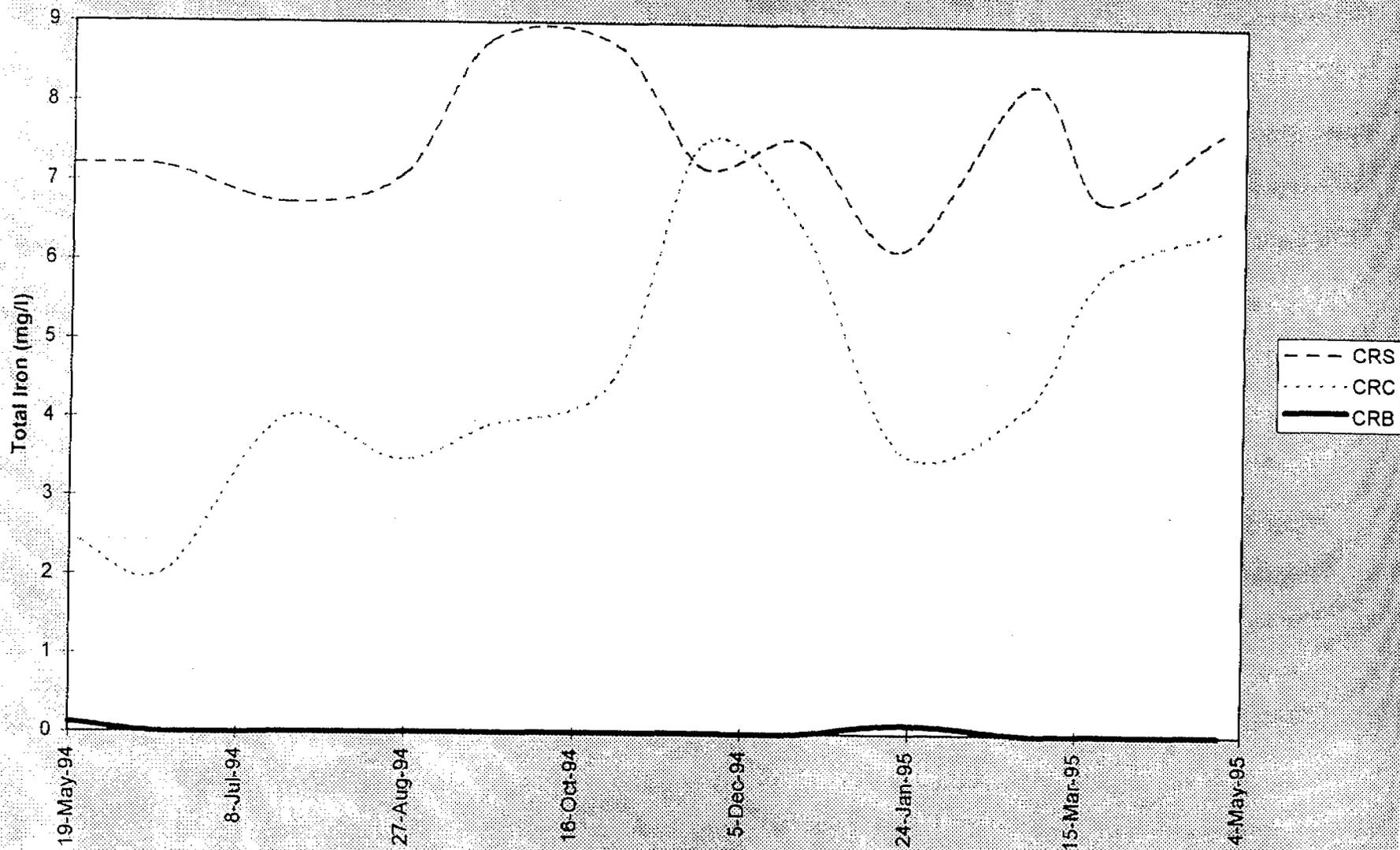
Surface Water Dissolved Boron (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



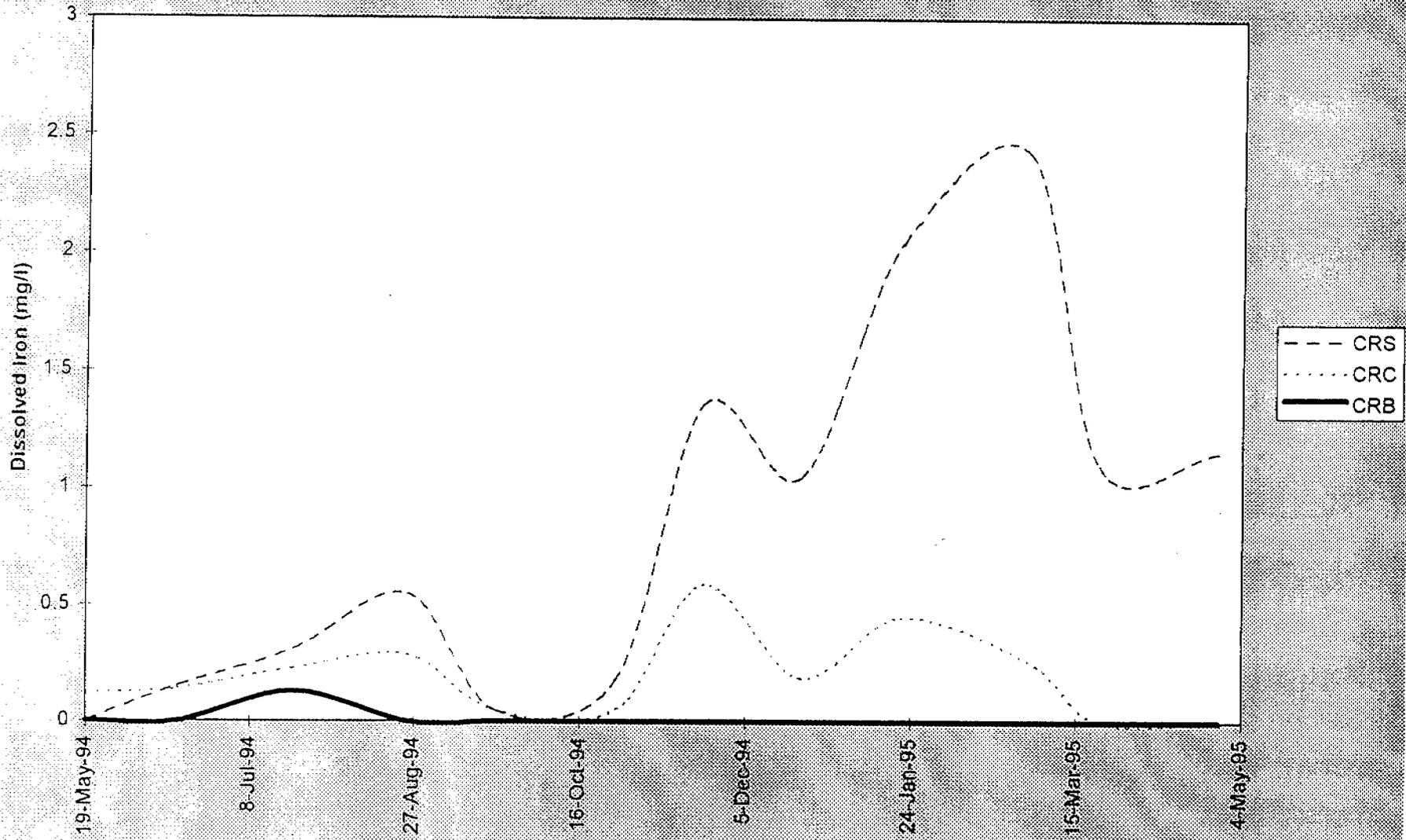
Surface and Ground Water Dissolved Boron (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



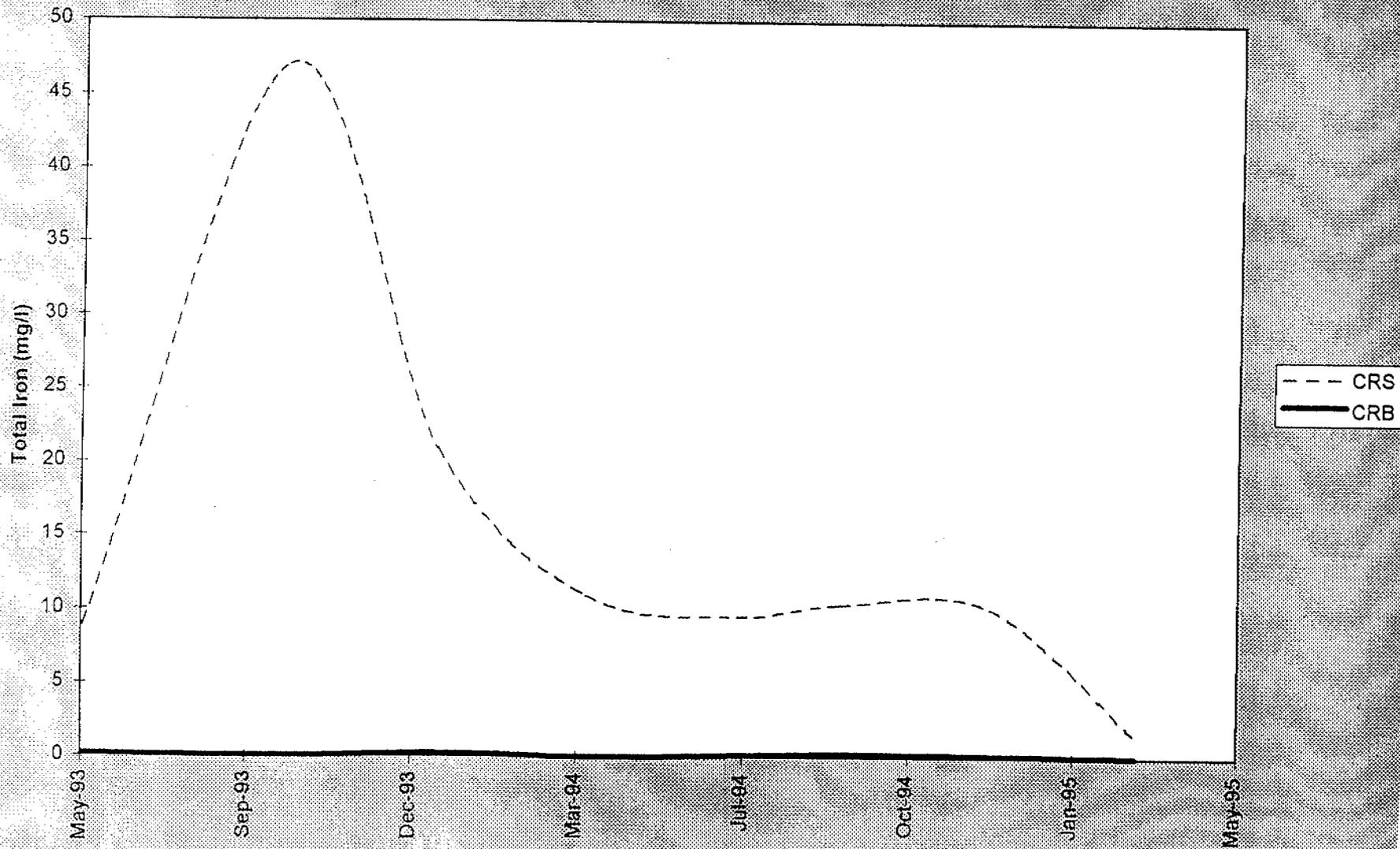
Surface Water Total Iron (EWP)
Baseline Water Quality Analysis June 1993 - 1995



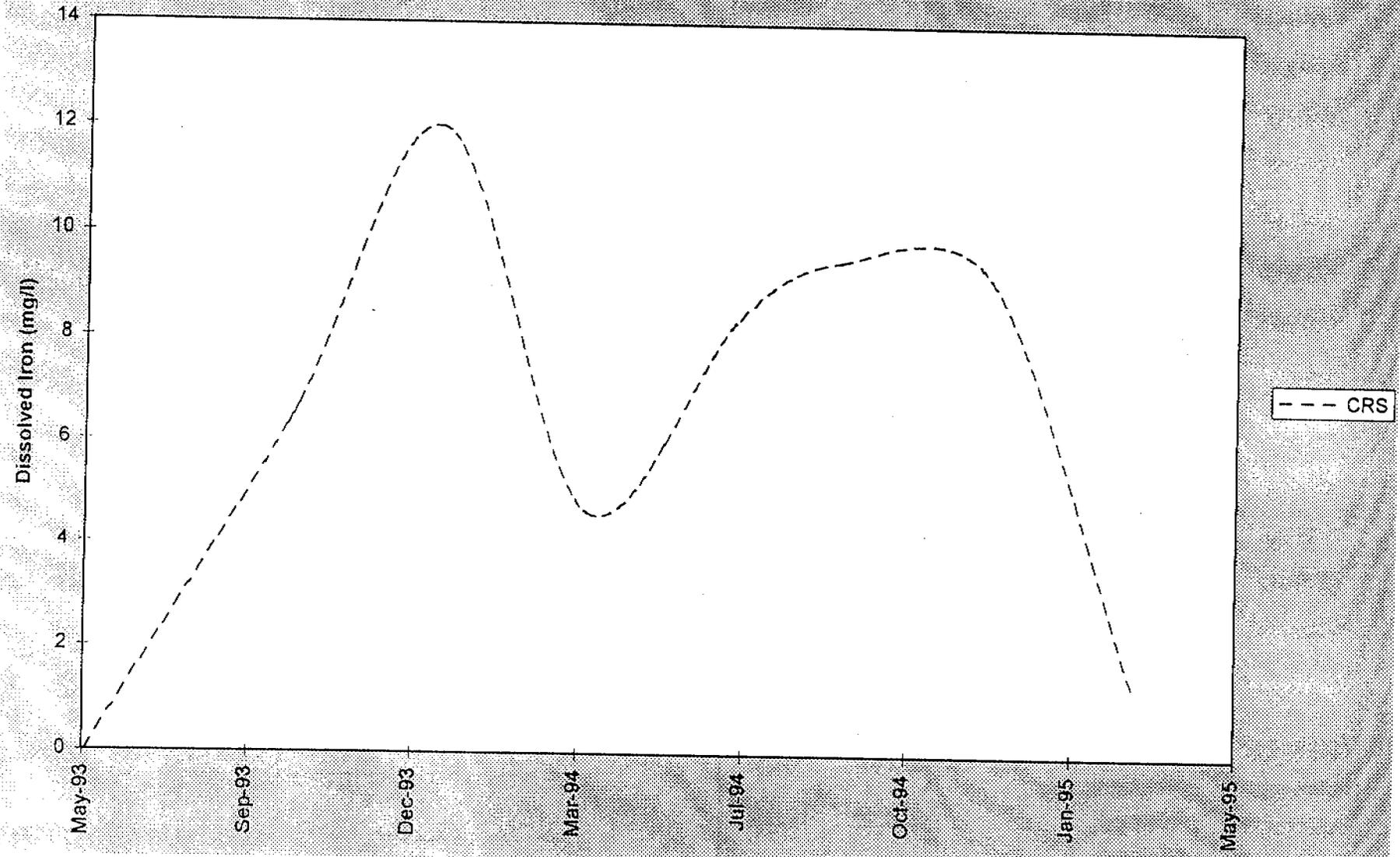
Surface Water Dissolved Iron (EWP)
Baseline Water Quality Analysis June 1993 - 1995



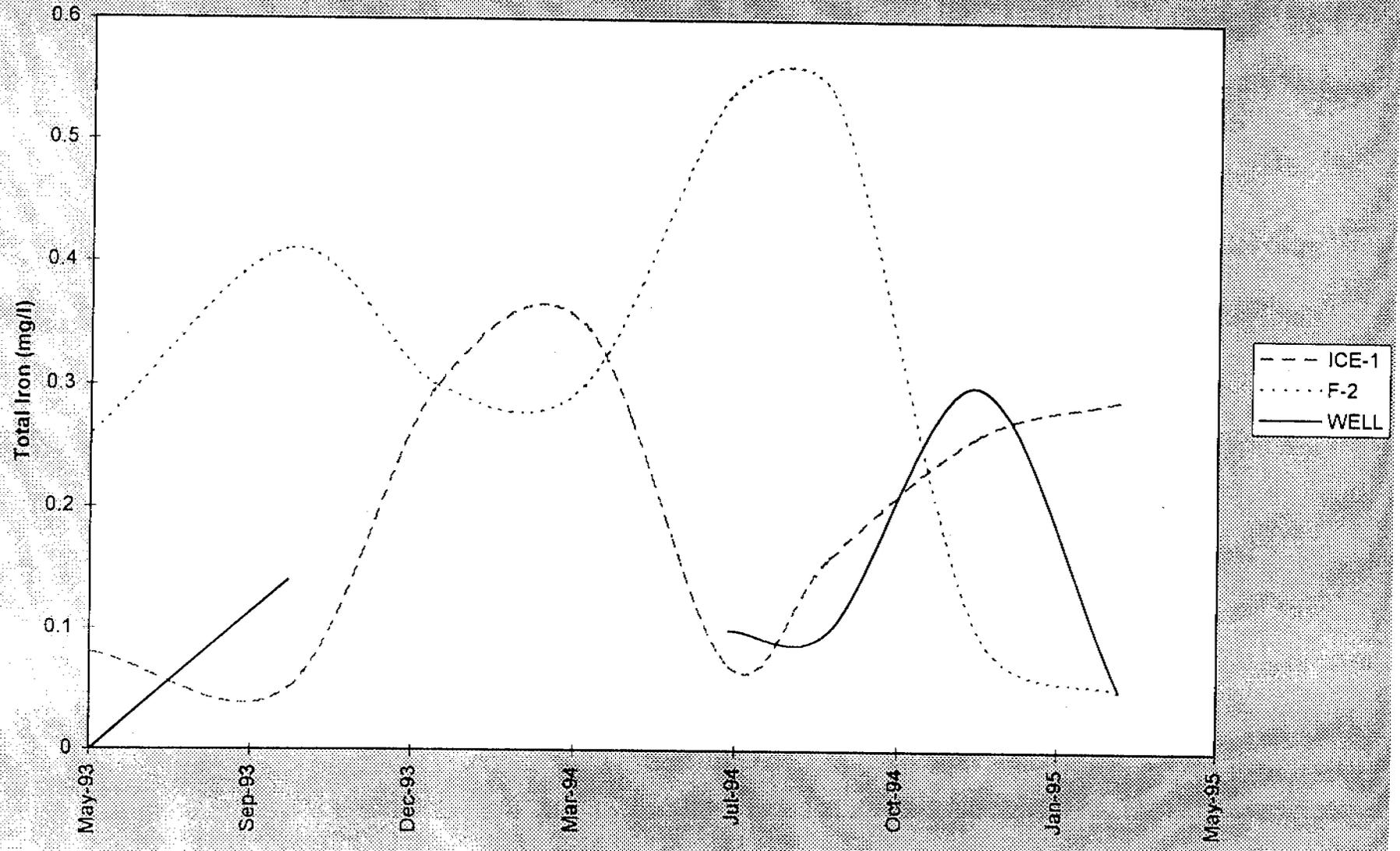
Surface Water Total Iron (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



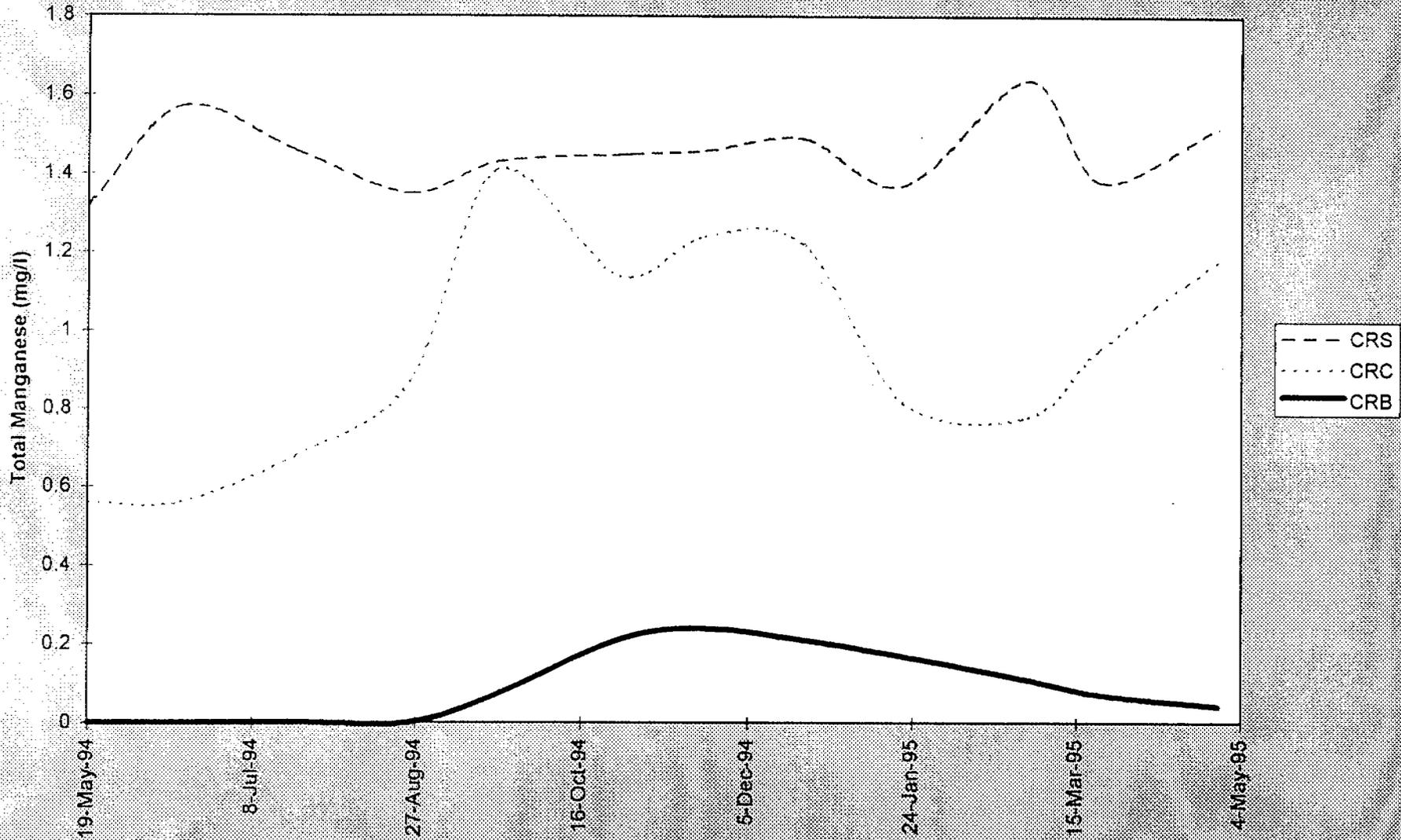
Surface Water Dissolved Iron (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



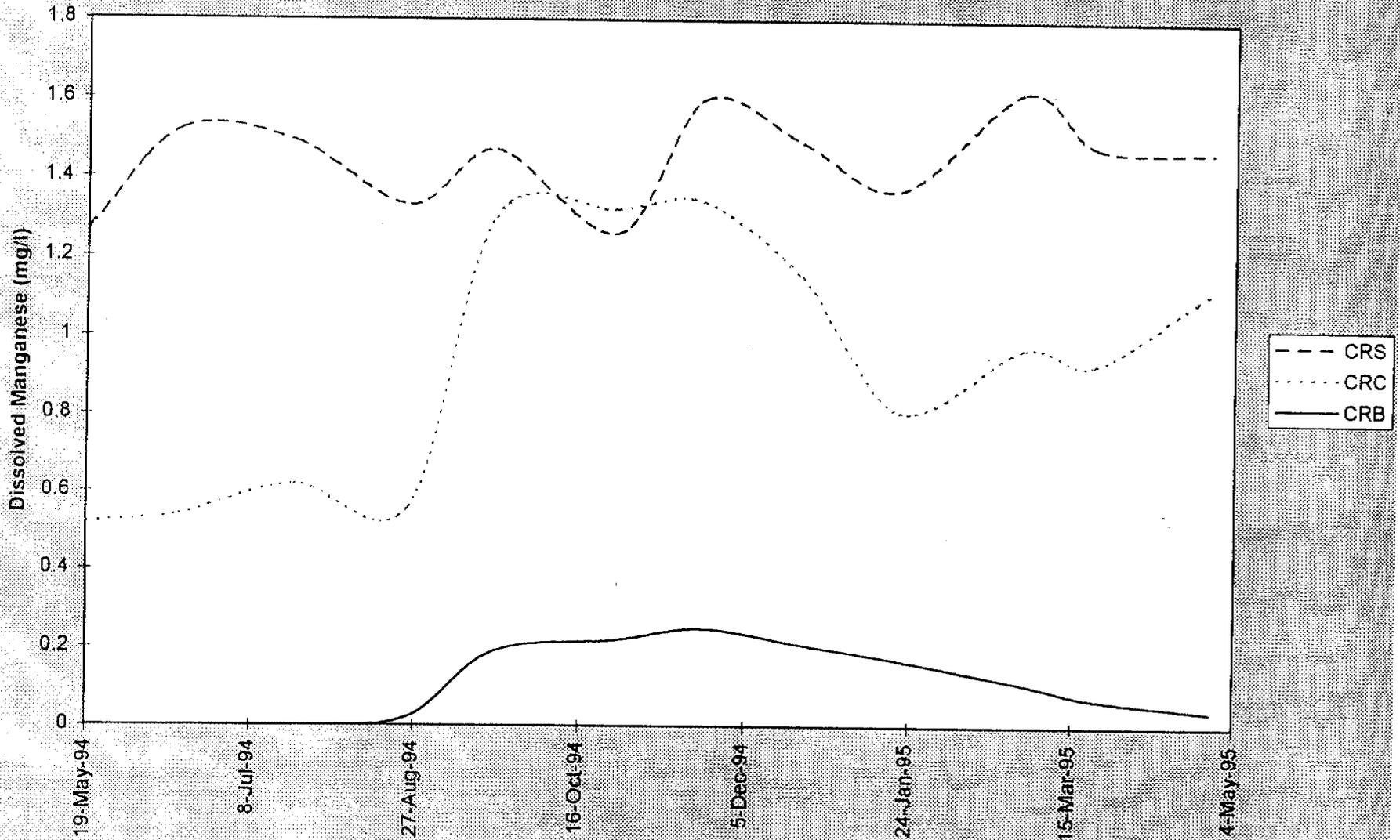
Surface and Ground Water Total Iron (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



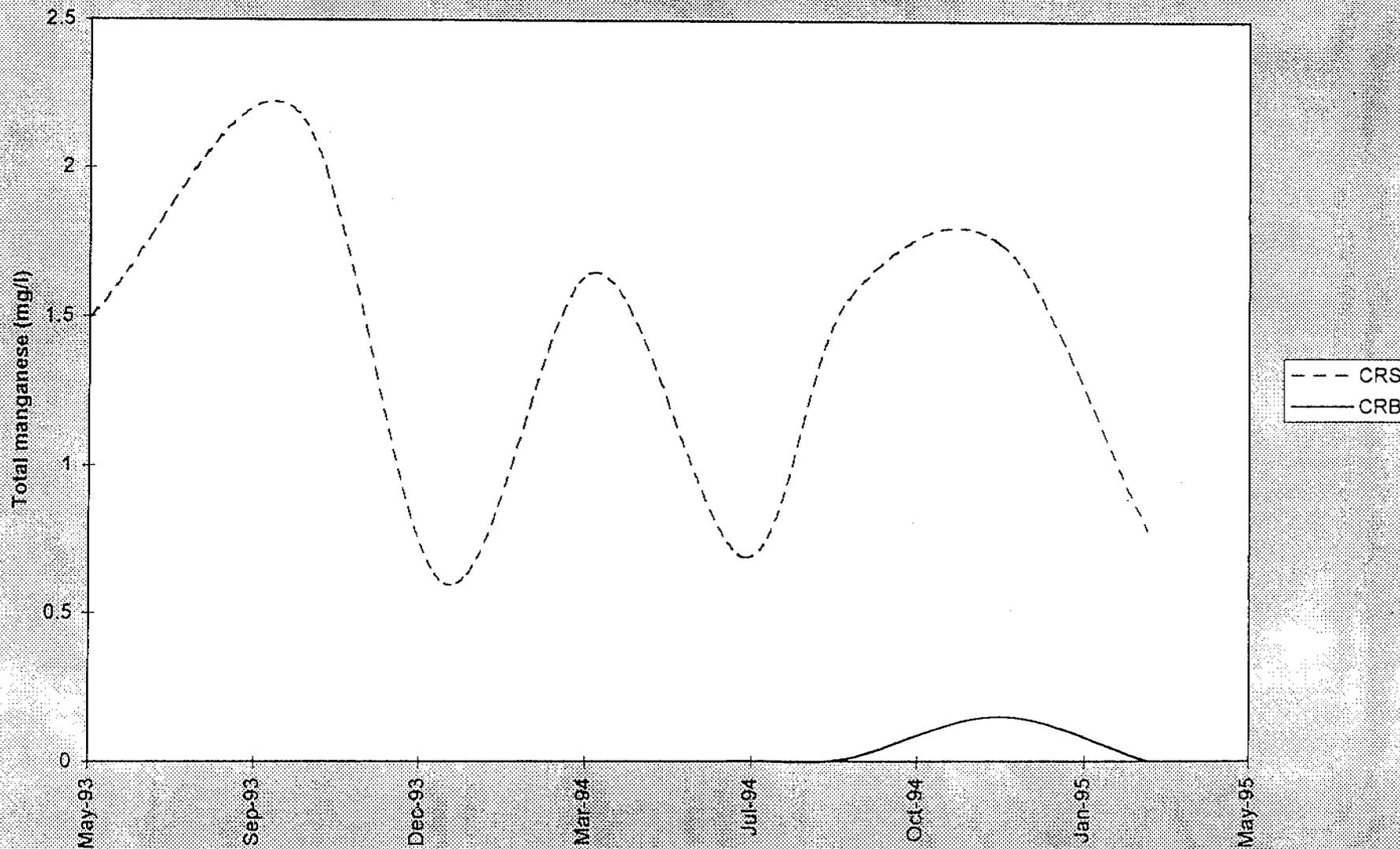
Surface Water Total Manganese (EWP)
Baseline Water Quality Analysis June 1993 - 1995



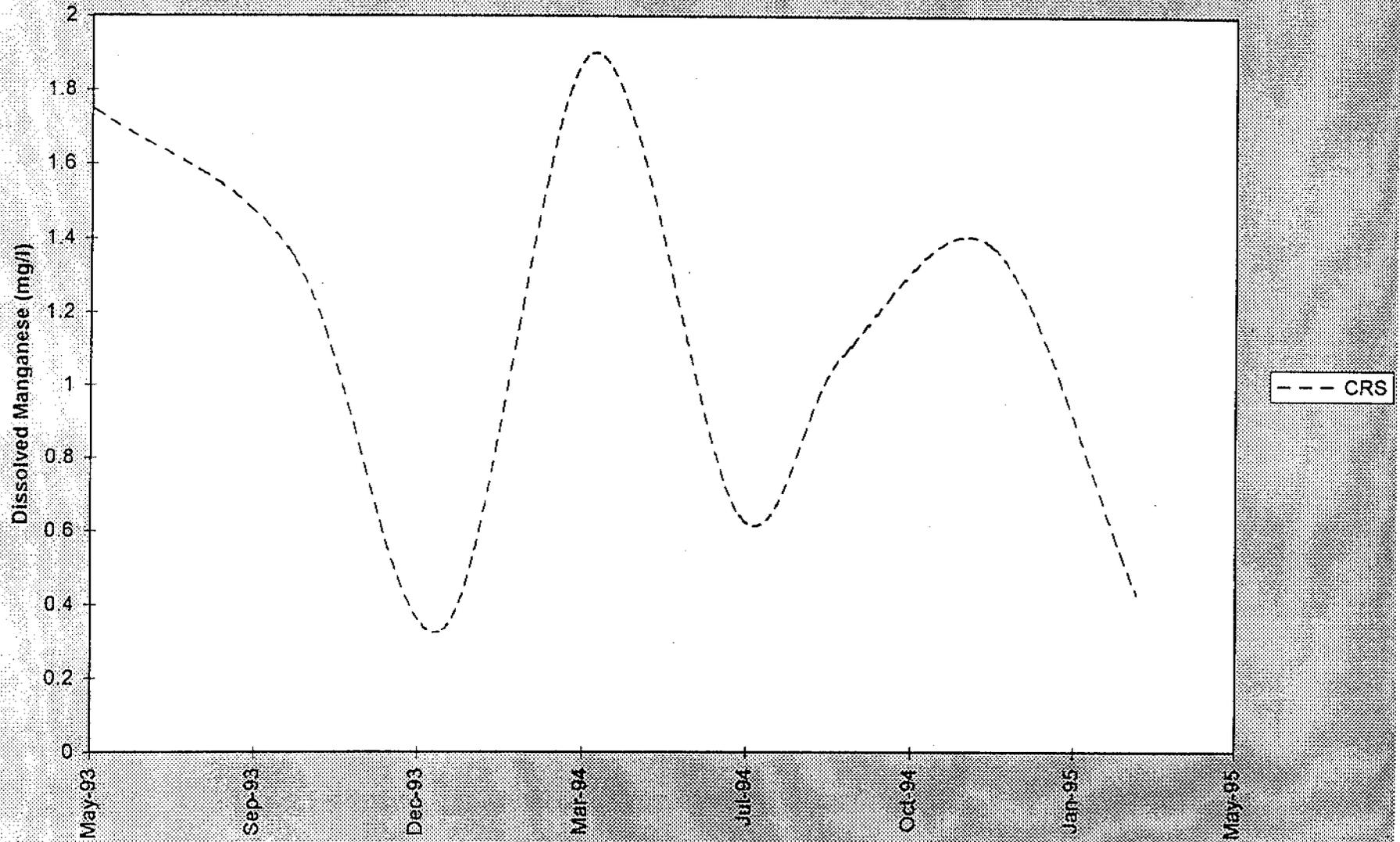
Surface Water Dissolved Manganese (EWP)
Baseline Water Quality Analysis June 1993 - 1995

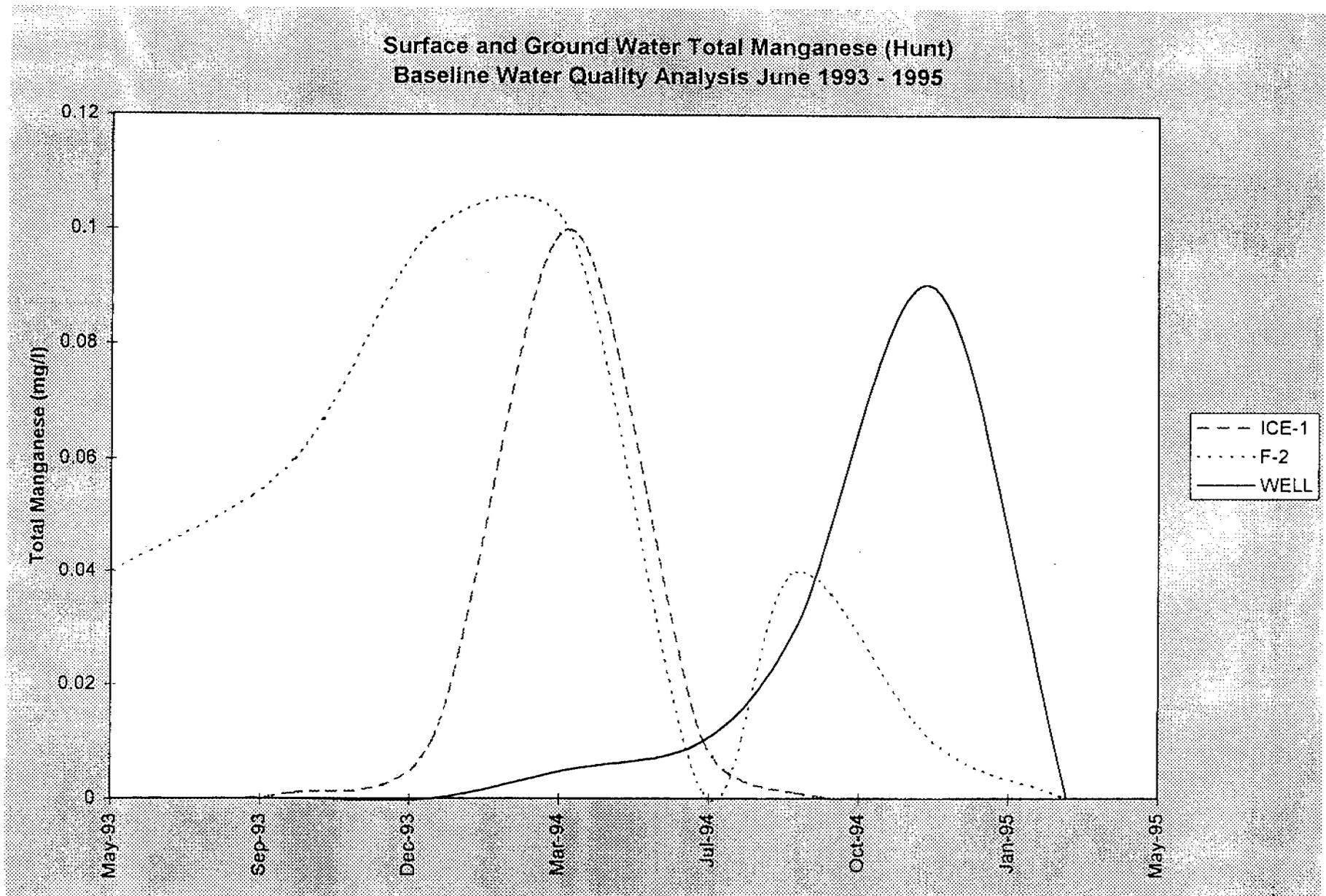


Surface Water Total Manganese (Hunt)
Baseline Water Quality Analysis June 1993 - 1995

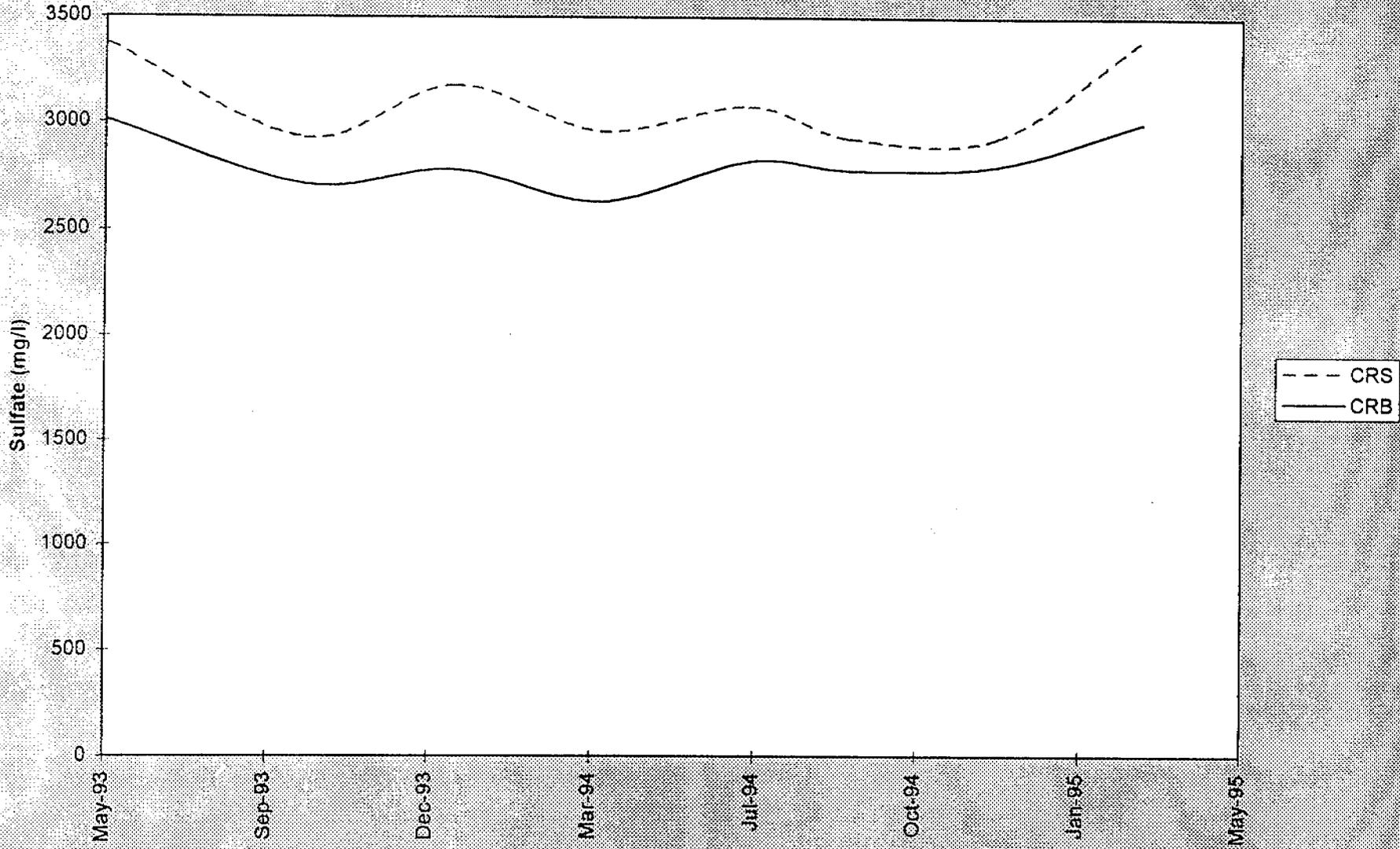


Surface Water Dissolved Manganese (Hunt)
Baseline Water Quality Analysis June 1993 - 1995





Surface Water Sulfate (Hunt)
Baseline Water Quality Analysis June 1993 - 1995



Surface and Ground Water Sulfate (Hunt)
Baseline Water Quality Analysis June 1993 - 1995

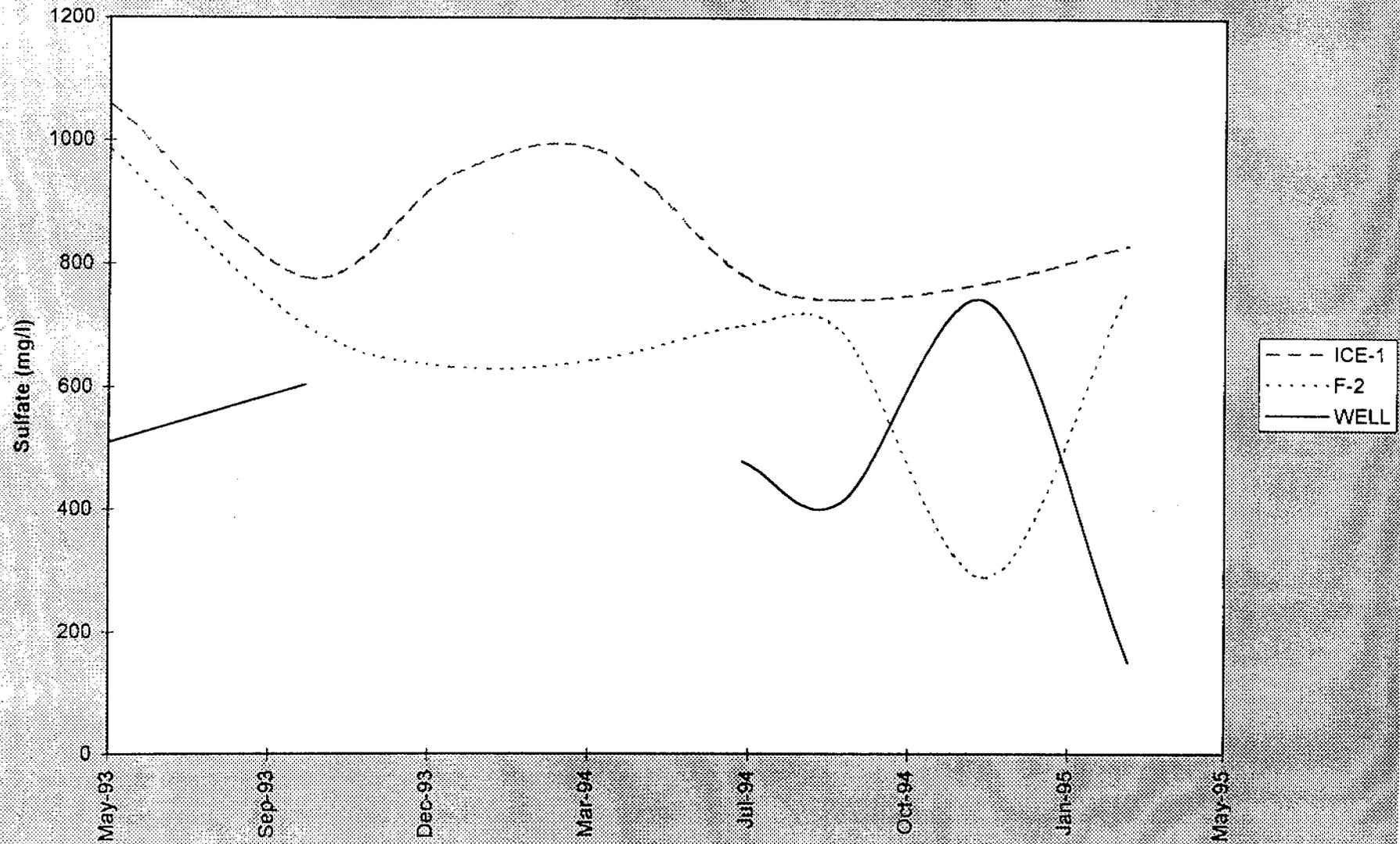
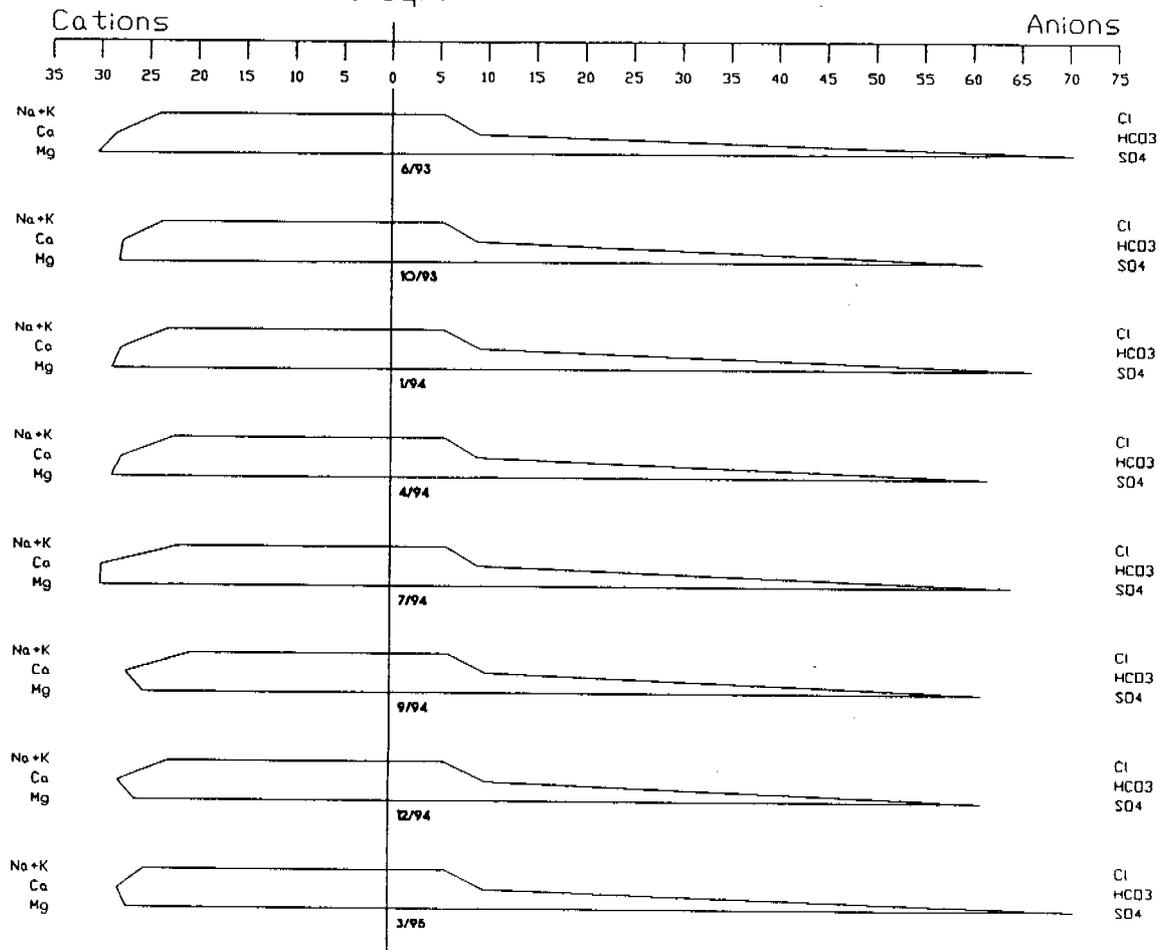


EXHIBIT A-4

WATER QUALITY CHARACTERIZATION-STIFF
DIAGRAMS

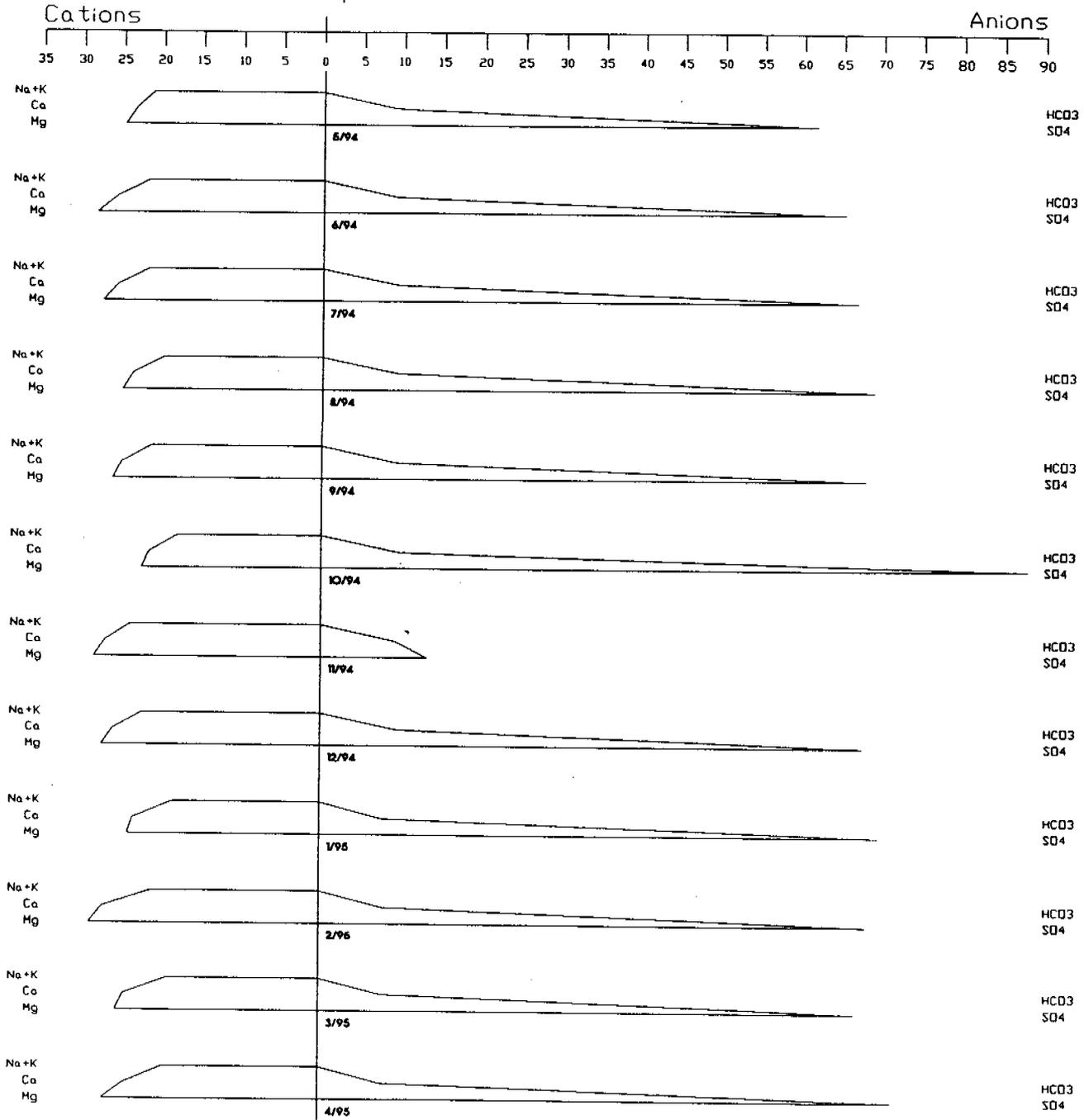
CRS (HUNT)

%meq/l



CRS (EWP)

%meq/l



ECKHOFF WATSON AND PREATOR ENGINEERING
 APPENDIX
 ENGINEERS PLANNERS SURVEYORS
 FIGURE 32

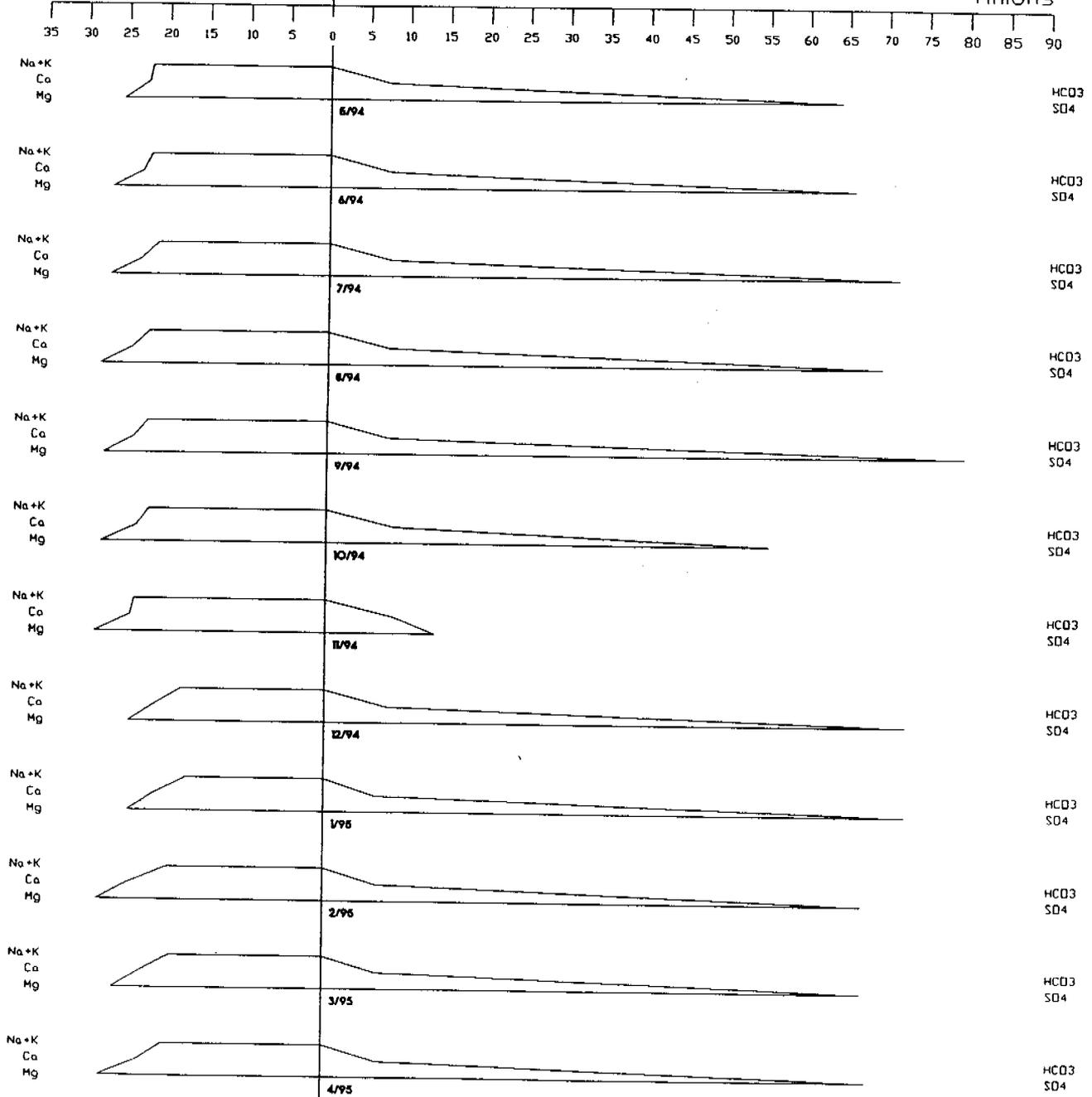
SUNNYSIDE COGENERATION ASSOCIATES
 Surface & Ground Water Monitoring Sites
 Baseline Water Quality Analysis June 1993-1995

CRC (EWP)

%meq/l

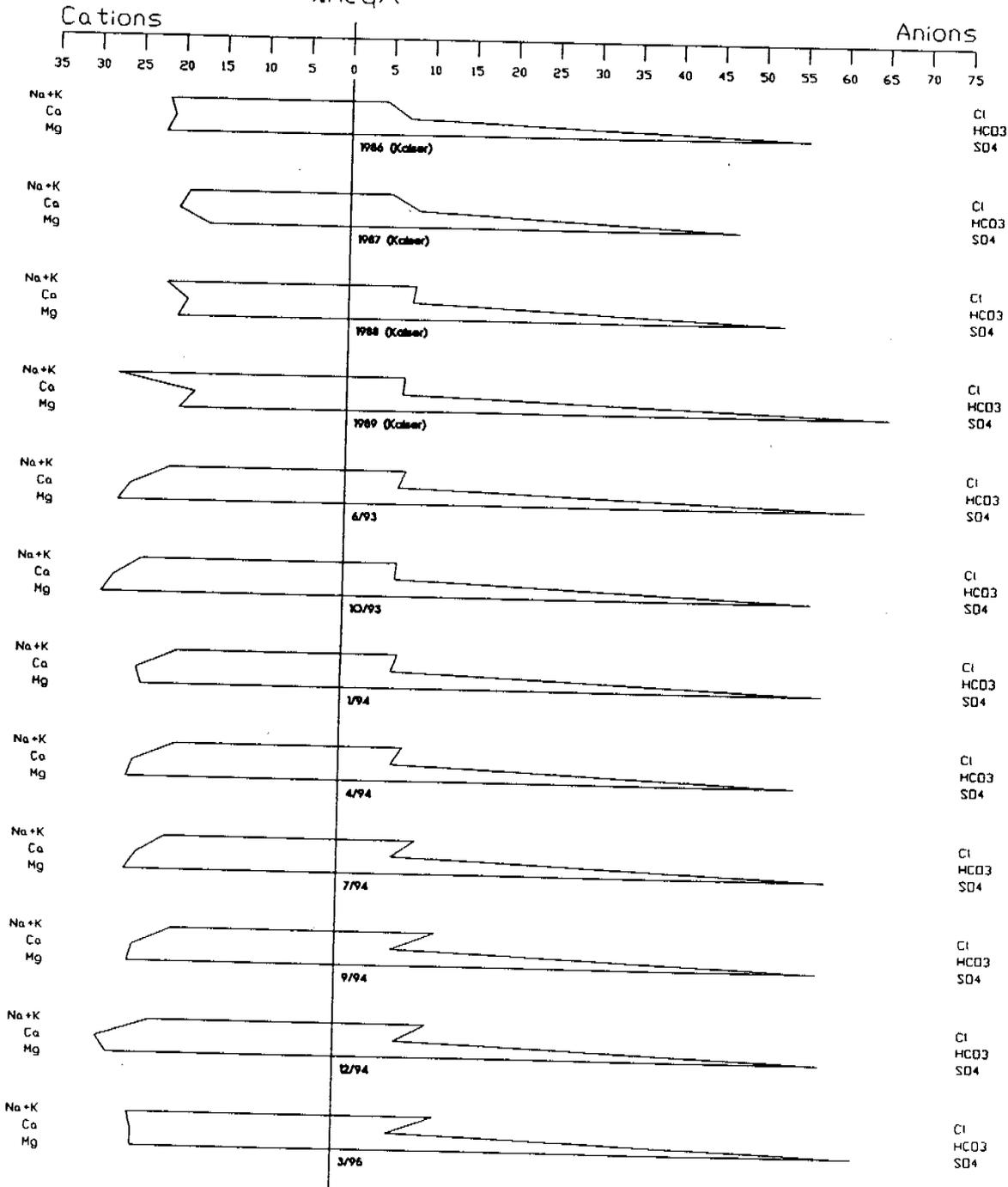
Cations

Anions



CRB (HUNT)

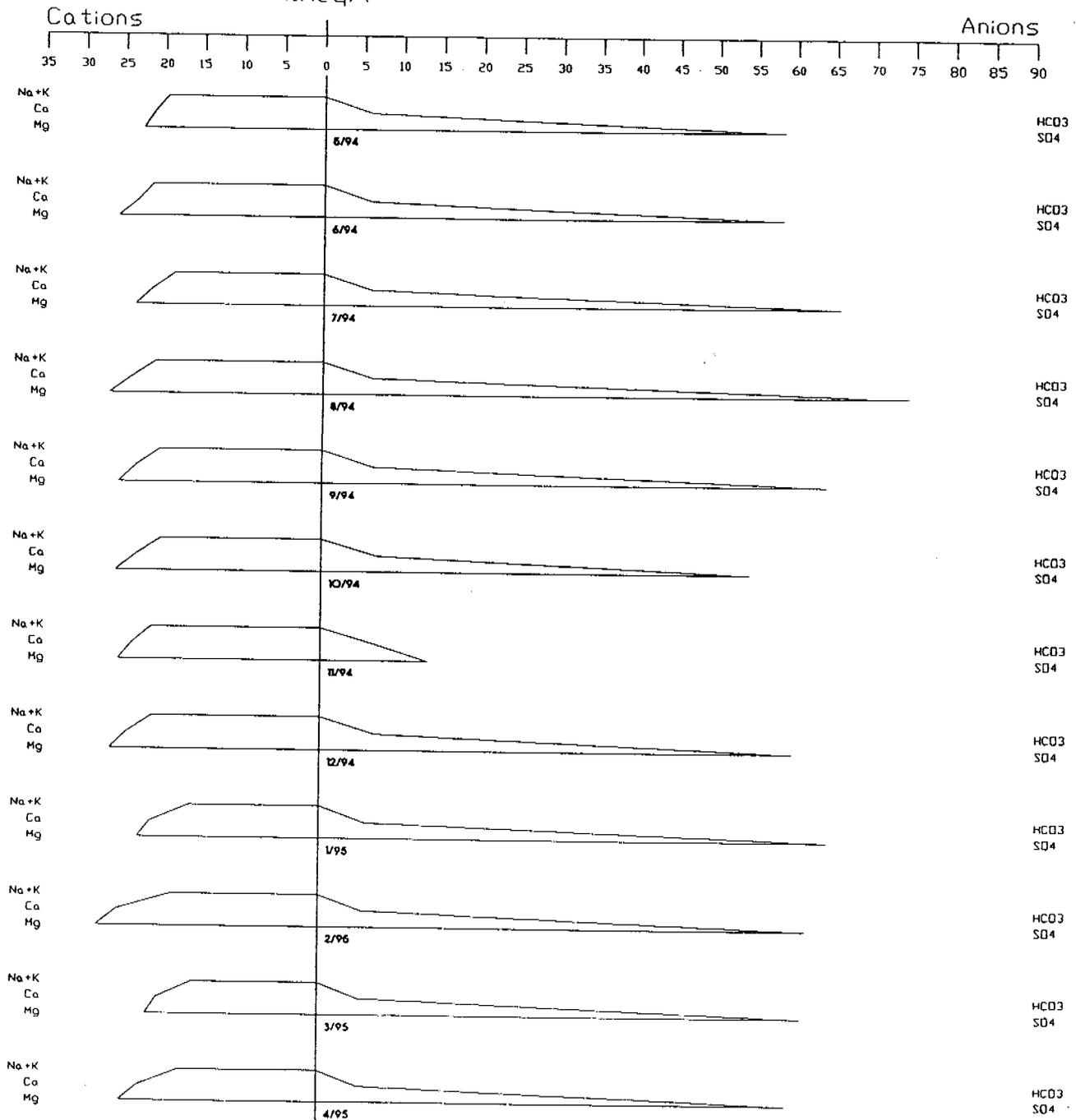
%meq/l



ECKHOFF WATSON AND PREATOR ENGINEERING
 APPENDIX
 ENGINEERS PLANNERS SURVEYORS
 FIGURE 34

SUNNYSIDE COGENERATION ASSOCIATES
 Surface & Ground Water Monitoring Sites
 Baseline Water Quality Analysis June 1993-1995

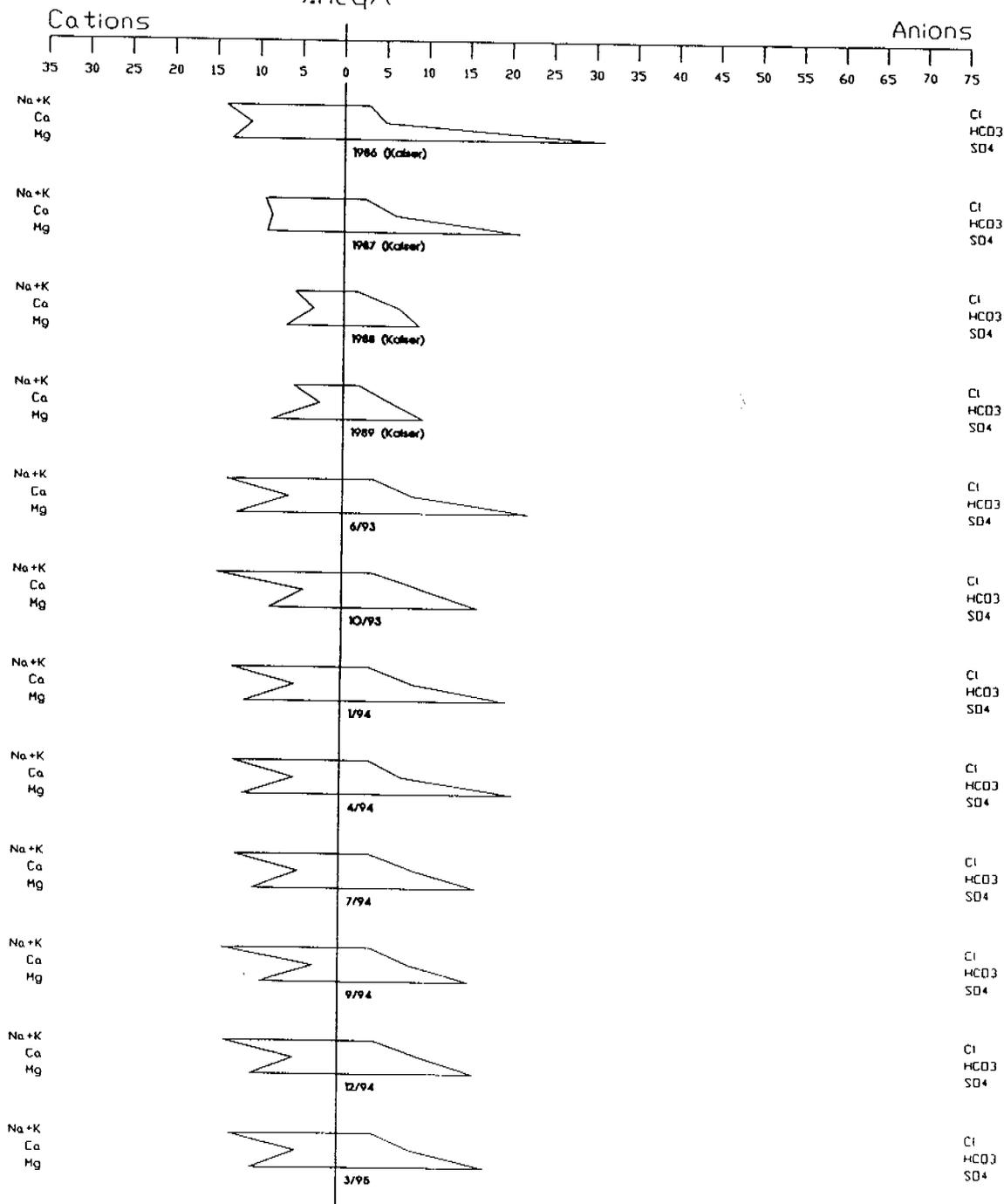
CRB (EWP)
%meq/l



ECKHOFF WATSON AND PREATOR ENGINEERING
APPENDIX
ENGINEERS PLANNERS SURVEYORS FIGURE 35

SUNNYSIDE COGENERATION ASSOCIATES
Surface & Ground Water Monitoring Sites
Baseline Water Quality Analysis June 1993-1995

ICE - 1
%meq/l

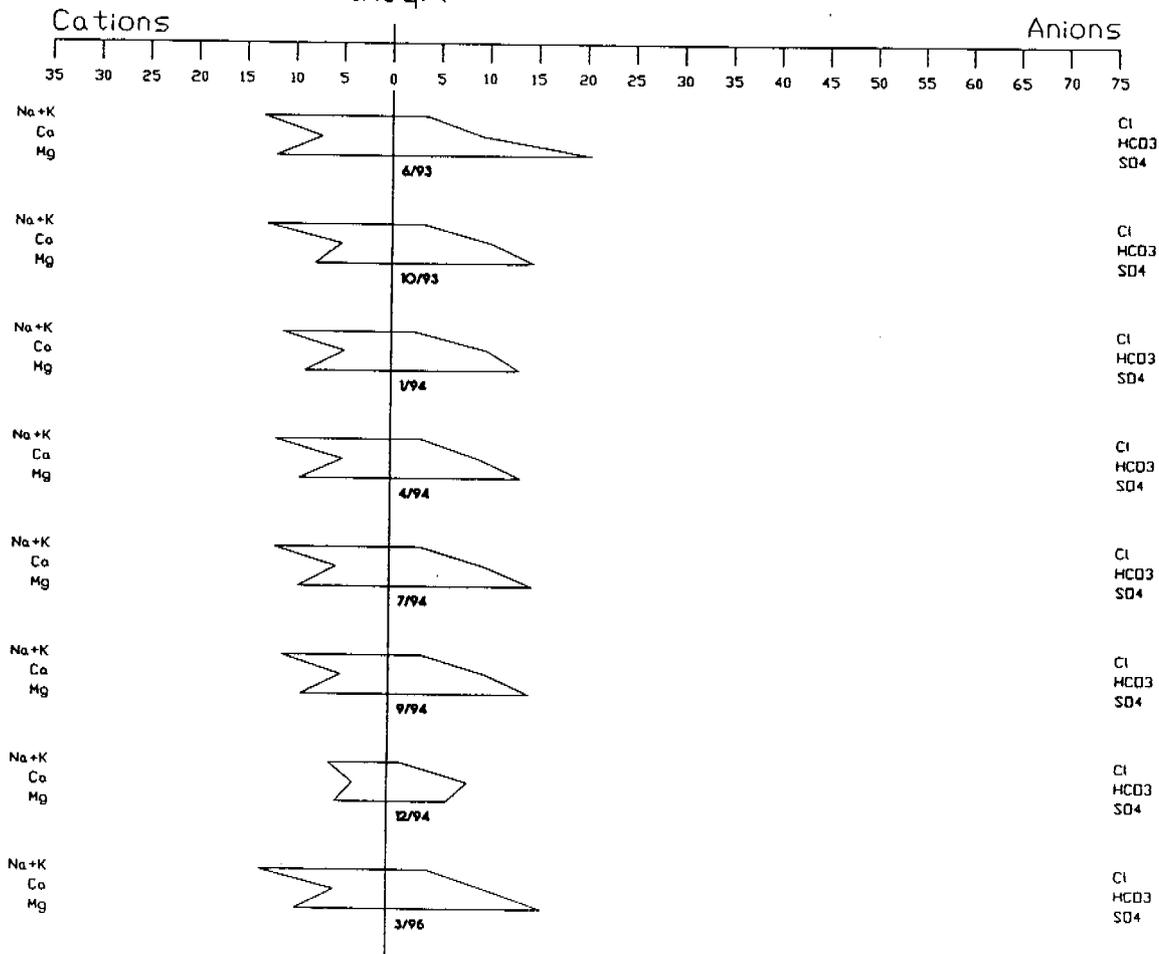


ECKHOFF WATSON AND PREATOR ENGINEERING
APPENDIX
ENGINEERS PLANNERS SURVEYORS
FIGURE 36

SUNNYSIDE COGENERATION ASSOCIATES
Surface & Ground Water Monitoring Sites
Baseline Water Quality Analysis June 1993-1995

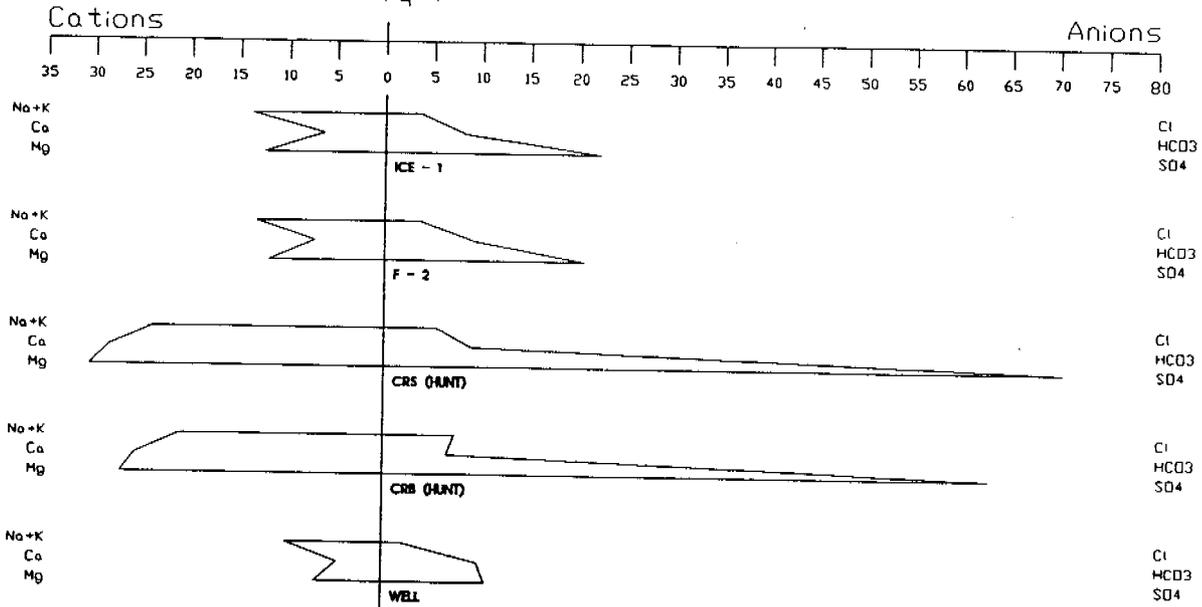
F - 2

%meq/l



June - 93

%meq/l

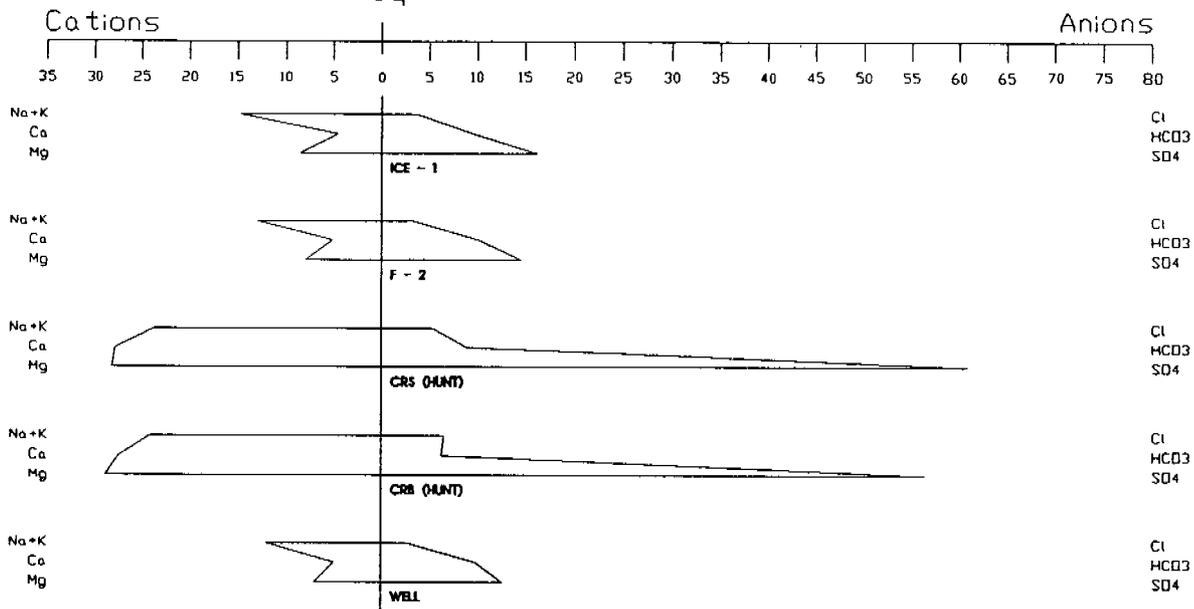


ECKHOFF WATSON AND PREATOR ENGINEERING
APPENDIX
ENGINEERS PLANNERS SURVEYORS FIGURE 38

SUNNYSIDE COGENERATION ASSOCIATES
Surface & Ground Water Monitoring Sites
Baseline Water Quality Analysis June 1993-1995

October - 93

%meq/l

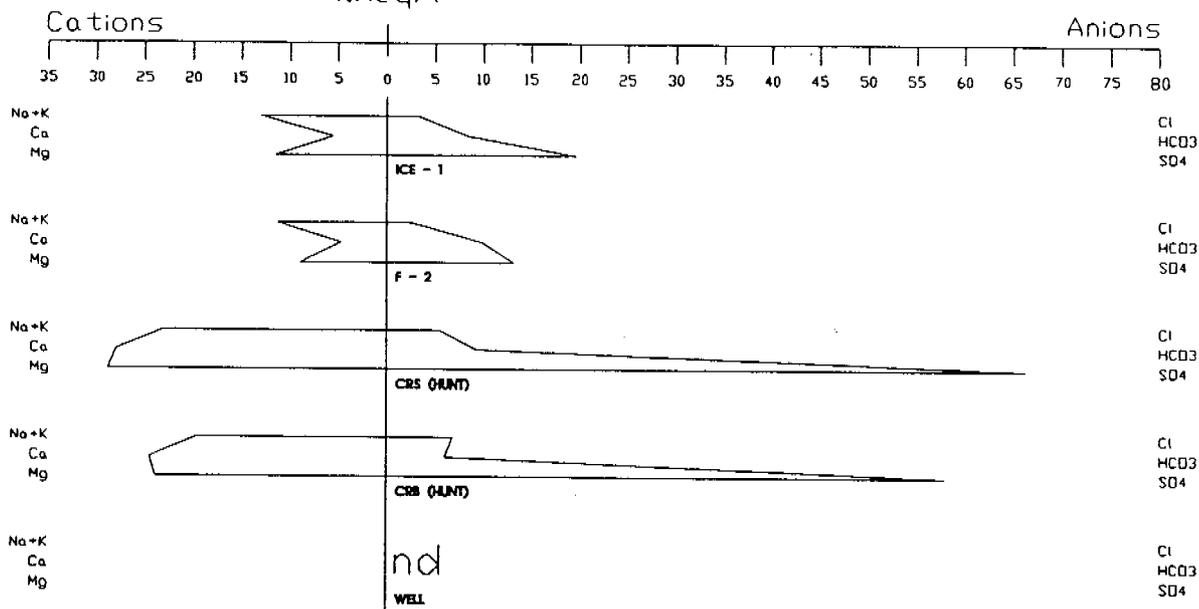


ECKHOFF WATSON AND PREATOR ENGINEERING
APPENDIX
ENGINEERS PLANNERS SURVEYORS **FIGURE 39**

SUNNYSIDE COGENERATION ASSOCIATES
Surface & Ground Water Monitoring Sites
Baseline Water Quality Analysis June 1993-1995

January - 94

%meq/l



ECKHOFF WATSON AND PREATOR ENGINEERING
APPENDIX
ENGINEERS PLANNERS SURVEYORS FIGURE 40

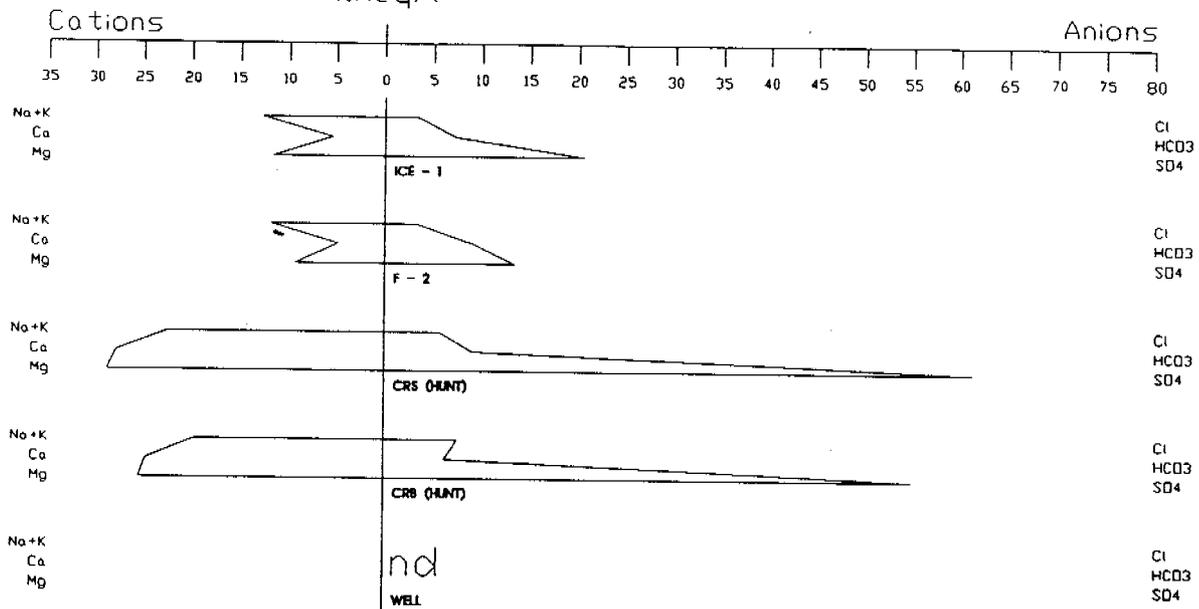
SUNNYSIDE COGENERATION ASSOCIATES

Surface & Ground Water Monitoring Sites

Baseline Water Quality Analysis June 1993-1995

April - 94

%meq/l

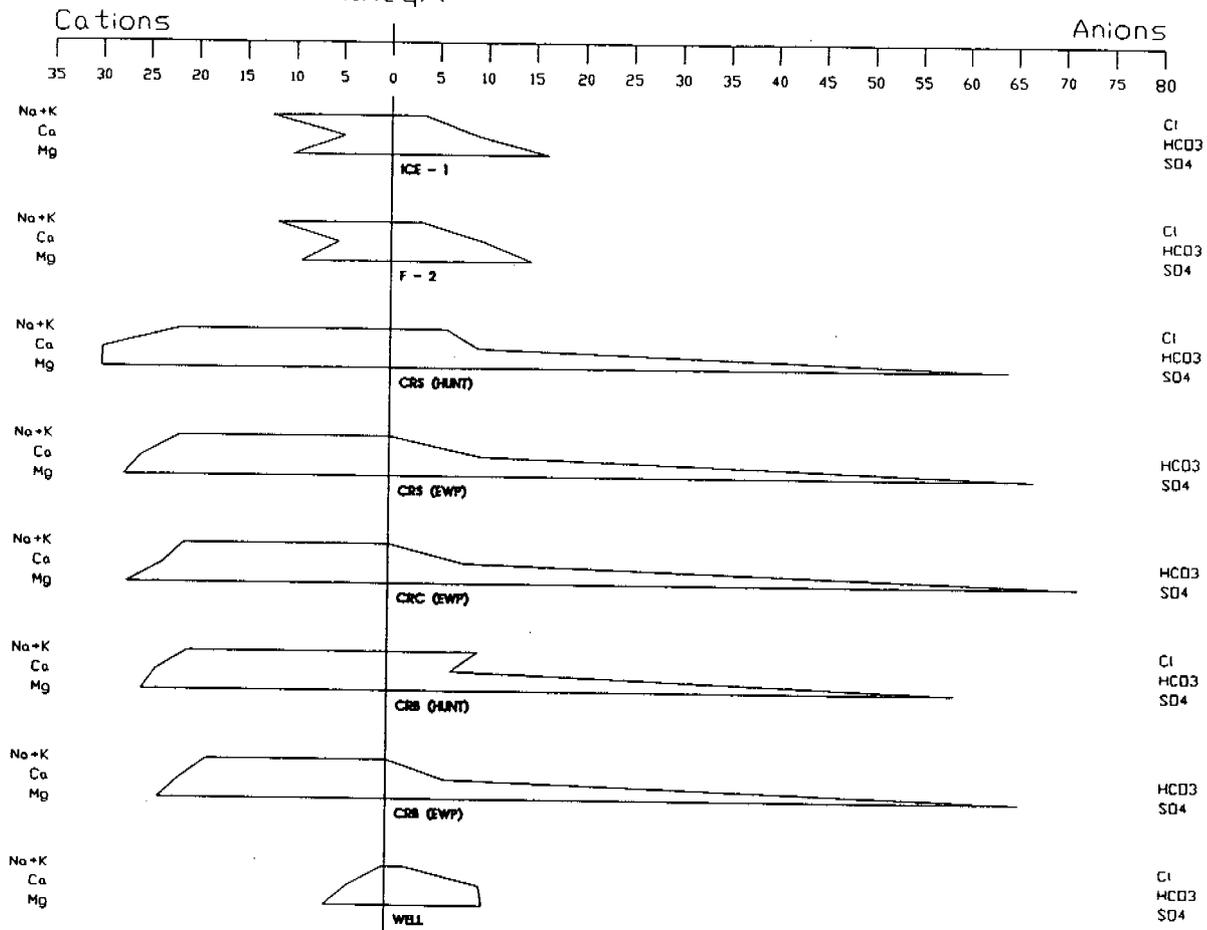


ECKHOFF WATSON AND PREATOR ENGINEERING
APPENDIX
ENGINEERS PLANNERS SURVEYORS FIGURE 41

SUNNYSIDE COGENERATION ASSOCIATES
Surface & Ground Water Monitoring Sites
Baseline Water Quality Analysis June 1993-1995

July - 94

%meq/l

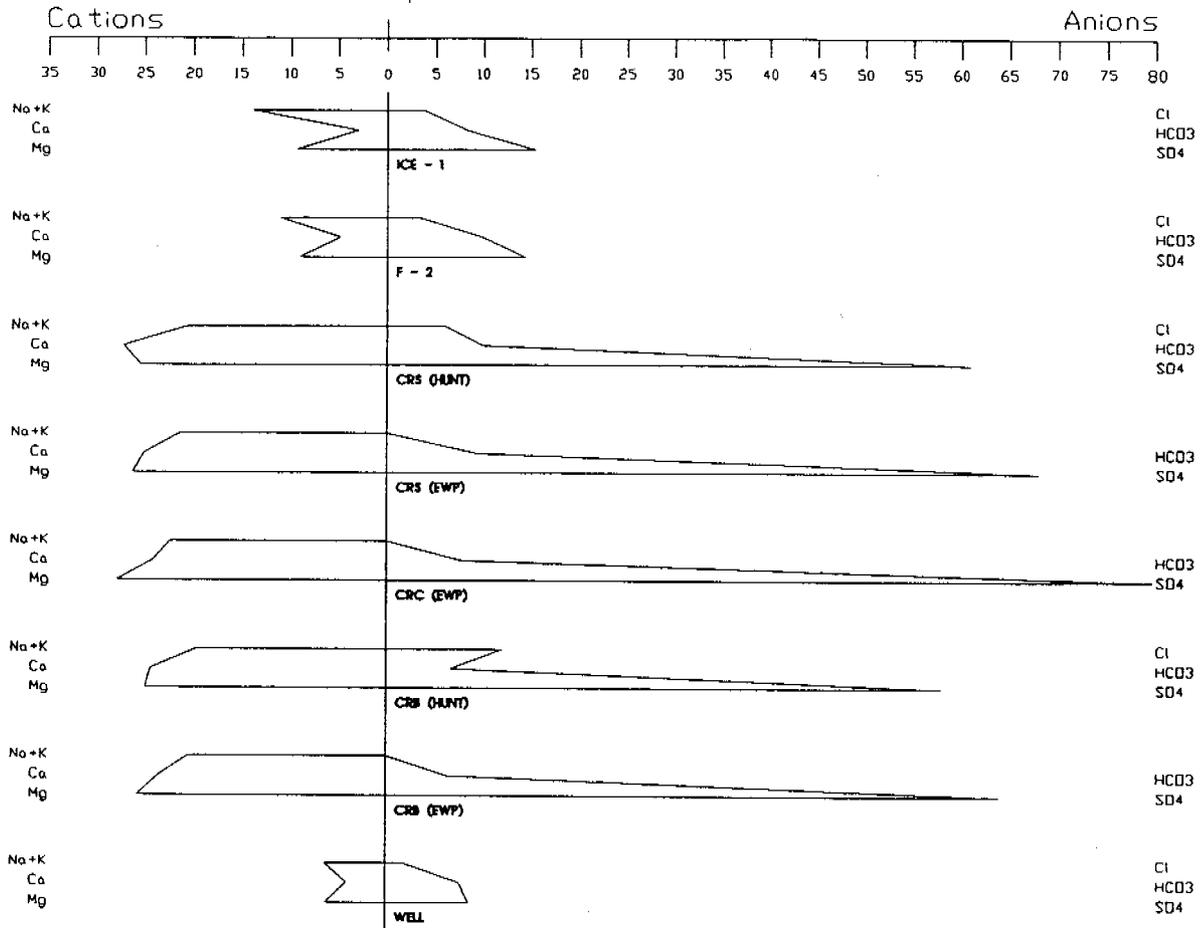


ECKHOFF WATSON AND PREATOR ENGINEERING
APPENDIX
ENGINEERS PLANNERS SURVEYORS
FIGURE 42

SUNNYSIDE COGENERATION ASSOCIATES
Surface & Ground Water Monitoring Sites
Basellr.e Water Quality Analysis June 1993-1995

September - 94

%meq/l



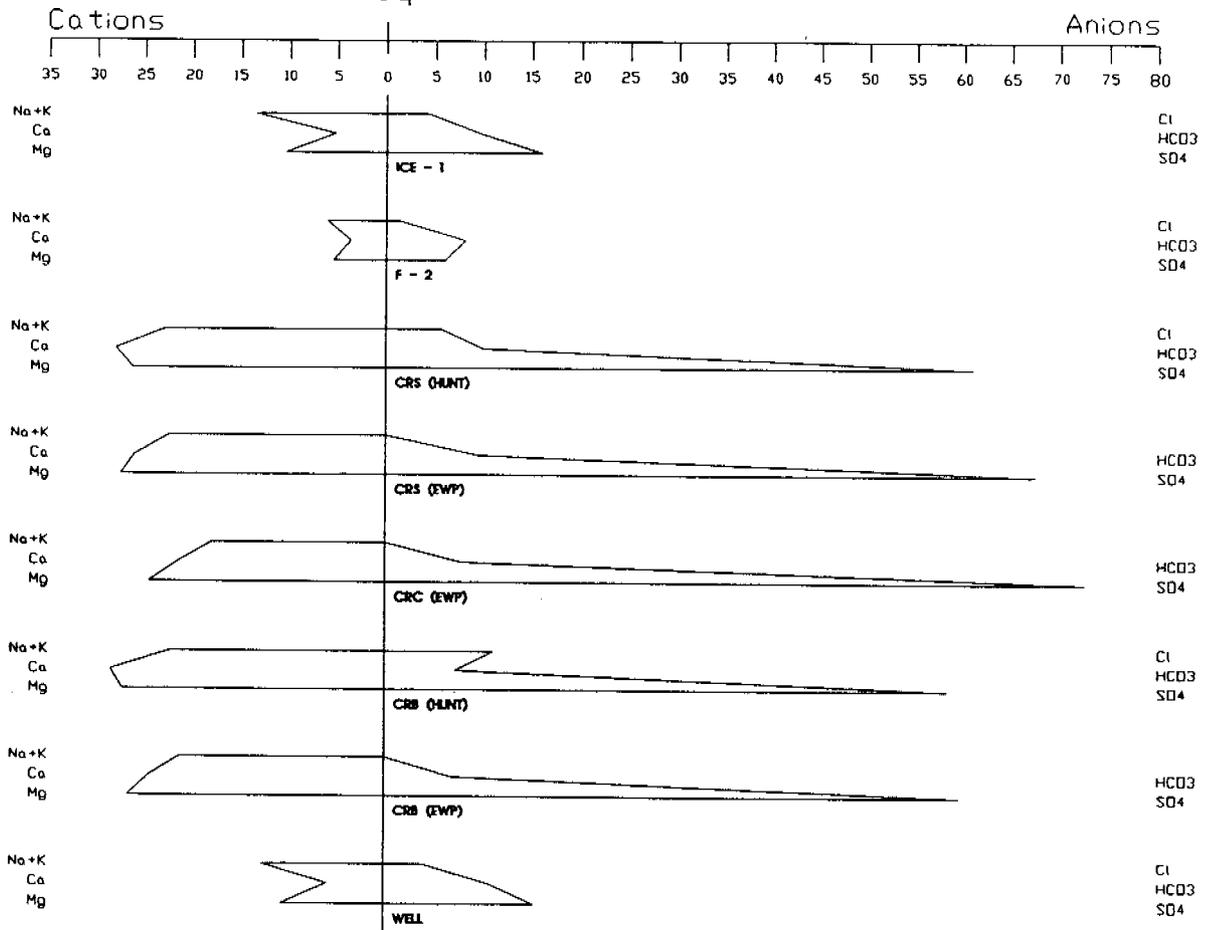
ECKHOFF WATSON AND PREATOR ENGINEERING
 APPENDIX
 ENGINEERS PLANNERS SURVEYORS
 FIGURE 43

SUNNYSIDE COGENERATION ASSOCIATES

Surface & Ground Water Monitoring Sites
 Baseline Water Quality Analysis June 1993-1995

December - 94

%meq/l

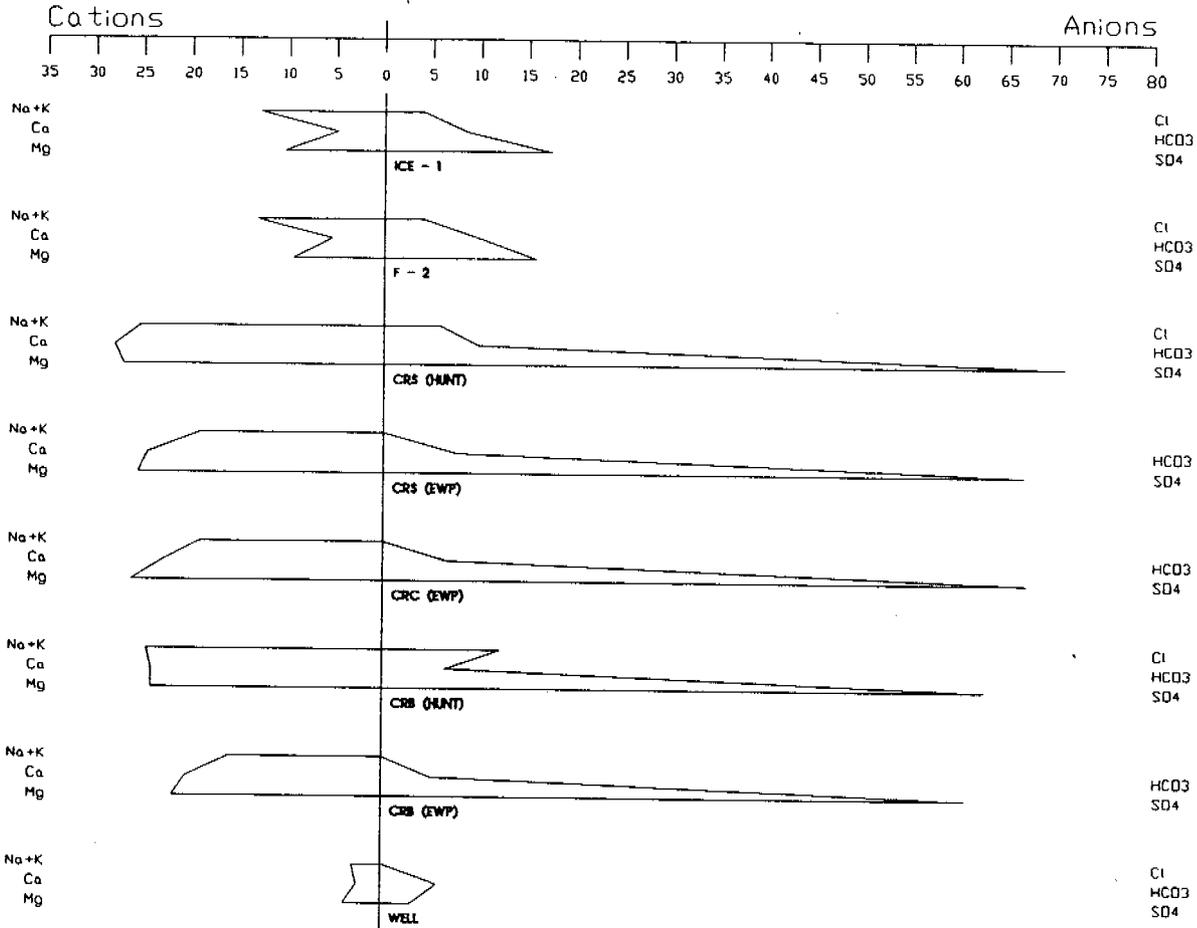


ECKHOFF WATSON AND PREATOR ENGINEERING
 ENGINEERS PLANNERS SURVEYORS
 APPENDIX
 FIGURE 44

SUNNYSIDE COGENERATION ASSOCIATES
 Surface & Ground Water Monitoring Sites
 Baseline Water Quality Analysis June 1993-1995

March - 95

%meq/l



ECKHOFF WATSON AND PREATOR ENGINEERING
APPENDIX
ENGINEERS PLANNERS SURVEYORS
FIGURE 45

SUNNYSIDE COGENERATION ASSOCIATES
Surface & Ground Water Monitoring Sites
Baseline Water Quality Analysis June 1993-1995

EXHIBIT A-5

DATA ATTACHMENTS

EXHIBIT A-5(a)

**HUNTINGDON ANALYTICAL DATA AND CHAIN OF
CUSTODY DOCUMENTATION**

Huntingdon

Chen-Northern, Inc.

100 SOUTH 26TH STREET

P.O. BOX 20616

BILLINGS, MT 59107

(406) 248-9161

FAX (406) 248-9282

TECHNICAL REPORT

REPORT TO: ATTN: CHUCK WEMPLE
CHEN-NORTHERN, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY UT 84119

DATE: December 9, 1993
JOB NUMBER: 87-927
SHEET: 1 of 11
INVOICE NO.: 003917

REPORT OF: Water Analysis - SCA-DOGM 5-137.3-91

SAMPLE IDENTIFICATION:

On November 1, 1993, these water samples (our laboratory numbers 146281 through 146287) were received in our laboratory for analysis. Tests were conducted in accordance with the U.S. Environmental Protection Agency Manual EPA 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes."

The results of the analysis are shown on the following pages.

A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

Post-it Fax Note	7671	Date	2/2/94	# of pages	19
To	Scott Carlsson	From	G. McDonald		
Co/Dept	EW7	Co.	Chen-Northern		
Phone #	261 0090	Phone #	972 4787		
Fax #	266 1671	Fax #			

Reviewed by

David Cornill

1001

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146281
 Sample Name: CRS-102693
 Sample Date: 10/26/93
 Collected by: G. HOWELL
 Time Sampled: 1320
 Sample Type: WATER

Page 2

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
*ANIONS					
Alkalinity Bicarbonate as HCO ₃	548 mg/l	1.02	0900	11/09/93	BH
Alkalinity Carbonate as CO ₃	0 mg/l	-	0900	11/09/93	BH
Alkalinity Total as CaCO ₃	449 mg/l	0.84	0900	11/09/93	BH
Chloride as Cl	96 mg/l	0.24	1300	11/09/93	BH
Sulfate as SO ₄	2930 mg/l	2.29	1345	11/10/93	CC
*CATIONS					
Calcium as Ca	558 mg/l	0.39	1130	11/15/93	NH
Hardness as CaCO ₃	2800 mg/l	-	1130	11/15/93	NH
Magnesium as Mg	342 mg/l	0.31	1130	11/15/93	NH
Sodium as Na	543 mg/l	0.81	1130	11/15/93	NH
INORGANICS					
Electrical Conductivity	5310 umhos/cm	5.1	1500	11/12/93	BH
Oil & Grease	<1 mg/l	1	1130	11/05/93	CC
Settleable Solids	<0.2 ml/l	0.2	1510	11/01/93	CC
Sulfide as S	<1 mg/l	0.61	1500	11/02/93	DD
Total Dissolved Solids	5200 mg/l	11.7	1605	11/02/93	CC
Total Suspended Solids	41 mg/l	3.5	1525	11/02/93	CC
METALS					
Aluminum as Al (Dissolved)	0.5 mg/l	0.023	1100	11/17/93	NH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1300	11/08/93	AH
Boron as B (Dissolved)	1.1 mg/l	0.045	1100	11/17/93	NH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1130	11/30/93	AH
Copper as Cu (Dissolved)	<0.02 mg/l	0.005	1100	11/17/93	NH
Iron as Fe (Dissolved)	6.30 mg/l	0.008	1100	11/17/93	NH
Iron as Fe (Total)	47 mg/l	0.008	1330	12/01/93	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1400	11/22/93	NH
Manganese as Mn (Dissolved)	1.35 mg/l	0.003	1100	11/17/93	NH

* The cation-anion analysis does not meet our quality assurance requirements. However, the values reported herein were verified by duplicate analysis. This indicates there are other unmeasured cations or anions present in the sample.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146281
 Sample Name: CRS-102693
 Sample Date: 10/26/93
 Collected by: G. HOWELL
 Time Sampled: 1320
 Sample Type: WATER

Page 3

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
METALS (cont)					
Manganese as Mn (Total)	2.2 mg/l	0.003	1330	12/01/93	BH-
Molybdenum as Mn (Total)	<0.05 mg/l	0.023	1100	11/17/93	NH-
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	11/10/93	AH-
Zinc as Zn (Dissolved)	0.33 mg/l	0.008	1100	11/17/93	NH-
NUTRIENTS					
Ammonia Nitrogen as N	1.73 mg/l	0.034	1130	11/12/30	DO-
Nitrite as N	<0.05 mg/l	0.005	1130	11/02/93	DO
Phosphorous Total	0.68 mg/l	<0.002	1330	11/18/93	CC-
Nitrate as N	0.33 mg/l	0.005	1130	11/03/93	DO-

32

10 out

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146282
 Sample Name: CRB-102693
 Sample Date: 10/26/93
 Collected by: G. HOWELL
 Time Sampled: 1400
 Sample Type: WATER

Page 4

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS**					
Alkalinity Bicarbonate as HCO ₃	384 mg/l	1.02	0900	11/09/93	BH
Alkalinity Carbonate as CO ₃	0 mg/l	-	0900	11/09/93	BH
Alkalinity Total as CaCO ₃	315 mg/l	0.84	0900	11/09/93	BH
Chloride as Cl	116 mg/l	0.24	1300	11/09/93	BH
Sulfate as SO ₄	2710 mg/l	2.29	1345	11/10/93	CC
CATIONS**					
Calcium as Ca	550 mg/l	0.39	1130	11/15/93	NH
Hardness as CaCO ₃	2810 mg/l	-	1130	11/15/93	NH
Magnesium as Mg	350 mg/l	0.31	1130	11/15/93	NH
Sodium as Na	555 mg/l	0.81	1130	11/15/93	NH
INORGANICS					
Electrical Conductivity	4860 umhos/cm	5.1	1500	11/12/93	BH
Oil & Grease	1 mg/l	1	1130	11/05/93	CC
Settleable Solids	<0.2 ml/l	0.2	1615	11/01/93	CC
Sulfide as S	1 mg/l	0.61	1500	11/02/93	DD
Total Dissolved Solids	4700 mg/l	11.7	1605	11/02/93	CC
Total Suspended Solids	<5 mg/l	3.5	1525	11/02/93	CC
METALS					
Aluminum as Al (Dissolved)	0.5 mg/l	0.023	1100	11/17/93	NH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1300	11/08/93	AH
Boron as B (Dissolved)	1.0 mg/l	0.045	1100	11/17/93	NH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1130	11/30/93	AH
Copper as Cu (Dissolved)	<0.02 mg/l	0.005	1100	11/17/93	NH

** The cation-anion analysis does not meet our quality assurance requirements. However, the values reported herein were verified by duplicate analysis. This indicates there are other unmeasured cations or anions present in the sample.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146282
 Sample Name: CRB-102693
 Sample Date: 10/26/93
 Collected by: G. HOWELL
 Time Sampled: 1400
 Sample Type: WATER

Page 5

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
Iron as Fe (Dissolved)	*19.2 mg/l	0.008	1100	11/17/93	NH
Iron as Fe (Total)	*<0.05 mg/l	0.008	1330	12/01/93	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1400	11/22/93	NH
Manganese as Mn (Dissolved)	*1.35 mg/l	0.003	1100	11/17/93	NH
Manganese as Mn (Total)	*<0.02 mg/l	0.003	1330	12/01/93	BH
Molybdenum as Mn (Total)	<0.05 mg/l	0.023	1100	11/17/93	NH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	11/10/93	AH
Zinc as Zn (Dissolved)	0.35 mg/l	0.008	1100	11/17/93	NH
NUTRIENTS					
Ammonia Nitrogen as N	<0.05 mg/l	0.034	1130	11/12/93	DD
Nitrite as N	<0.05 mg/l	0.005	1130	11/02/93	DD
Phosphorous Total	0.05 mg/l	<0.002	1330	11/18/93	CC
Nitrate as N	1.07 mg/l	0.005	1130	11/03/93	DD

* Samples were reanalyzed and results verified on December 8. These appear to be different samples.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146283
 Sample Name: F-Z/102793
 Sample Date: 10/27/93
 Collected by: G. HOWELL
 Time Sampled: 0730
 Sample Type: WATER

Page 6

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as HCO ₃	622 mg/l	1.02	0900	11/09/93	BH
Alkalinity Carbonate as CO ₃	0 mg/l	-	0900	11/09/93	BH
Alkalinity Total as CaCO ₃	510 mg/l	0.84	0900	11/09/93	BH
Chloride as Cl	59 mg/l	0.24	1300	11/09/93	BH
Sulfate as SO ₄	700 mg/l	2.29	1145	11/09/93	CC
CATIONS					
Calcium as Ca	102 mg/l	0.39	1000	11/05/93	NH
Hardness as CaCO ₃	650 mg/l	-	1000	11/05/93	NH
Magnesium as Mg	96 mg/l	0.31	1000	11/05/93	NH
Sodium as Na	300 mg/l	0.81	1000	11/05/93	NH
INORGANICS					
Electrical Conductivity	2240 umhos/cm	5.1	1500	11/12/93	BH
Oil & Grease	3 mg/l	1	1130	11/05/93	CC
Settleable Solids	<0.2 ml/l	0.2	1615	11/01/93	CC
Sulfide as S	<1 mg/l	0.61	1500	11/02/93	DO
Total Dissolved Solids	1500 mg/l	11.7	1605	11/02/93	CC
Total Suspended Solids	9 mg/l	3.5	1525	11/02/93	CC
METALS					
Aluminum as Al (Dissolved)	0.2 mg/l	0.023	1100	11/17/93	NH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1300	11/08/93	AH
Boron as B (Dissolved)	0.3 mg/l	0.045	1100	11/17/93	NH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1130	11/30/93	AH
Copper as Cu (Dissolved)	<0.02 mg/l	0.005	1100	11/17/93	NH
Iron as Fe (Dissolved)	<0.05 mg/l	0.008	1100	11/17/93	NH
Iron as Fe (Total)	0.41 mg/l	0.008	1330	12/01/93	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1400	11/22/93	NH
Manganese as Mn (Dissolved)	0.04 mg/l	0.003	1100	11/17/93	NH
Manganese as Mn (Total)	0.06 mg/l	0.003	1330	12/01/93	BH
Molybdenum as Mn (Total)	<0.05 mg/l	0.023	1100	11/17/93	NH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	11/10/93	AH
Zinc as Zn (Dissolved)	1.02 mg/l	0.008	1100	11/17/93	NH
NUTRIENTS					
Ammonia Nitrogen as N	0.11 mg/l	0.034	1130	11/12/93	DD
Nitrite as N	<0.05 mg/l	0.005	1130	11/02/93	DD
Phosphorous Total	0.06 mg/l	<0.002	1330	11/18/93	CC
Nitrate as N	0.88 mg/l	0.005	1130	11/03/93	DD

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146284
 Sample Name: ICE-1/102693
 Sample Date: 10/27/93
 Collected by: G. HOWELL
 Time Sampled: 0830
 Sample Type: WATER

Page 7

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as HCO ₃	593 mg/l	1.02	0900	11/09/93	BH
Alkalinity Carbonate as CO ₃	0 mg/l	-	0900	11/09/93	BH
Alkalinity Total as CaCO ₃	486 mg/l	0.84	0900	11/09/93	BH
Chloride as Cl	65 mg/l	0.24	1300	11/09/93	BH
Sulfate as SO ₄	777 mg/l	2.29	1145	11/09/93	CC
CATIONS					
Calcium as Ca	90 mg/l	0.39	1130	11/15/93	NH
Hardness as CaCO ₃	660 mg/l	-	1130	11/15/93	NH
Magnesium as Mg	105 mg/l	0.31	1000	11/05/93	NH
Sodium as Na	340 mg/l	0.81	1130	11/15/93	NH
INORGANICS					
Electrical Conductivity	2410 umhos/cm	5.1	1500	11/12/93	BH
Oil & Grease	<1 mg/l	1	1130	11/05/93	CC
Settleable Solids	<0.2 ml/l	0.2	0945	11/02/93	CC
Sulfide as S	<1 mg/l	0.61	1500	11/02/93	DD
Total Dissolved Solids	1600 mg/l	11.7	1605	11/02/93	CC
Total Suspended Solids	<2 mg/l	3.5	1525	11/02/93	CC
METALS					
Aluminum as Al (Dissolved)	0.1 mg/l	0.023	1100	11/17/93	NH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1300	11/08/93	AH
Boron as B (Dissolved)	0.3 mg/l	0.045	1100	11/17/93	NH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1130	11/30/93	AH
Copper as Cu (Dissolved)	<0.02 mg/l	0.005	1100	11/17/93	NH
Iron as Fe (Dissolved)	<0.05 mg/l	0.008	1100	11/17/93	NH
Iron as Fe (Total)	<0.05 mg/l	0.008	1330	12/01/93	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1400	11/22/93	NH
Manganese as Mn (Dissolved)	<0.02 mg/l	0.003	1100	11/17/93	NH
Manganese as Mn (Total)	<0.02 mg/l	0.003	1330	12/01/93	BH
Molybdenum as Mn (Total)	<0.05 mg/l	0.023	1100	11/17/93	NH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	11/10/93	AH
Zinc as Zn (Dissolved)	<0.02 mg/l	0.008	1100	11/17/93	NH
NUTRIENTS					
Ammonia Nitrogen as N	<0.05 mg/l	0.034	1130	11/12/30	DD
Nitrite as N	<0.05 mg/l	0.005	1130	11/02/93	DD
Phosphorous Total	0.05 mg/l	<0.002	1330	11/18/93	CC
Nitrate as N	0.77 mg/l	0.005	1130	11/03/93	DD

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146285
 Sample Name: WELL/102783
 Sample Date: 10/27/93
 Collected by: G. HOWELL
 Time Sampled: 0915
 Sample Type: WATER

Page 8

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as HCO ₃	599 mg/l	1.02	0900	11/09/93	BH
Alkalinity Carbonate as CO ₃	0 mg/l	-	0900	11/09/93	BH
Alkalinity Total as CaCO ₃	491 mg/l	0.84	0900	11/09/93	BH
Chloride as Cl	47 mg/l	0.24	1300	11/09/93	BH
Sulfate as SO ₄	604 mg/l	2.29	1145	11/09/93	CC
CATIONS					
Calcium as Ca	99 mg/l	0.39	1130	11/15/93	NH
Hardness as CaCO ₃	590 mg/l	-	1130	11/15/93	NH
Magnesium as Mg	84 mg/l	0.31	1000	11/05/93	NH
Sodium as Na	276 mg/l	0.81	1000	11/05/93	NH
INORGANICS					
Electrical Conductivity	2100 umhos/cm	5.1	1500	11/12/93	BH
Oil & Grease	<1 mg/l	1	1130	11/05/93	CC
Settleable Solids	<0.2 ml/l	0.2	1130	11/02/93	CC
Sulfide as S	<1 mg/l	0.61	1500	11/02/93	DD
Total Dissolved Solids	1400 mg/l	11.7	1605	11/02/93	CC
Total Suspended Solids	<2 mg/l	3.5	1525	11/02/93	CC
METALS					
Aluminum as Al (Dissolved)	<0.1 mg/l	0.023	1100	11/17/93	NH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1300	11/08/93	AH
Boron as B (Dissolved)	0.3 mg/l	0.045	1100	11/17/93	NH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1130	11/30/93	AH
Copper as Cu (Dissolved)	<0.02 mg/l	0.005	1100	11/17/93	NH
Iron as Fe (Dissolved)	<0.05 mg/l	0.008	1100	11/17/93	NH
Iron as Fe (Total)	0.14 mg/l	0.008	1330	12/01/93	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1400	11/22/93	NH
Manganese as Mn (Dissolved)	<0.02 mg/l	0.003	1100	11/17/93	NH
Manganese as Mn (Total)	<0.02 mg/l	0.003	1330	12/01/93	BH
Molybdenum as Mn (Total)	<0.05 mg/l	0.023	1100	11/17/93	NH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	11/10/93	AH
Zinc as Zn (Dissolved)	<0.02 mg/l	0.008	1100	11/17/93	NH
NUTRIENTS					
Ammonia Nitrogen as N	<0.05 mg/l	0.034	1130	11/12/30	DD
Nitrite as N	<0.05 mg/l	0.005	1130	11/02/93	DD
Phosphorous Total	0.05 mg/l	<0.002	1330	11/18/93	CC
Nitrate as N	1.21 mg/l	0.005	1130	11/03/93	DD

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146286
 Sample Name: DUPLICATE 146281 CRS/102693
 Sample Date: 10/26/93
 Collected by: G. HOWELL
 Time Sampled: 1320
 Sample Type: WATER

Page 9

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS*					
Alkalinity Bicarbonate as HCO ₃	542 mg/l	1.02	0900	11/09/93	BH
Alkalinity Carbonate as CO ₃	0 mg/l	-	0900	11/09/93	BH
Alkalinity Total as CaCO ₃	444 mg/l	0.84	0900	11/09/93	BH
Chloride as Cl	97 mg/l	0.24	1300	11/09/93	BH
Sulfate as SO ₄	2860 mg/l	2.29	1345	11/10/93	CC
CATIONS*					
Calcium as Ca	549 mg/l	0.39	1130	11/15/93	NH
Hardness as CaCO ₃	2780 mg/l	-	1130	11/15/93	NH
Magnesium as Mg	342 mg/l	0.31	1130	11/15/93	NH
Sodium as Na	552 mg/l	0.81	1130	11/15/93	NH
INORGANICS					
Electrical Conductivity	5370 umhos/cm	5.1	1500	11/12/93	BH
Settleable Solids	<0.2 ml/l	0.2	1510	11/01/93	CC
Sulfide as S	<1 mg/l	0.61	1500	11/02/93	DD
Total Dissolved Solids	5100 mg/l	11.7	1605	11/02/93	CC
Total Suspended Solids	42 mg/l	3.5	1525	11/02/93	CC
METALS					
Aluminum as Al (Dissolved)	0.4 mg/l	0.023	1100	11/17/93	NH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1300	11/08/93	AH
Boron as B (Dissolved)	1.0 mg/l	0.045	1100	11/17/93	NH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1130	11/30/93	AH
Copper as Cu (Dissolved)	<0.02 mg/l	0.005	1100	11/17/93	NH
Iron as Fe (Dissolved)	6.35 mg/l	0.008	1100	11/17/93	NH
Iron as Fe (Total)	50 mg/l	0.008	1330	12/01/93	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1400	11/22/93	NH
Manganese as Mn (Dissolved)	1.30 mg/l	0.003	1100	11/17/93	NH
Manganese as Mn (Total)	2.3 mg/l	0.003	1330	12/01/93	BH

* The cation-anion analysis does not meet our quality assurance requirements. However, the values reported herein were verified by duplicate analysis. This indicates there are other unmeasured cations or anions present in the sample.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146286
 Sample Name: DUPLICATE 146281 CRS/102693
 Sample Date: 10/26/93
 Collected by: G. HOWELL
 Time Sampled: 1320
 Sample Type: WATER

Page 10

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
Molybdenum as Mn (Total)	<0.05 mg/l	0.023	1100	11/17/93	NH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	11/10/93	AH
Zinc as Zn (Dissolved)	0.34 mg/l	0.008	1100	11/17/93	NH
NUTRIENTS					
Ammonia Nitrogen as N	1.73 mg/l	0.034	1130	11/12/93	DO
Nitrite as N	<0.05 mg/l	0.005	1130	11/02/93	DO
Phosphorous Total	0.85 mg/l	<0.002	1330	11/18/93	CC
Nitrate as N	0.34 mg/l	0.005	1130	11/03/93	DO

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146287
 Sample Name: SPIKE 146284 ICE-1/102793
 Sample Date: 10/26/93
 Collected by: G. HOWELL
 Time Sampled: 1320
 Sample Type: WATER

Page 11

PARAMETER	MEASURED VALUE	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS				
Alkalinity Total as CaCO ₃	98 %	0900	11/09/93	BH
Chloride as Cl	95 %	1300	11/09/93	BH
Sulfate as SO ₄	97 %	1145	11/09/93	CC
CATIONS				
Calcium as Ca	100 %	1130	11/15/93	NH
Magnesium as Mg	102 %	1130	11/15/93	NH
Sodium as Na	100 %	1130	11/15/93	NH
INORGANICS				
Sulfide as S	110 %	1500	11/02/93	DD
METALS				
Aluminum as Al (Dissolved)	94 %	1100	11/17/93	NH
Arsenic as As (Dissolved)	93 %	1300	11/08/93	AH
Boron as B (Dissolved)	104 %	1100	11/17/93	NH
Cadmium as Cd (Dissolved)	105 %	1130	11/30/93	AH
Copper as Cu (Dissolved)	100 %	1100	11/17/93	NH
Iron as Fe (Dissolved)	104 %	1100	11/17/93	NH
Iron as Fe (Total)	100 %	1330	12/01/93	BH
Lead as Pb (Dissolved)	90 %	1400	11/22/93	NH
Manganese as Mn (Dissolved)	100 %	1100	11/17/93	NH
Manganese as Mn (Total)	90 %	1330	12/01/93	BH
Molybdenum as Mn (Total)	100 %	1100	11/17/93	NH
Selenium as Se (Dissolved)	100 %	1400	11/10/93	AH
Zinc as Zn (Dissolved)	100 %	1100	11/17/93	NH
NUTRIENTS				
Ammonia Nitrogen as N	106 %	1130	11/12/30	DD
Nitrite as N	103 %	1130	11/02/93	DD
Phosphorous Total	96 %	1330	11/18/93	CC
Nitrate as N	102 %	1130	11/03/93	DD

Project or Site Name

5-137.3-91 DOGM

Project Number

A. Howell
Sampler Name (Printed)

Huntingdon

Consulting Engineers Environmental Scientists

- Chen-Northern, Inc., Division
- Thomas-Hartig & Associates, Inc., Division
- Schaefer Dixon Associates, Inc., Division
- Herzog Associates, Inc., Division

Contact or Report to

117 W. 2320 S. + B. 2C, UT 84119

Contact Address or Location

Signature
Sampler Signature

DATE COLLECTED	TIME COLLECTED	SAMPLE LOCATION OR DESCRIPTION	COMP OR GRAB	SAMPLE MATRIX	NO. OF CONTAINERS	ANALYSIS REQUIRED										NOTES	LAB NUMBER
						As	Sulfide	Total Alkal	As	As	As	As	As	As	As		
10-26-93	1320	CRS/102693	grab	H ₂ O	7	x	x	x	x	x	x	x	x	x	x	100%, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	146281
10-26-93	1400	CRB/102693	grab	H ₂ O	7	x	x	x	x	x	x	x	x	x	x	82	
10-27-93	0730	F-2/102793	grab	H ₂ O	7	x	x	x	x	x	x	x	x	x	x	83	
10-27-93	0830	ICE-1/102793	grab	H ₂ O	7	x	x	x	x	x	x	x	x	x	x	84	
10-27-93	0915	WELL/102793	grab	H ₂ O	7	x	x	x	x	x	x	x	x	x	x	85	
																Suppl 146281 CRS/102693 10/26/93 86	
																Suppl 146284 ICE-1/102793 10/27/93 87	
																Sulfide	
																+ Nitrate preserved in lab - (was out holding tank) on 11/1/93 3:15 pm	
Relinquished by:						Date	Time	Received by:	Remarks: ATTN: David Council See attached list for complete parameter listing Cooler temp 15.7°C								
Relinquished by:						Date	Time	Received by:									
Relinquished by:						Date	Time	Received by:									
Relinquished by:						Date	Time	Received by:									

FEB-9-94 MED 13:38

CHEN NORTHERN

FAX NO. 801-487-0963

P. 12

Huntingdon

Chen-Northern, Inc.

600 SOUTH 25TH STREET

P.O. BOX 30615

BILLINGS, MT 59107

(406) 248-9161

FAX (406) 248-9282

TECHNICAL REPORT

REPORT TO: ATTN: CHUCK WEMPLE
CHEN-NORTHERN, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY UT 84119

DATE: November 30, 1993
JOB NUMBER: 87-927
SHEET: 1 of 9
INVOICE NO.: 003888

REPORT OF: Water Analysis - SCA-SWD - 5-137.2-91

SAMPLE IDENTIFICATION:

On November 1, 1993, these water samples (our laboratory numbers 146273 through 146280) were received in our laboratory for analysis. Tests were conducted in accordance with the U.S. Environmental Protection Agency Manual EPA 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes."

The results of the analysis are shown on the following pages.

A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

Reviewed by

David Conniff

MC

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146273
 Sample Name: CRB 004/102693
 Sample Date: 10/26/93
 Collected by: M. HOWELL
 Time Sampled: 1140
 Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as HCO ₃	580 mg/l		1600	11/08/93	BH
Alkalinity Carbonate as CO ₃	10 mg/l		1600	11/08/93	BH
Alkalinity Total as CaCO ₃	493 mg/l	0.84	1600	11/08/93	BH
Chloride as Cl	86 mg/l	0.24	1300	11/08/93	BH
Sulfate as SO ₄	436 mg/l	2.29	1145	11/09/93	CC
CATIONS					
Calcium as Ca	24 mg/l	0.39	0930	11/04/93	NH
Hardness as CaCO ₃	134 mg/l		0930	11/04/93	NH
Magnesium as Mg	18 mg/l	0.31	0930	11/04/93	NH
Potassium as K	14 mg/l	0.18	1400	11/01/93	AH
Sodium as Na	432 mg/l	0.81	0930	11/04/93	NH
INORGANICS					
pH	8.5 S.U.		1600	11/01/93	BH
Total Dissolved Solids	1300 mg/l	11.7	1605	11/02/93	CC
METALS					
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1300	11/05/93	AH
Barium as Ba (Dissolved)	<0.1 mg/l	0.031	1500	11/04/93	NH
Cadmium as Cd (Dissolved)	<0.003 mg/l	0.002	1500	11/04/93	NH
Chromium as Cr (Dissolved)	<0.02 mg/l	0.009	1500	11/04/93	NH
Copper as Cu (Dissolved)	<0.02 mg/l	0.005	1500	11/04/93	NH
Lead as Pb (Dissolved)	<0.01 mg/l	0.0012	1530	11/22/93	NH
Mercury as Hg (Dissolved)	<0.0005mg/l	0.00025	1000	11/09/93	AH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	11/11/93	AH
Silver as Ag (Dissolved)	<0.01 mg/l	0.011	1345	11/24/93	BH
Zinc as Zn (Dissolved)	0.08 mg/l	0.008	1500	11/04/93	NH

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146274
 Sample Name: WHITMORE SPRINGS/102793
 Sample Date: 10/27/93
 Collected by: M. HOWELL
 Time Sampled: 0730
 Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as HCO ₃	636 mg/l		1600	11/08/93	BH
Alkalinity Carbonate as CO ₃	0 mg/l		1600	11/08/93	BH
Alkalinity Total as CaCO ₃	521 mg/l	0.84	1600	11/08/93	BH
Chloride as Cl	70 mg/l	0.24	1300	11/08/93	BH
Sulfate as SO ₄	660 mg/l	1.83	1145	11/09/93	CC
CATIONS					
Calcium as Ca	96 mg/l	0.39	1130	11/15/93	NH
Hardness as CaCO ₃	660 mg/l		1130	11/15/93	NH
Magnesium as Mg	102 mg/l	0.31	1130	11/15/93	NH
Potassium as K	8 mg/l	0.18	1400	11/01/93	AH
Sodium as Na	309 mg/l	0.81	1130	11/15/93	NH
INORGANICS					
pH	8.3 S.U.		1600	11/01/93	BH
Total Dissolved Solids	1500 mg/l	11.7	1605	11/02/93	CC
METALS					
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1300	11/05/93	AH
Barium as Ba (Dissolved)	<0.1 mg/l	0.031	1500	11/04/93	NH
Cadmium as Cd (Dissolved)	<0.003 mg/l	0.002	1500	11/04/93	NH
Chromium as Cr (Dissolved)	<0.02 mg/l	0.009	1500	11/04/93	NH
Copper as Cu (Dissolved)	<0.02 mg/l	0.005	1500	11/04/93	NH
Lead as Pb (Dissolved)	<0.01 mg/l	0.0012	1530	11/22/93	NH
Mercury as Hg (Dissolved)	<0.0005mg/l	.00025	1000	11/09/93	AH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	11/11/93	AH
Silver as Ag (Dissolved)	0.02 mg/l	0.011	1345	11/24/93	BH
Zinc as Zn (Dissolved)	<0.02 mg/l	0.008	1500	11/04/93	NH

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146275
 Sample Name: FRESH WATER RES./102793
 Sample Date: 10/27/93
 Collected by: M. HOWELL
 Time Sampled: 1000
 Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as HCO ₃	494 mg/l		1600	11/08/93	BH
Alkalinity Carbonate as CO ₃	21 mg/l		1600	11/08/93	BH
Alkalinity Total as CaCO ₃	440 mg/l	0.84	1600	11/08/93	BH
Chloride as Cl	39 mg/l	0.24	1300	11/08/93	BH
Sulfate as SO ₄	358 mg/l	1.83	1600	11/22/93	CC
CATIONS					
Calcium as Ca	39 mg/l	0.39	1130	11/15/93	NH
Hardness as CaCO ₃	270 mg/l		1130	11/15/93	NH
Magnesium as Mg	42 mg/l	0.31	1130	11/15/93	NH
Potassium as K	8 mg/l	0.18	1400	11/01/93	AH
Sodium as Na	278 mg/l	0.81	1130	11/15/93	NH
INORGANICS					
pH	8.8 S.U.		1600	11/01/93	BH
Total Dissolved Solids	960 mg/l	11.7	1605	11/02/93	CC
METALS					
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1300	11/05/93	AH
Barium as Ba (Dissolved)	<0.1 mg/l	0.031	1500	11/04/93	NH
Cadmium as Cd (Dissolved)	<0.003 mg/l	0.002	1500	11/04/93	NH
Chromium as Cr (Dissolved)	<0.02 mg/l	0.009	1500	11/04/93	NH
Copper as Cu (Dissolved)	<0.02 mg/l	0.005	1500	11/04/93	NH
Lead as Pb (Dissolved)	<0.01 mg/l	0.0012	1530	11/22/93	NH
Mercury as Hg (Dissolved)	<0.0005mg/l	0.00025	1000	11/09/93	AH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	11/11/93	AH
Silver as Ag (Dissolved)	<0.01 mg/l	0.011	1345	11/24/93	BH
Zinc as Zn (Dissolved)	1.70 mg/l	0.008	1500	11/04/93	NH

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146276
 Sample Name: MW-1/102793
 Sample Date: 10/27/93
 Collected by: M. HOWELL
 Time Sampled: 1140
 Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as HCO ₃	615 mg/l		1600	11/08/93	BH
Alkalinity Carbonate as CO ₃	0 mg/l		1600	11/08/93	BH
Alkalinity Total as CaCO ₃	504 mg/l	0.84	1600	11/08/93	BH
Chloride as Cl	85 mg/l	0.24	1300	11/08/93	BH
Sulfate as SO ₄	1050 mg/l	1.83	1145	11/09/93	CC
CATIONS					
Calcium as Ca	153 mg/l	0.39	0930	11/04/93	NH
Hardness as CaCO ₃	1099 mg/l		0930	11/04/93	NH
Magnesium as Mg	174 mg/l	0.31	0930	11/04/93	NH
Potassium as K	9 mg/l	0.18	1400	11/01/93	AH
Sodium as Na	294 mg/l	0.81	0930	11/04/93	NH
INORGANICS					
pH	7.7 S.U.		1600	11/01/93	BH
Total Dissolved Solids	2100 mg/l	11.7	1605	11/02/93	CC
METALS					
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1300	11/05/93	AH
Barium as Ba (Dissolved)	<0.1 mg/l	0.031	1500	11/04/93	NH
Cadmium as Cd (Dissolved)	<0.003 mg/l	0.002	1500	11/04/93	NH
Chromium as Cr (Dissolved)	*<0.03 mg/l	0.009	1500	11/04/93	NH
Copper as Cu (Dissolved)	<0.02 mg/l	0.005	1500	11/04/93	NH
Lead as Pb (Dissolved)	<0.01 mg/l	0.0012	1530	11/22/93	NH
Mercury as Hg (Dissolved)	<0.0005mg/l	0.00025	1000	11/09/93	AH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	11/11/93	AH
Silver as Ag (Dissolved)	0.02 mg/l	0.011	1345	11/24/93	BH
Zinc as Zn (Dissolved)	0.34 mg/l	0.008	1500	11/04/93	NH

* Higher detection limit due to the presence of interfering elements.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146277
 Sample Name: MW-2/102793
 Sample Date: 10/27/93
 Collected by: M. HOWELL
 Time Sampled: 1240
 Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as HCO ₃	602 mg/l		1600	11/08/93	BH
Alkalinity Carbonate as CO ₃	0 mg/l		1600	11/08/93	BH
Alkalinity Total as CaCO ₃	493 mg/l	0.84	1600	11/08/93	BH
Chloride as Cl	74 mg/l	0.24	1300	11/08/93	BH
Sulfate as SO ₄	736 mg/l	1.83	1145	11/09/93	CC
CATIONS					
Calcium as Ca	102 mg/l	0.39	1130	11/15/93	NH
Hardness as CaCO ₃	712 mg/l		1130	11/15/93	NH
Magnesium as Mg	111 mg/l	0.31	0930	11/04/93	NH
Potassium as K	12 mg/l	0.18	1400	11/01/93	AH
Sodium as Na	309 mg/l	0.81	0930	11/04/93	NH
INORGANICS					
pH	7.8 S.U.		1600	11/01/93	BH
Total Dissolved Solids	1600 mg/l	11.7	1605	11/02/93	CC
METALS					
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1300	11/05/93	AH
Barium as Ba (Dissolved)	<0.1 mg/l	0.031	1500	11/04/93	NH
Cadmium as Cd (Dissolved)	<0.003 mg/l	0.002	1500	11/04/93	NH
Chromium as Cr (Dissolved)	<0.02 mg/l	0.009	1500	11/04/93	NH
Copper as Cu (Dissolved)	<0.02 mg/l	0.005	1500	11/04/93	NH
Lead as Pb (Dissolved)	<0.01 mg/l	0.0012	1530	11/22/93	NH
Mercury as Hg (Dissolved)	<0.0005mg/l	0.00025	1000	11/09/93	AH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	11/11/93	AH
Silver as Ag (Dissolved)	0.02 mg/l	0.011	1345	11/24/93	BH
Zinc as Zn (Dissolved)	0.07 mg/l	0.008	1500	11/04/93	NH

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146278
 Sample Name: MW-3/102793
 Sample Date: 10/27/93
 Collected by: M. HOWELL
 Time Sampled: 1330
 Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as HCO ₃	649 mg/l		1600	11/08/93	BH
Alkalinity Carbonate as CO ₃	0 mg/l		1600	11/08/93	BH
Alkalinity Total as CaCO ₃	532 mg/l	0.84	1600	11/08/93	BH
Chloride as Cl	79 mg/l	0.24	1300	11/08/93	BH
Sulfate as SO ₄	928 mg/l	1.83	1145	11/09/93	CC
CATIONS					
Calcium as Ca	132 mg/l	0.39	0930	11/04/93	NH
Hardness as CaCO ₃	923 mg/l		0930	11/04/93	NH
Magnesium as Mg	144 mg/l	0.31	0930	11/04/93	NH
Potassium as K	10 mg/l	0.18	1400	11/01/93	AH
Sodium as Na	321 mg/l	0.81	0930	11/04/93	NH
INORGANICS					
pH	7.9 S.U.		1600	11/01/93	BH
Total Dissolved Solids	1900 mg/l	11.7	1605	11/02/93	CC
METALS					
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1300	11/05/93	AH
Barium as Ba (Dissolved)	<0.1 mg/l	0.031	1500	11/04/93	NH
Cadmium as Cd (Dissolved)	<0.003 mg/l	0.002	1500	11/04/93	NH
Chromium as Cr (Dissolved) *	<0.03 mg/l	0.009	1500	11/04/93	NH
Copper as Cu (Dissolved)	<0.02 mg/l	0.0095	1500	11/04/93	NH
Lead as Pb (Dissolved)	<0.01 mg/l	0.012	1530	11/22/93	NH
Mercury as Hg (Dissolved)	<0.0005mg/l	0.00025	1000	11/09/93	AH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	11/10/93	AH
Silver as Ag (Dissolved)	0.02 mg/l	0.011	1345	11/24/93	BH
Zinc as Zn (Dissolved)	0.02 mg/l	0.008	1500	11/04/93	NH

* Higher detection limit due to the presence of interfering elements.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146279
 Sample Name: DUPLICATE 146274 WHITMORE SPRINGS/102793
 Sample Date: 10/27/93
 Collected by: M. HOWELL
 Time Sampled: 0730
 Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as HC03	626 mg/l		1600	11/08/93	BH
Alkalinity Carbonate as C03	0 mg/l		1600	11/08/93	BH
Alkalinity Total as CaC03	513 mg/l	0.84	1600	11/08/93	BH
Chloride as Cl	67 mg/l	0.24	1300	11/08/93	BH
Sulfate as S04	667 mg/l	1.83	1145	11/09/93	CC
CATIONS					
Calcium as Ca	99 mg/l	0.39	1130	11/15/93	NH
Hardness as CaC03	667 mg/l		1130	11/15/93	NH
Magnesium as Mg	102 mg/l	0.31	0930	11/04/93	NH
Potassium as K	8 mg/l	0.18	1400	11/01/93	AH
Sodium as Na	309 mg/l	0.81	1130	11/15/93	NH
INORGANICS					
pH	8.5 S.U.		1600	11/01/93	BH
Total Dissolved Solids	1500 mg/l	11.7	1605	11/02/93	CC
METALS					
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1300	11/05/93	AH
Barium as Ba (Dissolved)	<0.01 mg/l	0.031	1500	11/04/93	NH
Cadmium as Cd (Dissolved)	<0.003 mg/l	0.002	1500	11/04/93	NH
Chromium as Cr (Dissolved)	<0.02 mg/l	0.009	1500	11/04/93	NH
Copper as Cu (Dissolved)	<0.02 mg/l	0.005	1500	11/04/93	NH
Lead as Pb (Dissolved)	<0.01 mg/l	0.012	1530	11/22/93	NH
Mercury as Hg (Dissolved)	<0.0005mg/l	0.00025	1000	11/09/93	AH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	11/11/93	AH
Silver as Ag (Dissolved)	0.02 mg/l	0.011	1345	11/24/93	BH
Zinc as Zn (Dissolved)	<0.02 mg/l	0.008	1500	11/04/93	NH

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 146280
 Sample Name: SPIKE 146277 MW-2/102793
 Sample Date: 10/27/93
 Collected by: M. HOWELL
 Time Sampled: 1240
 Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Total as CaCO3	100 %	0.84	1600	11/08/93	BH
Chloride as Cl	98 %	0.24	1300	11/08/93	BH
Sulfate as SO4	102 %	1.83	1145	11/09/93	CC
CATIONS					
Calcium as Ca	101 %	0.39	0930	11/04/93	NH
Magnesium as Mg	100 %	0.31	0930	11/04/93	NH
Potassium as K	100 %	0.18	1400	11/01/93	AH
Sodium as Na	101 %	0.81	0930	11/04/93	NH
METALS					
Arsenic as As (Dissolved)	93 %	0.0014	1300	11/05/93	AH
Barium as Ba (Dissolved)	96 %	0.031	1500	11/04/93	NH
Cadmium as Cd (Dissolved)	94 %	0.002	1500	11/04/93	NH
Chromium as Cr (Dissolved)	88 %	0.009	1500	11/04/93	NH
Copper as Cu (Dissolved)	84 %	0.005	1500	11/04/93	NH
Lead as Pb (Dissolved)	104 %	0.012	1530	11/22/93	NH
Mercury as Hg (Dissolved)	100 %	0.00025	1000	11/09/93	AH
Selenium as Se (Dissolved)	100 %	0.0011	1400	11/11/93	AH
Silver as Ag (Dissolved)	97 %	0.011	1345	11/24/93	BH
Zinc as Zn (Dissolved)	100 %	0.008	1500	11/04/93	NH

Huntingdon

Chen-Northern, Inc.

600 SOUTH 25TH STREET
P.O. BOX 30615
SALT LAKE CITY, MT 59107
(406) 248-9161
FAX (406) 248-9282

TECHNICAL REPORT

REPORT TO: ATTN: CHUCK WEMPLE
CHEN-NORTHERN, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY UT 84119

DATE: February 28, 1994
JOB NUMBER: 87-927
SHEET: 1 of 14
INVOICE NO.: 026905

REPORT OF: Surface Water Analysis - SCA DOGM 5-137.3-91

SAMPLE IDENTIFICATION:

On January 18, 1994, these surface water samples (our laboratory numbers 148524 through 148530) were received in our laboratory for analysis. Tests were conducted in accordance with the U.S. Environmental Protection Agency Manual EPA 600/4-79-020 "Methods for Chemical Analysis of Water and Wastes."

The test results are shown on the following pages.

A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

The samples were received cool and were properly preserved in accordance with EPA guidelines.

Reviewed by

David Cornish

mc

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 148524
 Sample Name: CRS/011494
 Sample Date: 01/14/94
 Collected by: GREG McDONALD
 Time Sampled: 1035
 Sample Type: SURFAACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as	570 mg/l		1100	02/10/94	BH
Alkalinity Carbonate as C	0 mg/l		1100	02/10/94	BH
Alkalinity Total as CaCO3	467 mg/l	0.84	1100	02/10/94	BH
Chloride as Cl	97 mg/l	1.41	1400	01/26/94	BH
Sulfate as SO4	3180 mg/l	2.29	1115	02/02/94	CC
CATIONS					
Calcium as Ca	560 mg/l	0.39	1600	02/04/94	BH
Hardness as CaCO3	2800 mg/l		1600	02/04/94	BH
Magnesium as Mg	340 mg/l	0.31	1600	02/04/94	BH
Potassium as K	56 mg/l	0.18	1400	01/28/94	AH
Sodium as Na	530 mg/l	0.81	1600	02/04/94	BH
INORGANICS					
Oil & Grease	<1 mg/l	0.9	1030	01/27/94	TK
Settleable Solids	0.4 ml/l	0.1	1150	01/19/94	CC
Total Dissolved Solids	4930 mg/l	11.7	1720	01/20/94	BH
Total Suspended Solids	16 mg/l	3.5	1300	01/21/94	BH
METALS					
Aluminum as Al (Dissolved)	* <0.5 mg/l	0.023	1400	02/03/94	BH
Arsenic as As (Dissolved)	0.005 mg/l	0.0014	0930	01/20/94	AH
Boron as B (Dissolved)	1.0 mg/l	0.045	1100	02/03/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1100	01/27/94	BH
Copper as Cu (Dissolved)	* <0.10 mg/l	0.005	1100	02/03/94	BH
Iron as Fe (Dissolved)	12 mg/l	0.008	1100	02/03/94	BH
Iron as Fe (Total)	21 mg/l	0.008	1630	02/03/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1300	01/20/94	AH
Manganese as Mn (Dissolve)	0.33 mg/l	0.003	1500	02/25/94	BH
Manganese as Mn (Total)	0.60 mg/l	0.003	1500	02/25/94	BH
Molybdenum as Mo (Dissolv)	* <0.25 mg/l	0.023	1100	02/03/94	BH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1130	01/21/94	AH
Zinc as Zn (Dissolved)	* <0.10 mg/l	0.008	1100	02/03/94	BH

* Higher detection limit is due to interference present in the sample.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 148524
Sample Name: CRS/011494
Sample Date: 01/14/94
Collected by: GREG McDONALD
Time Sampled: 1035
Sample Type: SURFAACE WATER

Page 3

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
NUTRIENTS					
Ammonia Nitrogen as N	2.11 mg/l	0.034	1515	01/24/94	CC
Nitrite as N	<0.05 mg/l	0.005	1200	01/20/94	DD
Phosphorous Total	0.76 mg/l	0.002	1600	02/09/94	CC
Nitrate as N	0.22 mg/l	0.005	1015	01/28/94	CC

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 148525
 Sample Name: CRB-011494
 Sample Date: 01/14/94
 Collected by: GREG McDONALD
 Time Sampled: 1130
 Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as	369 mg/l		1100	01/22/94	HB
Alkalinity Carbonate as C	0 mg/l		1100	01/22/94	HB
Alkalinity Total as CaCO ₃	302 mg/l	0.84	1100	01/22/94	HB
Chloride as Cl	121 mg/l	1.41	1400	01/26/94	HB
Sulfate as SO ₄	2780 mg/l	2.29	1115	02/02/94	CC
CATIONS					
Calcium as Ca	490 mg/l	0.39	0930	01/21/94	BH
Hardness as CaCO ₃	2400 mg/l		0930	01/21/94	BH
Magnesium as Mg	290 mg/l	0.31	0930	01/21/94	BH
Potassium as K	39 mg/l	0.18	1400	01/28/94	AH
Sodium as Na	450 mg/l	0.81	0930	01/21/94	BH
INORGANICS					
Oil & Grease	<1 mg/l	0.9	1030	01/27/94	TK
Settleable Solids	<0.1 ml/l	0.1	0940	01/19/94	CC
Total Dissolved Solids	4320 mg/l	11.7	1720	01/20/94	HB
Total Suspended Solids	<5 mg/l	3.5	1300	01/21/94	HB
METALS					
Aluminum as Al (Dissolved)	* <0.5 mg/l	0.023	1400	02/03/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	0930	01/20/94	AH
Boron as B (Dissolved)	0.7 mg/l	0.045	1100	02/03/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1100	01/27/94	BH
Copper as Cu (Dissolved)	* <0.10 mg/l	0.005	1100	02/03/94	BH
Iron as Fe (Dissolved)	* <0.25 mg/l	0.008	1330	02/08/94	BH
Iron as Fe (Total)	* <0.25 mg/l	0.008	1630	02/03/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1300	01/20/94	AH
Manganese as Mn (Dissolve)	* <0.20 mg/l	0.003	1100	02/03/94	BH
Manganese as Mn (Total)	* <0.10 mg/l	0.003	1630	02/03/94	BH
Molybdenum as Mo (Dissolv)	* <0.25 mg/l	0.023	1100	02/03/94	BH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1130	01/21/94	AH
Zinc as Zn (Dissolved)	* <0.10 mg/l	0.008	1100	02/03/94	BH

* Higher detection limit is due to interference present in the sample.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 148525
Sample Name: CRB-011494
Sample Date: 01/14/94
Collected by: GREG McDONALD
Time Sampled: 1130
Sample Type: SURFACE WATER

Page 5

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
NUTRIENTS					
Ammonia Nitrogen as N	<0.05 mg/l	0.034	1515	01/24/94	CC
Nitrite as N	<0.05 mg/l	0.005	1200	01/20/94	DD
Phosphorous Total	<0.02 mg/l	0.002	1600	02/09/94	CC
Nitrate as N	1.33 mg/l	0.005	1015	01/28/94	CC

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 148526
 Sample Name: F-2/011394
 Sample Date: 01/13/94
 Collected by: GREG McDONALD
 Time Sampled: 1600
 Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as	605 mg/l		1100	02/10/94	HB
Alkalinity Carbonate as C	0 mg/l		1100	02/10/94	HB
Alkalinity Total as CaCO ₃	496 mg/l	0.84	1100	02/10/94	HB
Chloride as Cl	44 mg/l	1.41	1400	01/26/94	HB
Sulfate as SO ₄	632 mg/l	2.29	1115	02/02/94	CC
CATIONS					
Calcium as Ca	94 mg/l	0.39	1600	02/04/94	BH
Hardness as CaCO ₃	690 mg/l		1600	02/04/94	BH
Magnesium as Mg	110 mg/l	0.31	1600	02/04/94	BH
Potassium as K	7 mg/l	0.18	1400	01/28/94	AH
Sodium as Na	260 mg/l	0.81	1600	02/04/94	BH
INORGANICS					
Oil & Grease	<1 mg/l	0.9	1030	01/27/94	TK
Settleable Solids	<0.1 ml/l	0.1	0940	01/19/94	CC
Total Dissolved Solids	1390 mg/l	11.7	1720	01/20/94	HB
Total Suspended Solids	<5 mg/l	3.5	1300	01/21/94	HB
METALS					
Aluminum as Al (Dissolved)	* <0.5 mg/l	0.023	1400	02/03/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	0930	01/20/94	AH
Boron as B (Dissolved)	* <0.5 mg/l	0.045	1100	02/03/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1100	01/27/94	BH
Copper as Cu (Dissolved)	* <0.10 mg/l	0.005	1100	02/03/94	BH
Iron as Fe (Dissolved)	* <0.25 mg/l	0.008	1100	02/03/94	BH
Iron as Fe (Total)	0.30 mg/l	0.008	1630	02/03/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1300	01/20/94	AH
Manganese as Mn (Dissolve)	* <0.10 mg/l	0.003	1100	02/03/94	BH
Manganese as Mn (Total)	0.10 mg/l	0.003	1630	02/03/94	BH
Molybdenum as Mo (Dissolv)	* <0.25 mg/l	0.023	1100	02/03/94	BH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0019	1130	01/21/94	AH
Zinc as Zn (Dissolved)	* <0.10 mg/l	0.008	1100	02/03/94	BH

* Higher detection limit is due to interference present in the sample.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 148526
 Sample Name: F-2/011394
 Sample Date: 01/13/94
 Collected by: GREG McDONALD
 Time Sampled: 1600
 Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
NUTRIENTS					
Ammonia Nitrogen as N	<0.05 mg/l	0.034	1515	01/24/94	CC
Nitrite as N	<0.05 mg/l	0.005	1200	01/20/94	DD
Phosphorous Total	<0.02 mg/l	0.002	1600	02/09/94	CC
Nitrate as N	0.97 mg/l	0.005	1015	01/28/94	CC

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 148527
 Sample Name: ICE-1/0113394
 Sample Date: 01/13/94
 Collected by: GREG McDONALD
 Time Sampled: 1454
 Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as	519 mg/l		1100	01/22/94	HB
Alkalinity Carbonate as C	0 mg/l		1100	01/22/94	HB
Alkalinity Total as CaCO ₃ .	425 mg/l	0.84	1100	01/22/94	HB
Chloride as Cl	59 mg/l	1.41	1400	01/26/94	HB
Sulfate as SO ₄	943 mg/l	2.29	1115	02/02/94	CC
CATIONS					
Calcium as Ca	110 mg/l	0.39	1600	02/04/94	BH
Hardness as CaCO ₃	850 mg/l		1600	02/04/94	BH
Magnesium as Mg	140 mg/l	0.31	0930	01/21/94	BH
Potassium as K	10 mg/l	0.18	1400	01/28/94	AH
Sodium as Na	298 mg/l	0.81	1600	02/04/94	BH
INORGANICS					
Oil & Grease	2 mg/l	0.9	1030	01/27/94	TK
Settleable Solids	<0.1 ml/l	0.1	1045	01/19/94	CC
Total Dissolved Solids	1780 mg/l	11.7	1720	01/20/94	HB
Total Suspended Solids	11 mg/l	3.5	1300	01/21/94	HB
METALS					
Aluminum as Al (Dissolved)	* <0.5 mg/l	0.023	1400	02/03/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	0930	01/20/94	AH
Boron as B (Dissolved)	* <0.5 mg/l	0.045	1100	02/03/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1100	01/27/94	BH
Copper as Cu (Dissolved)	* <0.10 mg/l	0.005	1100	02/03/94	BH
Iron as Fe (Dissolved)	* <0.25 mg/l	0.008	1100	02/03/94	BH
Iron as Fe (Total)	0.30 mg/l	0.008	1630	02/03/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1300	01/20/94	AH
Manganese as Mn (Dissolve)	* <0.10 mg/l	0.003	1100	02/03/94	BH
Manganese as Mn (Total)	* <0.10 mg/l	0.003	1630	02/03/94	BH
Molybdenum as Mo (Dissolv)	* <0.25 mg/l	0.023	1100	02/03/94	BH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1130	01/21/94	AH
Zinc as Zn (Dissolved)	* <0.10 mg/l	0.008	1100	02/03/94	BH

* Higher detection limit is due to interference present in the sample.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 148527
Sample Name: ICE-1/0113394
Sample Date: 01/13/94
Collected by: GREG McDONALD
Time Sampled: 1454
Sample Type: SURFACE WATER

Page 9

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
NUTRIENTS					
Ammonia Nitrogen as N	0.13 mg/l	0.034	1515	01/24/94	CC
Nitrite as N	<0.05 mg/l	0.005	1200	01/20/94	DD
Phosphorous Total	0.05 mg/l	0.002	1600	02/09/94	CC
Nitrate as N	0.69 mg/l	0.005	1015	01/28/94	CC

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 148528
 Sample Name: ICE-2/011394
 Sample Date: 01/13/94
 Collected by: GREG McDONALD
 Time Sampled: 1459
 Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as	530 mg/l		1100	01/22/94	HB
Alkalinity Carbonate as C	0 mg/l		1100	01/22/94	HB
Alkalinity Total as CaCO ₃	434 mg/l	0.84	1100	01/22/94	HB
Chloride as Cl	59 mg/l	1.41	1400	01/26/94	HB
Sulfate as SO ₄	943 mg/l	2.29	1115	02/02/94	CC
CATIONS					
Calcium as Ca	110 mg/l	0.39	1600	02/04/94	BH
Hardness as CaCO ₃	850 mg/l		0930	01/21/94	BH
Magnesium as Mg	140 mg/l	0.31	0930	01/21/94	BH
Potassium as K	12 mg/l	0.18	1400	01/28/94	AH
Sodium as Na	296 mg/l	0.81	1600	02/04/94	BH
INORGANICS					
Oil & Grease	<1 mg/l	0.9	1030	01/27/94	TK
Settleable Solids	<0.1 ml/l	0.1	1045	01/19/94	CC
Total Dissolved Solids	1740 mg/l	11.7	1720	01/20/94	HB
Total Suspended Solids	7 mg/l	3.5	1300	01/21/94	HB
METALS					
Aluminum as Al (Dissolved)	* <0.5 mg/l	0.023	1400	02/03/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	0930	01/20/94	AH
Boron as B (Dissolved)	* <0.5 mg/l	0.045	1100	02/03/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1100	01/27/94	BH
Copper as Cu (Dissolved)	* <0.10 mg/l	0.005	1100	02/03/94	BH
Iron as Fe (Dissolved)	* <0.25 mg/l	0.008	1100	02/03/94	BH
Iron as Fe (Total)	0.35 mg/l	0.008	1630	02/03/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1300	01/20/94	AH
Manganese as Mn (Dissolved)	* <0.10 mg/l	0.003	1100	02/03/94	BH
Manganese as Mn (Total)	* <0.10 mg/l	0.003	1630	02/03/94	BH
Molybdenum as Mo (Dissolved)	* <0.25 mg/l	0.023	1100	02/03/94	BH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1130	01/21/94	AH
Zinc as Zn (Dissolved)	* <0.10 mg/l	0.008	1100	02/03/94	BH

* Higher detection limit is due to interference present in the sample.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 148528
 Sample Name: ICE-2/011394
 Sample Date: 01/13/94
 Collected by: GREG McDONALD
 Time Sampled: 1459
 Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
NUTRIENTS					
Ammonia Nitrogen as N	0.11 mg/l	0.034	1515	01/24/94	CC
Nitrite as N	<0.05 mg/l	0.005	1200	01/20/94	DD
Phosphorous Total	0.05 mg/l	0.002	1600	02/09/94	CC
Nitrate as N	0.71 mg/l	0.005	1015	01/28/94	CC

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 148529
 Sample Name: DUPLICATE 148524 CRS/011494
 Sample Date: 01/14/94
 Collected by: GREG McDONALD
 Time Sampled: 1035
 Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Bicarbonate as	547 mg/l		1100	01/22/94	HB
Alkalinity Carbonate as C	0 mg/l		1100	01/22/94	HB
Alkalinity Total as CaCO3	448 mg/l	0.84	1100	01/22/94	HB
Chloride as Cl	103 mg/l	1.41	1400	01/26/94	HB
Sulfate as SO4	3160 mg/l	2.29	1115	02/02/94	CC
CATIONS					
Calcium as Ca	560 mg/l	0.39	1600	02/04/94	BH
Hardness as CaCO3	2800 mg/l		0930	01/21/94	BH
Magnesium as Mg	340 mg/l	0.31	1600	02/04/94	BH
Potassium as K	56 mg/l	0.18	1400	01/28/94	AH
Sodium as Na	525 mg/l	0.81	1600	02/04/94	BH
INORGANICS					
Total Dissolved Solids	5100 mg/l	11.7	1720	01/20/94	HB
Total Suspended Solids	62 mg/l	3.5	1300	01/21/94	HB
METALS					
Aluminum as Al (Dissolved)	* <0.5 mg/l	0.023	1400	02/03/94	BH
Arsenic as As (Dissolved)	0.005 mg/l	0.0014	0930	01/20/94	AH
Boron as B (Dissolved)	1.2 mg/l	0.045	1100	02/03/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1100	01/27/94	BH
Copper as Cu (Dissolved)	* <0.10 mg/l	0.005	1100	02/03/94	BH
Iron as Fe (Dissolved)	12 mg/l	0.008	1100	02/03/94	BH
Iron as Fe (Total)	20 mg/l	0.008	1630	02/03/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1300	01/20/94	AH
Manganese as Mn (Dissolve)	0.32 mg/l	0.003	1500	02/25/94	BH
Manganese as Mn (Total)	0.60 mg/l	0.003	1500	02/25/94	BH
Molybdenum as Mo (Dissolv)	* <0.25 mg/l	0.023	1100	02/03/94	BH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1130	01/21/94	AH
Zinc as Zn (Dissolved)	* <0.10 mg/l	0.008	1100	02/03/94	BH

* Higher detection limit is due to interference present in the sample.

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 148529
 Sample Name: DUPLICATE 148524 CRS/011494
 Sample Date: 01/14/94
 Collected by: GREG McDONALD
 Time Sampled: 1035
 Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
NUTRIENTS					
Ammonia Nitrogen as N	2.13 mg/l	0.034	1515	01/24/94	CC
Nitrite as N	<0.05 mg/l	0.005	1200	01/20/94	DD
Phosphorous Total	0.75 mg/l	0.002	1600	02/09/94	CC
Nitrate as N	0.26 mg/l	0.005	1015	01/28/94	CC

Client Name: CHEN-NORTHERN, INC. SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 148530
 Sample Name: SPIKE 148528 ICE-2/011394
 Sample Date: 01/13/94
 Collected by: GREG McDONALD
 Time Sampled: 1459
 Sample Type: SURFACE WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
Alkalinity Total as CaCO3	96 %	0.84	1100	01/22/94	HB
Chloride as Cl	102 %	1.41	1400	01/26/94	HB
Sulfate as SO4	101 %	2.29	1115	02/02/94	CC
CATIONS					
Calcium as Ca	100 %	0.39	0930	01/21/94	BH
Magnesium as Mg	98 %	0.31	0930	01/21/94	BH
Potassium as K	100 %	0.18	1400	01/28/94	AH
Sodium as Na	99 %	0.81	0930	01/21/94	BH
METALS					
Aluminum as Al (Dissolved)	100 %	0.023	1400	02/03/94	BH
Arsenic as As (Dissolved)	100 %	0.0014	0930	01/20/94	AH
Boron as B (Dissolved)	103 %	0.045	1100	02/03/94	BH
Cadmium as Cd (Dissolved)	100 %	0.0002	1100	01/27/94	BH
Copper as Cu (Dissolved)	94 %	0.005	1100	02/03/94	BH
Iron as Fe (Dissolved)	105 %	0.008	1100	02/03/94	BH
Iron as Fe (Total)	93 %	0.008	1630	02/03/94	BH
Lead as Pb (Dissolved)	100 %	0.0012	1300	01/20/94	AH
Manganese as Mn (Dissolve)	102 %	0.003	1100	02/03/94	BH
Manganese as Mn (Total)	100 %	0.003	1630	02/03/94	BH
Molybdenum as Mo (Dissolv)	91 %	0.023	1100	02/03/94	BH
Selenium as Se (Dissolved)	92 %	0.0011	1130	01/21/94	AH
Zinc as Zn (Dissolved)	104 %	0.008	1100	02/03/94	BH
NUTRIENTS					
Ammonia Nitrogen as N	95 %	0.034	1515	01/24/94	CC
Nitrite as N	107 %	0.005	1200	01/20/94	DD
Phosphorous Total	100 %	0.002	1600	02/09/94	CC
Nitrate as N	104 %	0.005	1015	01/28/94	CC

March 15, 1994

RECEIVED

MAR 17 1994

Chen-Northern, Inc., Division

600 South 25th Street
Box 30615
Billings, Montana 59107
4061248-9161
Fax 4061248-9282

Huntingdon Chen-Northern, Inc.
1127 West 2320 South, Suite B
Salt Lake City UT 84119

CHEN-NORTHERN, INC.
SALT LAKE CITY, UT

ATTENTION: Chuck Wemple

Dear Chuck,

The cation-anion balances for the last set of water samples from the Sunnyside Cogeneration Plant are as follows:

		Cations (meq/l)	Anions (meq/l)	Difference
148524	CRS/011494	80.41	78.29	2.13
148525	CRB-011494	68.89	67.35	1.54
148526	F-2/011394	25.23	24.33	0.90
148527	ICE-1/011394	30.23	29.81	0.42
148528	ICE-2/011394	30.19	29.99	0.21
148529	CRS/011494 Dup	80.20	77.66	2.54
148511	MW-1/011394	35.25	34.43	0.81
148512	MW-2/011394	28.36	27.50	0.86
148513	MW-3/011394	25.51	25.40	0.11
148514	WS/011394	24.39	23.48	0.91
148515	WSB/011394	24.87	24.12	0.75
148516	GWB/011394	0.20	0.15	0.05
148517	MW-1/011394	35.75	34.75	1.00

We will include the cation-anion balance on your next group of samples. This calculation is a quality control mechanism to measure the accuracy of major cations and anions. Water is electrically neutral meaning that the cations and anions, when expressed in milliequivalents per liter, should be roughly the same. For the balance, we use the four major cations - calcium, magnesium, sodium, and potassium. Major anions include alkalinity (total), chloride, and sulfate. Fluoride and nitrate are also used if results are available. To convert mg/l to meq/l for each cation and anion, divide the mg/l reading by the following values:

Calcium	20.04	Alkalinity	50.00
Magnesium	12.16	Chloride	35.46
Sodium	23.00	Sulfate	48.03
Potassium	39.10	Nitrate	62.00
		Fluoride	19.00

Huntingdon Chen-Northern, Inc.
Salt Lake City, Utah

March 15, 1994
Page two

Naturally, there may be other cations and anions not used in this equation, but in most cases they are in insignificant amounts. Occasionally, a sample will not "balance" after we rerun and verify our results, and in those cases, we will cite on the report that the problem may be in unmeasured cations and anions.

If you need additional information, let me know.

Sincerely,

HUNTINGDON CHEN-NORTHERN, INC.



David Council

DC:dg

cwo315.n.corres.council

SCA GM
 Project or Site Name
 5-137.3-91
 Project Number
 Greg McDonald
 Sampler Name (Printed)

CHAIN OF CUSTODY RECORD

Huntingdon
 Consulting Engineers Environmental Scientists

- Chen-Northern, Inc., Division
- Thomas-Hartig & Associates, Inc., Division
- Schaefer Dixon Associates, Inc., Division
- Herzog Associates, Inc., Division

Chuck Wemple
 Contact or Report to
 SLC, UT
 Contact Address or Location
 Signature

DATE COLLECTED	TIME COLLECTED	SAMPLE LOCATION OR DESCRIPTION	COMP OR GRAB	SAMPLE MATRIX	NO. OF CONTAINERS	ANALYSIS REQUIRED		NOTES	LAB NUMBER
4/14/94	1035	CRS/011494	Grab	Water	6	See Attached List		PH	
4/14/94	1130	CRB/011494	Grab	Water	6			2	1485621
4/13/94	1600	F-2/011394	Grab	Water	6			2	265
4/13/94	1454	ICE-1/011394	Grab	Water	6			2	266
4/13/94	1459	ICE-2/011394	Grab	Water	6			2	267
								2	268
								2	269
								2	270

Sp 148564 CRS/011494 4/14 1035 269
 Sp 148568 ICE-2/011394 4/13 1459 270

Relinquished by:	Date: 4/17/94	Time: 1400	Received by:	Remarks: Attn: Dave Council
Relinquished by:	Date: 4/18/94	Time: 1430	Received by:	
Relinquished by:	Date:	Time:	Received by:	
Relinquished by:	Date:	Time:	Received by:	

1142°C water temp 6.1°C
 SLC air temp 3.8°C

Huntingdon

(Formerly Chen-Northern, Inc.)
00 South 26th Street
PO Box 30615
Bozeman, MT 59107
(406) 248-9161
FAX (406) 248-9282

TECHNICAL REPORT

REPORT TO: ATTN: CHUCK WEMPLE
HUNTINGDON ENGINEERING &
ENVIRONMENTAL, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY UT 84119

DATE: June 1, 1994
JOB NUMBER: 87-927
SHEET: 1 of 5
INVOICE NO.: 026670

REPORT OF: Water Analysis - SCA DOGM (5-137.4-91)

SAMPLE IDENTIFICATION:

On April 21, 1994, these water samples (our laboratory numbers 150822 through 150825) were received in our laboratory for analysis. Tests were conducted in accordance with the U.S. Environmental Protection Agency Manual EPA 600/4-79-029 "Methods for Chemical Analysis of Water and Wastes."

The condition of the samples upon receipt at the laboratory is noted on the attached sample receipt checklist.

The test results are shown on the following pages.

A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

Reviewed by

David Cornill

Attachment: Sample Receipt Checklist

mmr

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 150822
 Sample Name: CRS/041994
 Sample Date: 04/19/94
 Collected by: CHUCK WEMPLE
 Time Sampled: 1415
 Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS**					
	73.58 meq/l				
Alkalinity Bicarbonate as HCO ₃	553 mg/l	-	1400	05/03/94	CC
Alkalinity Carbonate as CO ₃	0 mg/l	-	1400	05/03/94	CC
Alkalinity Total as CaCO ₃	453 mg/l	0.84	1400	05/03/94	CC
Chloride as Cl	101 mg/l	1.41	1530	04/27/94	CC
Sulfate as SO ₄	2960 mg/l	2.29	1400	05/23/94	DD
CATIONS**					
	80.38 meq/l				
Calcium as Ca	558 mg/l	0.39	1000	05/11/94	BH
Hardness as CaCO ₃	2890 mg/l	-	1000	05/11/94	BH
Magnesium as Mg	350 mg/l	0.31	1030	05/04/94	BH
Potassium as K	52 mg/l	0.18	1000	05/09/94	BH
Sodium as Na	515 mg/l	0.81	1000	04/25/94	AH
INORGANICS					
Electrical Conductivity	5550 umhos/cm	7	1300	04/27/94	HB
Oil & Grease	4 mg/l	0.9	1630	05/02/94	CC
Settleable Solids	<0.1 ml/l	0.1	1600	04/21/94	DD
Total Dissolved Solids	4890 mg/l	11.7	1400	04/26/94	HB
Total Suspended Solids	34 mg/l	3.5	1400	04/26/94	HB
METALS					
Aluminum as Al (Dissolved)	*<1.0 mg/l	0.023	1330	05/04/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1400	05/02/94	AH
Boron as B (Dissolved)	*<1 mg/l	0.045	1030	05/05/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1400	04/29/94	AH
Copper as Cu (Dissolved)	*<0.2 mg/l	0.005	1330	05/04/94	BH
Iron as Fe (Dissolved)	4.63 mg/l	0.008	1030	05/06/94	BH
Iron as Fe (Total)	11.0 mg/l	0.008	1400	05/06/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1400	04/28/94	AH
Manganese as Mn (Dissolved)	1.90 mg/l	0.003	1330	05/04/94	BH
Manganese as Mn (Total)	1.65 mg/l	0.003	1515	05/06/94	BH
Molybdenum as Mo (Dissolved)	*<0.5 mg/l	0.023	1330	05/04/94	BH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	05/04/94	AH
Zinc as Zn (Dissolved)	*<0.2 mg/l	0.008	1330	05/04/94	BH
NUTRIENTS					
Ammonia Nitrogen as N	1.42 mg/l	0.034	1600	04/25/94	CC
Nitrate + Nitrite as N	<0.05 mg/l	0.05	1330	04/22/94	DD
Phosphorous Total	0.27 mg/l	0.002	1400	04/26/94	CC

* Higher detection level due to interference.

** The cation-anion analysis does not meet our quality assurance requirements. However, the values reported herein were verified by duplicate analysis. This indicates there are other unmeasured cations or anions present in the sample.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 150823
 Sample Name: CRB/041994
 Sample Date: 04/19/94
 Collected by: CHUCK WEMPLE
 Time Sampled: 1430
 Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS**					
	64.86 meq/l				
Alkalinity Bicarbonate as HCO ₃	380 mg/l	-	1400	05/03/94	DD
Alkalinity Carbonate as CO ₃	0 mg/l	-	1400	05/03/94	DD
Alkalinity Total as CaCO ₃	311 mg/l	0.84	1400	05/03/94	DD
Chloride as Cl	134 mg/l	1.41	1530	04/27/94	DD
Sulfate as SO ₄	2630 mg/l	2.29	1400	05/23/94	DD
CATIONS**					
	70.68 meq/l				
Calcium as Ca	494 mg/l	0.39	1000	05/11/94	BH
Hardness as CaCO ₃	2666 mg/l	-	1000	05/11/94	BH
Magnesium as Mg	309 mg/l	0.31	1030	05/11/94	BH
Potassium as K	41 mg/l	0.18	1000	05/09/94	BH
Sodium as Na	450 mg/l	0.81	1000	04/25/94	AH
INORGANICS					
Electrical Conductivity	4960 umhos/cm	7	1300	04/27/94	HB
Oil & Grease	2 mg/l	0.9	1630	05/02/94	CC
Settleable Solids	<0.1 ml/l	0.1	1600	04/21/94	DD
Total Dissolved Solids	4620 mg/l	11.7	1400	04/26/94	HB
Total Suspended Solids	10 mg/l	3.5	1400	04/26/94	HB
METALS					
Aluminum as Al (Dissolved)	* <1.0 mg/l	0.023	1330	05/04/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1400	05/02/94	AH
Boron as B (Dissolved)	* <1 mg/l	0.045	1030	05/05/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1400	04/29/94	AH
Copper as Cu (Dissolved)	* <0.2 mg/l	0.005	1330	05/04/94	BH
Iron as Fe (Dissolved)	* <0.5 mg/l	0.008	1030	05/06/94	BH
Iron as Fe (Total)	0.10 mg/l	0.008	1400	05/06/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.0012	1400	04/28/94	AH
Manganese as Mn (Dissolved)	0.20 mg/l	0.003	1330	05/04/94	BH
Manganese as Mn (Total)	<0.10 mg/l	0.003	1515	05/06/94	BH
Molybdenum as Mo (Dissolved)	* <0.5 mg/l	0.023	1330	05/04/94	BH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	05/04/94	AH
Zinc as Zn (Dissolved)	* <0.2 mg/l	0.008	1330	05/04/94	BH
NUTRIENTS					
Ammonia Nitrogen as N	<0.05 mg/l	0.034	1600	04/25/94	CC
Nitrate + Nitrite as N	0.73 mg/l	0.05	1330	04/22/94	DD
Phosphorous Total	0.02 mg/l	0.002	1400	04/26/94	CC

* Higher detection level due to interference.

** The cation-anion analysis does not meet our quality assurance requirements. However, the values reported herein were verified by duplicate analysis. This indicates there are other unmeasured cations or anions present in the sample.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 150824
 Sample Name: ICE-1/041994
 Sample Date: 04/19/94
 Collected by: CHUCK WEMPLE
 Time Sampled: 1330
 Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
	29.84 meq/l				
Alkalinity Bicarbonate as HCO ₃	443 mg/l	-	1400	05/03/94	DD
Alkalinity Carbonate as CO ₃	11 mg/l	-	1400	05/03/94	DD
Alkalinity Total as CaCO ₃	382 mg/l	0.84	1400	05/03/94	DD
Chloride as Cl	60 mg/l	1.41	1530	04/27/94	DD
Sulfate as SO ₄	985 mg/l	2.29	1430	05/09/94	DD
CATIONS					
	30.19 meq/l				
Calcium as Ca	108 mg/l	0.39	1530	05/11/94	BH
Hardness as CaCO ₃	854 mg/l	-	1530	05/11/94	BH
Magnesium as Mg	142 mg/l	0.31	1530	05/11/94	BH
Potassium as K	13 mg/l	0.18	1000	05/09/94	AH
Sodium as Na	294 mg/l	0.81	1000	04/25/94	AH
INORGANICS					
Electrical Conductivity	2800 umhos/cm	7	1300	04/27/94	HB
Oil & Grease	<1 mg/l	0.9	1630	05/02/94	CC
Settleable Solids	<0.1 ml/l	0.1	1600	04/21/94	DD
Total Dissolved Solids	1860 mg/l	11.7	1400	04/26/94	HB
Total Suspended Solids	71 mg/l	3.5	1400	04/26/94	HB
METALS					
Aluminum as Al (Dissolved)	*<1.0 mg/l	0.023	1330	05/04/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1400	05/02/94	AAH
Boron as B (Dissolved)	* <1 mg/l	0.045	1030	05/05/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1400	05/11/94	AH
Copper as Cu (Dissolved)	*<0.2 mg/l	0.005	1330	05/04/94	BH
Iron as Fe (Dissolved)	*<0.5 mg/l	0.008	1030	05/06/94	BH
Iron as Fe (Total)	0.35 mg/l	0.008	1400	05/06/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.012	1400	04/28/94	AH
Manganese as Mn (Dissolved)	*<0.2 mg/l	0.003	1330	05/04/94	BH
Manganese as Mn (Total)	0.10 mg/l	0.003	1515	05/06/94	BH
Molybdenum as Mo (Dissolved)	*<0.5 mg/l	0.023	1330	05/04/94	BH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	05/04/94	AH
Zinc as Zn (Dissolved)	*<0.2 mg/l	0.008	1330	05/04/94	BH
NUTRIENTS					
Ammonia Nitrogen as N	0.08 mg/l	0.034	1600	04/25/94	CC
Nitrate + Nitrite as N	0.32 mg/l	0.05	1330	04/22/94	DD
Phosphorous Total	0.02 mg/l	0.002	1400	04/26/94	CC

* Higher detection level due to interference.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 150825
 Sample Name: F-2/041994
 Sample Date: 04/19/94
 Collected by: CHUCK WEMPLE
 Time Sampled: 1531
 Sample Type: WATER

PARAMETER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS					
	24.44 meq/l				
Alkalinity Bicarbonate as HCO ₃	553 mg/l	-	1400	05/03/94	DD
Alkalinity Carbonate as CO ₃	11 mg/l	-	1400	05/03/94	DD
Alkalinity Total as CaCO ₃	472 mg/l	0.84	1400	05/03/94	DD
Chloride as Cl	56 mg/l	1.41	1530	05/17/94	DD
Sulfate as SO ₄	644 mg/l	2.29	1430	05/09/94	DD
CATIONS					
	25.54 meq/l				
Calcium as Ca	97 mg/l	0.39	1030	05/11/94	BH
Hardness as CaCO ₃	712 mg/l	-		05/11/94	
Magnesium as Mg	114 mg/l	0.31	1030	05/11/94	BH
Potassium as K	7 mg/l	0.18	1000	05/09/94	AH
Sodium as Na	274 mg/l	0.81	1000	05/11/94	AH
INORGANICS					
Electrical Conductivity	2280 umhos/cm	7	1300	04/27/94	HB
Oil & Grease	<1 mg/l	0.9	1630	05/02/94	CC
Settleable Solids	<0.1 ml/l	0.1	1600	04/21/94	DD
Total Dissolved Solids	1430 mg/l	11.7	1400	04/26/94	HB
Total Suspended Solids	7 mg/l	3.5	1400	04/26/94	HB
METALS					
Aluminum as Al (Dissolved)	*<1.0 mg/l	0.023	1330	05/04/94	BH
Arsenic as As (Dissolved)	<0.002 mg/l	0.0014	1400	05/02/94	AH
Boron as B (Dissolved)	* <1 mg/l	0.045	1030	05/05/94	BH
Cadmium as Cd (Dissolved)	<0.001 mg/l	0.0002	1400	04/29/94	BH
Copper as Cu (Dissolved)	<0.2 mg/l	0.005	1330	05/04/94	BH
Iron as Fe (Dissolved)	*<0.5 mg/l	0.008	1030	05/06/94	BH
Iron as Fe (Total)	0.30 mg/l	0.008	1400	05/06/94	BH
Lead as Pb (Dissolved)	<0.002 mg/l	0.012	1400	04/28/94	AH
Manganese as Mn (Dissolved)	*<0.2 mg/l	0.003	1330	05/04/94	BH
Manganese as Mn (Total)	0.10 mg/l	0.003	1515	05/06/94	BH
Molybdenum as Mo (Dissolved)	*<0.5 mg/l	0.023	1330	05/04/94	BH
Selenium as Se (Dissolved)	<0.002 mg/l	0.0011	1400	05/04/94	AH
Zinc as Zn (Dissolved)	*<0.2 mg/l	0.008	1330	05/04/94	BH
NUTRIENTS					
Ammonia Nitrogen as N	<0.05 mg/l	0.034	1600	04/25/94	CC
Nitrate + Nitrite as N	0.75 mg/l	0.05	1430	04/22/94	DD
Phosphorous Total	0.02 mg/l	0.002	1400	04/26/94	CC

* Higher detection level due to interference.

CHAIN OF CUSTODY RECORD

Huntingdon

Consulting Engineers Environmental Scientists

- Chen-Northern, Inc., Division
- Thomas-Hartig & Associates, Inc., Division
- Schaefer Dixon Associates, Inc., Division
- Herzog Associates, Inc., Division

✓ Chuck Wemple
Contact or Report to

SLC UT
Contact Address or Location

Chuck Wemple
Sampler Signature

SCA DOGM

Project or Site Name

5-137.4-91

Project Number

Chuck Wemple
Sampler Name (Printed)

DATE COLLECTED	TIME COLLECTED	SAMPLE LOCATION OR DESCRIPTION	COMP OR GRAB	SAMPLE MATRIX	NO. OF CONTAINERS	ANALYSIS REQUIRED												NOTES	LAB NUMBER
4/19/94	1415	CRS/041994	Grab	Water	5	See Attached												metals filtered	150822
4/19/94	1430	CRB/041994	Grab	Water	6													metals unfiltered	23
4/19/94	1330	KE-1/041994	Grab	Water	6														24
4/19/94	1531	F-2/041994	Grab	Water	6														25
Relinquished by: <u>Chuck Wemple</u>			Date: <u>04/20/94</u>	Time: <u>1415</u>	Received by: <u>carrier airborne</u>												Remarks: <u>Metals filter</u>		
Relinquished by: _____			Date: <u>4/21/94</u>	Time: <u>0900</u>	Received by: <u>H. Blueland</u>												Remarks: <u>Reed's</u>		
Relinquished by: _____			Date: _____	Time: _____	Received by: _____												Remarks: <u>PI 3 - added HNO₃ in kab to</u>		
Relinquished by: _____			Date: _____	Time: _____	Received by: _____												Remarks: <u>PH 2.5 in lab</u>		
Relinquished by: _____			Date: _____	Time: _____	Received by: _____												Remarks: <u>SLC cooler temp 9°C</u>		
Relinquished by: _____			Date: _____	Time: _____	Received by: _____												Remarks: <u>L22 cooler temp 11°C</u>		

Huntingdon
(Formerly Chen-Northern, Inc.)
90 South 25th Street
PO Box 30615
Salt Lake City, UT 84119
(406) 248-9161
FAX (406) 248-9282

TECHNICAL REPORT

REPORT TO: ATTN: GREG McDONALD
HUNTINGDON ENGINEERING &
ENVIRONMENTAL, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY UT 84119

DATE: July 20, 1994
JOB NUMBER: 87-927
SHEET: 1 of 6
INVOICE NO.: 025606

REPORT OF: Water Analysis - SCA DOGM (5-137.4-91)

SAMPLE IDENTIFICATION:

On June 24, 1994, these water samples (our laboratory numbers 152659 through 152663) were received in our laboratory for analysis. Tests were conducted in accordance with the U.S. Environmental Protection Agency Manual EPA 600/4-79-029 "Methods for Chemical Analysis of Water and Wastes."

The condition of the samples upon receipt at the laboratory is noted on the attached sample receipt checklist.

The test results are shown on the following pages.

A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

Reviewed by David Council

Attachment: Sample Receipt Checklist

mc

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 152659
 Sample Name: ICE-1/062394
 Sample Date: 06/23/94
 Collected by: GREG McDONALD
 Time Sampled: 1000
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO ₃	310.1	541 mg/l		1500	06/29/94	HB
Alkalinity Carbonate as CO ₃	310.1	11 mg/l		1500	06/29/94	HB
Alkalinity Total as CaCO ₃	310.1	463 mg/l	0.43	1500	06/29/94	HB
Chloride as Cl	325.2	62 mg/l	0.72	0530	07/07/94	CC
Sulfate as SO ₄	375.2	782 mg/l	1.75	1400	07/13/94	CC
CATIONS						
Calcium as Ca	200.7	96 mg/l	0.10	1500	06/29/94	BH
Hardness as CaCO ₃	200.7	759 mg/l		1500	06/29/94	BH
Magnesium as Mg	200.7	126 mg/l	0.10	1500	06/29/94	BH
Potassium as K	258.1	11 mg/l	0.18	0930	07/01/94	BH
Sodium as Na	200.7	288 mg/l	0.81	1500	06/29/94	BH
INORGANICS						
Electrical Conductivity	120.1	2220 umhos/cm	7.3	1400	07/11/94	HB
Oil & Grease	413.1	<1 mg/l	0.946	1300	06/30/94	CC
Settleable Solids	160.5	<0.1 ml/l	0.1	1420	06/24/94	CC
Total Dissolved Solids	160.1	1590 mg/l	6.3	1500	06/28/94	HB
Total Suspended Solids	160.2	<4 mg/l	4	1500	06/27/94	HB
METALS						
Aluminum as Al (Dissolved)	200.7	<0.1 mg/l	0.02	1000	07/11/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1500	07/05/94	AAH
Boron as B (Dissolved)	200.7	0.2 mg/l	0.02	1500	07/08/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.00009	1500	06/29/94	AH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1000	07/11/94	BH
Iron as Fe (Dissolved)	200.7	<0.05 mg/l	0.006	1115	07/08/94	BH
Iron as Fe (Total)	200.7	0.07 mg/l	0.006	1545	06/30/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1100	07/15/94	AH
Manganese as Mn (Dissolved)	200.7	<0.02 mg/l	0.001	1115	07/08/94	BH
Manganese as Mn (Total)	200.7	<0.02 mg/l	0.001	1545	06/30/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	07/08/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.001	1500	07/08/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1115	07/08/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.015	1130	07/08/94	DD
Nitrite as N	353.2	<0.05 mg/l	0.005	1710	06/24/94	CC
Phosphorous Total	365.1	0.03 mg/l	0.003	1430	06/30/94	DD
Nitrate as N	353.2	0.48 mg/l	0.004	1200	06/24/94	DD

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 152660
 Sample Name: F-2/062394
 Sample Date: 06/23/94
 Collected by: GREG McDONALD
 Time Sampled: 1030
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO ₃	310.1	593 mg/l		1500	06/29/94	HB
Alkalinity Carbonate as CO ₃	310.1	11 mg/l		1500	06/29/94	HB
Alkalinity Total as CaCO ₃	310.1	505 mg/l	0.43	1500	06/29/94	HB
Chloride as Cl	325.2	56 mg/l	0.72	0930	07/07/94	CC
Sulfate as SO ₄	375.2	700 mg/l	1.75	1400	06/28/94	CC
CATIONS						
Calcium as Ca	200.7	108 mg/l	0.10	1500	06/29/94	BH
Hardness as CaCO ₃	200.7	738 mg/l		1030	07/14/94	BH
Magnesium as Mg	200.7	114 mg/l	0.10	1030	07/14/94	BH
Potassium as K	258.1	9 mg/l	0.18	0930	07/01/94	BH
Sodium as Na	200.7	273 mg/l	0.81	1500	06/29/94	BH
INORGANICS						
Electrical Conductivity	120.1	2280 umhos/cm	7.3	1400	07/11/94	HB
Oil & Grease	413.1	<1 mg/l	0.946	1300	06/30/94	CC
Settleable Solids	160.5	<0.1 ml/l	0.1	1420	06/24/94	CC
Total Dissolved Solids	160.1	1500 mg/l	6.3	1500	06/28/94	HB
Total Suspended Solids	160.2	<5 mg/l	4	1500	06/27/94	HB
METALS						
Aluminum as Al (Dissolved)	200.7	<0.1 mg/l	0.02	1000	07/11/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1500	07/05/94	AH
Boron as B (Dissolved)	200.7	0.2 mg/l	0.02	1500	07/08/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.00009	1500	06/29/94	AAH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1000	07/11/94	BH
Iron as Fe (Dissolved)	200.7	<0.05 mg/l	0.006	1115	07/08/94	BH
Iron as Fe (Total)	200.7	0.54 mg/l	0.001	1545	06/30/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1100	07/15/94	AAH
Manganese as Mn (Dissolved)	200.7	<0.02 mg/l	0.001	1115	07/08/94	BH
Manganese as Mn (Total)	200.7	<0.02 mg/l	0.001	1545	06/30/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	07/08/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.001	1500	07/08/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1115	07/08/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.015	1130	07/08/94	DD
Nitrite as N	353.2	<0.05 mg/l	0.005	1710	06/24/94	CC
Phosphorous Total	365.1	0.02 mg/l	0.003	1430	06/30/94	CC
Nitrate as N	353.2	0.94 mg/l	0.004	1200	06/24/94	DD

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 152661
 Sample Name: CRS/062394
 Sample Date: 06/23/94
 Collected by: GREG McDONALD
 Time Sampled: 1110
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS *						
Alkalinity Bicarbonate as HCO ₃	310.1	559 mg/l		1500	06/29/94	HB
Alkalinity Carbonate as CO ₃	310.1	0 mg/l		1500	06/29/94	HB
Alkalinity Total as CaCO ₃	310.1	458 mg/l	0.43	1500	06/29/94	HB
Chloride as Cl	325.2	105 mg/l	0.72	0930	07/07/94	CC
Sulfate as SO ₄	375.2	3080 mg/l	1.75	1300	06/29/94	CC
CATIONS *						
Calcium as Ca	200.7	597 mg/l	0.10	1500	06/29/94	BH
Hardness as CaCO ₃	200.7	2980 mg/l		1500	06/29/94	BH
Magnesium as Mg	200.7	363 mg/l	0.10	1500	06/29/94	BH
Potassium as K	258.1	57 mg/l	0.18	0930	07/01/94	BH
Sodium as Na	200.7	501 mg/l	0.81	1500	06/29/94	BH
INORGANICS						
Electrical Conductivity	120.1	5280 umhos/cm	7.3	1400	07/11/94	HB
Oil & Grease	413.1	<1 mg/l	0.946	1300	06/30/94	CC
Settleable Solids	160.5	<0.1 ml/l	0.1	1420	06/24/94	CC
Total Dissolved Solids	160.1	4910 mg/l	6.3	1500	06/28/94	HB
Total Suspended Solids	160.2	14 mg/l	4	1500	06/27/94	HB
METALS						
Aluminum as Al (Dissolved)	200.7	0.2 mg/l	0.02	1000	07/11/94	BH
Arsenic as As (Dissolved)	206.3	0.002 mg/l	0.002	1500	07/05/94	AAH
Boron as B (Dissolved)	200.7	0.6 mg/l	0.02	1500	07/08/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.00009	1500	06/29/94	AAH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1000	07/11/94	BH
Iron as Fe (Dissolved)	0.006	9.5 mg/l	0.006	1115	07/08/94	BH
Iron as Fe (Total)	200.7	10.4 mg/l	0.001	1545	06/30/94	BH
Lead as Pb (Dissolved)	0.001	<0.002 mg/l	0.001	1100	07/15/94	AAH
Manganese as Mn (Dissolved)	0.001	1.08 mg/l	0.001	1130	07/11/94	BH
Manganese as Mn (Total)	0.001	1.56 mg/l	0.001	1415	07/13/94	BH
Molybdenum as Mo (Dissolved)	0.009	<0.05 mg/l	0.009	1430	07/08/94	BH
Selenium as Se (Dissolved)	0.001	<0.002 mg/l	0.001	1500	07/08/94	AAH
Zinc as Zn (Dissolved)	0.002	<0.02 mg/l	0.002	1115	07/08/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	1.26 mg/l	0.015	1130	07/08/94	DD
Nitrite as N	353.2	<0.05 mg/l	0.005	1710	06/24/94	CC
Phosphorous Total	365.1	0.17 mg/l	0.003	1730	07/14/94	CC
Nitrate as N	353.2	0.37 mg/l	0.004	1200	06/24/94	DD

* The cation-anion analysis does not meet our quality assurance requirements. However, the values reported herein were verified by duplicate analysis. This indicates there are other unmeasured cations or anions present in the sample.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 152662
 Sample Name: CRB-062394
 Sample Date: 06/23/94
 Collected by: GREG McDONALD
 Time Sampled: 1130
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO ₃	310.1	398 mg/l			07/08/94	BH
Alkalinity Carbonate as CO ₃	310.1	0 mg/l			07/08/94	BH
Alkalinity Total as CaCO ₃	310.1	326 mg/l	0.43	1300	07/08/94	HB
Chloride as Cl	325.2	166 mg/l	0.72	0930	07/07/94	CC
Sulfate as SO ₄	375.2	2820 mg/l	1.75	1300	06/29/94	CC
CATIONS						
Calcium as Ca	200.7	480 mg/l	0.10	1030	07/14/94	BH
Hardness as CaCO ₃	200.7	2470 mg/l		1030	07/14/94	BH
Magnesium as Mg	200.7	310 mg/l	0.10	1030	07/14/94	BH
Potassium as K	258.1	48 mg/l	0.18	0930	07/01/94	BH
Sodium as Na	200.7	475 mg/l	0.81	1030	07/14/94	BH
INORGANICS						
Electrical Conductivity	120.1	5160 umhos/cm	7.3	1400	07/11/94	HB
Oil & Grease	413.1	<1 mg/l	0.946	1300	06/30/94	CC
Settleable Solids	160.5	<0.1 ml/l	0.1	1530	06/26/94	CC
Total Dissolved Solids	160.1	4490 mg/l	6.3	1500	06/28/94	HB
Total Suspended Solids	160.2	<5 mg/l	4	1500	06/27/94	HB
METALS						
Aluminum as Al (Dissolved)	200.7	<0.1 mg/l	0.02	1000	07/11/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1500	07/05/94	AAH
Boron as B (Dissolved)	200.7	0.6 mg/l	0.02	1500	07/08/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.00009	1500	06/29/94	AAH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1000	07/11/94	BH
Iron as Fe (Dissolved)	200.7	<0.25 * mg/l	0.006	1115	07/08/94	BH
Iron as Fe (Total)	200.7	<0.15 * mg/l	0.008	1545	06/30/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1100	07/15/94	AAH
Manganese as Mn (Dissolved)	200.7	<0.10 * mg/l	0.001	1115	07/08/94	BH
Manganese as Mn (Total)	200.7	<0.06 * mg/l	0.001	1545	06/30/94	BH
Molybdenum as Mo (Dissolved)	200.7	0.07 mg/l	0.009	1430	07/08/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.001	1500	07/08/94	AAH
Zinc as Zn (Dissolved)	200.7	0.03 mg/l	0.002	1115	07/08/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.015	1130	07/08/94	DD
Nitrite as N	353.2	<0.05 mg/l	0.005	1710	06/24/94	CC
Phosphorous Total	365.1	0.04 mg/l	0.003	1430	06/30/94	DD
Nitrate as N	353.2	0.44 mg/l	0.004	1200	06/24/94	DD

* Higher detection limit reported due to interferences present in the sample.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 152663
 Sample Name: WELL-1/062394
 Sample Date: 06/23/94
 Collected by: GREG McDONALD
 Time Sampled: 1210
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD		DATE OF ANALYSIS	ANALYST
			DETECTION LIMIT	TIME OF ANALYSIS		
ANIONS						
Alkalinity Bicarbonate as HCO ₃	310.1	593 mg/l		1500	06/29/94	HB
Alkalinity Carbonate as CO ₃	310.1	0 mg/l		1500	06/29/94	HB
Alkalinity Total as CaCO ₃	310.1	486 mg/l	0.43	1500	06/29/94	HB
Chloride as Cl	325.2	33 mg/l	0.72	0930	07/07/94	CC
Sulfate as SO ₄	375.2	479 mg/l	1.75	1400	07/13/94	CC
CATIONS						
Calcium as Ca	200.7	78 mg/l	0.10	1030	07/14/94	BH
Hardness as CaCO ₃	200.7	515 mg/l		1030	07/14/94	BH
Magnesium as Mg	200.7	78 mg/l	0.10	1030	07/14/94	BH
Potassium as K	258.1	7 mg/l	0.18	0930	07/01/94	BH
Sodium as Na	200.7	234 mg/l	0.81	1030	07/14/94	BH
INORGANICS						
Electrical Conductivity	120.1	1830 umhos/cm	7.3	1400	07/11/94	HB
Oil & Grease	413.1	2 mg/l	0.946	1300	06/30/94	CC
Settleable Solids	160.5	<0.1 ml/l	0.1	1530	06/24/94	CC
Total Dissolved Solids	160.1	1180 mg/l	6.3	1500	06/28/94	HB
Total Suspended Solids	160.2	<5 mg/l	4	1500	06/27/94	HB
METALS						
Aluminum as Al (Dissolved)	200.7	<0.1 mg/l	0.02	1000	07/11/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1500	07/05/94	AAH
Boron as B (Dissolved)	200.7	0.1 mg/l	0.02	1500	07/08/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.00009	1500	06/29/94	AAH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1000	07/11/94	BH
Iron as Fe (Dissolved)	200.7	<0.05 mg/l	0.006	1115	07/08/94	BH
Iron as Fe (Total)	200.7	0.10 mg/l	0.001	1545	06/30/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1100	07/15/94	AAH
Manganese as Mn (Dissolved)	200.7	<0.02 mg/l	0.001	1115	07/08/94	BH
Manganese as Mn (Total)	200.7	<0.02 mg/l	0.001	1545	06/30/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	07/08/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.001	1500	07/08/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1115	07/08/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.015	1130	07/08/94	DD
Nitrite as N	352.2	<0.05 mg/l	0.005	1710	06/24/94	CC
Phosphorous Total	365.1	<0.02 mg/l	0.003	1530	06/30/94	DD
Nitrate as N	353.2	0.85 mg/l	0.004	1200	06/24/94	DD

SOA DOGM

CHAIN OF JDY RECORD

Project or Site Name

15-137.4-91

Project Number

Greg McDonald

Sampler Name (Printed)

Huntingdon

Consulting Engineers Environmental Scientists

- Chen-Northern, Inc., Division
- Thomas-Hartig & Associates, Inc., Division
- Schaefer Dixon Associates, Inc., Division
- Herzog Associates, Inc., Division

Contact or Report to

1127 W. 2320 S. SLIC UTX

Contact Address or Location

Sampler Signature

DATE COLLECTED	TIME COLLECTED	SAMPLE LOCATION OR DESCRIPTION	COMP OR GRAB	SAMPLE MATRIX	NO. OF CONTAINERS	ANALYSIS REQUIRED				NOTES	LAB NUMBER
						Spec	Attached	List			
6/23/94	1000	ICE-1/062394	Grab	Water	6						152659
6/23/94	1030	F-2/062394	Grab	Water	6						60
6/23/94	1110	CRS/062394	Grab	Water	6						61
6/23/94	1130	CRB/062394	Grab	Water	6						62
6/23/94	1210	WELL-1/062394	Grab	Water	6						63
Relinquished by:			Date	Time	Received by:					Remarks:	
			6/25/94	1530	Carrie Felton					Attn: Dave Council	
Relinquished by:			Date	Time	Received by:					* Please Note Nitrate Range (ie holding time)	
			6/24/94	0930	J. Cleveland						
Relinquished by:			Date	Time	Received by:						
Relinquished by:			Date	Time	Received by:						

Cooler Temp 9°C

Huntingdon

(Formerly Chen-Northern, Inc.)
600 South 25th Street
PO Box 30615
Billings, MT 59107
(406) 248-9161
FAX (406) 248-9282

TECHNICAL REPORT

REPORT TO: ATTN: RICH GIRAUD
HUNTINGDON ENGINEERING &
ENVIRONMENTAL, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY UT 84119

DATE: October 21, 1994
JOB NUMBER: 87-927
SHEET: 1 of 6
INVOICE NO.: 027251

REPORT OF: Water Analysis - Sunnyside/DOGM 5-137.3-91

SAMPLE IDENTIFICATION:

On September 28, 1994, these water samples (laboratory numbers 155249 through 155253) were received in our laboratory for analysis. Tests were conducted in accordance with the U.S. Environmental Protection Agency Manual EPA 600/4-79-020 "Methods for Chemical Analysis of Water and Wastes."

The condition of the samples upon receipt at the laboratory is noted on the attached sample receipt checklist.

The test results are shown on the following pages.

A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

Reviewed by

David Condit

Attachments: Sample Receipt Checklist

mmr

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 155249
 Sample Name: ICE-1
 Sample Date: 09/27/94
 Collected by: RICHARD E. GIRAUD
 Time Sampled: NONE GIVEN
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO3	310.1	509 mg/l	-	1400	10/03/94	BH
Alkalinity Carbonate as CO3	310.1	17 mg/l	-	1400	10/03/94	BH
Alkalinity Total as CaCO3	310.1	446 mg/l	0.43	1400	10/03/94	BH
Chloride as Cl	325.3	67 mg/l	0.37	1400	10/12/94	BH
Sulfate as SO4	375.2	742 mg/l	1.75	1130	09/30/94	CC
CATIONS						
Calcium as Ca	200.7	60 mg/l	0.10	1030	10/14/94	BH
Hardness as CaCO3	23408	618 mg/l	-	1030	10/14/94	BH
Magnesium as Mg	200.7	114 mg/l	0.10	1030	10/14/94	BH
Potassium as K	258.1	6 mg/l	0.18	1300	10/07/94	AAH
Sodium as Na	200.7	320 mg/l	0.81	1030	10/14/94	BH
INORGANICS						
Electrical Conductivity	120.1	2350 umhos/cm	7.3	1400	10/05/94	BH
Oil & Grease	413.1	<1 mg/l	0.9	0730	10/10/94	CC
Settleable Solids	160.5	<0.1 ml/l	-	1440	09/28/94	TK
Total Dissolved Solids	160.1	1580 mg/l	6.3	0930	10/05/94	TK
Total Suspended Solids	160.2	7 mg/l	5.4	1000	10/03/94	TK
METALS						
Aluminum as Al (Dissolved)	200.7	0.3 mg/l	0.02	1100	10/03/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1300	10/06/94	AAH
Boron as B (Dissolved)	200.7	0.2 mg/l	0.02	1510	10/07/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.0009	1100	10/10/94	BH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1100	10/03/94	BH
Iron as Fe (Dissolved)	200.7	<0.05 mg/l	0.006	1430	10/07/94	BH
Iron as Fe (Total)	200.7	0.16 mg/l	0.006	0950	10/11/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1400	10/11/94	AAH
Manganese as Mn (Dissolved)	200.7	<0.02 mg/l	0.001	1430	10/07/94	BH
Manganese as Mn (Total)	200.7	<0.02 mg/l	0.001	0950	10/11/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	10/07/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.001	1500	10/05/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1430	10/07/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	0.11 mg/l	0.015	1700	10/13/94	DD
Nitrite as N	354.2	<0.05 mg/l	0.005	1600	09/28/94	CC
Phosphorous Total	365.1	0.02 mg/l	0.003	1330	10/12/94	CC
Nitrate as N	353.2	0.05 mg/l	0.004	1730	09/28/94	CC

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 155250
 Sample Name: CRS
 Collected by: RICHARD E. GIRAUD
 Time Sampled: NONE GIVEN
 Sample Type: WATER

Page 3

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD		DATE OF ANALYSIS	ANALYST
			DETECTION LIMIT	TIME OF ANALYSIS		
ANIONS						
Alkalinity Bicarbonate as HCO ₃	310.1	608 mg/l	-	1400	10/14/94	HB
Alkalinity Carbonate as CO ₃	310.1	0 mg/l	-	1400	10/14/94	HB
Alkalinity Total as CaCO ₃	310.1	498 mg/l	0.43	1400	10/14/94	HB
Chloride as Cl	325.3	106 mg/l	0.37	1400	10/12/94	HB
Sulfate as SO ₄	375.2	2930 mg/l	1.75	1130	09/30/94	CC
CATIONS						
Calcium as Ca	200.7	546 mg/l	0.10	0900	10/20/94	BH
Hardness as CaCO ₃	23408	2630 mg/l	-	0900	10/20/94	BH
Magnesium as Mg	200.7	309 mg/l	0.10	0900	10/20/94	BH
Potassium as K	258.1	39 mg/l	0.18	1300	10/07/94	BH
Sodium as Na	200.7	471 mg/l	0.81	1030	10/14/94	BH
INORGANICS						
Electrical Conductivity	120.1	5520 μ mhos/cm	7.3	1400	10/05/94	HB
Oil & Grease	413.1	<1 mg/l	0.9	1000	10/11/94	CC
Settleable Solids	160.5	<0.1 ml/l	-	1440	09/28/94	TK
Total Dissolved Solids	160.1	5410 mg/l	6.3	0930	10/05/94	TK
Total Suspended Solids	160.2	28 mg/l	5.4	1000	10/03/94	TK
METALS						
Aluminum as Al (Dissolved)	200.7	0.1 mg/l	0.02	1100	10/03/94	BH
Arsenic as As (Dissolved)	206.3	0.002 mg/l	0.002	1300	10/06/94	AAH
Boron as B (Dissolved)	200.7	1.0 mg/l	0.02	1510	10/07/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.0009	1100	10/10/94	BH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1100	10/03/94	BH
Iron as Fe (Dissolved)	200.7	8.40 mg/l	0.006	1000	12/30/94	BH
Iron as Fe (Total)	200.7	9.57 mg/l	0.006	1000	12/30/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1400	10/11/94	AAH
Manganese as Mn (Dissolved)	200.7	0.64 mg/l	0.001	1430	10/07/94	BH
Manganese as Mn (Total)	200.7	0.69 mg/l	0.001	0950	10/11/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	10/07/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.002	1500	10/05/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1430	10/07/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	1.33 mg/l	0.015	1700	10/13/94	DD
Nitrite as N	354.2	<0.05 mg/l	0.005	1600	09/28/94	CC
Phosphorous Total	365.1	0.15 mg/l	0.003	0945	10/13/94	CC
Nitrate as N	353.2	0.22 mg/l	0.004	1730	09/28/94	CC

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 155251
 Sample Name: C88
 Sample Date: 09/27/94
 Collected by: RICHARD E. GIRAUD
 Time Sampled: NONE GIVEN
 Sample Type: WATER

Page 4

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO ₃	310.1	405 mg/l	-	1400	10/03/94	BH
Alkalinity Carbonate as CO ₃	310.1	0 mg/l	-	1400	10/03/94	BH
Alkalinity Total as CaCO ₃	310.1	332 mg/l	0.43	1400	10/03/94	BH
Chloride as Cl	325.3	213 mg/l	0.37	1400	10/12/94	BH
Sulfate as SO ₄	376.2	2760 mg/l	1.75	1130	09/30/94	CC
CATIONS						
Calcium as Ca	200.7	486 mg/l	0.10	1130	10/20/94	BH
Hardness as CaCO ₃	23408	2460 mg/l	-	1130	10/20/94	BH
Magnesium as Mg	200.7	303 mg/l	0.10	1130	10/20/94	BH
Potassium as K	258.1	32 mg/l	0.18	1300	10/07/94	AAH
Sodium as Na	200.7	450 mg/l	0.81	1030	10/14/94	BH
INORGANICS						
Electrical Conductivity	120.1	5460 umhos/cm	7.3	1400	10/05/94	BH
Oil & Grease	413.1	<1 mg/l	0.9	1000	10/11/94	CC
Settleable Solids	160.5	<0.1 ml/l	-	1440	09/28/94	TK
Total Dissolved Solids	160.1	5230 mg/l	6.3	0930	10/05/94	TK
Total Suspended Solids	160.2	<5 mg/l	5.4	1000	10/03/94	TK
METALS						
Aluminum as Al (Dissolved)	200.7	0.3 mg/l	0.02	1100	10/03/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1300	10/06/94	AAH
Boron as B (Dissolved)	200.7	0.8 mg/l	0.02	1510	10/07/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.0009	1100	10/10/94	BH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1100	10/03/94	BH
Iron as Fe (Dissolved)	200.7	<0.25 mg/l	0.006	1000	12/30/94	BH
Iron as Fe (Total)	200.7	<0.25 mg/l	0.006	1000	12/30/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1400	10/11/94	AAH
Manganese as Mn (Dissolved)	200.7	<0.10 mg/l	0.001	1430	10/07/94	BH
Manganese as Mn (Total)	200.7	<0.06 mg/l	0.001	0950	10/11/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	10/07/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.002	1500	10/05/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1430	10/07/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.015	1700	10/13/94	DO
Nitrite as N	354.2	<0.05 mg/l	0.005	1600	09/28/94	CC
Phosphorous Total	365.1	0.02 mg/l	0.003	1330	10/12/94	CC
Nitrate as N	353.2	0.39 mg/l	0.004	1730	09/28/94	CC

* Higher detection level due to interferences.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 155252
 Sample Name: F-2
 Sample Date: 09/27/94
 Collected by: RICHARD E. GIRAUD
 Time Sampled: NONE GIVEN
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO ₃	310.1	601 mg/l	-	1400	10/03/94	HB
Alkalinity Carbonate as CO ₃	310.1	6 mg/l	-	1400	10/03/94	HB
Alkalinity Total as CaCO ₃	310.1	502 mg/l	0.43	1400	10/03/94	HB
Chloride as Cl	325.3	60 mg/l	0.37	1400	10/12/94	HB
Sulfate as SO ₄	375.2	690 mg/l	1.75	1130	09/30/94	CC
CATIONS						
Calcium as Ca	200.7	96 mg/l	0.10	1130	10/05/94	BH
Hardness as CaCO ₃	23408	697 mg/l	-	1130	10/05/94	BH
Magnesium as Mg	200.7	111 mg/l	0.10	1130	10/05/94	BH
Potassium as K	258.1	6 mg/l	0.18	1300	10/07/94	AAH
Sodium as Na	200.7	256 mg/l	0.81	1030	10/14/94	BH
INORGANICS						
Electrical Conductivity	120.1	2260 umhos/cm	7.3	1400	10/05/94	HB
Oil & Grease	413.1	<1 mg/l	0.9	1000	10/11/94	CC
Settleable Solids	160.5	<0.1 ml/l	-	1556	09/28/94	TK
Total Dissolved Solids	160.1	1540 mg/l	6.3	0930	10/05/94	TK
Total Suspended Solids	160.2	8 mg/l	5.4	1000	10/03/94	TK
METALS						
Aluminum as Al (Dissolved)	200.7	0.2 mg/l	0.02	1100	10/03/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1300	10/06/94	AAH
Boron as B (Dissolved)	200.7	0.2 mg/l	0.02	1510	10/07/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.0009	1100	10/10/94	BH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1100	10/03/94	BH
Iron as Fe (Dissolved)	200.7	<0.05 mg/l	0.006	1430	10/07/94	BH
Iron as Fe (Total)	200.7	0.54 mg/l	0.006	0950	10/11/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1400	10/11/94	AAH
Manganese as Mn (Dissolved)	200.7	<0.02 mg/l	0.001	1430	10/07/94	BH
Manganese as Mn (Total)	200.7	0.04 mg/l	0.001	0950	10/11/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	10/07/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.002	1500	10/05/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1430	10/07/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.015	1700	10/14/94	DD
Nitrite as N	354.2	<0.05 mg/l	0.005	1600	09/28/94	CC
Phosphorous Total	365.1	<0.02 mg/l	0.003	1330	10/12/94	CC
Nitrate as N	353.2	0.48 mg/l	0.004	1730	09/28/94	CC

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 155253
 Sample Name: DRAGERRTON WELL
 Sample Date: 09/27/94
 Collected by: RICHARD E. GIRAUD
 Time Sampled: NONE GIVEN
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD		DATE OF ANALYSIS	ANALYST
			DETECTION LIMIT	TIME OF ANALYSIS		
ANIONS						
Alkalinity Bicarbonate as HCO ₃	310.1	463 mg/l	-	1400	10/03/94	HB
Alkalinity Carbonate as CO ₃	310.1	0 mg/l	-	1400	10/03/94	HB
Alkalinity Total as CaCO ₃	310.1	379 mg/l	0.43	1400	10/03/94	HB
Chloride as Cl	325.3	30 mg/l	0.37	1400	10/12/94	HB
Sulfate as SO ₄	375.2	412 mg/l	1.75	1130	09/30/94	CC
CATIONS						
Calcium as Ca	200.7	81 mg/l	0.10	1130	10/05/94	BH
Hardness as CaCO ₃	23408	511 mg/l	-	1130	10/05/94	BH
Magnesium as Mg	200.7	75 mg/l	0.10	1130	10/05/94	BH
Potassium as K	258.1	4 mg/l	0.18	1300	10/07/94	AAH
Sodium as Na	200.7	144 mg/l	0.81	1030	10/14/94	BH
INORGANICS						
Electrical Conductivity	120.1	1520 umhos/c	7.3	1400	10/05/94	HB
Oil & Grease	413.1	<1 mg/l	0.9	1000	10/11/94	CC
Settleable Solids	160.5	<0.1 ml/l	-	1556	09/28/94	TK
Total Dissolved Solids	160.1	981 mg/l	6.3	0930	10/05/94	TK
Total Suspended Solids	160.2	<5 mg/l	5.4	1000	10/03/94	TK
METALS						
Aluminum as Al (Dissolved)	200.7	0.2 mg/l	0.02	1100	10/03/94	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1300	10/06/94	AAH
Boron as B (Dissolved)	200.7	0.2 mg/l	0.02	1510	10/07/94	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.0009	1100	10/10/94	BH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1100	10/03/94	BH
Iron as Fe (Dissolved)	200.7	<0.05 mg/l	0.006	1430	10/07/94	BH
Iron as Fe (Total)	200.7	0.10 mg/l	0.006	0950	10/11/94	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1400	10/11/94	AAH
Manganese as Mn (Dissolved)	200.7	<0.02 mg/l	0.001	1430	10/07/94	BH
Manganese as Mn (Total)	200.7	0.03 mg/l	0.001	0950	10/11/94	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1430	10/07/94	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.002	1500	10/05/94	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1430	10/07/94	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.015	1700	10/14/94	DD
Nitrite as N	354.2	<0.05 mg/l	0.005	1600	09/28/94	CC
Phosphorous Total	365.1	<0.02 mg/l	0.003	1330	10/12/94	CC
Nitrate as N	353.2	0.80 mg/l	0.004	1730	09/28/94	CC

Huntingdon

(Formerly Chen-Northern, Inc.)

100 South 25th Street
Box 30616
Billings, MT 59107
(406) 248-9161
FAX (406) 248-9282

TECHNICAL REPORT

REPORT TO: ATTN: RICH GIRAUD
HUNTINGDON ENGINEERING &
ENVIRONMENTAL, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY UT 84119

DATE: January 20, 1995
JOB NUMBER: 87-927
SHEET: 1 of 5
INVOICE NO.: 003084

REPORT OF: Water Analysis - Sunnyside DOGM 5-137.3-91

SAMPLE IDENTIFICATION:

On December 20, 1994, these water samples (laboratory numbers 158101 through 158105) were received in our laboratory for analysis. Tests were conducted in accordance with the U.S. Environmental Protection Agency Manual EPA 600/4-79-020 "*Methods for Chemical Analysis of Water and Wastes.*"

The condition of the samples upon receipt at the laboratory is noted on the attached sample receipt checklist.

The test results are shown on the following pages.

A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

Reviewed by

David Couvill

Attachment: Sample Receipt Checklist

cmr

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 158102
 Sample Name: F-2/121994
 Sample Date: 12/19/94
 Collected by: RICHARD E. GIRAUD
 Time Sampled: NONE GIVEN
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO ₃	310.1	492 mg/l	-	1300	01/11/95	DD
Alkalinity Carbonate as CO ₃	310.1	0 mg/l	-	1300	01/11/95	DD
Alkalinity Total as CaCO ₃	310.1	403 mg/l	0.4	1300	01/11/95	DD
Chloride as Cl	325.2	23 mg/l	0.7	1400	01/09/95	CC
Sulfate as SO ₄	375.2	290 mg/l	2	1500	12/30/94	DD
CATIONS						
Calcium as Ca	200.7	72 mg/l	0.1	1030	01/10/95	BH
Hardness as CaCO ₃	23408	452 mg/l	-	1030	01/10/95	BH
Magnesium as Mg	200.7	66 mg/l	0.1	1030	01/10/95	BH
Potassium as K	258.1	3 mg/l	0.2	1430	12/29/94	AAH
Sodium as Na	200.7	141 mg/l	0.8	1030	01/10/95	BH
INORGANICS						
Electrical Conductivity	120.1	1300 umhos/cm	7	1500	12/29/94	HB
Oil & Grease	413.1	<1 mg/l	1	1400	01/04/95	DD
Settleable Solids	160.5	<0.1 ml/l	0.1	--	12/21/94	DD
Total Dissolved Solids	160.1	894 mg/l	6	1700	12/22/94	CC
Total Suspended Solids	160.2	3 mg/l	2	1530	12/22/94	CC
METALS						
Aluminum as Al (Dissolved)	200.7	<0.1 mg/l	0.02	1515	01/03/95	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1600	01/04/95	AAH
Boron as B (Dissolved)	200.7	0.1 mg/l	0.02	1345	01/03/95	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.00009	1800	01/10/95	AAH
Copper as Cu (Dissolved)	200.7	<0.02 mg/l	0.004	1515	01/03/95	BH
Iron as Fe (Dissolved)	200.7	0.08 mg/l	0.006	1345	01/03/95	BH
Iron as Fe (Total)	200.7	0.10 mg/l	0.006	1420	01/10/95	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1400	01/06/95	AAH
Manganese as Mn (Dissolved)	200.7	<0.02 mg/l	0.001	1345	01/03/95	AAH
Manganese as Mn (Total)	200.7	<0.02 mg/l	0.001	1420	01/10/95	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1600	01/03/95	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.001	1500	01/03/95	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1345	01/03/95	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05 mg/l	0.02	1300	12/28/94	CC
Nitrite as N	353.2	<0.05 mg/l	0.005	1000	12/21/94	DD
Phosphorous Total	365.1	<0.02 mg/l	0.003	1630	01/10/95	CC
Nitrate as N	353.2	0.66 mg/l	0.004	1200	12/27/94	BH

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 158105
 Sample Name: CR8/121994
 Sample Date: 12/19/94
 Collected by: RICHARD E. GIRAUD
 Time Sampled: NONE GIVEN
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	TIME OF ANALYSIS	DATE OF ANALYSIS	ANALYST
ANIONS*						
Alkalinity Bicarbonate as HCO ₃	310.1	440 mg/l	-	1330	12/22/94	BH
Alkalinity Carbonate as CO ₃	310.1	0 mg/l	-	1330	12/22/94	BH
Alkalinity Total as CaCO ₃	310.1	361 mg/l	0.4	1330	12/22/94	BH
Chloride as Cl	325.3	197 mg/l	0.7	--	01/13/95	DD
Sulfate as SO ₄	375.2	2800 mg/l	2	1500	12/30/94	DD
CATIONS*						
Calcium as Ca	200.7	570 mg/l	0.1	1130	01/12/95	BH
Hardness as CaCO ₃	23408	2780 mg/l	-	1130	01/12/95	BH
Magnesium as Mg	200.7	330 mg/l	0.1	1030	01/10/95	BH
Potassium as K	258.1	31 mg/l	0.2	1430	12/29/94	AAH
Sodium as Na	200.7	507 mg/l	0.8	1030	01/10/95	BH
INORGANICS						
Electrical Conductivity	120.1	5190 umhos/cm	7	1500	12/29/94	HB
Oil & Grease	413.1	<1 mg/l	1	1400	01/04/95	DD
Settleable Solids	160.5	<0.1 ml/l	0.1	-	12/21/94	DD
Total Dissolved Solids	160.1	5070 mg/l	6	1700	12/22/94	CC
Total Suspended Solids	160.2	<1 mg/l	2	1530	12/22/94	CC
METALS						
Aluminum as Al (Dissolved)	200.7	0.3 mg/l	0.02	1515	01/03/95	BH
Arsenic as As (Dissolved)	206.3	<0.002 mg/l	0.002	1600	01/04/95	AAH
Boron as B (Dissolved)	200.7	0.9 mg/l	0.02	1345	01/03/95	BH
Cadmium as Cd (Dissolved)	213.2	<0.001 mg/l	0.00009	1800	01/10/95	AAH
Copper as Cu (Dissolved)	200.7	<0.06 mg/l	0.004	1515	01/03/95	BH
Iron as Fe (Dissolved)	200.7	<0.15 mg/l	0.006	1345	01/03/95	BH
Iron as Fe (Total)	200.7	0.18 mg/l	0.006	1420	01/10/95	BH
Lead as Pb (Dissolved)	239.2	<0.002 mg/l	0.001	1400	01/06/95	AAH
Manganese as Mn (Dissolved)	200.7	0.12 mg/l	0.001	1345	01/03/95	BH
Manganese as Mn (Total)	200.7	0.15 mg/l	0.001	1420	01/10/95	AAH
Molybdenum as Mo (Dissolved)	200.7	<0.05 mg/l	0.009	1600	01/03/95	BH
Selenium as Se (Dissolved)	270.3	<0.002 mg/l	0.001	1500	01/03/95	AAH
Zinc as Zn (Dissolved)	200.7	<0.02 mg/l	0.002	1345	01/03/95	BH
NUTRIENTS						
Ammonia Nitrogen as N	350.1	0.07 mg/l	0.02	1300	12/28/94	CC
Nitrite as N	353.2	<0.05 mg/l	0.005	1000	12/21/94	DD
Phosphorous Total	365.1	<0.02 mg/l	0.003	1630	01/10/95	CC
Nitrate as N	353.2	0.70 mg/l	0.004	1200	12/27/94	BH

* The cation-anion analysis does not meet our quality assurance requirements. However, the values reported herein were verified by duplicate analysis. This indicates there are other unmeasured cations or anions present in the sample.

SAMPLE RECEIPT CHECKLIST

Client Name H-5LC
 Project Sunnyside DGM
 Laboratory number(s) 15821-05
 Checklist completed by BH / 12/20/94
 Initials / Date

Date/Time Received 12/20/94 1355
 Received by BH/Christ
 Carrier name IPS
 Logged in by _____
 Sample Type _____
 Initials / Date Walter

	YES	NO		YES	NO
Shipping container in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16. All samples rec'd within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Custody seals present on shipping container?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17. <u>Preservation</u> pH check performed by: <u>BH</u>		
Condition: Intact <input checked="" type="checkbox"/> Broken <input type="checkbox"/>			18. Metals bottle(s) pH <2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Chain of custody present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19. Nutrient bottle(s) pH <2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Chain of custody signed when relinquished and received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20. Cyanide bottle(s) pH >12?	<u>N/A</u>	<input type="checkbox"/>
Chain of custody agrees with sample labels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	21. Sulfide bottle(s) pH >9?	<input type="checkbox"/>	<input type="checkbox"/>
Custody seals on sample bottles?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	22. Oil & grease bottle(s) pH <2?	<input type="checkbox"/>	<input type="checkbox"/>
Condition: Intact <input type="checkbox"/> Broken <input type="checkbox"/>			23. TOC bottle(s) pH <2?	<u>N/A</u>	<input type="checkbox"/>
Samples in proper container/bottle?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	24. DRO/418.1 bottle(s) pH <2?	<input type="checkbox"/>	<input type="checkbox"/>
0. Samples intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	25. Phenolics bottle(s) pH <2?	<input type="checkbox"/>	<input type="checkbox"/>
1. Sufficient sample volume for indicated test?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	26. Volatiles (VOA) pH <2? (VOA pH checked by analyst)	<input type="checkbox"/>	<input type="checkbox"/>
2. VOA vials have zero headspace?	<u>N/A</u>	<input type="checkbox"/>	27. Client contacted?	<input type="checkbox"/>	<input type="checkbox"/>
3. Trip Blank received?	<u>N/A</u>	<input type="checkbox"/>	28. Person contacted	_____	_____
4. <u>Ice/Frozen Blue Ice</u> present in shipping container? (circle one)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	29. Date contacted	_____	_____
5. Container temperature <u>15.5°C</u> 2. _____ 3. _____			30. Contacted by	_____	_____
			31. Regarding?	_____	_____

Any NO response must be detailed in the comments section below. If items are not applicable, they should be marked NA.

COMMENTS: #6 Metals sample for CRB/12/94 was not labeled, there are 6 bottles to each set instead of 5, dissolved metals not marked as filtered, dissolved in 500ml bottles instead of 1000ml, total metals in 1000ml bottles, not 500ml.

Huntingdon

(Formerly Chen-Northern, Inc.)
300 South 25th Street
PO Box 30615
Billings, MT 59107
(406) 248-9161
FAX (406) 248-9282

TECHNICAL REPORT

REPORT TO: ATTN: RICH GIRAUD
HUNTINGDON ENGINEERING &
ENVIRONMENTAL, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY UT 84119

DATE: April 28, 1995
JOB NUMBER: 87-927
SHEET: 1 of 14
INVOICE NO: 029206

REPORT OF: Water Analysis - Sunnyside DOGM 5-137.4-91

SAMPLE IDENTIFICATION:

On March 28, 1995, these water samples (laboratory numbers 161306 through 161312) were received in our laboratory for analysis. Tests were conducted in accordance with the U.S. Environmental Protection Agency Manual EPA 600/4-79-020 "Methods for Chemical Analysis of Water and Wastes".

The condition of the samples upon receipt at the laboratory is noted on the attached sample receipt checklist. Chain of custody documentation is enclosed.

The test results are shown on the following pages.

A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

Reviewed by Kathleen ADA

Attachments: Sample Receipt Checklist
Chain of Custody

rmr

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 161306
 Sample Name: ICE-1
 Sample Date: 03/27/95
 Collected by: RON GOSSARD
 Time Sampled: 1305
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD				
			DETECTION LIMIT	DATE OF ANALYSIS	TIME OF ANALYSIS	ANALYST	
ANIONS							
Alkalinity Bicarbonate as HCO ₃	310.1	524	mg/l	0.52	04/05/95	1300	HB
Alkalinity Carbonate as CO ₃	310.1	11	mg/l	0	04/05/95	1300	HB
Alkalinity Total as CaCO ₃	310.1	448	mg/l	0.43	04/05/95	1300	HB
Chloride as Cl	325.3	72	mg/l	0.37	04/17/95	1200	HB
Sulfate as SO ₄	375.2	830	mg/l	1.75	04/12/95	1130	DD
CATIONS							
Calcium as Ca	200.7	98	mg/l	0.10	04/04/95	1030	BH
Hardness as CaCO ₃	23408	772	mg/l	0.7	04/04/95	1030	BH
Magnesium as Mg	200.7	128	mg/l	0.10	04/04/95	1030	BH
Potassium as K	258.1	6	mg/l	0.18	03/29/95	NG	BH
Sodium as Na	200.7	300	mg/l	0.45	04/04/95	1440	BH
INORGANICS							
Electrical Conductivity	120.1	2540	umhos/	7.3	04/13/95	1600	HB
Oil & Grease	413.1	8	mg/l	1.9	04/07/95	1000	AAH
Settleable Solids	160.5	<0.1	mL/l	---	03/28/95	ND	DD
Total Dissolved Solids	160.1	1670	mg/l	6.3	03/30/95	1610	CC
Total Suspended Solids	160.2	<5	mg/l	5.4	03/29/95	1630	BH
METALS							
Aluminum as Al (Dissolved)	200.7	<0.1	mg/l	0.02	04/12/95	1400	BH
Arsenic as As (Dissolved)	206.3	<0.002	mg/l	0.002	04/04/95	1400	AAH
Boron as B (Dissolved)	200.7	0.2	mg/l	0.022	04/12/95	1400	BH
Cadmium as Cd (Dissolved)	213.2	<0.001	mg/l	0.0009	04/07/95	1600	AAH
Copper as Cu (Dissolved)	200.7	<0.02	mg/l	0.004	04/12/95	1400	BH
Iron as Fe (Dissolved)	200.7	<0.05	mg/l	0.006	04/12/95	1400	BH
Iron as Fe (Total)	200.7	0.29	mg/l	0.006	04/06/95	1400	BH
Lead as Pb (Dissolved)	239.2	<0.002	mg/l	0.0045	04/05/95	NG	AAH
Manganese as Mn (Dissolved)	200.7	<0.04 *	mg/l	0.0004	04/12/95	1400	BH
Manganese as Mn (Total)	200.7	<0.02	mg/l	0.0004	04/06/95	1400	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05	mg/l	0.009	04/12/95	1400	BH
Selenium as Se (Dissolved)	270.3	<0.002	mg/l	0.0014	04/03/95	1500	AAH
Zinc as Zn (Dissolved)	200.7	<0.02	mg/l	0.002	04/12/95	1400	BH
MISCELLANEOUS							
Cation/Anion Balance	---	0.6	%	---	---	---	---

* Higher detection limit due to interference in the sample.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 161306
 Sample Name: ICE-1
 Sample Date: 03/27/95
 Collected by: RON GOSSARD
 Time Sampled: 1305
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD			
			DETECTION LIMIT	DATE OF ANALYSIS	TIME OF ANALYSIS	ANALYST
NUTRIENTS						
Ammonia Nitrogen as N	350.1	0.09	mg/l 0.015	03/29/95	1200	CC
Nitrite as N	353.2	<0.05	mg/l 0.005	03/28/95	NG	DD
Phosphorous Total	365.1	0.029	mg/l 0.003	04/03/95	1200	BH
Nitrate as N	353.2	0.20	mg/l 0.004	03/29/95	1300	CC

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 161307
 Sample Name: CRS
 Sample Date: 03/27/95
 Collected by: RON GOSSARD
 Time Sampled: 1405
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD			
			DETECTION LIMIT	DATE OF ANALYSIS	TIME OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO ₃	310.1	605	mg/l	0.52	04/05/95 1300	HB
Alkalinity Carbonate as CO ₃	310.1	0	mg/l	0	04/05/95 1300	HB
Alkalinity Total as CaCO ₃	310.1	496	mg/l	0.43	04/05/95 1300	HB
Chloride as Cl	325.3	104	mg/l	0.37	04/17/95 1200	HB
Sulfate as SO ₄	375.2	3400	mg/l	1.75	04/12/95 1130	DD
CATIONS						
Calcium as Ca	200.7	560	mg/l	0.10	04/04/95 1030	BH
Hardness as CaCO ₃	23408	2750	mg/l	0.7	04/04/95 1030	BH
Magnesium as Mg	200.7	328	mg/l	0.10	04/04/95 1030	BH
Potassium as K	258.1	37	mg/l	0.18	03/29/95 NG	BH
Sodium as Na	200.7	580	mg/l	0.81	04/04/95 1440	BH
INORGANICS						
Electrical Conductivity	120.1	5210	umhos/	7.3	04/13/95 1600	HB
Oil & Grease	413.1	<2	mg/l	1.9	04/07/95 1000	AH
Settleable Solids	160.5	<0.1	ml/l	---	03/28/95 NG	DD
Total Dissolved Solids	160.1	5090	mg/l	6.3	03/30/95 1610	CC
Total Suspended Solids	160.2	24	mg/l	5.4	03/29/95 1630	BH
METALS						
Aluminum as Al (Dissolved)	200.7	<0.1	mg/l	0.02	04/12/95 1400	BH
Arsenic as As (Dissolved)	206.3	<0.002	mg/l	0.002	04/04/95 1400	AAH
Boron as B (Dissolved)	200.7	0.7	mg/l	0.022	04/12/95 1400	BH
Cadmium as Cd (Dissolved)	213.2	<0.001	mg/l	0.0009	04/07/95 1600	AAH
Copper as Cu (Dissolved)	200.7	<0.02	mg/l	0.004	04/12/95 1400	BH
Iron as Fe (Dissolved)	200.7	1.23	mg/l	0.006	04/12/95 1400	BH
Iron as Fe (Total)	200.7	1.5	mg/l	0.006	04/06/95 1400	BH
Lead as Pb (Dissolved)	239.2	<0.002	mg/l	0.0013	04/05/95 NG	AAH
Manganese as Mn (Dissolved)	200.7	0.43	mg/l	0.001	04/12/95 1400	BH
Manganese as Mn (Total)	200.7	0.78	mg/l	0.001	04/06/95 1400	BH
Molybdenum as Mo (Dissolved)	200.7	0.06	mg/l	0.009	04/12/95 1400	BH
Selenium as Se (Dissolved)	270.3	<0.002	mg/l	0.0014	04/03/95 1500	AAH
Zinc as Zn (Dissolved)	200.7	<0.02	mg/l	0.002	04/12/95 1400	BH
MISCELLANEOUS						
Cation/Anion Balance	---	1.5	%	---	--	--

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 161307
 Sample Name: CRS
 Sample Date: 03/27/95
 Collected by: RON GOSSARD
 Time Sampled: 1405
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD				
			DETECTION LIMIT	DATE OF ANALYSIS	TIME OF ANALYSIS	ANALYST	
NUTRIENTS							
Ammonia Nitrogen as N	350.1	1.78	mg/l	0.015	03/29/95	1330	CC
Nitrite as N	353.2	<0.05	mg/l	0.005	03/28/95	NG	DD
Phosphorous Total	365.1	0.170	mg/l	0.003	04/03/95	1200	BH
Nitrate as N	353.2	<0.05	mg/l	0.004	03/29/95	1300	CC

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 161308
 Sample Name: CRB
 Sample Date: 03/27/95
 Collected by: RON GOSSARD
 Time Sampled: 1430
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD				
			DETECTION LIMIT	DATE OF ANALYSIS	TIME OF ANALYSIS	ANALYST	
ANIONS							
Alkalinity Bicarbonate as HCO ₃	310.1	398	mg/l	0.52	04/05/95	1300	HB
Alkalinity Carbonate as CO ₃	310.1	0	mg/l	0	04/05/95	1300	HB
Alkalinity Total as CaCO ₃	310.1	326	mg/l	0.43	04/05/95	1300	HB
Chloride as Cl	325.3	217	mg/l	0.37	04/17/95	1200	HB
Sulfate as SO ₄	375.2	3000	mg/l	1.75	04/12/95	1130	DD
CATIONS							
Calcium as Ca	200.7	480	mg/l	0.10	04/04/95	1030	BH
Hardness as CaCO ₃	2340B	2401	mg/l	0.7	04/04/95	1030	BH
Magnesium as Mg	200.7	292	mg/l	0.10	04/04/95	1030	BH
Potassium as K	258.1	27	mg/l	0.18	03/29/95	NG	BH
Sodium as Na	200.7	564	mg/l	0.45	04/04/95	1030	BH
INORGANICS							
Electrical Conductivity	120.1	4950	umhos/	7.3	04/13/95	1600	HB
Oil & Grease	413.1	<2	mg/l	1.9	04/07/95	1000	AAH
Settleable Solids	160.5	<0.1	ml/l	---	03/28/95	NG	DD
Total Dissolved Solids	160.1	4880	mg/l	6.3	03/30/95	1610	CC
Total Suspended Solids	160.2	<5	mg/l	5.4	03/29/95	1630	BH
METALS							
Aluminum as Al (Dissolved)	200.7	<0.1	mg/l	0.02	04/12/95	1400	BH
Arsenic as As (Dissolved)	206.3	<0.002	mg/l	0.002	04/04/95	1400	AAH
Boron as B (Dissolved)	200.7	0.5	mg/l	0.022	04/12/95	1400	BH
Cadmium as Cd (Dissolved)	213.2	<0.001	mg/l	00009	04/07/95	1600	AAH
Copper as Cu (Dissolved)	200.7	<0.02	mg/l	0.004	04/12/95	1400	BH
Iron as Fe (Dissolved)	200.7	<0.25*	mg/l	0.006	04/12/95	1400	BH
Iron as Fe (Total)	200.7	<0.05	mg/l	0.006	04/06/95	1400	BH
Lead as Pb (Dissolved)	239.2	<0.002	mg/l	0.0003	04/05/95	NG	AAH
Manganese as Mn (Dissolved)	200.7	<0.10*	mg/l	0.001	04/12/95	1400	BH
Manganese as Mn (Total)	200.7	<0.02	mg/l	0.001	04/06/95	1400	BH
Molybdenum as Mo (Dissolved)	200.7	0.07	mg/l	0.009	04/12/95	1400	BH
Selenium as Se (Dissolved)	270.3	<0.002	mg/l	0.0014	04/03/95	1500	AAH
Zinc as Zn (Dissolved)	200.7	<0.02	mg/l	0.002	04/12/95	1400	BH
MISCELLANEOUS							
Cation/Anion Balance	---	1.3	%	---	---	---	---

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 161308
 Sample Name: CRB
 Sample Date: 03/27/95
 Collected by: RON GOSSARD
 Time Sampled: 1430
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD			
			DETECTION LIMIT	DATE OF ANALYSIS	TIME OF ANALYSIS	ANALYST
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05	mg/l	0.015	03/29/95	1200 CC
Nitrite as N	353.2	<0.05	mg/l	0.005	03/28/95	NG DD
Phosphorous Total	365.1	0.050	mg/l	0.003	04/03/95	1200 BH
Nitrate as N	353.2	0.61	mg/l	0.004	03/29/95	1300 CC

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 161309
 Sample Name: F-2
 Sample Date: 03/27/95
 Collected by: RON GOSSARD
 Time Sampled: 1500
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD DETECTION LIMIT	DATE OF ANALYSIS	TIME OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO ₃	310.1	610	mg/l 0.52	04/05/95	1300	HB
Alkalinity Carbonate as CO ₃	310.1	0	mg/l 0	04/05/95	1300	HB
Alkalinity Total as CaCO ₃	310.1	500	mg/l 0.43	04/05/95	1300	HB
Chloride as Cl	325.3	72	mg/l 0.37	04/17/95	1200	HB
Sulfate as SO ₄	375.2	760	mg/l 1.75	04/12/95	1130	DD
CATIONS						
Calcium as Ca	200.7	108	mg/l 0.10	04/04/95	1030	BH
Hardness as CaCO ₃	23408	751	mg/l 0.7	04/04/95	1030	BH
Magnesium as Mg	200.7	117	mg/l 0.10	04/04/95	1030	BH
Potassium as K	258.1	5	mg/l 0.18	03/29/95	NG	BH
Sodium as Na	200.7	306	mg/l 0.45	04/04/95	1030	BH
INORGANICS						
Electrical Conductivity	120.1	2360	umhos/ 7.3	04/13/95	1600	HB
Oil & Grease	413.1	2	mg/l 1.9	04/07/95	1000	AH
Settleable Solids	160.5	<0.1	ml/l ---	03/28/95	NG	DD
Total Dissolved Solids	160.1	1600	mg/l 6.3	03/30/95	1610	CC
Total Suspended Solids	160.2	<5	mg/l 5.4	03/29/95	1630	BH
METALS						
Aluminum as Al (Dissolved)	200.7	<0.1	mg/l 0.02	04/12/95	1400	BH
Arsenic as As (Dissolved)	206.3	<0.002	mg/l 0.002	04/04/95	1400	AAH
Boron as B (Dissolved)	200.7	0.2	mg/l 0.022	04/12/95	1400	BH
Cadmium as Cd (Dissolved)	213.2	<0.001	mg/l 0.0009	04/07/95	1600	AAH
Copper as Cu (Dissolved)	200.7	<0.02	mg/l 0.004	04/12/95	1400	BH
Iron as Fe (Dissolved)	200.7	<0.05	mg/l 0.006	04/12/95	1400	BH
Iron as Fe (Total)	200.7	<0.05	mg/l 0.006	04/06/95	1400	BH
Lead as Pb (Dissolved)	239.2	<0.002	mg/l 0.0013	04/05/95	NG	AAH
Manganese as Mn (Dissolved)	200.7	<0.02	mg/l 0.001	04/12/95	1400	BH
Manganese as Mn (Total)	200.7	<0.02	mg/l 0.001	04/06/95	1400	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05	mg/l 0.009	04/12/95	1400	BH
Selenium as Se (Dissolved)	270.3	<0.002	mg/l 0.0014	04/03/95	1500	AAH
Zinc as Zn (Dissolved)	200.7	<0.02	mg/l 0.002	04/12/95	1400	BH
MISCELLANEOUS						
Cation/Anion Balance	---	1.1	%	---	---	---

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 161309
 Sample Name: F-2
 Sample Date: 03/27/95
 Collected by: RON GOSSARD
 Time Sampled: 1500
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD				
			DETECTION LIMIT	DATE OF ANALYSIS	TIME OF ANALYSIS	ANALYST	
NUTRIENTS							
Ammonia Nitrogen as N	350.1	<0.05	mg/l	0.015	03/29/95	1200	CC
Nitrite as N	353.2	<0.05	mg/l	0.005	03/28/95	NG	DD
Phosphorous Total	365.1	<0.02	mg/l	0.003	04/03/95	1200	BH
Nitrate as N	353.2	0.51	mg/l	0.004	03/29/95	1300	CC

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 161310
 Sample Name: WELL
 Sample Date: 03/27/95
 Collected by: RON GOSSARD
 Time Sampled: 1525
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD			
			DETECTION LIMIT	DATE OF ANALYSIS	TIME OF ANALYSIS	ANALYST
ANIONS						
Alkalinity Bicarbonate as HCO ₃	310.1	362	mg/l	0.52	04/05/95	1300 HB
Alkalinity Carbonate as CO ₃	310.1	0	mg/l	0	04/05/95	1300 HB
Alkalinity Total as CaCO ₃	310.1	297	mg/l	0.43	04/05/95	1300 HB
Chloride as Cl	325.3	4	mg/l	0.37	04/17/95	1200 HB
Sulfate as SO ₄	375.2	150	mg/l	1.75	04/12/95	1130 DD
CATIONS						
Calcium as Ca	200.7	50	mg/l	0.10	04/04/95	1030 BH
Hardness as CaCO ₃	234.08	318	mg/l	0.7	04/04/95	1030 BH
Magnesium as Mg	200.7	47	mg/l	0.10	04/04/95	1030 BH
Potassium as K	258.1	2	mg/l	0.18	03/29/95	NG BH
Sodium as Na	200.7	70	mg/l	0.45	04/04/95	1030 BH
INORGANICS						
Electrical Conductivity	120.1	861	umhos/	7.3	04/13/95	1300 HB
Oil & Grease	413.1	**				
Settleable Solids	160.5	<0.01	ml/l	---	03/28/95	NG DD
Total Dissolved Solids	160.1	512	mg/l	6.3	03/30/95	1610 CC
Total Suspended Solids	160.2	<5	mg/l	5.4	03/29/95	1630 BH
METALS						
Aluminum as Al (Dissolved)	200.7	<0.1	mg/l	0.02	04/12/95	1400 BH
Arsenic as As (Dissolved)	206.3	<0.002	mg/l	0.002	04/04/95	1400 AAH
Boron as B (Dissolved)	200.7	<0.1	mg/l	0.022	04/12/95	1400 BH
Cadmium as Cd (Dissolved)	200.7	<0.001	mg/l	0.0009	04/07/95	1600 AAH
Copper as Cu (Dissolved)	200.7	<0.02	mg/l	0.004	04/12/95	1400 BH
Iron as Fe (Dissolved)	200.7	<0.05	mg/l	0.006	04/12/95	1400 BH
Iron as Fe (Total)	200.7	<0.05	mg/l	0.006	04/06/95	1400 BH
Lead as Pb (Dissolved)	239.2	<0.002	mg/l	0.006	04/05/95	1400 AAH
Manganese as Mn (Dissolved)	200.7	<0.02	mg/l	0.001	04/12/95	1400 BH
Manganese as Mn (Total)	200.7	<0.02	mg/l	0.001	04/06/95	1400 BH
Molybdenum as Mo (Dissolved)	200.7	<0.05	mg/l	0.009	04/12/95	140 BH
Selenium as Se (Dissolved)	270.3	<0.002	mg/l	0.0014	04/03/95	1500 AAH
Zinc as Zn (Dissolved)	200.7	<0.02	mg/l	0.002	04/12/95	1400 BH
MISCELLANEOUS						
Cation/Anion Balance	---	1.5	%	---	---	---

** Sample container was broken in shipment.

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 161310
 Sample Name: WELL
 Sample Date: 03/27/95
 Collected by: RON GOSSARD
 Time Sampled: 1525
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD			
			DETECTION LIMIT	DATE OF ANALYSIS	TIME OF ANALYSIS	ANALYST
NUTRIENTS						
Ammonia Nitrogen as N	350.1	<0.05	mg/l	0.015	03/29/95	1200 CC
Nitrite as N	353.2	<0.05	mg/l	0.005	03/28/95	NG DD
Phosphorous Total	365.1	0.028	mg/l	0.003	04/03/95	1200 BH
Nitrate as N	353.2	0.54	mg/l	0.004	03/29/95	1300 CC

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 161311
 Sample Name: DUPLICATE 161306 ICE-1
 Sample Date: 03/27/95
 Collected by: RON GOSSARD
 Time Sampled: 1305
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD				
			DETECTION LIMIT	DATE OF ANALYSIS	TIME OF ANALYSIS	ANALYST	
ANIONS							
Alkalinity Bicarbonate as HCO ₃	310.1	529	mg/l	0.52	04/05/95	1300	HB
Alkalinity Carbonate as CO ₃	310.1	11	mg/l	0	04/05/95	1300	HB
Alkalinity Total as CaCO ₃	310.1	453	mg/l	0.43	04/05/95	1300	HB
Chloride as Cl	325.3	74	mg/l	0.37	04/17/95	1200	HB
Sulfate as SO ₄	375.2	820	mg/l	1.75	04/12/95	1130	DD
CATIONS							
Calcium as Ca	200.7	98	mg/l	0.10	04/04/95	1030	BH
Hardness as CaCO ₃	23408	764	mg/l	0.7	04/04/95	1030	BH
Magnesium as Mg	200.7	126	mg/l	0.10	04/04/95	1030	BH
Potassium as K	258.1	6	mg/l	0.18	03/29/95	NG	BH
Sodium as Na	200.7	300	mg/l	0.45	04/04/95	1030	BH
INORGANICS							
Electrical Conductivity	120.1	2590	umhos/	7.3	04/13/95	1600	HB
Total Suspended Solids	160.2	4	mg/l	5.4	03/29/95	1630	bh
METALS							
Aluminum as Al (Dissolved)	200.7	<0.1	mg/l	0.02	04/12/95	1400	BH
Arsenic as As (Dissolved)	206.3	<0.002	mg/l	0.002	04/04/95	1400	AAH
Boron as B (Dissolved)	200.7	0.2	mg/l	0.022	04/12/95	1400	BH
Cadmium as Cd (Dissolved)	213.2	<0.001	mg/l	00009	04/07/95	1600	AAH
Copper as Cu (Dissolved)	200.7	<0.02	mg/l	0.004	04/12/95	1400	BH
Iron as Fe (Dissolved)	200.7	<0.05	mg/l	0.006	04/12/95	1400	BH
Iron as Fe (Total)	200.7	0.30	mg/l	0.006	04/06/95	1400	BH
Lead as Pb (Dissolved)	239.2	<0.002	mg/l	0.0013	04/05/95	1600	AAH
Manganese as Mn (Dissolved)	200.7	<0.04*	mg/l	0.001	04/12/95	1400	BH
Manganese as Mn (Total)	200.7	<0.02	mg/l	0.001	04/06/95	1400	BH
Molybdenum as Mo (Dissolved)	200.7	<0.05	mg/l	0.009	04/12/95	1400	BH
Selenium as Se (Dissolved)	270.3	<0.002	mg/l	0.0014	04/03/95	1500	AAH
Zinc as Zn (Dissolved)	200.7	<0.02	mg/l	0.002	04/12/95	1400	BH
MISCELLANEOUS							
Cation/Anion Balance	---	0.4	%	---	---	---	--
NUTRIENTS							
Ammonia Nitrogen as N	350.1	<0.05	mg/l	0.015	03/29/95	1200	CC
Nitrite as N	353.2	<0.05	mg/l	0.005	03/28/95	NG	DD

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 161311
Sample Name: DUPLICATE 161306 ICÉ-1
Sample Date: 03/27/95
Collected by: RON GOSSARD
Time Sampled: 1305
Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD				
			DETECTION LIMIT	DATE OF ANALYSIS	TIME OF ANALYSIS	ANALYST	
Phosphorous Total	365.1	0.026	mg/l	0.003	04/03/95	1200	BH
Nitrate as N	353.2	0.20	mg/l	0.004	03/29/95	1300	CC

Client Name: HUNTINGDON - SALT LAKE CITY, UT
 Project No.: 87-927
 Laboratory No.: 161312
 Sample Name: SPIKE 161310 WELL
 Sample Date: 03/27/95
 Collected by: RON GOSSARD
 Time Sampled: 1525
 Sample Type: WATER

PARAMETER	METHOD NUMBER	MEASURED VALUE		METHOD			ANALYST
				DETECTION LIMIT	DATE OF ANALYSIS	TIME OF ANALYSIS	
ANIONS							
Alkalinity Total as CaCO3	310.1	98	X	0.43	04/05/95	1300	BH
Chloride as Cl	325.3	110	X	0.37	04/17/95	1200	BH
Sulfate as SO4	375.2	100	X	1.75	04/12/95	1130	DD
CATIONS							
Calcium as Ca	200.7	96	X	0.10	04/04/95	1030	BH
Magnesium as Mg	200.7	96	X	0.10	04/04/95	1030	BH
Potassium as K	258.1	110	X	0.18	03/29/95	NG	BH
Sodium as Na	200.7	96	X	0.45	04/04/95	1030	BH
METALS							
Aluminum as Al (Dissolved)	200.7	104	X	0.02	04/12/95	1400	BH
Arsenic as As (Dissolved)	206.3	100	X	0.002	04/04/95	1400	AAH
Boron as B (Dissolved)	200.7	102	X	0.022	04/12/95	1400	BH
Cadmium as Cd (Dissolved)	213.2	95	X	0.0009	04/07/95	1600	AAH
Copper as Cu (Dissolved)	200.7	101	X	0.004	04/12/95	1400	BH
Iron as Fe (Dissolved)	200.7	110	X	0.006	04/12/95	1400	BH
Iron as Fe (Total)	200.7	92	X	0.006	04/06/95	1400	BH
Lead as Pb (Dissolved)	239.2	100	X	0.0013	04/05/95	1600	AAH
Manganese as Mn (Dissolved)	200.7	101	X	0.001	04/12/95	1400	BH
Manganese as Mn (Total)	200.7	90	X	0.001	04/06/95	1400	BH
Molybdenum as Mo (Dissolved)	200.7	106	X	0.009	04/12/95	1400	BH
Selenium as Se (Dissolved)	270.3	95	X	0.0014	04/03/95	1500	AAH
Zinc as Zn (Dissolved)	200.7	112	X	0.002	04/12/95	1400	BH
NUTRIENTS							
Ammonia Nitrogen as N	350.1	93	X	0.015	03/29/95	1200	CC
Nitrite as N	353.2	104	X	0.005	03/28/95	NG	DD
Phosphorous Total	365.4	105	X	0.003	04/03/95	1200	BH
Nitrate as N	353.2	100	X	0.004	03/29/95	1300	CC

Huntingdon

(Formerly Chen-Northern, Inc.)
600 South 25th Street
PO Box 30615
Billings, MT 59107
(406) 248-9161
FAX (406) 248-9282

TECHNICAL REPORT

REPORT TO: ATTN: RICH GIRAUD
HUNTINGDON ENGINEERING &
ENVIRONMENTAL, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY UT 84119

DATE: April 28, 1995
JOB NUMBER: 87-927
SHEET: 1 of 2
INVOICE NO.: 029342

REPORT OF: Water Analysis - Sunnyside Cogeneration Facility 15-137.4-91

SAMPLE IDENTIFICATION:

On April 7, 1995, this water sample (laboratory number 161717) was received in our laboratory for analysis. Tests were conducted in accordance with the U.S. Environmental Protection Agency Manual EPA 600/4-79-020 "Methods for Chemical Analysis of Water and Wastes."

The condition of the sample upon receipt at the laboratory is noted on the attached sample receipt checklist. Chain of custody documentation is enclosed.

The test results are shown on the following page.

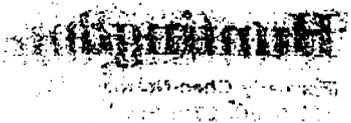
A < sign indicates the value reported was the practical quantitation limit for this sample using the method described. Concentrations of analyte, if present, below this were not quantifiable.

Reviewed by 

Attachments: Sample Receipt Checklist
Chain of Custody

rnr

Client Name: HUNTINGDON - SALT LAKE CITY, UT
Project No.: 87-927
Laboratory No.: 161717
Sample Name: DAGERTON WELL 040595
Sample Date: 04/05/95
Collected by: RON GOSSARD
Time Sampled: 1445
Sample Type: WATER



PARAMETER	METHOD NUMBER	MEASURED VALUE	METHOD			
			DETECTION LIMIT	DATE OF ANALYSIS	TIME OF ANALYSIS	ANALYST
INORGANICS						
Oil & Grease	413.1	<1	mg/l 1.9	04/18/95	NG	CJ

Sumner Generation Facility
Project of Site Name

CHAIN OF CUSTODY RECORD

Huntingdon

Consulting Engineers Environmental Scientists

Rich Girard
Contact or Report to

5-137.4-91
Project Number

1177 West 2320 South Ste B SLC
Contact Address or Location 84119

RON COSSARD
Sampler Name (Printed)

- Chen-Northern, Inc., Division
- Thomas-Hartig & Associates, Inc., Division
- Schaefer Dixon Associates, Inc., Division
- Herzog Associates, Inc., Division

Tom Cossard
Sampler Signature

DATE COLLECTED	TIME COLLECTED	SAMPLE LOCATION OR DESCRIPTION	COMP OR GRAB	SAMPLE MATRIX	NO. OF CONTAINERS	ANALYSIS REQUIRED							NOTES	LAB NUMBER
4-5-95 6/17/95	1445	Dagerton Well 040595	GRAB	H ₂ O	1	<input checked="" type="checkbox"/>								

Relinquished by: <u>Ron Cossard</u>	Date: <u>4-6-95</u>	Time: <u>1400</u>	Received by: <u>Airborne/Carrier</u>	Remarks: <u>Huntingdon Lab - Billings, MT</u>
Relinquished by:	Date:	Time:	Received by:	
Relinquished by:	Date:	Time:	Received by:	
Relinquished by:	Date:	Time:	Received by:	

Delta Kuhl Shipping
HTG - BIG SHIPPING DEPT
4-7-95 11:20

SAMPLE RECEIPT CHECKLIST

Client Name HTG-SLC

Date/Time Received 4-7-95 11:30

Project _____

Received by Deena Kroll

Laboratory number(s) _____

Carrier name _____

Checklist completed by: DK / 4-7-95
Initials / Date

Logged in by Deena Kroll
Initials / Date

Sample Type _____

- | | YES | NO | | YES | NO |
|--|-------------------------------------|-------------------------------------|--|--------------------------|--------------------------|
| 1. Shipping container in good condition? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 16. All samples rec'd within holding time? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody seals present on shipping container? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 17. <u>Preservation</u> pH check performed by: <u>DK</u> | | |
| 3. Condition: Intact _____ Broken _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 18. Metals bottle(s) pH <? <u>NA</u> | | |
| 4. Chain of custody present? | <input type="checkbox"/> | <input type="checkbox"/> | 19. Nutrient bottle(s) pH <? <u>NA</u> | | |
| 5. Chain of custody signed when relinquished and received? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 20. Cyanide bottle(s) pH >12? <u>NA</u> | | |
| 6. Chain of custody agrees with sample labels? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 21. Sulfide bottle(s) pH >9? <u>NA</u> | | |
| 7. Custody seals on sample bottles? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 22. Oil & grease bottle(s) pH <? <u>NA</u> | | |
| 8. Condition: Intact _____ Broken _____ | <input type="checkbox"/> | <input type="checkbox"/> | 23. TOC bottle(s) pH <? <u>NA</u> | | |
| 9. Samples in proper container/bottle? | <input type="checkbox"/> | <input type="checkbox"/> | 24. DRO/418.1 bottle(s) pH <? <u>NA</u> | | |
| 10. Samples intact? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 25. Phenolics bottle(s) pH <? <u>NA</u> | | |
| 11. Sufficient sample volume for indicated test? | <input type="checkbox"/> | <input type="checkbox"/> | 26. Volatiles (VOA) pH <? (VOA pH checked by analyst) | | |
| 12. VOA vials have zero headspace? | <input type="checkbox"/> | <input type="checkbox"/> | 27. Client contacted? | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Trip Blank received? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 28. Person contacted _____ | | |
| 14. Ice/Frozen <u>Blue Ice</u> present in shipping container? (circle one) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 29. Date contacted _____ | | |
| 15. Container temperature 1. <u>4.6</u> 2. _____ 3. _____ | | | 30. Contacted by _____ | | |
| | | | 31. Regarding? _____ | | |

Any NO response must be detailed in the comments section below. If items are not applicable, they should be marked NA.

COMMENTS: _____

EXHIBIT A-5(b)

HUNTINGDON FIELD DATA SHEETS

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen - Northern

MONITORING LOCATION NUMBER: ICE-1 NOGM

Runoff Basin / Spring / Other: Stream Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	gpm Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters				Collection Point	Sample Taken (yes/no)
									Temp (°C)	pH	SC (umhos)	DO Meter No.		
7/26/93	1335	GM CW	Sunny/Hot	yes		185	CC		29	8.08	2200	7.4	Marked	yes
7/29	1517	GM	Sunny/Hot	yes		200	CC		23	8.17	2300	6.2	"	NO
8/26/93	1103	GM		yes		120	CC		16	7.18	2200	7.2	"	NO
9/2/93	1700	GM CW	Slt	yes		150	CC	-	20	8.23	2150	5.4	"	NO
9/27	0830	MH	Windy	yes		180	U:3		3.3	8.50	1200	6.0	-	NO
11/16	1310	MH	Cl'd	yes		150	U:3		5.0	8.48	1800	5.6	-	NO
12/9	1555	GM	C.R.	yes	clear	300	U:5		4.8	8.49	2471	10.3	"	NO
1/13/94	1438	GM	Cold/Cl'd	yes	Clear ICE-2 duplicate	200	U:3		5.1	8.29	2220	6.4	"	yes
7/28	1536	GM	Cool, P.C.	yes	light brown/silty	150	U:3		8.9	8.16	1450	7.3	"	NO
8/31/94	12:39	CW/TMM	Warm, Sunny	yes	"	90	DF		12.9	7.90	1800	6.0	"	NO
7/19/94	1315	CW/COM	" "	yes	"	100	DF		17.2	8.23	2860	6.4	"	NO
5/31/94	1055	RL	cool, rain	yes	clear	300	CC		13.1	8.29	2257	9.9	"	NO
6/23	0928	GM	Sunny/Hot	yes	clear	120	DF		21.9	8.74	2120	6.5	"	yes
7/21/94	0935	GM	Sunny/Hot	yes	clear	90	DF		21.2	8.34	2150	7.1	"	NO
8/24/94	1450	GM	Sunny/Hot	yes	clear	50	DF		25.7	8.71	2170	6.3	"	NO
9/29/94	1226	RB6	sunny, cool	yes	clear	4.0	DF ^{DO} CC		18.2	8.50	2340.9	15.4	"	yes
10/19/94	1302	RB6/6M	cloudy, cool	yes		120	CC		9.9	8.59	2491.3	8.8	"	yes
11/21/94	1217	RB6/REG	overcast, cool	yes		20	CC		1.1	8.84	2165	15.5	"	NO

* Basin water level measurements are taken from permanent reference point at basin location.
 Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UG W 070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen - Northern

MONITORING LOCATION NUMBER:

F-2 (Whit. Sp)

D06M

Runoff Basin / Spring / Other: _____

Sampling Parameters: _____

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	gpm Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters				Collection Point	Sample Taken (yes/no)
									Temp (F/C)	pH	SC (umhos)	DO Meter No.		
6/26/93	1515	Gmcw	Sunny/Hot	yes	Clear water	100	CC		25	8.4	2300	7.8	Marked Point	yes
7/27	1456	Gm	Sunny/Hot	yes	"	~90	Vis		23	8.02	1900	5.9	"	yes
8/24/93	1058	Gm	Overcast	yes	"	100	CC		15	7.18	2150	6.2	"	NO
9/6/93	1757	Gmcw	Sky	yes	"	100	CC		17	7.54	2100	6.4	"	yes
10/27	0730	MH	w-dry	yes	"	100	CC		1.5	8.3	1200	7.0	"	NO
11/6	1310	MH	Cold	yes	"	100	CC		5.3	8.49	1300	6.20	"	NO
12/9	1530	Gm	Cold	yes	Grey from TSS(009)	150	CC		6.0	7.82	1800	12.7	"	NO
1/3/94	1535	Gm	Cold Clear	yes	Clear	~90	CC		5.6	8.51	1824	6.2	"	yes
2/28	1320	Gm	PC Cool	yes	Clear Water	35	CC		7.7	7.62	2180	6.9	"	NO
3/1/94	1254	Gm/TMM	Warm, Sunny	yes	"	25.5	CC		13.6	8.01	1500	6.4	"	NO
4/17	1525	04/61	"	yes	Clear	36	CC		15.5	8.40	1800	8.6	"	yes
5/1/94	1147	RL	cool, rain	yes	clear	85	CC		12.5	8.16	1650	7.9	"	NO
6/20/94	1030	Gm	Sunny hot	yes	clear	60	CC		18.7	8.49	2130	7.0	"	yes
7/1/94	0900	Gm	Sunny Hot	yes	clear	43	CC		18.9	7.98	3401	7.9	"	NO
8/22/94	1213	Gm	Sunny Hot	yes	clear low flow	23	CC		22.4	7.85	320	8.5	"	NO
9/29/94	1428	RBG	sunny cool	yes	clear	7.0	CC		19.5	8.26	2218.2	14.9	"	yes
10/19/94	1325	RBG/Gm	cloudy cool	yes	clear	30.0	CC		10.5	8.35	2340.8	8.6	"	yes
11/2/94	1129	RBL/REG	overcast, cool	yes	clear	24.0	CC		3.4	8.63	2200	13.9	"	no

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen - Northern

MONITORING LOCATION NUMBER: CRS (source) DOG M

Runoff Basin / Spring / Other: _____ Sampling Parameters: _____

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters				Collection Point	Sample Taken (yes/no)
									Temp (°C)	pH	SC (umhos)	DO Meter No.		
6/5/94	1335	GM CW	Sunny hot	yes	Much Rust, Warm.	~30	Vis		32	6.77	4600	6.2	Flipped Point	yes
7/2	1620	GM	Sunny hot	yes	"	~30	Vis		28	7.25	3200	2.4	"	NO
8/26/94	1150	GM	overcast	yes	"	~40	VIS		25	6.81	2800	3.4	"	NO
9/1/94	1555	CW or	sw	yes	"	~40	Vis		28	7.12	4600	1.9	"	yes
10/26	1320	MH	w. - dry	yes	"	40	Vis		23	6.98	4700	3.5	"	NO
11/6	1405	MH	Cold	yes	"	50	Vis		23.2	6.86	4850	2.1	"	NO
12/9	1612	GM	Cold	yes	Warmer low flow	~30	Vis		23.2	6.93	4300	1.9	"	NO
1/14/94	1011	GM	Clear Cold	yes	"	~100	Vis		21.2	7.08	4748	2.4	"	yes
2/28	1356	GM	PC, Cool	yes	"	100	Vis		36.5	6.74	4470	0.9	"	NO
3/5/94	11:57	CW/GMM	Warm, Sunny	yes	"	?	—		23.7	6.51	5400	1.4	"	NO
4/10	1356	CW/GM	"	yes	Weir in place	10	W		26.9	6.83	4550	3.2	Weir	yes
5/21/94	1147	RL	cool, rain	yes	Rust, warm, weir in place	8.5	W		23.6	6.64	4650	1.9	Weir	NO
6/23/94	1049	GM	Sunny hot	yes	"	8.5	W		37.2	6.88	5170	1.5	"	yes
7/1/94	1004	GM	Sunny hot	yes	"	8.5	W		26.9	6.96	5480	1.3	"	NO
8/22/94	1545	GM	Sunny hot	yes	Clear low flow Mud Veg.	7.1	W		27.5	7.01	5130	1.2	"	NO
9/29/94	1318	RBG	Sunny cool	yes	clean	8.5	W		26.2	6.88	5450	1.2	"	yes
10/19/94	1344	RBG/GM	Cloudy, cool	yes	lots of vegetation	8.5	W		21.1	6.86	5565.4	2.3	"	yes
11/2/94	1145	RBG/REG	overcast cool	yes	vegetation	4.7	weir		18.9	7.11	5088	5.3	"	NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen - Northern

MONITORING LOCATION NUMBER: CRB (boundary) NOGM

Runoff Basin Spring Other: _____

Sampling Parameters: _____

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters				Collection Point	Sample Taken (yes/no)
									Temp (°C)	pH	SC (umhos)	DO Meter No.		
6/22/93	1355	GmCW	Sunny Hot	yes	Much leaf litter / water	~30	Vis		2.6	7.60	4200	8.1	Station Point	yes
7/27	1626	Gm	Sunny Hot	yes	" "	~30	Vis		2.1	7.87	4600	5.0	"	NO
8/6/93	1159	Gm	Overcast	yes	" "	~60	Vis		18.5	6.5	2450	5.4	"	NO
9/2	1643	GmCW	SW	yes	" "	~40	Vis		2.0	7.92	4150	4.9	"	NO
10/26	1400	MH	w. sky	yes	" "	40	Vis		8.3	7.50	3400	6.0	"	NO
11/16	1430	MH	Cold	yes	" "	40?	Vis		7.2	7.10	3300	5.5	"	NO
12/9	1627	Gm	Cold	yes	Clear water	40?	Vis		5.9	7.94	3900	8.4	"	NO
1/14/94	1103	Gm	Clear Cold	yes	Clear	200 ^{est}	Vis		5.0	8.17	3100	6.0	"	yes
4/28	1407	Gm	PC, Cool	yes	Less flow	120	Vis		15.6	7.9	4370	6.8	"	NO
3/31/94	11:27	CW/TMM	WARM, SUNNY	yes	" "	-	-		14.6	7.61	3500	6.5	"	NO
7/1/94	1430	CW/GM	" "	yes	Wier in place	38	W		19.3	7.96	4870	7.4	Wier	yes
5/31/94	1227	RE	cool, rain	yes	clear, flow is spread out	240	W		14.1	7.73	4599	7.0	"	NO
9/2/94	1300	Gm	Sunny Hot	yes	clear	40	W		20.9	7.99	4950	7.2	"	yes
7/2/94	1209	Gm	Sunny Hot	yes	clear	40	W		20.4	7.82	5200	6.8	"	NO
8/22/94	1556	Gm	Sunny Hot	yes	clear	26	W		24.2	7.59	5130	7.3	"	NO
9/27/94	1347	RBB	Sunny cool	yes	" "	40	W		21.8	7.86	5179.7	7.8	"	yes
10/19/94	1405	RBB/Gm	cloudy cool	yes	" "	48	W		13.0	8.06	5320	7.8	"	yes
11/2/94	1157	RBB/RE	overcast, cool	yes	" "	40.0	Weir		6.1	8.44	5093	13.9	"	NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen - Northern

MONITORING LOCATION NUMBER: WELL (E. Carbon Municipal well) BOGM

Runoff Basin / Spring / Other: Well Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters				Collection Point	Sample Taken (yes/no)	
									Temp (°C)	pH	SC (umhos)	DO Meter No.			
9/30/93	1130	GMCW	Sunny/Hot	yes	Clear water	50 gpm	CC		16	7.8	1800	7.2	Boze	yes	
7/27	1700	Gm	Sunny/Hot	yes	" "	50 gpm	Vis		17	8.18	3100	5.8	Boze	NO	
8/26/93	1036	Gm	overcast	yes	" "	50 gpm	CC		12	6.77	220	4.9	"	NO	
9/2/93	1486	GMCW	SW	yes	" "	46	CC		15	7.10	1450	5.2	"	yes	
10/27	0915	Mlt	Windy	yes	" "	50	CC		7	8.00	1300	4.5	"	NO	
1/16	1250	Mlt	Cold	yes	" "	50	CC		10.0	7.27	1300	4.6	"	NO	
1/7/94	1514	Gm	Cold	NO	Pipe from well to stand pipe is frozen.								"	NO	
1/14/94	1357	Gm	ClD Clear	NO	Pipe is still frozen.								"	NO	
2/28	1240	Gm	PC, Cal	NO	"								"	NO	
3/31/94	1305	CW/Tmm	Warm, Sunny	NO	OUT OF COMMISSION - UNSAMPLED DUE TO MAINTENANCE								"	NO	
4/19	1541	CW/Gm	" "	NO	" "								"	NO	
6/31/94	1334	Ru	cool, windy	NO	this well is out of operation								"	NO	
9/27/94	1205	Gm	Sunny/Hot	yes		50			17.2	7.63	1710	7.2	Pump House	yes	
7/11/94	1539	Gm	Sunny HSB	yes		250			15.0	8.37	1300	1790	8.8	"	NO
8/12/94	1224	Gm	Sunny Hot	yes	Well is spraying inside of the plant				18.3	7.97	1225	7.9	"	NO	
9/27/94	1133	R36	sunny cool	NO	well turned on & off after samp.	NA			14.7	7.65	1510.7	9.1	"	yes	
10/19/94	1436	R36/Gm	cloudy cool	NO	wells not in use;	NA			12.2	8.41	644.0	7.8	"	yes	
11/2/94	1111	R36/RE6	overcast, cool	NO	well not in use	NA			7.1	8.10	1215	10.9	"	NO	

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen-Northern

MONITORING LOCATION NUMBER: 004 (CONT)

UPDES

Runoff Basin / Spring / Other: _____

Sampling Parameters: _____

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters				Collection Point	Sample Taken (yes/no)	
									Temp (°C)	pH	SC (umhos)	DO Meter No.			
3/5/94	10:41	CW/TMM	Warm, Sunny	NO	OUTFALL IS DRY										
4/19/94	1604	GM/CW	" "	NO	Basin is nearly empty (1" in places)										NO
4/24/94	1133	GM/CW	rain + sun	NO	outfall is dry										NO
5/17/94	1115	CW	overcast, cool	NO	Basin is dry										NO
5/31/94	1425	RG	rain	NO	Basin is dry										NO
6/8/94	1428	RG	Clear Warm	NO	Basin is Dry										NO
6/23/94	1250	GM	Sunny Hot	NO	Basin is Dry										NO
7/1/94	1607	RG	Clear Hot	NO	Dry - installed measuring staff										NO
7/20/94	1611	GM	Sunny Hot	NO	Dry										NO
8/9/94	1420	RG	Windy PC	NO	Some puddles										NO
8/23/94	1239	GM	Sunny Hot	NO	Dry										NO
1/29/94	0920	RB6	cloudy, cool	NO	Dry (outfall) Basin - puddles										NO
2/19/94	1502	RB6/RE	cloudy, cool	NO	outfall dry, Basin - .05" H ₂ O										NO
1/21/94	1544	RB6	cloudy, cool	NO	outfall dry, Basin - 2" H ₂ O										NO
1/21/94	1044	RB6/RE	overcast, cool	NO	basin - frozen H ₂ O; no H ₂ O level										NO

* Basin water level measurements are taken from permanent reference point at basin location.
 Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen - Northern

MONITORING LOCATION NUMBER: 007 Rail Cut Pond

UPDES

Runoff (Basin) Spring / Other: _____

Sampling Parameters: _____

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters				Collection Point	Sample Taken (yes/no)	
									Temp (°C)	pH	SC (umhos)	DO Meter No.			
2/24/94	1146	GM	Sunny Cool	NO	Basin is damp										
2/25	1417	GM	PC, Cool	NO	Basin is damp										NO
3/16/94	1144	GM	PC, WARM	NO	Basin is dry										NO
3/31/94	11:30	CW/TMM	WARM, Sunny	NO	NO WATER IN BASIN										NO
4/19	1507	CW/GM	" "	NO	Dry Basin										NO
4/29	1213	CW	rain & sun	NO	Some rain water present in basin										NO
5/17/94	1044	CW	overcast/cool	NO	Basin is dry										NO
5/21/94	1203	RL	rain	NO	Basin is dry										NO
6/8/94	1557	RB	Clear Warm	NO	Basin is Dry										NO
6/23/94	1046	GM	Sunny Hot	NO	Basin is Dry										NO
7/11/94	1811	RB	Clear Hot	NO	Dry										NO
7/21/94	1022	GM	Sunny Hot	NO	Dry										NO
8/6/94	1705	RB	Warm, PC	NO	~10" of water										NO
8/22/94	1532	GM	Sunny Hot	NO	Muddy, No standing water.										NO
9/29/94	0820	RB6	cloudy, cool	NO	basin is dry										NO
10/19/94	1337	RB6/GM	cloudy, cool	NO	Discharge pt. damp; basin ^{shallow} _{dry}										NO
11/01/94	1620	RB6	cloudy, cool	NO	Discharge pt. dry; basin ^{shallow} _{puddles}										NO
11/21/94	1137	RB6/PEG	overcast, cool	NO	basin - muddy floor										NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen - Northern

MONITORING LOCATION NUMBER: 008 Old Course Refuse Pond UDEs

Runoff Basin) Spring / Other: _____

Sampling Parameters: _____

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters				Collection Point	Sample Taken (yes/no)	
									Temp (°C)	pH	SC (umhos)	DO Meter N/A			
2/23/94	1445	Gm	PC Cool	NO	Basin is Damp.										
3/16/94	1137	Gm	PC WARM	NO	Basin is Dry										NO
3/31/94	11:02	CW/TMM	Warm, Sunny	NO	POND NO WATER										NO
4/10/94	1559	CW/Gm	" "	NO	Dry Basin										NO
4/25/94	1746	CW	rainy/muddy	NO	rain water in Basin										NO
5/17/94	1109	CL	overcast/cool	NO	Basin is dry										NO
5/31/94	1412	RG	rain	NO	Basin is dry										NO
6/8/94	1449	RG	Clear Warm	NO	Basin is Dry										NO
6/23/94	1257	GM	Sunny Hot	NO	Basin is Dry										NO
7/11/94	1547	RG	Clear Hot	NO	Dry										NO
7/21/94	1620	Gm	Sunny Hot	NO	Dry										NO
8/9/94	1456	RG	Warm, PC	NO	2' of water at standpipe										NO
8/23/94	1243	Gm	Sunny Hot	NO	Dry (S. Muddy)										NO
9/29/94	0935	RBG	cloudy, cool	NO	outfall-dry basin-dry w/ mud										NO
10/19/94	1516	RBG/Gm	cloudy, cool	NO	outfall-dry basin - 1-2" H ₂ O										NO
11/6/94	1531	RBG	cloudy, cool	NO	basin - muddy w/ puddles										NO
11/21/94	1054	RBG/REG	overcast, cool	NO	basin - frozen puddles										NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UG W070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen - Northern

MONITORING LOCATION NUMBER: 009 Pasture Pond

UPDES

Runoff Basin Spring / Other: _____

Sampling Parameters: _____

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters				Collection Point	Sample Taken (yes/no)
									Temp (°C)	pH	SC (umhos)	DO Meter (%)		
2/28/94	1440	Gm	PC Cool	NO	Basin is damp.									NO
3/16/94	1129	Gm	PC Warm	NO	Basin is moist									NO
3/27/94	10:53	CW/DAM	Warm, Sunny	NO	POND DRY									NO
4/19/94	1553	CYGM	" "	NO	Dry Pond.									NO
4/29/94	1237	CW	fair/mix	No	Some water in basin									NO
5/17/94	1105	CW	overcast	No	Basin is dry									NO
5/21/94	1350	RG	fair	No	6" of water in basin									NO
6/8/94	1422	RG	Warm Clear	NO	1' of water in Basin									NO
6/23/94	1252	Gm	Sunny Hot	NO	6" of water in basin									NO
7/11/94	1527	RB	Clear Hot	NO	Dry									NO
7/20/94	1608	Gm	Sunny Hot	NO	Dry									NO
8/6/94	1517	RG	Warm PC	NO	1-2" of water in Basin									NO
8/23	1236	Gm	Sunny Hot	NO	1-2" of water in Basin									NO
9/29/94	0912	RBG	cloudy, cool	NO	basin contains shallow H ₂ O									NO
10/9/94	1452	RB6/Gm	cloudy, cool	NO	outfall-dry basin - shallow H ₂ O									NO
11/01/94	1558	RB6	cloudy, cool	NO	basin - 2" H ₂ O									NO
11/21/94	1043	RB6/RE6	overcast, cool	NO	basin ≈ 6" H ₂ O, ice									NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen - Northern

MONITORING LOCATION NUMBER: 012 Course Refuse Toe

UPDES

Runoff Basin Spring / Other: _____

Sampling Parameters: _____

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sleet, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters				Collection Point	Sample Taken (yes/no)	
									Temp (°C)	pH	SC (umhos)	DO Meter No.			
2/28	1414	GM	PC Cool	NO	1'-2" of water in Basin										NO
3/16/94	1143	GM	PC WARM	NO	1" water in BASIN										NO
3/31/94	11:35	CN/TMM	WARM, SUNNY	NO	Water in BASIN										NO
4/19/94	1447	CW/GM	" "	NO	6" of water in Basin										NO
4/29/94	1218	CW	rain + mist	NO	rain water present in basin										NO
5/17/94	1047	CW	overcast/cool	NO	water in basin, no discharge										NO
5/31/94	1155	RG	rain	NO	6" of water in basin										NO
6/8/94	1550	RG	Warm Clear	NO	6" of water in basin										NO
6/23/94	1048	GM	Sunny Hot	NO	6" of water in basin										NO
7/1/94	1740	RG	Clear Hot	NO	Dry										NO
7/21/94	1020	GM	Sunny Hot	NO	Dry										NO
8/9/94	1647	RG	Warm, PC	NO	1" of water										NO
8/22/94	1535	GM	Sunny Hot	NO	1" of water in Basin										NO
9/29/94	0835	RB6	cloudy, cool	NO	Basin has ≈ 1' of water										NO
10/9/94	1400	RB6/GM	cloudy, cool	NO	outfall - dry basin - 2-3" H ₂ O										NO
11/01/94	1625	RB6	cloudy, cool	NO	outfall - dry basin ≈ 1-2" H ₂ O										NO
11/21/94	1156	RB6/REG	overcast, cool	NO	basin - frozen H ₂ O										NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen - Northern

MONITORING LOCATION NUMBER: 013 Facility Sed Pond.

Runoff Basin / Spring / Other: _____

Sampling Parameters: _____

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, smell, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters				Collection Point	Sample Taken (yes/no)	
									Temp (°C)	pH	SC (umhos)	DO Meter No.			
2/28	1436	GM	PC, Cool	NO	3' below Red Stripe										
3/16/94	1125	GM	PC, HOAM	NO	WL ≈ 4.5' below red stripe										NO
3/31/94	10:47	CW/JMM	NM, Sunny	NO	Water in Basin										NO
4/10/94	1545	CW/GM	" "	NO	Water 5' below R.S.										NO
4/29/94	1157	CW	rain, mud	NO	Water 5' below P.S.										NO
5/17/94	1057	CW	overcast	NO	Water in basin is 7' below outlet pipe										NO
5/31/94	1337	RG	rain	NO	1-2' of water in basin										NO
6/5/94	1405	RG	Warm Clear	NO	1-2' of water in basin										NO
6/22/94	1240	GM	Sunny Hot	NO	1' of water in basin										NO
7/11/94	1520	RG	Cloudy Hot	NO	6"-8" of water										NO
7/20/94	1603	GM	Sunny Hot	NO	feet (-4) inches of water										NO
8/9/94	1507	RG	Warm PC	NO	2-3' of water in basin										NO
8/23/94	1232	GM	Sunny, Hot	NO	2' of water pumping to Res.										NO
9/29/94	0900	RBG	cloudy, cool	NO	Basin has ≈ 1' of water										NO
10/19/94	1445	RBG/GM	cloudy, cool	NO	Basin - 2.3" below red mark										NO
11/6/94	1551	RBG	clearly, cool	NO	Basin - 2.3" H ₂ O										NO
11/20/94	1035	RBG/REG	overcast, cool	NO	Basin - frozen H ₂ O										NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen - Northern

MONITORING LOCATION NUMBER: 014 Coal File Sed Pond

UPDES

Runoff Basin Spring / Other:

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters				Collection Point	Sample Taken (yes/no)	
									Temp (°C)	pH	SC (umhos)	DO Meter No.			
2/28	1438	GM	Dr. Post	NO	1' below overflow										
3/16/94	1126	GM	Dr. Warm	NO	2' below overflow pipe										NO
5/31/94	10:56	CW/TMM	Warm, Sunny	NO	WATER IN POND										NO
7/19/94	1548	CW/GM	" "	NO	Water 2' below overflow pipe										NO
4/25/94	1151	CW	rain & hum	NO	water within 2' of discharge pipe										NO
5/17/94	1059	CW	overcast	NO	pond is nearly full										NO
5/31/94	1345	RG	rain	NO	6" of water in basin										NO
6/8/94	1415	RG	Warm Clear	NO	6" of water in basin										NO
6/23/94	1242	GM	Sunny Hot	NO	6" of water in basin										NO
7/1/94	1525	RG	clear hot	NO	3" of water in basin										NO
7/2/94	1606	GM	Sunny Hot	NO	Dry Basin										NO
7/9/94	1512	RG	Warm PC	NO	≈ 1" of water										NO
7/23/94	1237	GM	Sunny Hot	NO	2" of water in places										NO
9/29/94	0907	RBG	cloudy, cool	NO	≈ 1' of water in basin										NO
10/9/94	1450	RBG/GM	cloudy, cool	NO	outfall - puddles basin - 6" H ₂ O										NO
11/01/94	1555	RBG	cloudy, cool	NO	discharge pt. - clamp basin - 7" H ₂ O										NO
11/21/94	1045	RBG/REG	overcast, cool	NO	point being dug out										NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UG W070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen - Northern

MONITORING LOCATION NUMBER: 015 Landfill Seal Pond

UPDES

Runoff Basin Spring / Other: _____

Sampling Parameters:

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, smell, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters				Collection Point	Sample Taken (yes/no)	
									Temp (F/C)	pH	SC (umhos)	DO Meter No.			
2/27	1328	GM	PC Cool	NO	Damp Basin										
3/16/94	1157	GM	PC Warm	NO	Basin is Dry										NO
3/31/94	11:21	CN/TMM	Warm, Sunny	NO	NO WATER IN BASIN, ASH IN BASIN										NO
4/19/94	1145	CU/GMM	" "	NO	Basin is Dry										NO
4/25/94	1226	CH	fair & hazy	NO	rain water is low at edge										NO
5/17/94	1032	CH	bust/cool	NO	Basin is Dry										NO
5/31/94	1125	RA	light rain	NO	Basin is dry										NO
6/9/94	1612	RG	Warm Clear	NO	Basin is Dry										NO
6/23/94	0920	GM	Sunny Hot	NO	Basin is Dry										NO
7/1/94	1722	RG	Clear Hot	NO	Dry Basin										NO
7/20/94	1220	GM	Sunny Hot	NO	Dry Basin										NO
7/29/94	1255	RG	Warm PC	NO	Dry										NO
7/22/94	1350	CSM	Sunny Hot	NO	Dry										NO
9/29/94	0847	RB6	cloudy, cool	NO	Basin is dry										NO
10/19/94	1219	RB6/GM	cloudy, cool	NO	outfall - dry basin - 9" H ₂ O										NO
11/01/94	1608	RB6	cloudy, cool	NO	outfall - dry basin 5" H ₂ O										NO
11/21/94	1415	RB6/REG	overcast, cool	NO	basin - 2" H ₂ O, ice on bottom										NO

* Basin water level measurements are taken from permanent reference point at basin location.

Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

SUNNYSIDE COGENERATION ASSOCIATES FACILITY

Carbon County, Utah

Groundwater Discharge Permit Number UGW070002

Surface Water and Discharge Basin Compliance Sampling

HUNTINGDON Chen - Northern

MONITORING LOCATION NUMBER: 016 Borrow Area Pond

UPDES

Runoff Basin / Spring / Other: _____

Sampling Parameters: _____

Date	Time	Personnel	Weather	Discharge Present (yes/no)	Observations (color, sheen, odor, etc.)	Flow (cfs)	Flow Meas. Method	Basin Water Level (feet)	Field Parameters				Collection Point	Sample Taken (yes/no)	
									Temp (°C)	pH	SC (umhos)	DO Meter No.			
2/28	1443	GM	PC, Cool	NO	Basin is Dry										
3/16/94	1136	GM	PC warm	NO	Basin is Dry										NO
3/31/94	1106	CN/EMM	Warm, Sunny	NO	NO WATER IN POND										NO
4/10/94	1536	CW/GM	" "	NO	Dry Basin										NO
4/29/94	1240	CW	rain then	NO	Minor water puddles in basin										NO
5/17/94	1108	CW	overcast	NO	Basin is Dry										NO
5/21/94	1357	RG	rain	NO	Basin is Dry										NO
6/8/94	1442	RG	Windy Clear	NO	Basin is Dry										NO
6/23/94	1259	GM	Sunny Hot	NO	Basin is Dry										NO
7/11/94	1535	RG	Clear Hot	NO	Dry										NO
7/20/94	1617	GM	Sunny Hot	NO	Dry										NO
8/2/94	1445	RG	Warm PC	NO	3" of water										NO
8/23	1241	GM	Sunny/Hot	NO	Dry										NO
9/29/94	0930	RBG	cloudy cool	NO	Basin is dry										NO
10/19/94	1510	RBB/GM	cloudy cool	NO	Basin - dry										NO
11/6/94	1538	RBG	cloudy cool	NO	Basin dry										NO
11/21/94	1050	RBG/REG	overcast cool	NO	basin dry snow on bottom										NO

* Basin water level measurements are taken from permanent reference point at basin location.
 Flow measurement methods: W = Weir, VE = Visual Estimate, CC = Calibrated Container, DF = Debris Flow Rate Estimate

12-7-95 UPDES INSPECTIONS R. MILLER

0902	OUTFALL 001	NO DISCHARGE	PUMPS OFF	LT SNOW
0909	OUTFALL 002	NO DISCHARGE	PUMPS OFF	LT SNOW
0920	OUTFALL 015	NO DISCHARGE	DRY	LT SNOW
0932	OUTFALL 007	NO DISCHARGE	DRY	LT SNOW
0942	OUTFALL 012	NO DISCHARGE	2" WATER	LT SNOW
0957	OUTFALL 004	NO DISCHARGE	DRY	LT SNOW
1002	OUTFALL 016	NO DISCHARGE	DRY	LT SNOW
1008	OUTFALL 008	NO DISCHARGE	DRY	LT SNOW
1021	OUTFALL 009	NO DISCHARGE	DRY	LT SNOW
1024	OUTFALL 014	NO DISCHARGE	DAMP	LT SNOW
1025	OUTFALL 013	NO DISCHARGE	3" WATER	LT SNOW

12-18-95 UPDES INSPECTIONS R. MILLER

0833	OUTFALL 001	NO DISCHARGE	PUMPS OFF	CLEAR/COLD
0840	OUTFALL 002	NO DISCHARGE	PUMPS OFF	CLEAR/COLD
0847	OUTFALL 015	NO DISCHARGE	DRY	CLEAR/COLD
0855	OUTFALL 007	NO DISCHARGE	DRY	CLEAR/COLD
0900	OUTFALL 012	NO DISCHARGE	1 1/2" KE	CLEAR/COLD
0921	OUTFALL 004	NO DISCHARGE	DRY	CLEAR/COLD
0927	OUTFALL 016	NO DISCHARGE	DRY	CLEAR/COLD
0932	OUTFALL 008	NO DISCHARGE	DRY	CLEAR/COLD
0939	OUTFALL 009	NO DISCHARGE	DRY	CLEAR/COLD
0942	OUTFALL 014	NO DISCHARGE	DRY	CLEAR/COLD
0943	OUTFALL 013	NO DISCHARGE	1/2" WATER	CLEAR/COLD