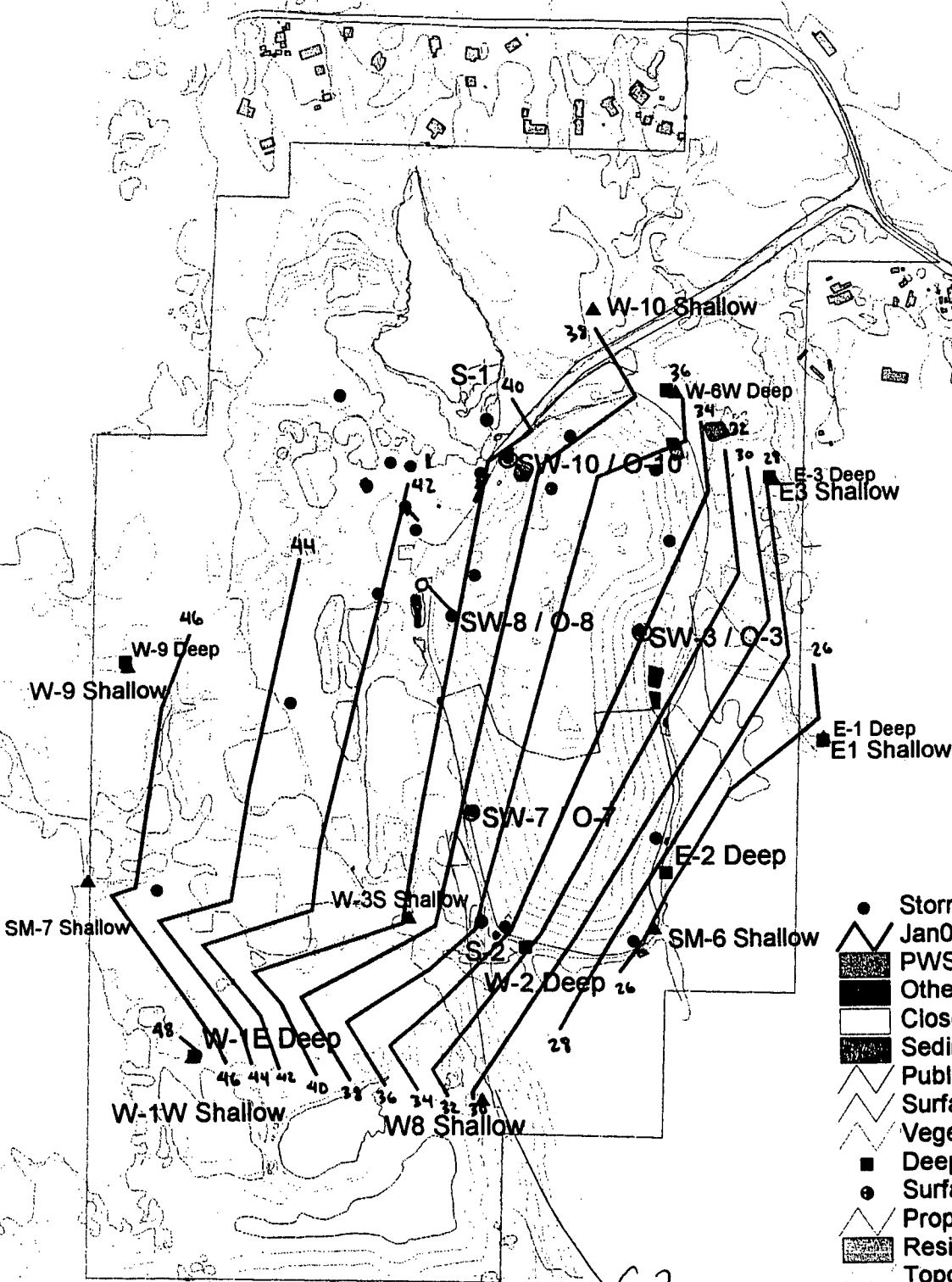


Crescent City Landfill Shallow Groundwater Contours 14 January 2003

1-3



- Stormwater Monitoring Point
- ▲ Jan03 Shallow Contours
- PWS Buildings
- Other Buildings
- Closed Portion of LF
- Sediment Basins
- Public Roads
- Surface Water
- Vegetation
- Deep Wells
- Surface Water Monitoring Point
- ▲ Property Line
- Residents
- Topography
- Refuse Limits
- ▲ Shallow Wells
- Landfill Road

*S-2
is in
pond aka
Beaver Pond*

S-3

Authority staff collect samples from 3 surface locations four times per year. The attached tables and graphs reflect recent data, and indicate detections above the tolerance intervals from Winzler & Kelly's Technical memorandum. Samples above these tolerance levels indicate the landfill's detectable influence on surrounding surface waters. ~~Surface water monitoring point S-1 is sampled from the North Pond. S-2 is sampled from the overflow pond adjacent to the landfill and is the most likely location to detect surface water impacts, and S-3 is surface water flowing from the wetlands down gradient from the landfill north towards Lake Earl.~~ It is worth noting that the sample point for S-1 for the entire year was moved as close as possible to the landfill mound, to detect any influence from the landfill, whereas in prior years the sample point was to the west in front of a culvert leading towards the Overflow pond (S-2). The sample point was moved because water from the North Pond rarely entered this culvert and because stormwater from the active face overflowed into the North Pond in 2002, and the surface water monitoring should detect that influence.

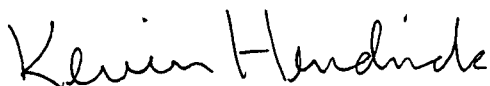
In January 2003 samples from S-1 were above the tolerance level for both calcium and sodium, and the April 2003 sample from S-1 was above the tolerance interval for calcium, although these samples did indicate a decreasing trend. Samples from S-2 were above sodium and calcium tolerance levels for April 2003. Samples from S-3 did not exceed tolerance levels for sodium or calcium in January or April 2003. None of the above referenced samples indicated any constituent of concern above the maximum contaminant level for drinking water.

Storm water

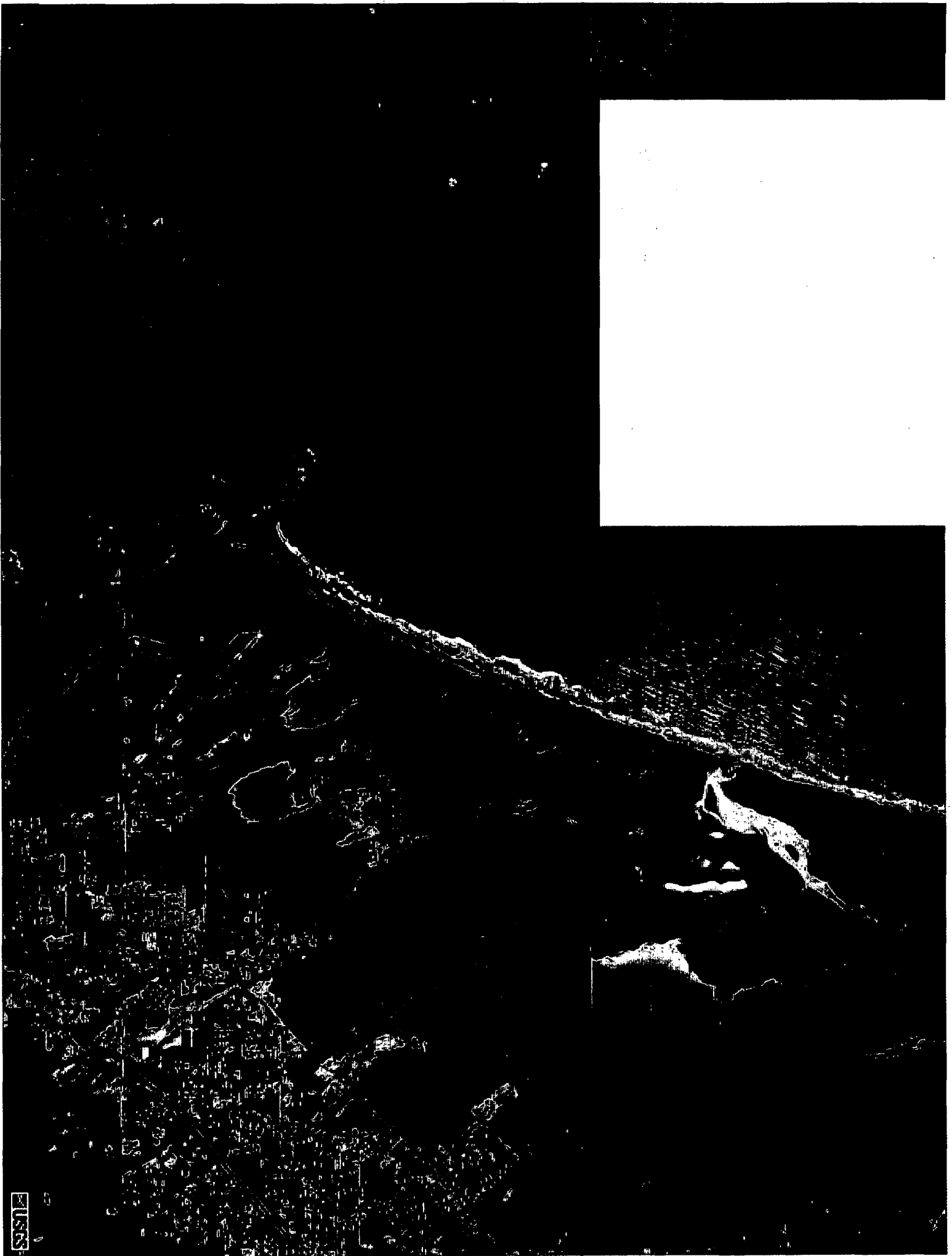
The storm water samples from the past six months indicated greatest water quality impact from the active face, and recently filled portions of the landfill. Tests in January 2003 below the active face (location SW-3) detected 460 ppm COD, 95 ppb Acetone and 1.1 ppb methylene chloride. Tests in April 2003 at that location detected 390 ppm COD, 2.2 ppb Toluene and 0.7 ppb m,p,xylene. Illustrated on the Crescent City Landfill map enclosed in the back of this report, is the location of the sample area for the active face. For comparison, the sampling location from storm water flowing over inactive portions of the uncapped landfill, which received runoff from areas that were active one year prior (location SW-8), detected 94 ppm COD in January 2003 and 59 ppm in April 2003. The surface water sample from the closed (Phase 1, location SW-7) portion of the landfill detected 30 and 27 ppm COD during those same periods.

If you have any questions or comments on this report or require further information regarding our water quality monitoring, please feel free to call Tedd Ward at 707-465-1100.

Sincerely,

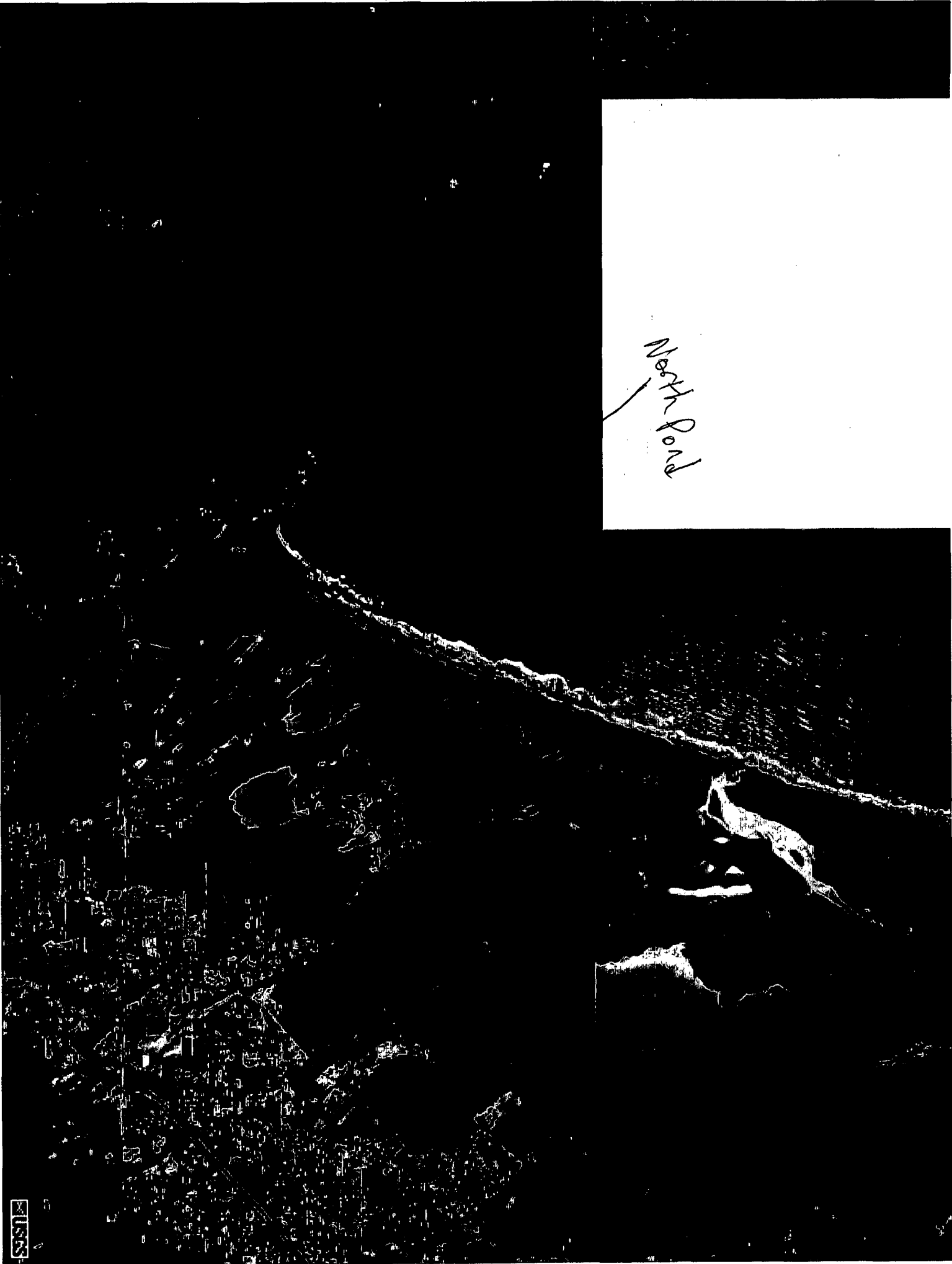


Kevin Hendrick
Director

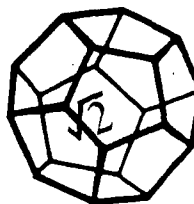


USNS

North Pond



RWQCB
REGION 1



**NORTH COAST
LABORATORIES LTD.**

SEP - 8 2003

September 03, 2003

CK _____ FOR _____ _____
 RLT _____ LQR _____ KAD _____
 NPO _____ ASO _____ EJJ _____

Del Norte Solid Waste Author.
391 Front Street
Crescent City, CA 95531

Order No.: 0308456
Invoice No.: 36290
PO No.:
ELAP No. 1247-Expires July 2004

Attn: Tedd Ward

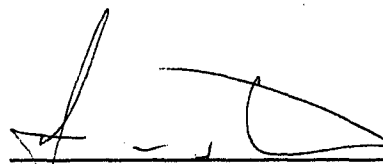
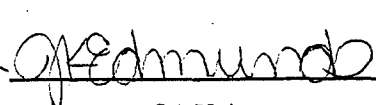
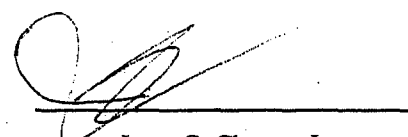
RE: Surface Water

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	S-1
01B	S-1
01D	S-1 (Dissolved)
01E	S-1
01F	S-1
01G	S-1
02A	S-2
02B	S-2
02D	S-2 (Dissolved)
02E	S-2
02F	S-2
02G	S-2
03A	S-3
03B	S-3
03D	S-3 (Dissolved)
03E	S-3
03F	S-3
03G	S-3

ND = Not Detected at the Reporting Limit
Limit = Reporting Limit
All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY


 Laboratory Supervisor(s)
 
 QA Unit
 
 Jesse G. Chaney, Jr.
 Laboratory Director

CLIENT: Del Norte Solid Waste Author.
Project: Surface Water
Lab Order: 0308456

CASE NARRATIVE

EPA 1664:

Individual chemicals are not differentiated by this method. Analytical results represent material which is extracted with n-hexane.

COD:

The relative percent difference (RPD) for the laboratory control samples was above the upper acceptance limit for COD. The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits; therefore, the data were accepted.

Date: 03-Sep-03
WorkOrder: 0308456

ANALYTICAL REPORT

Client Sample ID: S-1
Lab ID: 0308456-01A

Received: 8/20/03

Collected: 8/19/03 15:15

Test Name: Chemical Oxygen Demand

Reference: EPA 410.4

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Chemical Oxygen Demand	65	5.0	mg/L	1.0	8/26/03	8/26/03

Client Sample ID: S-1
Lab ID: 0308456-01B

Received: 8/20/03

Collected: 8/19/03 15:15

Test Name: Hexane Extractable Material

Reference: EPA 1664

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Grease and Oil (TPH fraction)	ND	5.0	mg/L	1.0	8/22/03	8/25/03

Client Sample ID: S-1 (Dissolved)
Lab ID: 0308456-01D

Received: 8/20/03

Collected: 8/19/03 15:15

Test Name: Arsenic

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Arsenic	ND	10	µg/L	1.0	8/20/03	8/28/03

Test Name: ICAP Metals with Acid Digestion

Reference: EPA 200.7

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Boron	110	100	µg/L	1.0	8/20/03	8/29/03
Antimony	ND	50	µg/L	1.0	8/20/03	8/29/03
Barium	9.4	5.0	µg/L	1.0	8/20/03	8/29/03
Beryllium	ND	1.0	µg/L	1.0	8/20/03	8/29/03
Cadmium	ND	10	µg/L	1.0	8/20/03	8/29/03
Calcium	22,000	1,000	µg/L	1.0	8/20/03	8/29/03
Chromium	ND	10	µg/L	1.0	8/20/03	8/29/03
Cobalt	ND	10	µg/L	1.0	8/20/03	8/29/03
Copper	ND	10	µg/L	1.0	8/20/03	8/29/03
Iron	860	100	µg/L	1.0	8/20/03	8/29/03
Magnesium	15,000	250	µg/L	1.0	8/20/03	8/29/03
Manganese	61	2.0	µg/L	1.0	8/20/03	8/29/03
Molybdenum	ND	20	µg/L	1.0	8/20/03	8/29/03
Nickel	ND	20	µg/L	1.0	8/20/03	8/29/03
Potassium	5,000	5,000	µg/L	1.0	8/20/03	8/29/03
Silver	ND	10	µg/L	1.0	8/20/03	8/29/03
Sodium	29,000	1,000	µg/L	1.0	8/20/03	8/29/03
Vanadium	ND	10	µg/L	1.0	8/20/03	8/29/03
Zinc	ND	20	µg/L	1.0	8/20/03	8/29/03

Date: 03-Sep-03

WorkOrder: 0308456

ANALYTICAL REPORT

Test Name: Lead

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Lead	ND	10	µg/L	1.0	8/20/03	8/25/03

Test Name: Mercury

Reference: EPA 245.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Mercury	ND	1.0	µg/L	1.0	8/28/03	9/2/03

Test Name: Selenium

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Selenium	ND	10	µg/L	1.0	8/20/03	8/29/03

Test Name: Thallium

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Thallium	ND	10	µg/L	1.0	8/20/03	8/26/03

Client Sample ID: S-1

Received: 8/20/03

Collected: 8/19/03 15:15

Lab ID: 0308456-01E

Test Name: Settleable Solids

Reference: EPA 160.5

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Settleable Solids	4.0	0.10	mL/L/hour	1.0		8/20/03

Client Sample ID: S-1

Received: 8/20/03

Collected: 8/19/03 15:15

Lab ID: 0308456-01F

Test Name: F, SO4, Cl, NO3, NO2

Reference: EPA 300.0

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Nitrate (as Nitrogen)	ND	0.10	mg/L	1.0		8/20/03

Test Name: pH

Reference: Std. Meth. 18th Ed. 4500 H+ B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
pH	6.4	N/A	pH Units	1.0		8/20/03

Test Name: Total Dissolved Solids

Reference: EPA 160.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Total Dissolved Solids	230	10	mg/L	1.0		8/26/03

Test Name: Turbidity

Reference: EPA 180.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Turbidity	6.0	0.050	NTU	1.0		8/20/03

Date: 03-Sep-03

WorkOrder: 0308456

ANALYTICAL REPORT

Client Sample ID: S-1

Received: 8/20/03

Collected: 8/19/03 15:15

Lab ID: 0308456-01G

Test Name: Acetone

Reference: EPA 602 Modified

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Acetone	ND	10	µg/L	1.0		8/25/03
Surrogate: Fluorobenzene	98.4	85-115	% Rec	1.0		8/25/03

Client Sample ID: S-2

Received: 8/20/03

Collected: 8/19/03 15:40

Lab ID: 0308456-02A

Test Name: Chemical Oxygen Demand

Reference: EPA 410.4

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Chemical Oxygen Demand	65	5.0	mg/L	1.0	8/26/03	8/26/03

Client Sample ID: S-2

Received: 8/20/03

Collected: 8/19/03 15:40

Lab ID: 0308456-02B

Test Name: Hexane Extractable Material

Reference: EPA 1664

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Grease and Oil (TPH fraction)	ND	5.0	mg/L	1.0	8/22/03	8/25/03

Client Sample ID: S-2 (Dissolved)

Received: 8/20/03

Collected: 8/19/03 15:40

Lab ID: 0308456-02D

Test Name: Arsenic

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Arsenic	ND	10	µg/L	1.0	8/20/03	8/28/03

Test Name: ICAP Metals with Acid Digestion

Reference: EPA 200.7

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Boron	300	100	µg/L	1.0	8/20/03	8/29/03
Antimony	ND	50	µg/L	1.0	8/20/03	8/29/03
Barium	100	5.0	µg/L	1.0	8/20/03	8/29/03
Beryllium	ND	1.0	µg/L	1.0	8/20/03	8/29/03
Cadmium	ND	10	µg/L	1.0	8/20/03	8/29/03
Calcium	44,000	1,000	µg/L	1.0	8/20/03	8/29/03
Chromium	ND	10	µg/L	1.0	8/20/03	8/29/03
Cobalt	ND	10	µg/L	1.0	8/20/03	8/29/03
Copper	ND	10	µg/L	1.0	8/20/03	8/29/03
Iron	11,000	100	µg/L	1.0	8/20/03	8/29/03

Date: 03-Sep-03

WorkOrder: 0308456

ANALYTICAL REPORT

Magnesium	39,000	250	µg/L	1.0	8/20/03	8/29/03
Manganese	910	2.0	µg/L	1.0	8/20/03	8/29/03
Molybdenum	ND	20	µg/L	1.0	8/20/03	8/29/03
Nickel	ND	20	µg/L	1.0	8/20/03	8/29/03
Potassium	11,000	5,000	µg/L	1.0	8/20/03	8/29/03
Silver	ND	10	µg/L	1.0	8/20/03	8/29/03
Sodium	74,000	1,000	µg/L	1.0	8/20/03	8/29/03
Vanadium	ND	10	µg/L	1.0	8/20/03	8/29/03
Zinc	ND	20	µg/L	1.0	8/20/03	8/29/03

Test Name: Lead

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Lead	ND	10	µg/L	1.0	8/20/03	8/25/03

Test Name: Mercury

Reference: EPA 245.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Mercury	ND	1.0	µg/L	1.0	8/28/03	9/2/03

Test Name: Selenium

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Selenium	ND	10	µg/L	1.0	8/20/03	8/29/03

Test Name: Thallium

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Thallium	ND	10	µg/L	1.0	8/20/03	8/26/03

Client Sample ID: S-2

Received: 8/20/03

Collected: 8/19/03 15:40

Lab ID: 0308456-02E

Test Name: Settleable Solids

Reference: EPA 160.5

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Settleable Solids	10	0.10	mL/L/hour	1.0		8/20/03

Client Sample ID: S-2

Received: 8/20/03

Collected: 8/19/03 15:40

Lab ID: 0308456-02F

Test Name: F, SO4, Cl, NO3, NO2

Reference: EPA 300.0

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Nitrate (as Nitrogen)	ND	0.10	mg/L	1.0		8/20/03

Test Name: pH

Reference: Std. Meth. 18th Ed. 4500 H+ B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
pH	6.6	N/A	pH Units	1.0		8/20/03

Date: 03-Sep-03

WorkOrder: 0308456

ANALYTICAL REPORT

Test Name: Total Dissolved Solids

Reference: EPA 160.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Total Dissolved Solids	520	10	mg/L	1.0		8/26/03

Test Name: Turbidity

Reference: EPA 180.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Turbidity	280	0.50	NTU	10		8/20/03

Client Sample ID: S-2

Received: 8/20/03

Collected: 8/19/03 15:40

Lab ID: 0308456-02G

Test Name: Acetone

Reference: EPA 602 Modified

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Acetone	ND	10	µg/L	1.0		8/25/03
Surrogate: Fluorobenzene	95.7	85-115	% Rec	1.0		8/25/03

Client Sample ID: S-3

Received: 8/20/03

Collected: 8/19/03 16:15

Lab ID: 0308456-03A

Test Name: Chemical Oxygen Demand

Reference: EPA 410.4

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Chemical Oxygen Demand	12	5.0	mg/L	1.0	8/26/03	8/26/03

Client Sample ID: S-3

Received: 8/20/03

Collected: 8/19/03 16:15

Lab ID: 0308456-03B

Test Name: Hexane Extractable Material

Reference: EPA 1664

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Grease and Oil (TPH fraction)	ND	5.0	mg/L	1.0	8/27/03	8/28/03

Client Sample ID: S-3 (Dissolved)

Received: 8/20/03

Collected: 8/19/03 16:15

Lab ID: 0308456-03D

Test Name: Arsenic

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Arsenic	ND	10	µg/L	1.0	8/20/03	8/28/03

Test Name: ICAP Metals with Acid Digestion

Reference: EPA 200.7

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
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Date: 03-Sep-03

WorkOrder: 0308456

ANALYTICAL REPORT

Boron	ND	100	µg/L	1.0	8/20/03	8/29/03
Antimony	ND	50	µg/L	1.0	8/20/03	8/29/03
Barium	11	5.0	µg/L	1.0	8/20/03	8/29/03
Beryllium	ND	1.0	µg/L	1.0	8/20/03	8/29/03
Cadmium	ND	10	µg/L	1.0	8/20/03	8/29/03
Calcium	21,000	1,000	µg/L	1.0	8/20/03	8/29/03
Chromium	ND	10	µg/L	1.0	8/20/03	8/29/03
Cobalt	ND	10	µg/L	1.0	8/20/03	8/29/03
Copper	ND	10	µg/L	1.0	8/20/03	8/29/03
Iron	560	100	µg/L	1.0	8/20/03	8/29/03
Magnesium	21,000	250	µg/L	1.0	8/20/03	8/29/03
Manganese	470	2.0	µg/L	1.0	8/20/03	8/29/03
Molybdenum	ND	20	µg/L	1.0	8/20/03	8/29/03
Nickel	ND	20	µg/L	1.0	8/20/03	8/29/03
Potassium	ND	5,000	µg/L	1.0	8/20/03	8/29/03
Silver	ND	10	µg/L	1.0	8/20/03	8/29/03
Sodium	20,000	1,000	µg/L	1.0	8/20/03	8/29/03
Vanadium	ND	10	µg/L	1.0	8/20/03	8/29/03
Zinc	ND	20	µg/L	1.0	8/20/03	8/29/03

Test Name: Lead

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Lead	ND	10	µg/L	1.0	8/20/03	8/25/03

Test Name: Mercury

Reference: EPA 245.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Mercury	ND	1.0	µg/L	1.0	8/28/03	9/2/03

Test Name: Selenium

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Selenium	ND	10	µg/L	1.0	8/20/03	8/29/03

Test Name: Thallium

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Thallium	ND	10	µg/L	1.0	8/20/03	8/26/03

Client Sample ID: S-3

Received: 8/20/03

Collected: 8/19/03 16:15

Lab ID: 0308456-03E

Test Name: Settleable Solids

Reference: EPA 160.5

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Settleable Solids	ND	0.10	mL/L/hour	1.0		8/20/03

Date: 03-Sep-03
WorkOrder: 0308456

ANALYTICAL REPORT

Client Sample ID: S-3
Lab ID: 0308456-03F

Received: 8/20/03

Collected: 8/19/03 16:15

Test Name: F, SO4, Cl, NO3, NO2

Reference: EPA 300.0

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Nitrate (as Nitrogen)	0.61	0.10	mg/L	1.0		8/20/03

Test Name: pH

Reference: Std. Meth. 18th Ed. 4500 H+ B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
pH	7.0	N/A	pH Units	1.0		8/20/03

Test Name: Total Dissolved Solids

Reference: EPA 160.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Total Dissolved Solids	230	10	mg/L	1.0		8/26/03

Test Name: Turbidity

Reference: EPA 180.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Turbidity	35	0.050	NTU	1.0		8/20/03

Client Sample ID: S-3
Lab ID: 0308456-03G

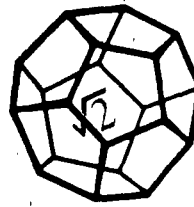
Received: 8/20/03

Collected: 8/19/03 16:15

Test Name: Acetone

Reference: EPA 602 Modified

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Acetone	ND	10	µg/L	1.0		8/25/03
Surrogate: Fluorobenzene	94.5	85-115	% Rec	1.0		8/25/03



**NORTH COAST
LABORATORIES LTD.**

R W Q C B
REGION 1

April 15, 2003

APR 18 2003

Del Norte Solid Waste Author.
391 Front Street
Crescent City, CA 95531

Order No. SAW FCR PHH
 RL LFR KAD
 NPO RSG E JL
Invoice No.: 33113 *SMP*
PO No.:

ELAP No. 1247-Expires July 2004

Attn: Tedd Ward

RE: Surface Water

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	S-2
01B	S-2
01D	S-2 (Dissolved)
01E	S-2
01F	S-2
02A	S-1
02B	S-1
02D	S-1 (Dissolved)
02E	S-1
02F	S-1
03A	S-3
03B	S-3
03D	S-3 (Dissolved)
03E	S-3
03F	S-3

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Unit

Jesse G. Chaney, Jr.
Laboratory Director

CLIENT: Del Norte Solid Waste Author.
Project: Surface Water
Lab Order: 0304100

CASE NARRATIVE

pH/Dissolved Metals:

All the samples were received and extracted past the official holding time.

Acetone:

The laboratory control sample duplicate (LCSD) recovery was below the lower acceptance limit for acetone. The laboratory control sample (LCS) recovery was within acceptance limits; therefore, the data were accepted.

EPA 1664:

Individual chemicals are not differentiated by this method. Analytical results represent material which is extracted with n-hexane.

Selenium

The laboratory control sample (LCS) recovery was above the upper acceptance limit. This recovery indicates that the sample results may be erroneously high. There were no detectable levels of analyte in the samples; therefore, the data were accepted.

Date: 15-Apr-03
WorkOrder: 0304100

ANALYTICAL REPORT

Client Sample ID: S-2
Lab ID: 0304100-01A

Received: 4/4/03

Collected: 4/3/03 8:20

Test Name: Chemical Oxygen Demand

Reference: EPA 410.4

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Chemical Oxygen Demand	25	5.0	mg/L	1.0	4/10/03	4/10/03

Client Sample ID: S-2
Lab ID: 0304100-01B

Received: 4/4/03

Collected: 4/3/03 8:20

Test Name: Hexane Extractable Material

Reference: EPA 1664

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Grease and Oil (TPH fraction)	ND	5.0	mg/L	1.0	4/9/03	4/11/03

Client Sample ID: S-2 (Dissolved)
Lab ID: 0304100-01D

Received: 4/4/03

Collected: 4/3/03 8:20

Test Name: Arsenic

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Arsenic	ND	10	µg/L	1.0	4/4/03	4/10/03

Test Name: ICAP Metals with Acid Digestion

Reference: EPA 200.7

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Boron	170	100	µg/L	1.0	4/4/03	4/8/03
Antimony	ND	50	µg/L	1.0	4/4/03	4/8/03
Barium	49	5.0	µg/L	1.0	4/4/03	4/8/03
Beryllium	ND	1.0	µg/L	1.0	4/4/03	4/8/03
Cadmium	ND	10	µg/L	1.0	4/4/03	4/8/03
Calcium	23,000	1,000	µg/L	1.0	4/4/03	4/8/03
Chromium	ND	10	µg/L	1.0	4/4/03	4/8/03
Cobalt	ND	10	µg/L	1.0	4/4/03	4/8/03
Copper	ND	10	µg/L	1.0	4/4/03	4/8/03
Iron	530	100	µg/L	1.0	4/4/03	4/8/03
Magnesium	16,000	250	µg/L	1.0	4/4/03	4/8/03
Manganese	260	2.0	µg/L	1.0	4/4/03	4/8/03
Molybdenum	ND	20	µg/L	1.0	4/4/03	4/8/03
Nickel	ND	20	µg/L	1.0	4/4/03	4/8/03
Potassium	6,900	5,000	µg/L	1.0	4/4/03	4/8/03
Silver	ND	10	µg/L	1.0	4/4/03	4/8/03
Sodium	30,000	1,000	µg/L	1.0	4/4/03	4/8/03
Vanadium	ND	10	µg/L	1.0	4/4/03	4/8/03
Zinc	ND	20	µg/L	1.0	4/4/03	4/8/03

Date: 15-Apr-03

WorkOrder: 0304100

ANALYTICAL REPORT

Test Name: Lead

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Lead	ND	10	µg/L	1.0	4/4/03	4/7/03

Test Name: Mercury

Reference: EPA 245.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Mercury	ND	1.0	µg/L	1.0	4/14/03	4/15/03

Test Name: Selenium

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Selenium	ND	10	µg/L	1.0	4/4/03	4/8/03

Test Name: Thallium

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Thallium	ND	10	µg/L	1.0	4/4/03	4/14/03

Client Sample ID: S-2

Received: 4/4/03

Collected: 4/3/03 8:20

Lab ID: 0304100-01E

Test Name: F, SO4, Cl, NO3, NO2

Reference: EPA 300.0

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Nitrate (as Nitrogen)	0.85	0.10	mg/L	1.0		4/4/03

Test Name: pH

Reference: Std. Meth. 18th Ed. 4500 H+ B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
pH	6.8	N/A	pH Units	1.0		4/4/03

Test Name: Settleable Solids

Reference: EPA 160.5

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Settleable Solids	0.10	0.10	mL/L/hour	1.0		4/4/03

Test Name: Total Dissolved Solids

Reference: EPA 160.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Total Dissolved Solids	220	10	mg/L	1.0		4/9/03

Test Name: Turbidity

Reference: EPA 180.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Turbidity	22	0.050	NTU	1.0		4/4/03

Date: 15-Apr-03
WorkOrder: 0304100

ANALYTICAL REPORT

Client Sample ID: S-2
Lab ID: 0304100-01F

Received: 4/4/03

Collected: 4/3/03 8:20

Test Name: Acetone

Reference: EPA 602 Modified

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Acetone	ND	10	µg/L	1.0		4/8/03
Surrogate: Fluorobenzene	101	85-115	% Rec	1.0		4/8/03

Client Sample ID: S-1
Lab ID: 0304100-02A

Received: 4/4/03

Collected: 4/3/03 9:15

Test Name: Chemical Oxygen Demand

Reference: EPA 410.4

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Chemical Oxygen Demand	37	5.0	mg/L	1.0	4/10/03	4/10/03

Client Sample ID: S-1
Lab ID: 0304100-02B

Received: 4/4/03

Collected: 4/3/03 9:15

Test Name: Hexane Extractable Material

Reference: EPA 1664

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Grease and Oil (TPH fraction)	ND	5.0	mg/L	1.0	4/9/03	4/11/03

Client Sample ID: S-1 (Dissolved)
Lab ID: 0304100-02D

Received: 4/4/03

Collected: 4/3/03 9:15

Test Name: Arsenic

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Arsenic	ND	10	µg/L	1.0	4/4/03	4/10/03

Test Name: ICAP Metals with Acid Digestion

Reference: EPA 200.7

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Boron	190	100	µg/L	1.0	4/4/03	4/8/03
Antimony	ND	50	µg/L	1.0	4/4/03	4/8/03
Barium	11	5.0	µg/L	1.0	4/4/03	4/8/03
Beryllium	ND	1.0	µg/L	1.0	4/4/03	4/8/03
Cadmium	ND	10	µg/L	1.0	4/4/03	4/8/03
Calcium	18,000	1,000	µg/L	1.0	4/4/03	4/8/03
Chromium	ND	10	µg/L	1.0	4/4/03	4/8/03
Cobalt	ND	10	µg/L	1.0	4/4/03	4/8/03
Copper	ND	10	µg/L	1.0	4/4/03	4/8/03
Iron	780	100	µg/L	1.0	4/4/03	4/8/03

Date: 15-Apr-03

WorkOrder: 0304100

ANALYTICAL REPORT

Magnesium	12,000	250	µg/L	1.0	4/4/03	4/8/03
Manganese	27	2.0	µg/L	1.0	4/4/03	4/8/03
Molybdenum	ND	20	µg/L	1.0	4/4/03	4/8/03
Nickel	ND	20	µg/L	1.0	4/4/03	4/8/03
Potassium	6,800	5,000	µg/L	1.0	4/4/03	4/8/03
Silver	ND	10	µg/L	1.0	4/4/03	4/8/03
Sodium	26,000	1,000	µg/L	1.0	4/4/03	4/8/03
Vanadium	ND	10	µg/L	1.0	4/4/03	4/8/03
Zinc	ND	20	µg/L	1.0	4/4/03	4/8/03

Test Name: Lead

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Lead	ND	10	µg/L	1.0	4/4/03	4/7/03

Test Name: Mercury

Reference: EPA 245.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Mercury	ND	1.0	µg/L	1.0	4/14/03	4/15/03

Test Name: Selenium

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Selenium	ND	10	µg/L	1.0	4/4/03	4/8/03

Test Name: Thallium

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Thallium	ND	10	µg/L	1.0	4/4/03	4/14/03

Client Sample ID: S-1

Received: 4/4/03

Collected: 4/3/03 9:15

Lab ID: 0304100-02E

Test Name: F, SO4, Cl, NO3, NO2

Reference: EPA 300.0

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Nitrate (as Nitrogen)	ND	0.10	mg/L	1.0		4/4/03

Test Name: pH

Reference: Std. Meth. 18th Ed. 4500 H+ B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
pH	6.8	N/A	pH Units	1.0		4/4/03

Test Name: Settleable Solids

Reference: EPA 160.5

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Settleable Solids	ND	0.10	mL/L/hour	1.0		4/4/03

Test Name: Total Dissolved Solids

Reference: EPA 160.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Total Dissolved Solids	200	10	mg/L	1.0		4/9/03

Date: 15-Apr-03

WorkOrder: 0304100

Test Name: Turbidity

ANALYTICAL REPORT

Reference: EPA 180.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Turbidity	2.3	0.050	NTU	1.0		4/4/03

Client Sample ID: S-1

Received: 4/4/03

Collected: 4/3/03 9:15

Lab ID: 0304100-02F

Test Name: Acetone

Reference: EPA 602 Modified

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Acetone	ND	10	µg/L	1.0		4/8/03
Surrogate: Fluorobenzene	98.9	85-115	% Rec	1.0		4/8/03

Client Sample ID: S-3

Received: 4/4/03

Collected: 4/3/03 9:35

Lab ID: 0304100-03A

Test Name: Chemical Oxygen Demand

Reference: EPA 410.4

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Chemical Oxygen Demand	23	5.0	mg/L	1.0	4/10/03	4/10/03

Client Sample ID: S-3

Received: 4/4/03

Collected: 4/3/03 9:35

Lab ID: 0304100-03B

Test Name: Hexane Extractable Material

Reference: EPA 1664

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Grease and Oil (TPH fraction)	ND	5.0	mg/L	1.0	4/9/03	4/11/03

Client Sample ID: S-3 (Dissolved)

Received: 4/4/03

Collected: 4/3/03 9:35

Lab ID: 0304100-03D

Test Name: Arsenic

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Arsenic	ND	10	µg/L	1.0	4/4/03	4/10/03

Test Name: ICAP Metals with Acid Digestion

Reference: EPA 200.7

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Boron	ND	100	µg/L	1.0	4/4/03	4/8/03
Antimony	ND	50	µg/L	1.0	4/4/03	4/8/03
Barium	6.3	5.0	µg/L	1.0	4/4/03	4/8/03
Beryllium	ND	1.0	µg/L	1.0	4/4/03	4/8/03
Cadmium	ND	10	µg/L	1.0	4/4/03	4/8/03

Date: 15-Apr-03

ANALYTICAL REPORT

WorkOrder: 0304100

Calcium	6,800	1,000	µg/L	1.0	4/4/03	4/8/03
Chromium	ND	10	µg/L	1.0	4/4/03	4/8/03
Cobalt	ND	10	µg/L	1.0	4/4/03	4/8/03
Copper	ND	10	µg/L	1.0	4/4/03	4/8/03
Iron	700	100	µg/L	1.0	4/4/03	4/8/03
Magnesium	7,900	250	µg/L	1.0	4/4/03	4/8/03
Manganese	74	2.0	µg/L	1.0	4/4/03	4/8/03
Molybdenum	ND	20	µg/L	1.0	4/4/03	4/8/03
Nickel	ND	20	µg/L	1.0	4/4/03	4/8/03
Potassium	ND	5,000	µg/L	1.0	4/4/03	4/8/03
Silver	ND	10	µg/L	1.0	4/4/03	4/8/03
Sodium	13,000	1,000	µg/L	1.0	4/4/03	4/8/03
Vanadium	ND	10	µg/L	1.0	4/4/03	4/8/03
Zinc	ND	20	µg/L	1.0	4/4/03	4/8/03

Test Name: Lead

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Lead	ND	10	µg/L	1.0	4/4/03	4/7/03

Test Name: Mercury

Reference: EPA 245.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Mercury	ND	1.0	µg/L	1.0	4/14/03	4/15/03

Test Name: Selenium

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Selenium	ND	10	µg/L	1.0	4/4/03	4/8/03

Test Name: Thallium

Reference: EPA 200.9

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Thallium	ND	10	µg/L	1.0	4/4/03	4/14/03

Client Sample ID: S-3

Received: 4/4/03

Collected: 4/3/03 9:35

Lab ID: 0304100-03E

Test Name: F, SO4, Cl, NO3, NO2

Reference: EPA 300.0

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Nitrate (as Nitrogen)	0.31	0.10	mg/L	1.0		4/4/03

Test Name: pH

Reference: Std. Meth. 18th Ed. 4500 H+ B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
pH	6.8	N/A	pH Units	1.0		4/4/03

Test Name: Settleable Solids

Reference: EPA 160.5

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Settleable Solids	ND	0.10	mL/L/hour	1.0		4/4/03

Date: 15-Apr-03

WorkOrder: 0304100

ANALYTICAL REPORT

Test Name: Total Dissolved Solids

Reference: EPA 160.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Total Dissolved Solids	110	10	mg/L	1.0		4/9/03

Test Name: Turbidity

Reference: EPA 180.1

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Turbidity	8.3	0.050	NTU	1.0		4/4/03

Client Sample ID: S-3

Received: 4/4/03

Collected: 4/3/03 9:35

Lab ID: 0304100-03F

Test Name: Acetone

Reference: EPA 602 Modified

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
Acetone	ND	10	µg/L	1.0		4/8/03
Surrogate: Fluorobenzene	98.4	85-115	% Rec	1.0		4/8/03