

December 20, 2007 Project No. 3596.001.02 4820 McGrath Street, Suite 100 Ventura, California 93003-7778 **Tel: (805) 650-7000** Fax: (805) 650-7010

### **PROJECT MEMORANDUM**

To: Mr. Bruce Buel, General Manager

Copy: Paul Sorenson

From: David Gardner, C.Hg.

### Subject: Task 4 - Technical Memorandum Nipomo Creek Water Quality Sampling Program Phase 2 - Hydrogeologic Investigation of the Southland WWTF

The purpose of the project memorandum is to describe the procedures followed, results obtained, and a preliminary interpretation of the fate and transport of wastewater constituents discharged to percolation ponds at the Nipomo Community Services District (CSD) Southland Wastewater Treatment Facility (WWTF). In this task, we identify water quality indicators of wastewater origin, with specific reference to the presence of such wastewater in Nipomo Creek. Prior work by Fugro (2007) and others (Cleath, 1997, 2000) suggested that wastewater discharged to the percolation ponds may be flowing, in part, laterally toward Nipomo Creek and re-emerging as surface water. Through discussions with staff at the Central Coast Regional Water Quality Control Board (RWQCB), ongoing and anticipated future operation of the WWTF needs to address potential water quality impacts to Nipomo Creek, if any.

To investigate the possible connection of wastewater discharges at the WWTF and surface water flow and quality in Nipomo Creek a series of composite samples of wastewater discharged to the percolation ponds were obtained. A sampling event was also conducted at five stations along Nipomo Creek. Water quality samples were also obtained from two shallow groundwater monitoring wells located adjacent the percolation pond. Procedures for sample collection are described in this project memorandum. Constituents chosen for analysis were based, in part, on the USGS Water Resources Investigations Report 03-4279, "Use of Water Quality Indicators and Environmental Tracers to Determine the Fate and Transport of Recyclable Water in Los Angeles County, California." The USGS report was used for guidance only.

A summary of the water quality data obtained is presented in tabular form, in Stiff diagrams, and in a Piper diagram for the purpose of comparative analysis. Mixing model calculations for chloride ions were applied to grossly estimate the percentage of wastewater in surface water in Nipomo Creek.



### FIELD SAMPLING PROCEDURES

A traverse of Nipomo Creek was conducted on Monday, October 22nd, from upstream to downstream of a stretch adjacent the Southland WWTF. Sampling stations are shown on Plate 1 - Study Area Map. During this event, flow in the Nipomo Creek was noted and water quality samples were collected at five locations (Plate 1 and Table 1).

Surface water flow in Nipomo Creek was determined by measuring the width and depth along a cross section of the channel at the sample location point. A float was timed over a defined distance moving down the creek. Discharge was calculated using cross sectional creek area multiplied by flow rate. A summary of analytical results are shown on Table 1 - Summary of Water Quality Data.

Field analysis of surface water samples were obtained for pH (Oakton Con-10), temperature (Oakton Con-10), electrical conductivity (YSI Model 33 S-C-T Meter - with temperature correction) and dissolved oxygen (DO; Hach LDO-HQ10 Oxygen Sensor - with temperature correction). Each instrument was calibrated prior to use. Measurements were recorded from the center of the water column, and in the case of DO the probe was agitated during reading (to prevent underestimation of the reading).

Wastewater discharged to the Southland WWTF percolation ponds was sampled by CSD staff using a composite peristaltic type sampler pump over a 16 hour period. Such sampling was performed weekly (commencing every Tuesday afternoon) for a period of one month. The analytical results of two such composite samples are presented in the report.

Samples from monitoring wells MW-1 and MW-3 were obtained on October 18 and October 23, 2007 as part of an aquifer testing program. Nipomo CSD staff collected water quality samples. As with the wastewater and surface water samples, the monitoring well samples were collected in plastic sample containers, labeled with well identification, date and time, and transported under chain-of-custody documentation to FGL Environmental in Santa Paula, California. All laboratory analytical data are provided as Attachment 1 - Laboratory Analytical Data.

The constituents sampled for were generally as follows:

- Anions: Chloride, Sulfate, Ammonia, Nitrate, Nitrite, Total Nitrogen, Phosphate, Bromide, Alkalinity;
- **Cations:** Calcium, Sodium, Magnesium, Potassium, Boron, Zinc;
- Other Chemical Constituents: MBAS, Total Dissolved Solids (TDS); and
- **Physical Parameters:** Conductivity (Field and Laboratory), Dissolved Oxygen (DO), Temperature, pH, creek flow volume.

## Table 1. Summary of Water Quality Data

_											
Constituent		SW-1	SW-2	SW-3	SW-4	SW-5	MW-1	MW-3	Effluent	Effluent	Eureka Well
(mg/l or as noted)	Method	10/22/2007	10/22/2007	10/22/2007	10/22/2007	10/22/2007	10/18/2007	10/23/2007	10/24/2007	10/31/2007	8/8/2007
Location: Northing	GPS	3878462	3878316	3878049	3877918	3877064	-	-	-	-	-
Location: Easting	GPS	10731228	10731324	10731576	10731693	10731825	-	-	-	-	-
Elevation	Мар	264	263	260	259.5	259	-	-	-	-	-
Flow (gpm)	Field	9	28	N/D	N/D	N/D	-	-	-	-	-
Conductivity (uS/cm)	Field	1110	1000	1290	1390	1300			-	-	-
Conductivity (uS/cm)	SM2510B	1400	1280	1580	1600	1620	1820	1680	1900	-	1030
Temperature (°C)	Field	15.7	14.5	15.7	16.3	15.6	17.3	16.7	15	11.5	-
Dissolved Oxygen (DO)	Field	4.3	4.3	16	8.8	1	0.4	4.7	4.8	7.3	-
Total Dissolved Solids	SM2540C	900	780	1040	1030	1110	1210	1090	1110	1020	750
Chloride	EPA 300.0	155	120	176	185	203	236	218	224	219	44
Boron	EPA 200.7	<0.1	<0.1	0.2	0.1	<0.1	0.4	0.3	0.4	0.6	<0.1
Ammonia (as NH <sub>3</sub> -N)	SM4500	<0.2	<0.2	<0.2	<0.2	0.3	0.9	<0.2	44	34	
MBAS	SM5540c	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND	<0.1	<0.1
Phosphate	EPA 300.0	<0.5	<0.5	<0.5	<0.5	1.9	1.6	<0.5	14.5	15.1	
Nitrate	EPA 300.0	18	26.9	46.5	41.2	29.5	114	76.7	ND	3.1	4.7
pH (no units)	Field	7.52	7.53	8.31	7.93	7.15	6.42	6.46	8.01	7.9	7.2
Bromide	-	0.59	0.44	0.33	0.33	0.35	0.28	<0.03	0.23	0.32	
Alkalinity (as CaCO <sub>3</sub> )	SM2320B	380	330	320	330	250	200	200	350	340	150
Calcium	EPA 200.7	93	80	93	89	101	98	87	85	77	109
Sodium	EPA 200.7	148	107	159	162	182	223	215	205	193	55
Magnesium	EPA 200.7	55	54	61	57	41	44	41	36	33	43
Potassium	EPA 200.7	3	1	2	1	2	15	3	26	24	3
Zinc	EPA 200.7	0.02	<0.02	<0.02	<0.02	<0.02	0.05	0.21	0.06	0.05	<0.02
Sulfate	EPA 300.0	136	144	201	205	250	270	260	250	250	333
Nitrite	EPA 300.0	<0.3	<0.3	0.3	<0.3	<0.3	<0.3	<0.3	ND	<0.3	<0.1
Total Nitrogen	EPA 300.0	<0.5	<0.5	<0.5	0.6	1	1.6	<0.5	38	36	
Bicarbonate	SM2320B	460	400	400	410	310	240	240	420	420	190
Carbonate	SM2320B	0	0	0	0	0	0	0	0	0	0





### DISCUSSION

Wastewater discharged to the Southland percolation ponds (based on composite samples of the effluent obtained on October 24 and October 31, 2007) is sodium-bicarbonatechloride in chemical character with total dissolved solids concentrations of about 1100 milligrams per liter (mg/l). Nitrogen in the effluent is in the unoxidized ammonia form. Chloride ion concentrations, at some 225 mg/l, are distinctly elevated relative to groundwater. Typical average chloride ion concentrations in the CSD groundwater are in the 50 mg/l range (2006 Nipomo CSD Consumer Confidence Report). The elevated chloride ion concentrations in the effluent are directly related to water softener system regenerate brine. The observed increase in chloride ions in the wastewater is consistent with levels observed in other communities that rely on water softeners to reduce the hardness of water.

As indicated on Plate 1, the water quality of the shallow aquifer system (MW-1 and MW-3) immediately adjacent the Southland WWTF percolation ponds mimics the chemical character of the wastewater with respect to TDS concentrations, chloride ion concentrations, and other constituents. This is to be expected given the shallow perforated intervals in these monitoring wells, starting at depths of 35 and 50 feet, respectively, and close proximity of the monitoring wells to the percolation sites. The groundwater in the monitoring wells is essentially treated wastewater. Nitrogen species have been oxidized from ammonia to nitrate, with nitrate ion concentrations of 77 mg/l to 114 mg/l.

Surface water samples collected from the stations along Nipomo Creek (refer to Plate 1) are interpreted to represent various mixtures of native groundwater and effluent. The Stiff diagram at SW-1 is of a sodium calcium bicarbonate chemical. The chemical character of surface water in Nipomo Creek progressively transforms along the direction of surface water flow (and adjacent and downstream of the percolation ponds) to a sodium-chloride-bicarbonate character. TDS, nitrate, and chloride ion concentrations also all increase down the flow path, suggesting an increasing percentage of effluent from the percolation ponds in the surface water samples.

The percentage of wastewater relative to native groundwater in the Nipomo Creek samples could not be determined using statistical or other analytical methods due to a general lack of information on the quality of native ground water (shallow aquifer) in the area of interest. We assume, based on earlier regional studies of the Nipomo Mesa (California State Department of Water Resources Bulletin No. 63-3) that native groundwater unaffected by wastewater discharged at the WWTF had TDS concentrations of about 500 mg/l, that the native groundwater was of sodium bicarbonate character, and that the chloride ion concentration was in the range of 50 mg/l. Qualitatively, the percentage of wastewater in the surface water samples collected as part of this study relative to native groundwater may fall within the range of 50 to 75 percent, variable by location and seasonal hydrologic conditions.

USGS WRI 03-4279 provides useful approaches to use water quality indicator parameters as environmental tracers relative to the transport of recycled water in aquifers in the Los Angeles area (Montebello forebay). Chloride ions, being a conservative chemical



constituent in ground water, is often used in mixing models to estimate percentages of wastewater relative to native groundwater. Chloride is a useful indicator parameter in that it reflects the addition of this salt to wastewater during the treatment process, as cited above. When used with bromide concentration values to remove the natural chloride, "excess" chloride can be calculated and an estimate of wastewater as a percentage of ground water made. Table 2 - Summary of Excess Chloride Values and Predicted Wastewater Percentages indicates a range of wastewater in the Nipomo Creek samples from about 0 to 65 percent. The results are consistent with, the more qualitative conclusions based on the water quality data and graphical depictions (i.e., Stiff diagrams).

From the above we conclude that wastewater represents a significant component of the water sampled at SW-3, SW-4, and SW-5 in Nipomo Creek as part of this study. Obviously, as a percentage of ground water, the amount will vary seasonally and by location. We surmise that prior to discharge of wastewater in the percolation ponds there was relatively little ground water in the uppermost aquifer. What groundwater existed was likely thin lenses of perched ground water occurring above the confining layers. As the wastewater mound enlarged and spread in a radial manner from the point of discharge, mixing occurred with native ground water and with time the volume of wastewater in the shallow aquifer became a significant percentage of the total mass. We assume that some form of steady state discharge of wastewater to Nipomo Creek occurred a number of years ago, and will continue in direct proportion to the percolation of wastewater in the ponds.

Sample	Bromide (mg/l)	Chloride (mg/l)	Excess Chloride in Sample (mg/l)	Chloride in in Wastewater	
SW-1	.59	155	0	158	0
SW-2	.44	120	0	158	0
SW-3	.33	176	81	158	51
SW-4	.33	185	90	158	57
SW-5	.35	203	103	158	65
MW-1	.28	236	156	158	99
MW-3	<0.03	218	-	158	-
Effluent	.23	224	158	158	100
Eureka Well	.17	50	1	158	1*

### Table 2. Summary of Excess Chloride Values and Calculated Wastewater Percentages

Notes: - Bromide Value inexplicably low (<0.03 mg/l), therefore calculation was not appropriate.

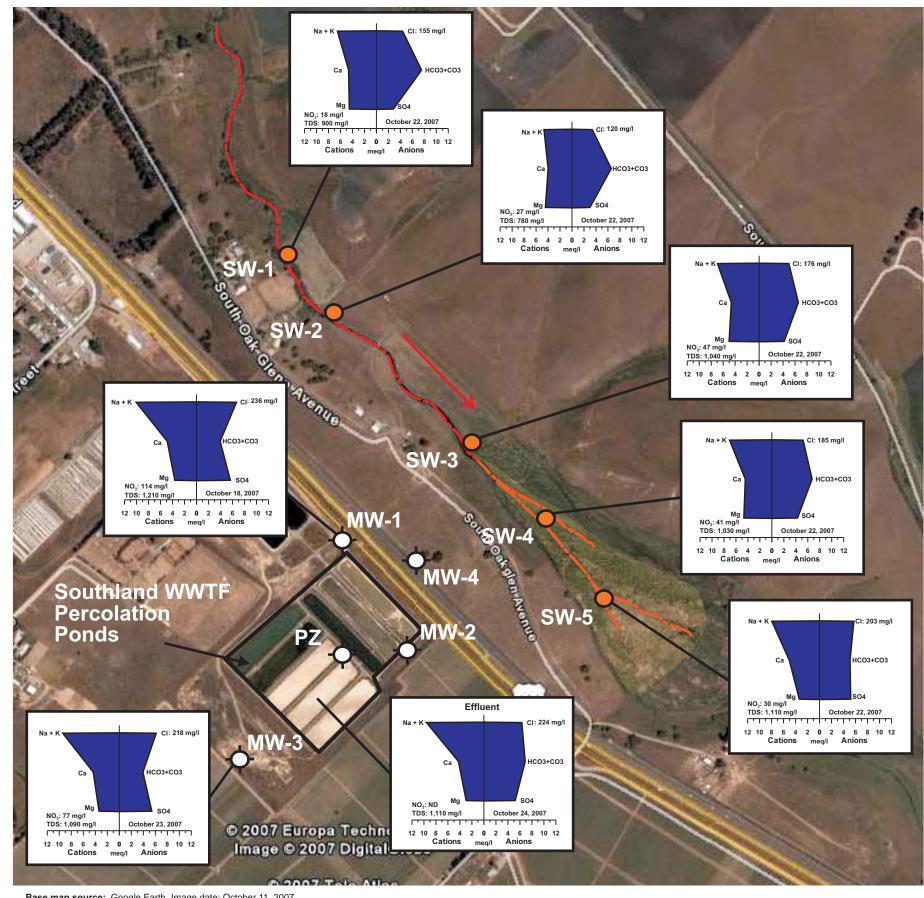
 $^{\ast}$  Well not influenced by wastewater, non-zero value due to accuracy of analytical method. All values accurate to  $\pm 10\%$ 



### REFERENCES

- Cleath and Associates (1997), *Groundwater Flow from Percolation Ponds*, letter, prepared for Nipomo Community Services District, May 22.
- (1997), Test Hole Results and Recommended Monitoring Well Locations for the Nipomo CSD Wastewater Disposal Site, prepared for Garing, Taylor and Associates, January 13.
- Fugro West, Inc. (2007), "Assessment of the Potential for Extracting Discharge Water from Beneath the Southland Wastewater Treatment Facility, Nipomo, California," prepared for Nipomo Community Services District, November.
- \_\_\_\_\_ (2007), "Hydrogeologic Characterization Southland Wastewater Treatment Facility, Nipomo, California," prepared for Nipomo Community Services District, July,
- State of California, The Resources Agency, Department of Water Resources (1970), *Bulletin No. 63-3, Sea Water Intrusion: Pismo-Guadalupe Area*, February.

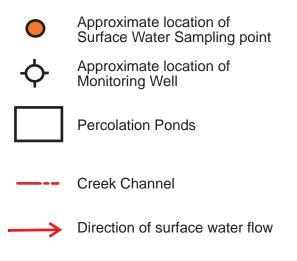
PLATES

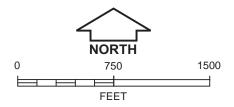


Base map source: Google Earth, Image date: October 11, 2007.

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### LEGEND

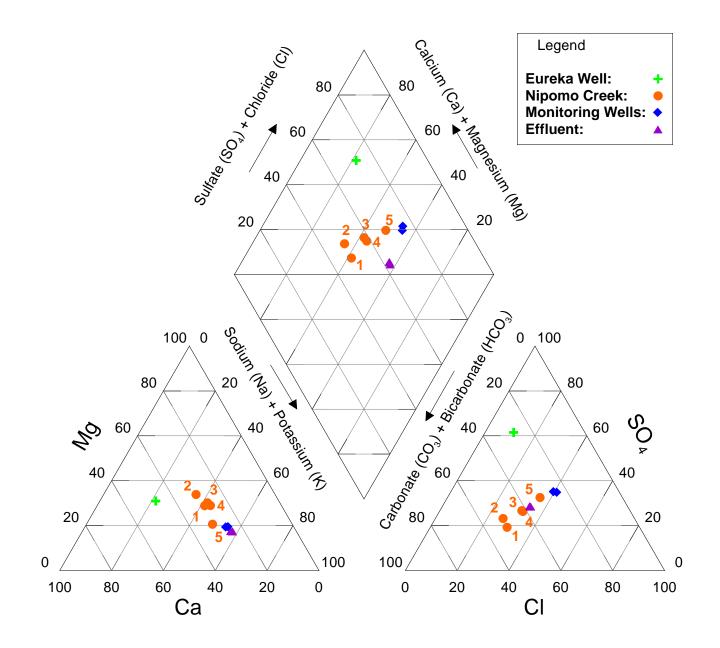




### STUDY AREA MAP Southland WWTP Discharge Study Nipomo, California

PLATE 1





PIPER DIAGRAM Southland WWTP Discharge Study Nipomo, California

### ATTACHMENT 1 LABORATORY ANALYTICAL DATA







November 8, 2007

### Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444 Lab ID Customer

: SP 0712008 : 2-14320

### Laboratory Report

Introduction: This report package contains total of 7 pages divided into 3 sections:

Case Narrative	(2 Pages)	: An overview of the work performed at FGL.
Sample Results	(2 pages)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

### **Case Narrative**

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
Effluent Composite	10/24/2007	10/24/2007	SP 0712008-001	WW
Effluent Grab	10/24/2007		SP 0712008-002	WW

**Sampling and Receipt Information:** All samples were received, prepared and analyzed within the method specified holding times. All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

### **Inorganic - Metals QC**

200.7	10/30/2007:211183 All analysis quality controls are within established criteria.
3010	<ul> <li>10/29/2007:210531 All preparation quality controls are within established criteria, except:</li> <li>The following note applies to Sodium:</li> <li>310 LCS above Acceptance Range (AR). Samples which were non detect for this analyte were accepted.</li> </ul>

### Inorganic - Wet Chemistry QC

2130B	10/24/2007:210413 All preparation quality controls are within established criteria.
	10/24/2007:210967 All analysis quality controls are within established criteria.
2320B	10/25/2007:210429 All preparation quality controls are within established criteria.

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 CA ELCopy of rocument found at
 www.NoNewWip Tax:compation No. 2670

#### Lab ID : SP 0712008 Customer : 2-14320

#### **Inorganic - Wet Chemistry QC**

	10/25/2007:210986 All analysis quality controls are within established criteria.
2510B	10/26/2007:210458 All preparation quality controls are within established criteria.
	10/26/2007:211018 All analysis quality controls are within established criteria.
2540 C,E	10/26/2007:210459 All preparation quality controls are within established criteria.
300.0	10/25/2007:210556 All preparation quality controls are within established criteria.
	10/25/2007:211143 All analysis quality controls are within established criteria.
351.1	<ul> <li>10/28/2007:210507 All preparation quality controls are within established criteria, except:</li> <li>The following note applies to Nitrogen, Total Kjeldahl:</li> <li>435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.</li> </ul>
4500NH3G	11/06/2007:211404 All analysis quality controls are within established criteria.
	11/05/2007:211398 All analysis quality controls are within established criteria.
4500NH3H	10/31/2007:210614 All preparation quality controls are within established criteria.
5540C	10/24/2007:210409 All preparation quality controls are within established criteria.
	10/24/2007:210962 All analysis quality controls are within established criteria.

Certification: I certify that this data package is in compliance with NELAC standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature. Digitally signed by Kelly A. Dunnahoo, B.S. Title: Laboratory Director Date: 2007-11-08

Approved By Kelly A. Dunnahoo, B.S.





November 8, 2007

### Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444 Lab ID : SP 0712008-001 Customer ID : 2-14320

Sampled On : October 24, 2007-07:45 Sampled By : Rick Motley Received On : October 24, 2007-16:30 Matrix : Waste Water

Description : Effluent Composite Project : Southland WWTP - Special Eff

#### Sample Results - Inorganic

Constituent	Result	PQL	Units	Note	Sample	Preparation	Samp	le Analysis
	Kesun	IQL		Noie	Method	Date/ID	Method	Date/ID
Metals, Total P.P5								
Boron	0.4	0.1	mg/L		3010	10/29/07:210531	200.7	10/30/07:211183
Calcium	85	1	mg/L		3010	10/29/07:210531	200.7	10/30/07:211183
Magnesium	36	1	mg/L		3010	10/29/07:210531	200.7	10/30/07:211183
Potassium	26	1	mg/L		3010	10/29/07:210531	200.7	10/30/07:211183
Sodium	205	1	mg/L		3010	10/29/07:210531	200.7	10/30/07:211183
Zinc	0.06	0.02	mg/L		3010	10/29/07:210531	200.7	10/30/07:211183
Wet Chemistry Pil								
Ammonia-N	44	2	mg/L		4500NH3H	10/31/07:210614	4500NH3G	11/06/07:211404
Alkalinity (as CaCO3)-	350	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Soluble	550	10	mg/L		2520B	10/23/07.210429	25200	10/23/07:210986
Bicarbonate	420	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Carbonate	ND	10	mg/L	0	2320B	10/25/07:210429	2320B	10/25/07:210986
Hydroxide	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Bromide	0.23	0.03	mg/L		300.0	10/25/07:210556	300.0	10/25/07:211143
Chloride	224	5	mg/L		300.0	10/25/07:210556	300.0	10/25/07:211143
Conductivity	1900	1	umhos/cm		2510B	10/26/07:210458	2510B	10/26/07:211018
MBAS	ND	0.1	mg/L		5540C	10/24/07:210409	5540C	10/24/07:210962
Nitrate	ND	0.4	mg/L		300.0	10/25/07:210556	300.0	10/25/07:211143
Nitrate + Nitrite as N	ND	0.1	mg/L		300.0	10/25/07:210556	300.0	10/25/07:211143
Nitrite	ND	0.3	mg/L		300.0	10/25/07:210556	300.0	10/25/07:211143
Nitrogen, Total as Nitrogen	38	5	mg/L		351.1	10/28/07:210507	4500NH3G	11/05/07:211398
Nitrate + Nitrite	ND	0.1	mg/L		300.0	10/25/07:210556	300.0	10/25/07:211143
Kjeldahl Nitrogen	38	5	mg/L		351.1	10/28/07:210507	4500NH3G	11/05/07:211398
Nitrogen, Total Kjeldahl	38	5	mg/L		351.1	10/28/07:210507	4500NH3G	11/05/07:211398
Phosphate	14.5	0.5	mg/L		300.0	10/25/07:210556	300.0	10/25/07:211143
Solids, Total Dissolved			-					
(TDS)	1110	20	mg/L		2540 C,E	10/26/07:210459	2540C	10/27/07:211063
Sulfate	250	10	mg/L		300.0	10/25/07:210556	300.0	10/25/07:211143
Turbidity	16.0	0.2	NTU		2130B	10/24/07:210413	2130B	10/24/07:210967

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (), (P) Plastic, (VFS) VOA w/Filters+Syringes Preservatives: H2SO4 pH < 2, HNO3 pH < 2





November 8, 2007

### Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

Description : Effluent Grab Project : Southland WWTP - Special Eff Lab ID : SP 0712008-002 Customer ID : 2-14320

Sampled On : October 24, 2007-07:45 Sampled By : Rick Motley Received On : Matrix : Waste Water

### **Sample Results - Inorganic**

Constituent	Result POL		Units	Note	Sample	Preparation	Sample Analysis		
Constituent		1 QL			Method	Date/ID	Method	Date/ID	
Field Test									
Temperature	15		øC			10/24/07 07:45	2550B	10/24/07 07:45	
pH	8.01		units			10/24/07 07:45	4500-H B	10/24/07 07:45	
Oxygen, Dissolved	4.8		mg/L			10/24/07 07:45	4500-O G	10/24/07 07:45	

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (), (P) Plastic, (VFS) VOA w/Filters+Syringes Preservatives: H2SO4 pH < 2, HNO3 pH < 2

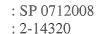




### November 8, 2007

Nipomo Community Services District

Lab ID Customer



**Quality Control - Inorganic** 

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	200.7	10/30/2007:211183	CCV	ppm	5.000	102 %	90-110	
			CCB	ppm		0.045	0.10	
			CCV	ppm	5.000	102 %	90-110	
			CCB	ppm		0.042	0.10	
	3010	10/29/2007:210531	Blank	mg/L	1	ND	< 0.1	
			LCS	mg/L	4.000	97.0 %	85-115	
			MS	mg/L	4.000	92.1 %	75-125	
			MSD	mg/L	4.000	91.6 %	75-125	
			MSRPD	mg/L	0.8000	0.4%	≤20.0	
			PDS	mg/L	4.000	104 %	75-125	
Calcium	200.7	10/30/2007:211183	CCV	ppm	25.00	101 %	90-110	
			CCB	ppm		0.005	1.0	
			CCV	ppm	25.00	101 %	90-110	
			CCB	ppm		0.002	1.0	
	3010	10/29/2007:210531	Blank	mg/L		ND	<1	
			LCS	mg/L	12.50	98.1 %	85-115	
			MS	mg/L	12.50	57.3 %	<1/4	
			MSD	mg/L	12.50	62.7 %	<1⁄4	
			MSRPD	mg/L	0.8000	0.8%	≤20.0	
			PDS	mg/L	12.50	92.0 %	75-125	
Magnesium	200.7	10/30/2007:211183	CCV	ppm	25.00	96.8 %	90-110	
			ССВ	ppm		0.005	1.0	
			CCV	ppm	25.00	96.3 %	90-110	
			CCB	ppm		0.002	1.0	
	3010	10/29/2007:210531	Blank	mg/L		ND	<1	
			LCS	mg/L	12.50	95.8 %	85-115	
			MS	mg/L	12.50	76.3 %	75-125	
			MSD	mg/L	12.50	77.2 %	75-125	
			MSRPD	mg/L	0.8000	0.2%	≤20.0	
			PDS	mg/L	12.50	98.8 %	75-125	
Potassium	200.7	10/30/2007:211183	CCV	ppm	25.00	98.6 %	90-110	
			CCB	ppm		0.1	1.0	
			CCV	ppm	25.00	98.8 %	90-110	
			CCB	ppm		-0.03	1.0	
	3010	10/29/2007:210531	Blank	mg/L	[	ND	<1	
			LCS	mg/L	12.50	98.9 %	85-115	
			MS	mg/L	12.50	87.4 %	75-125	
			MSD	mg/L	12.50	89.2 %	75-125	
			MSRPD	mg/L	0.8000	0.5%	≤20	
			PDS	mg/L	12.50	102 %	75-125	
Sodium	200.7	10/30/2007:211183	CCV	ppm	25.00	97.2 %	90-110	·····
	-		CCB	ppm		0.20	1.0	
			CCV	ppm	25.00	95.3 %	90-110	
			CCB	ppm		0.06	1.0	
	3010	10/29/2007:210531	Blank	mg/L	1	ND	<1	
			LCS	mg/L	12.50	80.5 %	85-115	310
			MS	mg/L	12.50	42.7 %	<1/4	-
			MSD	mg/L	12.50	49.3 %	<1/4	
			MSRPD	mg/L	0.8000	0.9%	≤20.0	
			PDS	mg/L	12.50	80.3 %	75-125	
Zinc	200.7	10/30/2007:211183	CCV	ppm	1.000	98.6 %	90-110	
			CCB	ppm		-0.0099	0.02	
		1			1 000			
			I CCV I	ppm	1 1.(NN)	98.6%	90-110	
			CCV CCB	ppm ppm	1.000	98.6 % -0.0089	90-110 0.02	

Corporate Offices & Laboratory P.O. Box 272 / 853 Corporation Street Santa Paula, CA 93061-0272 TEL: 805/392-2000 FAX: 805/525-4172 CA NELAP Certification No. 01110CA 
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### November 8, 2007 Nipomo Community Services District

.

Lab ID Customer : SP 0712008 : 2-14320

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Metals		<b>I</b>						
Zinc	3010	10/29/2007:210531	LCS	mg/L	2.000	100 %	85-115	
			MS	mg/L	2.000	94.7 %	75-125	
			MSD	mg/L	2.000	95.0 %	75-125	
			MSRPD	mg/L	0.8000	0.2%	≤20.0	
			PDS	mg/L	2.000	99.1 %	75-125	
Wet Chem								
Alkalinity (as CaCO3)	2320B	10/25/2007:210429	Dup	mg/L.		0.6%	3.42	
	2320B	10/25/2007:210986	CCV	mg/l	234.9	102 %	90-110	
A	4500NH3G	11/05/2007-211209	CCV	mg/l	234.9	<u>101 %</u> 0.039	90-110	
Ammonia Nitrogen	4500NH3G	11/05/2007:211398	CCB CCV	mg/l mg/l	2.000	102 %	0.2 90-110	
			ССВ	mg/l	2.000	0.044	0.2	
			CCV	mg/l	2.000	99.8 %	90-110	
	4500NH3G	11/06/2007:211404	ICB	mg/l		-0.021	0.2	
			ICV	mg/l	2.000	110 %	90-110	
			CCB	mg/l		0.026	0.2	
			CCV	mg/l	2.000	106 %	90-110	
	4500NH3H	10/31/2007:210614	Blank	mg/L		ND	<0.2	
			LCS	mg/L	2.000	74.6 %	63-116	
			MS	mg/L	2.000	91.7 %	17-127	
			MSD	mg/L	2.000	85.9 %	17-127	
D'	2320B	10/25/2007:210429	MSRPD	mg/L	2.000	6.0% 0.6%	≤80.2	
Bicarbonate Bromide	300.0	10/25/2007:210429	Dup LCS	mg/l mg/L	5.000	101 %	4.78 90-110	
Bromide	500.0	10/25/2007:210550	MS	mg/L mg/L	100.0	95.1%	90-110	
			MSD	mg/L mg/L	100.0	94.9 %	90-121	
			MSRPD	mg/L	100.0	0.2%	≤1.61	
	300.0	10/25/2007:211143	ICV	ppb	10000	102 %	90-110	
			ICB	ppb		0.0	30	
			CCB	ppb		0.0	30	
			CCV	ppb	5000	102 %	90-110	
Carbonate	2320B	10/25/2007:210429	Dup	mg/l		0.0	10	
Chloride	300.0	10/25/2007:210556	LCS	mg/L	25.00	99.9 %	90-110	
	200.0	10/05/0007 011110	MSRPD	mg/L	100.0	0.3%	≤23.0	
	300.0	10/25/2007:211143	ICV	ppm	50.00	104 %	90-110	
			ICB CCB	ppm		0.04	1	
			CCV	ppm ppm	25.00	100 %	90-110	
Conductivity	2510B	10/26/2007:211018	ICB	umhos/cm	23.00	0.1	1	
Conducting	20102	10/20/2007.211010	ICV	umhos/cm	998.0	99.5 %	95-105	
			CCV	umhos/cm	998.0	99.5 %	95-105	
E. C.	2510B	10/26/2007:210458	Blank	umhos/cm		ND	<1	
			Dup	umhos/cm		0.1%	0.372	
Hydroxide	2320B	10/25/2007:210429	Dup	mg/l		0.0	10	
MBAS	5540C	10/24/2007:210409	MS	mg/L	1.000	100 %	90-110	
			MSD	mg/L	1.000	100 %	90-110	
	55400	10/24/2007-2100/2	MSRPD	mg/L mg/I	1.000	0.0	≤0.1	
	5540C	10/24/2007:210962	CCB CCV	mg/L mg/L	1.000	0.000 100 %	0.1 99-101	
Nitrate	300.0	10/25/2007:210556	LCS	mg/L mg/L	20.00	100 %	99-101	
Initale	0.000	1012312001.210330	MS	mg/L mg/L	400.0	99.5 %	90-110 88-124	
			MSD	mg/L	400.0	99.6 %	88-124	
			MSRPD	mg/L	100.0	0.07%	≤29.1	
	300.0	10/25/2007:211143	ICV	ppm	40.00	103 %	90-110	
			ICB	ppm		0.000	0.4	
			CCB	ppm		0.011	0.4	
			CCV	ppm	20.00	102 %	90-110	

## **Quality Control - Inorganic**

### November 8, 2007 Nipomo Community Services District

.

Lab ID Customer : SP 0712008 : 2-14320

Constituent		Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Wet Chem									
Nitrite		300.0	10/25/2007:210556	LCS	mg/L	15.00	97.1 %	90-110	
				MS	mg/L	300.0	96.9 %	91-121	
				MSD	mg/L	300.0	97.0 %	91-121	
				MSRPD	mg/L	100.0	0.08%	≤23.8	
		300.0	10/25/2007:211143	ICV	ppm	30.00	103 %	90-110	
				ICB	ppm		0.000	0.3	
				CCB	ppm		0.000	0.3	
				CCV	ppm	15.00	97.9 %	90-110	
Nitrogen, Total	Kjeldahl	351.1	10/28/2007:210507	Blank	mg/L	0.000	ND	<0.5	
				LCS	mg/L	2.000	98.2 %	69-125	125
				MS	mg/L	2.000	5.6 %	25-149	435
				MSD	mg/L	2.000	11.6 %	25-149	435
Di 1		200.0	10/25/2007:210556	MSRPD LCS	mg/L	2.000	0.12	<u>≤0.5</u> 90-110	
Phosphate		300.0	10/25/2007:210556	MS	mg/L	300.0	99.7 %	90-110 85-126	
				MS MSD	mg/L mg/L	300.0	101 %	85-120	
				MSD	mg/L mg/L	100.0	1.2%	≤41.1	
		300.0	10/25/2007:211143	ICV	2	30.00	1.2 %	90-110	
		500.0	10/23/2007.211145	ICV	ppm	50.00	0.000	0.5	
				CCB	ppm		0.000	0.5	
				CCV	ppm ppm	15.00	103 %	90-110	
Solids, Total Di	ecowled	2540 C,E	10/26/2007:210459	Blank	mg/L	15.00	ND	<20	
Solids, Total Di	SSUVICU	2.540 C,L	10/20/2007.210433	LCS	mg/L mg/L	1000	99.7 %	90-110	
				LCS	mg/L	1000	101 %	90-110	
				Dup	mg/L	1000	3.9%	10.0	
Sulfate		300.0	10/25/2007:210556	LCS	mg/L	50.00	99.8 %	90-110	
Suitate		500.0	10/20/2007.210000	MS	mg/L	1000	99.4 %	78-137	
				MSD	mg/L	1000	99.4 %	78-137	
				MSRPD	mg/L	100.0	0.01%	≤12.3	
		300.0	10/25/2007:211143	ICV	ppm	100.0	104 %	90-110	<b> </b>
				ICB	ppm		0.91	2	
				CCB	ppm		0.91	2	
				CCV	ppm	50.00	100 %	90-110	
Turbidity		2130B	10/24/2007:210413	Dup	NTU		0.0	0.2	
		2130B	10/24/2007:210967	ССВ	NTU		0.063	0.2	
				CCV	NTU	2.000	91.5 %	90-110	
				CCB	NTU		0.065	0.2	
				CCV	NTU	2.000	91.0 %	90-110	
Definition									
ICV	: Initial Calibrati	on Verification	- Analyzed to verify the	e instrument	calibration is	within criter	ria.		
ICB	: Initial Calibration	on Blank - Anal	yzed to verify the instru	ıment baseli	ne is within c	riteria.			
CCV			ation - Analyzed to ver				n criteria.		
CCB			Analyzed to verify the						
Blank			ify that the preparation						and the second se
LCS			ample - Prepared to veri						
MS			ole is spiked with a kno	wn amount (	ot analyte. Th	ne recoveries	s are an indicat	ion of how th	nat sample
	matrix affects and		VCD noir A manda	omnlo dur l'	onto in amili-1	with a know	m amount of -	natural TL.	
MSD	*	•	MSD pair - A random s		-	with a knov	vir amount of a	naiyieu. The	
			ow that sample matrix a ample with each batch			in duplicate	The relative r	vercent differ	enceison
Dup			eparation and analysis.	is prepared a	and analyzed	m uupneate.	ine relative p	Accent unier	ence is all
			erence (RPD) - The MS	relative ne	rcent differen	ce is an indi	cation of precis	sion for the m	reparation
MSRPD	and analysis.	i to i ciccin Dill	oronoo (xx 2) - 100 ivic	, reimive he	i çeni uniteren	~~ 15 WI IIIII	eactor or process	non nor me p	-openanton
ND		sult was below	the DQO listed for the	analyte					
ND < <sup>1</sup> /4			ke concentration was le		forth of the sa	umple conce	ntration		
DQO			the criteria against wh						
Explaination	, Dam Quarty Of	-jootsto - 21110 fé	ernerne agamor wit	ivii iiv yuai		a io compan			
310	: LCS above Acc	eptance Range (	AR). Samples which v	vere non det	ect for this an	alvte were a	ccepted.		
435			this analyte. Data was						
100	, campio manta i		, and many to, while we						المحمد

### **Quality Control - Inorganic**

SP 0712008: Quality Control Page 4 of 4

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			Remarks:	Nipomo Community Services District s: Nipomo CSD Attr: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444 (805)929-1341 Fax: (805)929-5090 I Person: Dan Migliazzo Name: Southland WWTP - Special Eff se Order Number: Pickup Fee: ref(s) & M. J. T pickup Fee: I Date: 10/23/07 Time: 4 Date Location Description Effluent Composite Effluent Grab Date I Date I		ENVIRONMENTAL
I (HA)	Received By:	1	Relinquished	Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the system       Image: Construction of the system         Image: Construction of the	2255:10/10/2007	
4911 51:1 0/1-2/0	Date: Time: Receive	CMI SI:1 DHA	Date; Time: Relinqu	Wet Chemistry-SO4, TDS, PO4, NO2, NO3, MBAS, Conductivity, CI, Br, All (CaCO3), NH3-N, Turbidity TKN Field Filter PO4 32oz(P), 40ml(VFS), 16oz(P)-H2SO4	DESCRIPTION	Weekly www.fglinc.com
) Intraliv reso		son whalo	ished Date:	C     Field Test-Field pH       C     Field Test-Field pH       PH = 15 MINUTE HOLD TIME!!       Field - pH Date		
	Time: Received By:	Č	Time: Relinquished	Field - pH Time       Field Test-Field O2 Diss.	ner, Preservative and Sampling	HAIN OF CUSTO Laboratory Copy (1 of 3)
	Date: Time		Date: Time		information	USTODY (1 of 3)
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# Santa Paula - Condition Upon Receipt (Attach to COC)

### Sample Receipt:

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1.	Number of ice chests/packages received: Note as OTC if received over the counter unpackaged.			94,944555,000,979		
2.	Were samples received in a chilled condition? Temps: Acceptable is 2° to 6° C. Also acceptable is received on ice (ROI) fo temperature (RRT) if sampled within one hour of receipt. Client contr documented below. If many packages are received at one time check further review. Please notify Microbiology personnel immediately of	or the same act for tem for tests/H	perature fa .T.'s/rushe	ilures m s/Bacti's	ust be	
3.	Do the number of bottles received agree with the COC?		Ges	No	N/A	
4.	Were samples received intact? (i.e. no broken bottles, leak	ts etc.)	Des	No		
5.	Were sample custody seals intact?		<b>Ø</b> A	Yes	No	
Sig	n and date the COC, obtain LIMS sample numbers, select me	ethods/te	sts and p	rint lab	els.	
San 1. 2.	nple Verification, Labeling and Distribution: Were all requested analyses understood and acceptable? Did bottle labels correspond with the client's ID's?		Ves	No No		
3.	Were all bottles requiring sample preservation properly pr	ecenved?	Xes)	No	N/A	FGL
J. 4.	VOAs checked for Headspace?	0301 9001	Tes	No	N/A	FUL
₹,	VOAs theteed for headspace?			110	IWA	
5.	Were all analyses within holding times at time of receipt?		Yes	No		
6.	Have rush or project due dates been checked and accepted	?	MA	Yes	No	
Atta	ch labels to the containers and include a copy of the COC fo	or lab del	iverv.	$\rightarrow$		
Sam	ple Receipt, Login and Verification completed by (initials):		A	$\mathcal{Y}$		
		(i.e. temp Phone Ni Date:	•		ved.	
2.	Initiated By: Problem:	Phone Ni Date:	(2-14	Nagay - Maddillana - An	**************************************	
	Resolution: Nip	omo Com SP		Servic		trict
			0/24/20			
				· ~ ~ 9		

### Gardner, David [FWI]

From:	Gardner,	David	[FWI]
			ft aast

Sent: Tuesday, September 25, 2007 10:48 AM

To: Sorensen, Paul [FWI]; Roberts, Shawn [FWI]

Cc: Nicely, Tim [FWI]

Subject: Nipomo CSD, water quality indicator parameters and environmental tracers associated with wastewater

Relative to your question (Paul) on what to sample for in the Nipomo Creek survey and the pump tests on site I referred to the USGS publication on recycled water in the Montebello forebay (2003, Anders and Schroeder). This publication attempts to look at and define flow paths from the recharge basins in a number of variable depth production wells located about 500 feet from the spreading basins. They used about 40 water quality indicators in an attempt to determine the flow paths, the mixing, as well as age of the ground water. They used various statistical analyses with all the data. Indicators included both general chemical, organic, and isotopic analysis. The study was likely a \$1M effort. Obviously we don't have that budget or time. The study is useful in that I think it can narrow our effort to a few key constituents found in wastewater. From that we can do some simple statistical analysis (nonparametric tests) to try to see if the Nipomo CSD wastewater is emerging in the creek. I think we need to be careful about how we go about this and not try to over state what we know and conclude from the somewhat limited testing and analysis we will be doing.

Key to the study will be to try to identify areas where we think we have "native" groundwater, unaffected by the wastewater. Using the DWR well log data and well locations, we will need to find shallow wells in the area to sample, not just the creek and the wells at the site. Our problem, in part, is that we really don't know what up gradient of the site is.

We need to focus on conservative constituents in the wastewater such as chloride, bromide, and boron (as well as all the other general mineral constituents). Boron, in particular, can be present in large amounts in wastewater due to its presence as a softener in detergents. The USGS study found that there was little, if any, significant correlation of water quality in the wells and the recycled wastewater related to microbial constituents. Thus, to sample water in the creek for bacterial counts etc. would appear to be a waste of time.

The most significant correlation appears to be the salts added to the wastewater...sodium and chloride. The USGS study used an interesting approach by calculating the "excess" chloride and boron in the water samples. This was done using some simple equations to determine the percentage of wastewater in the samples collected from the wells. They did a linear regression analysis (a graph) as a method to test how good the correlation was. I think we can do the same thing. We will need a number of samples of the wastewater, say over a several week period. Perhaps a half dozen or so.

Most of the USGS study focused on all sorts of isotope data, ratios, dissolved gases, and age dating of the ground water. Metals such as Fe, Mn, and Zn showed no significant correlation due to the way they are reduced or mobilized over the groundwater flow path.

We should do the standard nitrogen species....nitrate, nitrite, ammonia, total nitrogen.

So...constituents to test for (really pretty straightforward) include....

Field....T, pH, EC, dissolved oxygen, turbidity (surface water).

Lab...TDS, Ca, Mg, Na, K, alkalinity, SO4, Cl, Br, NO3, NO2, NH3, phosphate, zinc, B, MBAS.

Calculated...excess Cl, excess B,

Well Information as to depth, perforated interval, obviously need to be known as well as their location relative to the inferred flow paths. Before we go out in the field I would like to see the target wells we intend to sample for background (assuming we can find some).

I will scan the USGS report and send it to you.

David Gardner, CHg Principal Hydrogeologist Fugro West, Inc. 4820 McGrath Street, Suite 100 Ventura, CA 93003 www.fugrowest.com phone : (805) 650 7000 fax: (805) 650 7010





November 9, 2007

### Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444 Lab ID Customer

: SP 0711789 : 2-14320

### Laboratory Report

Introduction: This report package contains total of 6 pages divided into 3 sections:

Case Narrative	(2 Pages)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

#### **Case Narrative**

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
MW1	10/18/2007	10/18/2007	SP 0711789-001	MW

**Sampling and Receipt Information:** The sample was received, prepared and analyzed within the method specified holding times. All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

### Inorganic - Metals QC

200.7	11/08/2007:210919 All preparation quality controls are within established criteria.
	11/08/2007:211554 All analysis quality controls are within established criteria.
	10/26/2007:211090 All analysis quality controls are within established criteria.
3010	10/24/2007:210389 All preparation quality controls are within established criteria.

### **Inorganic - Wet Chemistry QC**

2130B	10/18/2007:210246	All preparation quality controls are within established criteria.
	10/18/2007:210805	All analysis quality controls are within established criteria.

 Office & Laboratory
 Office & Laboratory

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Field Office Visalia, California TEL: 559/734-9473 Mobile: 559/737-2399 FAX: 559/734-8435

#### Lab ID : SP 0711789 Customer : 2-14320

07:210267 All preparation quality controls are within established criteria.
07:210835 All analysis quality controls are within established criteria.
07:210219 All preparation quality controls are within established criteria.
07:210783 All analysis quality controls are within established criteria.
07:210220 All preparation quality controls are within established criteria.
07:210253 All preparation quality controls are within established criteria.
07:210255 All preparation quality controls are within established criteria.
07:210949 All analysis quality controls are within established criteria.
07:210820 All analysis quality controls are within established criteria.
07:210340 All preparation quality controls are within established criteria.
07:211132 All analysis quality controls are within established criteria.
07:211087 All analysis quality controls are within established criteria.
07:210295 All preparation quality controls are within established criteria.
07:210211 All preparation quality controls are within established criteria.

### Inorganic - Wet Chemistry QC

**Certification:** I certify that this data package is in compliance with NELAC standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

Approved By Kelly A. Dunnahoo, B.S.

Digitally signed by Kelly A. Dunnahoo, B.S. Title: Laboratory Director Date: 2007-11-09





November 9, 2007

### Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

Description : MW1 Project : Southland WWTP - GW - 1 Lab ID : SP 0711789-001 Customer ID : 2-14320

Sampled On : October 18, 2007-09:00 Sampled By : Not Available Received On : October 18, 2007-15:40 Matrix : Monitoring Well

#### Sample Results - Inorganic

Constituent	Result	PQL	Units	Note	Sample	Preparation	Sampl	e Analysis
Constituent	Kesuit			1.010	Method	Date/ID	Method	Date/ID
Field Test			[					
pH	6.42		units			10/18/07 09:00	4500-H B	10/18/07 09:00
Temperature	17.3		øC			10/18/07 09:00	2550B	10/18/07 09:00
Oxygen, Dissolved	.40		mg/L			10/18/07 09:00	4500-O G	10/18/07 09:00
Metals, Total P:1'5								
Boron	0.4	0.1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Calcium	98	1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Magnesium	44	1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Potassium	15	1	mg/L		200.7	11/08/07:210919	200.7	11/08/07:211554
Sodium	223	1	mg/L		200.7	11/08/07:210919	200.7	11/08/07:211554
Zinc	0.05	0.02	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Wet Chemistry VFS:1	1							
Ammonia-N	0.9	0.2	mg/L		4500NH3H	10/22/07:210295	4500NH3G	10/24/07:211087
Alkalinity (as CaCO3)-	200	10	-		2220.0	10/00/07 0100/7	2320B	10/00/07 010835
Soluble	200	10	mg/L		2320B	10/20/07:210267	2320B	10/20/07:210835
Bicarbonate	240	10	mg/L		2320B	10/20/07:210267	2320B	10/20/07:210835
Carbonate	ND	10	mg/L		2320B	10/20/07:210267	2320B	10/20/07:210835
Hydroxide	ND	10	mg/L		2320B	10/20/07:210267	2320B	10/20/07:210835
Bromide	0.28	0.03	mg/L		300.0	10/18/07:210253	300.0	10/19/07:210820
Chloride	236	5	mg/L		300.0	10/19/07:210255	300.0	10/19/07:210949
Conductivity	1820	1	umhos/cm		2510B	10/19/07:210219	2510B	10/19/07:210783
MBAS	ND	0.1	mg/L		5540C	10/18/07:210211	5540C	10/18/07:210775
Nitrate	114	2	mg/L		300.0	10/19/07:210255	300.0	10/19/07:210949
Nitrate + Nitrite as N	25.7	0.5	mg/L		300.0	10/19/07:210255	300.0	10/19/07:210949
Nitrite	ND	0.3	mg/L		300.0	10/18/07:210253	300.0	10/19/07:210820
Nitrogen, Total as	27.3	0.5			351.1	10/23/07:210340	4500NH3G	10/29/07:211132
Nitrogen	21.5	0.5	mg/L		331.1	10/25/07:210340	4500NH5G	10/29/07:211132
Nitrate + Nitrite	25.7	0.5	mg/L		300.0	10/19/07:210255	300.0	10/19/07:210949
Kjeldahl Nitrogen	1.6	0.5	mg/L		351.1	10/23/07:210340	4500NH3G	10/29/07:211132
Nitrogen, Total Kjeldahl	1.6	0.5	mg/L		351.1	10/23/07:210340	4500NH3G	10/29/07:211132
Phosphate	1.6	0.5	mg/L		300.0	10/18/07:210253	300.0	10/19/07:210820
Solids, Total Dissolved	1210	20	-		2540.05	10/10/07-210220	25400	10/20/07 210027
(TDS)	1210	20	mg/L		2540 C,E	10/19/07:210220	2540C	10/20/07:210827
Sulfate	270	10	mg/L		300.0	10/19/07:210255	300.0	10/19/07:210949
Turbidity	0.8	0.2	NTU		2130B	10/18/07:210246	2130B	10/18/07:210805

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (), (P) Plastic, (VFS) VOA w/Filters+Syringes Preservatives: H2SO4 pH < 2, HNO3 pH < 2

Corporate Offices & Laboratory P.O. Box 272 / 853 Corporation Street Santa Paula, CA 93061-0272 TEL: 805/392-2000 FAX: 805/525-4172 CA NELAP Certification No. 01110CA 
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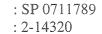




#### November 9, 2007

Nipomo Community Services District

Lab ID	
Customer	



### **Quality Control - Inorganic**

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	200.7	10/26/2007:211090	CCV	ppm	5.000	101 %	90-110	
			CCB	ppm		-0.006	0.10	
			CCV	ppm	5.000	106 %	90-110	
	<u></u>		CCB	ppm	ļ	-0.016	0.10	
	3010	10/24/2007:210389	Blank	mg/L		ND	< 0.1	
		1	LCS	mg/L	4.000	92.2 %	85-115	
			MS	mg/L	4.000	95.1 %	75-125	
			MSD	mg/L	4.000	93.1 %	75-125	
			MSRPD	mg/L	0.8000	1.9%	≤20.0	
			PDS	mg/L	4.000	120 %	75-125	
Calcium	200.7	10/26/2007:211090	CCV	ppm	25.00	100 %	90-110	
			CCB	ppm		0.008	1.0	
			CCV	ppm	25.00	102 %	90-110	
			ССВ	ppm	}	0.01	1.0	
	3010	10/24/2007:210389	Blank	mg/L		ND	<1	
			LCS	mg/L	12.50	92.3 %	85-115	
			MS	mg/L	12.50	104 %	75-125	
			MSD	mg/L	12.50	88.4 %	75-125	
		1	MSRPD	mg/L	0.8000	3.3%	≤20.0	
			PDS	mg/L	12.50	-183 %	75-125	Р
Magnesium	200.7	10/26/2007:211090	CCV	ppm	25.00	96.7 %	90-110	
-			CCB	ppm		0.009	1.0	
			CCV	ppm	25.00	99.3 %	90-110	
			CCB	ppm		0.009	1.0	
	3010	10/24/2007:210389	Blank	mg/L	T	ND	<1	
			LCS	mg/L	12.50	92.4 %	85-115	
			MS	mg/L	12.50	104 %	75-125	
			MSD	mg/L	12.50	89.7 %	75-125	
			MSRPD	mg/L	0.8000	3.6%	≤20.0	
			PDS	mg/L	12.50	-156 %	75-125	Р
Potassium	200.7	11/08/2007:210919	MS	mg/L	12.50	127 %	<1/4	
, otaootani		11100.000.000	MSD	mg/L	12.50	123 %	75-125	
			MSRPD	mg/L	800.0	0.5%	≤20.0	
	200.7	11/08/2007:211554	CCV	ppm	25.00	102 %	90-110	
	200.7	11100/2007.211001	CCB	ppm	25.00	-0.03	1.0	
			CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		-0.01	1.0	
Sodium	200.7	11/08/2007:210919	MS	mg/L	12.50	-1360 %	<1/4	
	200.7		MSD	mg/L	12.50	-1390 %	<1/4 <1/4	
			MSRPD	mg/L	800.0	0.07%	≤20.0	
	200.7	11/08/2007:211554	CCV	ppm	25.00	98.7 %	90-110	
	200.7	**************************************	CCB	ppm	23.00	0.06	1.0	
			CCV	ppm	25.00	98.0 %	90-110	
			CCB	ppm	20.00	0.19	1.0	
Zinc	200.7	10/26/2007:211090	CCV	ppm ppm	1.000	96.9 %	90-110	
2.00	200.7	1012012001.211070	CCB	ppm	1,000	0.0004	0.02	
			CCV	ppm	1.000	97.2 %	90-110	
			CCB	ppm	1.000	-0.0007	0.02	
	3010	10/24/2007:210389	Blank	mg/L	<u> </u>	ND	<0.02	
	3010	1012712001.210309	LCS	mg/L	2.000	92.6 %	<0.02 85-115	
			MS	mg/L mg/L	2.000	92.0 %	75-115	
			MS MSD		2.000	90.0 %	75-125	
			MSD MSRPD	mg/L ma/l	0.8000	92.1%		
			PDS	mg/L mg/L	2.000	4.1%	≤20.0 75-125	
			ru3	1112/1	1 2.000	1 114 70	1.7-1/.7	1

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 FAX: 530/343-3807

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### November 9, 2007 **Nipomo Community Services District**

Lab ID Customer : SP 0711789 : 2-14320

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Alkalinity (as CaCO3)	2320B	10/20/2007:210267	Dup	mg/L		1.1%	3.42	
	2320B	10/20/2007:210835	CCV	mg/l	234.9	103 %	90-110	
Ammonia Nitrogen	4500NH3G	10/24/2007:211087	ICB	mg/l mg/l	234.9	<u>103 %</u> -0.011	<u>90-110</u> 0.2	
Anniona Willogen	4500141150	10/24/2007.211007	ICV	mg/l	2.000	102 %	90-110	
			CCB	mg/l		-0.004	0.2	
			CCV	mg/l	2.000	101 %	90-110	
	4500NH3G	10/29/2007:211132	ССВ	mg/l		0.000	0.2	
			CCV CCB	mg/l	2.000	102 % -0.031	90-110 0.2	
			CCV	mg/l mg/l	2.000	101 %	90-110	
	4500NH3H	10/22/2007:210295	Blank	mg/L	2.000	ND	<0.2	
			LCS	mg/L	2.000	80.0 %	63-116	
			MS	mg/L	2.000	91.5 %	17-127	
			MSD	mg/L	2.000	83.4 %	17-127	
		10/20/2007 0100/7	MSRPD	mg/L	2.000	5.9%	≤80.2	
BicarbonateBromide	2320B 300.0	10/20/2007:210267 10/18/2007:210253	Dup LCS	mg/l mg/L	5.000	1.1% 105 %	4.78 90-110	
Bromide	500.0	10/18/2007:210255	MS	mg/L mg/L	100.0	103 %	90-110	
			MSD	mg/L	100.0	103 %	90-121	
			MSRPD	mg/L	100.0	0.06%	≤1.61	
	300.0	10/19/2007:210820	CCB	ppb		0.0	30	
			CCV	ppb	5000	105 %	90-110	
	[		CCB	ppb		0.0	30	
<u> </u>	2220D	10/20/2007 21/22/7	CCV	ppb	5000	104 %	90-110	
Carbonate	2320B 300.0	10/20/2007:210267 10/19/2007:210255	Dup	mg/l	25.00	0.0 105 %	10 90-110	
Chloride	500.0	10/19/2007:210255	LCS MS	mg/L mg/L	25.00 500.0	105 %	90-110 86-128	
			MSD	mg/L mg/L	500.0	114 %	86-128	
			MSRPD	mg/L	100.0	0.1%	≤23.0	
	300.0	10/19/2007:210949	CCB	ppm		0.006	1	
			CCV	ppm	25.00	100 %	90-110	
			CCB	ppm	05.00	0.007	1	
Contraction in the second seco	2510B	10/19/2007:210783	CCV ICB	ppm	25.00	102 % 0.1	90-110 1	
Conductivity	23100	10/19/2007:210785	ICB	umhos/cm umhos/cm	998.0	101 %	95-105	
			CCV	umhos/cm	998.0	101 %	95-105	
E. C.	2510B	10/19/2007:210219	Blank	umhos/cm		ND	<1	
			Dup	umhos/cm		0.2%	0.372	
Hydroxide	2320B	10/20/2007:210267	Dup	mg/l		0.0	10	
MBAS	5540C	10/18/2007:210211	MS	mg/L	1.000	100 %	90-110	
			MSD	mg/L	1.000	100 %	90-110	
	5540C	10/18/2007:210775	MSRPD CCB	mg/L mg/L	1.000	0.0	<u>≤0.1</u> 0.1	
	3340C	10/16/2007.210775	CCV	mg/L mg/L	1.000	100 %	99-101	
Nitrate	300.0	10/19/2007:210255	LCS	mg/L	20.00	106 %	90-110	
11111110	20510	10,19,10007.0010000	MS	mg/L	400.0	112 %	88-124	
			MSD	mg/L	400.0	113 %	88-124	
			MSRPD	mg/L	100.0	0.3%	≤29.1	
	300.0	10/19/2007:210949	CCB	ppm	20.00	0.008	0.4	
			CCV CCB	ppm	20.00	101 % 0.013	90-110 0.4	
			CCV	ppm ppm	20.00	103 %	0.4 90-110	
Nitrite	300.0	10/18/2007:210253	LCS	mg/L	15.00	103 %	90-110	
······································			MS	mg/L	300.0	106 %	91-121	
			MSD	mg/L	300.0	105 %	91-121	
			MSRPD	mg/L	100.0	0.1%	≤23.8	
	300.0	10/19/2007:210820	CCB	ppm	15.00	0.013	0.3	
			CCV	ppm	15.00	102 %	90-110	

### **Quality Control - Inorganic**

### November 9, 2007 Nipomo Community Services District

### Lab ID Customer

: SP 0711789 : 2-14320

Constituent		Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note		
Wet Chem		1									
Nitrite		300.0	10/19/2007:210820	ССВ	anm		0.011	0.3			
Nume		500.0	10/19/2007.210820	CCV	ppm	15.00	103 %	90-110			
NI'L T-L-I	177-14-11	351.1	10/23/2007:210340	Blank	ppm	15.00	ND	<0.5			
Nitrogen, Total	Kjeldani	351.1	10/25/2007:210340		mg/L	2,000					
				LCS	mg/L	2.000	94.0 %	69-125			
				MS	mg/L	2.000	150 %	<1/4			
				MSD	mg/L	2.000	-37.5 %	<1/4			
			10/10/2005 010050	MSRPD	mg/L	2.000	15.1%	≤25.7			
Phosphate		300.0	10/18/2007:210253	LCS	mg/L	15.00	106 %	90-110			
				MS	mg/L	300.0	109 %	85-126			
				MSD	mg/L	300.0	108 %	85-126			
				MSRPD	mg/L	100.0	0.3%	≤41.1			
		300.0	10/19/2007:210820	CCB	ppm		0.000	0.5			
				CCV	ppm	15.00	108 %	90-110			
				CCB	ppm		0.000	0.5			
				CCV	ppm	15.00	109 %	90-110			
Solids, Total D	issovled	2540 C,E	10/19/2007:210220	Blank	mg/L		ND	<20			
bolids, rotar D	1550 1100	1 2010 0,2	10/19/2001/210220	LCS	mg/L	1000	98.7 %	90-110			
				LCS	mg/L	1000	98.5 %	90-110			
				Dup	mg/L	1000	2.4%	10.0			
Sulfate		300.0	10/19/2007:210255	LCS	mg/L mg/L	50.00	105 %	90-110			
Suitate		500.0	10/19/2007:210255	1	0	1		E			
				MS	mg/L	1000	113 %	78-137			
			1	MSD	mg/L	1000	114 %	78-137			
				MSRPD	mg/L	100.0	0.3%	≤12.3			
		300.0	10/19/2007:210949	CCB	ppm		0.88	2			
				CCV	ppm	50.00	99.7 %	90-110			
				CCB	ppm		0.87	2			
				CCV	ppm	50.00	102 %	90-110			
Turbidity		2130B	10/18/2007:210246	Dup	NTU		0.0030	0.2			
		2130B	10/18/2007:210805	CCB	NTU	1	0.055	0.2			
				CCV	NTU	2.000	93.0 %	90-110			
				ССВ	NTU		0.050	0.2			
				CCV	NTU	2.000	93.0 %	90-110			
Definition		1	<u>I.</u>			1 21000					
ICV	Initial Calibration	on Verification	Analyzed to verify the	inctrument	calibration is	within criter	in				
ICB			yzed to verify the instru				14.				
CCV			tion - Analyzed to veri				onitonio				
			Analyzed to verify the				cinena.				
CCB											
Blank			ify that the preparation								
LCS			mple - Prepared to veri								
MS			le is spiked with a know	wn amount (	or analyte. Th	ne recoveries	are an indicat	ion of how th	at sample		
	matrix affects and		1000 I I I I				-				
MSD			MSD pair - A random s			with a know	n amount of a	nalyted. The			
			w that sample matrix a								
		aplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an									
Lup	indication of precision for the preparation and analysis.										
MSRPD	: MS/MSD Relati	ve Percent Diff	erence (RPD) - The MS	S relative pe	rcent differen	ce is an indic	cation of precis	sion for the p	reparation		
NISKED	and analysis.										
ND	: Non-detect - Re	sult was below 1	he DQO listed for the a	analyte.							
			ke concentration was le		forth of the sa	ample concer	ntration				
<1/4											

## **Quality Control - Inorganic**

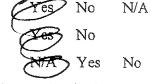
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## Santa Paula - Condition Upon Receipt (Attach to COC)

#### Sample Receipt:

- Number of ice chests/packages received: Note as OTC if received over the counter unpackaged.
- 2. Were samples received in a chilled condition? Temps: <u>Marceptable</u> is above freezing to 6° C. Also acceptable is received on ice (ROI) for the same day of sampling or received at room temperature (RRT) if sampled within one hour of receipt. Client contact for temperature failures must be documented below. If many packages are received at one time check for tests/H.T.'s/rushes/Bacti's to prioritize further review. Please notify Microbiology personnel immediately of bacti samples received.
- 3. Do the number of bottles received agree with the COC?
- 4. Were samples received intact? (i.e. no broken bottles, leaks etc.)
- 5. Were sample custody seals intact?



No

No

No

Yes

1l

N/A

No

FGL

Sign and date the COC, obtain LIMS sample numbers, select methods/tests and print labels.

### Sample Verification, Labeling and Distribution:

- 1. Were all requested analyses understood and acceptable?
- 2. Did bottle labels correspond with the client's ID's?
- 3. Were all bottles requiring sample preservation properly preserved?
- 4. Were all analyses within holding times at time of receipt?
- 5. Have rush or project due dates been checked and accepted?

Attach labels to the containers and include a copy of the COC for lab delivery.

Sample Receipt, Login and Verification completed by (initials):

#### **Discrepancy Documentation:**

Any items above which are "No	' or do not meet specifications	(i.e. temps) must be resolved.
-------------------------------	---------------------------------	--------------------------------

 1.
 Person Contacted:
 Phone Number:

 Initiated By:
 Date:

 Problem:
 Date:

Resolution:

Resolution:

2.	Person Contacted:	Phone Number:
	Initiated By:	Date:
	Problem:	

(2-14320) Nipomo Community Services District SP 0711789 IV-10/18/2007-15:41:53





November 9, 2007

#### Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444 Lab ID Customer

: SP 0711942 : 2-14320

### Laboratory Report

**Introduction:** This report package contains total of 6 pages divided into 3 sections:

Case Narrative	(2 Pages)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

### **Case Narrative**

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
MW3	10/23/2007	10/22/2007	SP 0711942-001	MW

**Sampling and Receipt Information:** The sample was received, prepared and analyzed within the method specified holding times. All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

#### **Inorganic - Metals QC**

200.7	11/08/2007:210919 All preparation quality controls are within established criteria.
	11/08/2007:211554 All analysis quality controls are within established criteria.
	10/26/2007:211090 All analysis quality controls are within established criteria.
3010	10/24/2007:210389 All preparation quality controls are within established criteria.

### **Inorganic - Wet Chemistry QC**

2130B	10/23/2007:210923	All analysis quality controls are within established criteria.
	10/23/2007:210355	All preparation quality controls are within established criteria.

#### Lab ID : SP 0711942 Customer : 2-14320

2320B	10/25/2007:210986 All analysis quality controls are within established criteria.
2320B	10/25/2007:210429 All preparation quality controls are within established criteria.
2510B	10/25/2007:210416 All preparation quality controls are within established criteria.
	10/25/2007:210972 All analysis quality controls are within established criteria.
2540 C,E	10/25/2007:210417 All preparation quality controls are within established criteria.
300.0	<ul><li>10/24/2007:210555 All preparation quality controls are within established criteria, except:</li><li>The following note applies to Bromide:</li><li>435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.</li></ul>
	10/24/2007:211123 All analysis quality controls are within established criteria.
351.1	<ul><li>10/28/2007:210507 All preparation quality controls are within established criteria, except:</li><li>The following note applies to Nitrogen, Total Kjeldahl:</li><li>435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.</li></ul>
4500NH3G	11/05/2007:211449 All analysis quality controls are within established criteria.
	11/05/2007:211398 All analysis quality controls are within established criteria.
4500NH3H	10/29/2007:210532 All preparation quality controls are within established criteria.
5540C	10/23/2007:210351 All preparation quality controls are within established criteria.
	10/23/2007:210924 All analysis quality controls are within established criteria.

### Inorganic - Wet Chemistry QC

**Certification:** I certify that this data package is in compliance with NELAC standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

Approved By Kelly A. Dunnahoo, B.S.

Digitally signed by Kelly A. Dunnahoo, B.S. Title: Laboratory Director Date: 2007-11-09





November 9, 2007

### Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

Description : MW3 Project : Southland WWTP - GW - 2 Lab ID : SP 0711942-001 Customer ID : 2-14320

Sampled On : October 23, 2007-09:50 Sampled By : Not Available Received On : October 22, 2007-15:30 Matrix : Monitoring Well

#### Sample Results - Inorganic

Constituent	Result	PQL	Units	Note	Sample	Preparation	Sampl	le Analysis
Constituent	Kesuit	FQL	Units	Note	Method	Date/ID	Method	Date/ID
Field Test			1					
pH	6.46		units			10/23/07 09:50	4500-H B	10/23/07 09:50
Temperature	16.7		øC			10/23/07 09:50	2550B	10/23/07 09:50
Oxygen, Dissolved	4.7		mg/L			10/23/07 09:50	4500-O G	10/23/07 09:50
Metals, Total P:1'5	]				ĺ			
Boron	0.3	0.1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Calcium	87	1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Magnesium	41	1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Potassium	3	1	mg/L		200.7	11/08/07:210919	200.7	11/08/07:211554
Sodium	215	1	mg/L		200.7	11/08/07:210919	200.7	11/08/07:211554
Zinc	0.21	0.02	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Wet Chemistry Pil			1				1	
Ammonia-N	ND	0.2	mg/L		4500NH3H	10/29/07:210532	4500NH3G	11/05/07:211449
Alkalinity (as CaCO3)-	200	10	-		22202	10/05/05 010 (00	00000	10105105 010001
Soluble	200	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Bicarbonate	240	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Carbonate	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Hydroxide	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Bromide	ND	0.03	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Chloride	218	5	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Conductivity	1680	1	umhos/cm		2510B	10/25/07:210416	2510B	10/25/07:210972
MBAS	ND	0.1	mg/L		5540C	10/23/07:210351	5540C	10/23/07:210924
Nitrate	76.7	0.4	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrate + Nitrite as N	17.3	0.1	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrite	ND	0.3	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrogen, Total as	17.3	0.5			351.1	10/28/07:210507	4500NH3G	11/05/07 211209
Nitrogen	17.5	0.5	mg/L		331.1	10/28/07:210507	4500NH30	11/05/07:211398
Nitrate + Nitrite	17.3	0.1	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Kjeldahl Nitrogen	ND	0.5	mg/L		351.1	10/28/07:210507	4500NH3G	11/05/07:211398
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		351.1	10/28/07:210507	4500NH3G	11/05/07:211398
Phosphate	ND	0.5	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Solids, Total Dissolved	1090	20	-		2540 C.E	10/25/07-210/417	25400	10/06/07 011010
(TDS)	1090	20	mg/L		2340 C,E	10/25/07:210417	2540C	10/26/07:211019
Sulfate	260	10	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Turbidity	1.0	0.2	NTU		2130B	10/23/07:210355	2130B	10/23/07:210923

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (), (P) Plastic, (VFS) VOA w/Filters+Syringes Preservatives: H2SO4 pH < 2, HNO3 pH < 2

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 FAX: 530/343-3807

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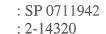
Field Office Visalia, California TEL: 559/734-9473 Mobile: 559/737-2399 FAX: 559/734-8435



### November 9, 2007

Nipomo Community Services District

Lab ID Customer



### **Quality Control - Inorganic**

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Metals								-
Boron	200.7	10/26/2007:211090	CCV	ppm	5.000	101 %	90-110	
			CCB	ppm		-0.006	0.10	
			CCV	ppm	5.000	106 %	90-110	
			CCB	ppm		-0.016	0.10	
	3010	10/24/2007:210389	Blank	mg/L		ND	<0.1	
			LCS	mg/L	4.000	92.2 %	85-115	
			MS	mg/L	4.000	95.1 %	75-125	
			MSD	mg/L	4.000	93.1 %	75-125	
			MSRPD	mg/L	0.8000	1.9%	≤20.0	
			PDS	mg/L	4.000	120 %	75-125	
Calcium	200.7	10/26/2007:211090	CCV	ppm	25.00	100 %	90-110	
			CCB	ppm		0.008	1.0	
			CCV	ppm	25.00	102 %	90-110	
			CCB	ppm		0.01	1.0	
	3010	10/24/2007:210389	Blank	mg/L		ND	<1	
			LCS	mg/L	12.50	92.3 %	85-115	
		1	MS	mg/L	12.50	104 %	75-125	
			MSD	mg/L	12.50	88.4 %	75-125	
			MSRPD	mg/L	0.8000	3.3%	≤20.0	
			PDS	mg/L	12.50	-183 %	75-125	Р
Magnesium	200.7	10/26/2007:211090	CCV	ppm	25.00	96.7 %	90-110	
			CCB	ppm		0.009	1.0	
			CCV	ppm	25.00	99.3 %	90-110	
			CCB	ppm		0.009	1.0	
	3010	10/24/2007:210389	Blank	mg/L		ND	<1	
			LCS	mg/L	12.50	92.4 %	85-115	
			MS	mg/L	12.50	104 %	75-125	
			MSD	mg/L	12.50	89.7 %	75-125	
			MSRPD	mg/L	0.8000	3.6%	≤20.0	
			PDS	mg/L	12.50	-156 %	75-125	Р
Potassium	200.7	11/08/2007:210919	MS	mg/L	12.50	127 %	<1/4	
			MSD	mg/L	12.50	123 %	75-125	
			MSRPD	mg/L	800.0	0.5%	≤20.0	
	200.7	11/08/2007:211554	CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		-0.01	1.0	
			CCV	ppm	25.00	103 %	90-110	
			CCB	ppm	1	-0.03	1.0	
Sodium	200.7	11/08/2007:210919	MS	mg/L	12.50	-1360 %	<1/4	
			MSD	mg/L	12.50	-1390 %	<1⁄4	
			MSRPD	mg/L	800.0	0.07%	≤20.0	
	200.7	11/08/2007:211554	CCV	ppm	25.00	98.0 %	90-110	
			CCB	ppm		0.19	1.0	
			CCV	ppm	25.00	100 %	90-110	
			CCB	ppm		0.11	1.0	
Zinc	200.7	10/26/2007:211090	CCV	ppm	1.000	96.9 %	90-110	
			CCB	ppm		0.0004	0.02	
			CCV	ppm	1.000	97.2 %	90-110	
			CCB	ppm		-0.0007	0.02	
	3010	10/24/2007:210389	Blank	mg/L		ND	< 0.02	
			LCS	mg/L	2.000	92.6 %	85-115	
			MS	mg/L	2.000	96.0 %	75-125	
			MSD	mg/L	2.000	92.1 %	75-125	
			MSRPD	mg/L	0.8000	4.1%	≤20.0	
					8			
			PDS	mg/L	2.000	114 %	75-125	
Wet Chem			PDS	mg/L	2.000	114 %	75-125	

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### November 9, 2007 Nipomo Community Services District

Lab ID Customer : SP 0711942 : 2-14320

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Alkalinity (as CaCO3)	2320B	10/25/2007:210429	Dup	mg/L		0.6%	3.42	
	2320B	10/25/2007:210986	CCV	mg/l	234.9	102 %	90-110	
			CCV	mg/l	234.9	101 %	90-110	
Ammonia Nitrogen	4500NH3G	11/05/2007:211398	CCB	mg/l	2,000	0.039	0.2	
			CCV CCB	mg/l	2.000	102 % 0.044	90-110 0.2	
			CCV	mg/l mg/l	2.000	99.8 %	90-110	
	4500NH3G	11/05/2007:211449	CCB	mg/l	2.000	0.035	0.2	
	450011150	11105/2001,211449	CCV	mg/l	2.000	106 %	90-110	
			ССВ	mg/l	2.000	0.016	0.2	
			CCV	mg/l	2.000	106 %	90-110	
	4500NH3H	10/29/2007:210532	Blank	mg/L		ND	< 0.2	
			LCS	mg/L	2.000	80.6 %	63-116	-
			MS	mg/L	2.000	90.2 %	17-127	
			MSD	mg/L	2.000	81.2 %	17-127	
			MSRPD	mg/L	2.000	9.4%	≤80.2	
Bicarbonate	2320B	10/25/2007:210429	Dup	mg/l		0.6%	4.78	
Bromide	300.0	10/24/2007:210555	LCS	mg/L	5.000	100 %	90-110	
			MS	mg/L	100.0	109 %	90-121	
			MSD	mg/L	100.0	101 %	90-121	
			MSRPD	mg/L	100.0	7.9%	≤1.61	435
	300.0	10/24/2007:211123	CCB	ppb		0.0	30	
			CCV	ppb	5000	110 %	90-110	
			CCB	ppb		0.0	30	
~		10/05/0007 010/00	CCV	ppb	5000	107 %	90-110	
Carbonate	2320B	10/25/2007:210429	Dup	mg/l		0.0	10	
Chloride	300.0	10/24/2007:210555	LCS	mg/L	25.00	96.9 %	90-110	
			MS	mg/L	500.0	111 %	86-128	
			MSD	mg/L	500.0	104 %	86-128	
	300.0	10/24/2007;211123	MSRPD	mg/L	100.0	4.9% 0.05	≤23.0	
	500.0	10/24/2007:211125	CCB CCV	ppm	25.00	107 %	1 90-110	
			ССВ	ppm ppm	23.00	0.05	90-110	
			CCV	ppm ppm	25.00	107 %	90-110	
Conductivity	2510B	10/25/2007:210972	ICB	umhos/cm	23.00	0.1	1	
Conductivity	25100	10/25/2007.210972	ICV	umhos/cm	998.0	99.1 %	95-105	
			CCV	umhos/cm	998.0	99.2 %	95-105	
E. C.	2510B	10/25/2007:210416	Blank	umhos/cm		ND	<1	
			Dup	umhos/cm		0.1%	0.372	
Hydroxide	2320B	10/25/2007:210429	Dup	mg/l		0.0	10	
MBAS	5540C	10/23/2007:210351	MS	mg/L	1.000	100 %	90-110	
			MSD	mg/L	1.000	100 %	90-110	
			MSRPD	mg/L	1.000	0.0	≤0.1	
	5540C	10/23/2007:210924	ССВ	mg/L		0.000	0.1	
			CCV	mg/L	1.000	100 %	99-101	
Nitrate	300.0	10/24/2007:210555	LCS	mg/L	20.00	98.5 %	90-110	
			MS	mg/L	400.0	112 %	88-124	
			MSD	mg/L	400.0	104 %	88-124	
			MSRPD	mg/L	100.0	6.6%	≤29.1	
	300.0	10/24/2007:211123	CCB	ppm		0.029	0.4	
			CCV	ppm	20.00	108 %	90-110	
			CCB	ppm	20.00	0.010	0.4	
N 71 - 1	200.0	10/04/0005 010555	CCV	ppm	20.00	108 %	90-110	
Nitrite	300.0	10/24/2007:210555	LCS	mg/L	15.00	96.0 %	90-110	
			MS MSD	mg/L mg/L	300.0 300.0	111 %	91-121 91-121	
			NI-512	1112/L	JUU.U	102 %	71-121	
					100.0	8 00%	<220	
	300.0	10/24/2007:211123	MSRPD CCB	mg/L ppm	100.0	8.0% 0.014	<u>≤23.8</u> 0.3	

### **Quality Control - Inorganic**

## November 9, 2007 Nipomo Community Services District

Lab ID Customer

#### : SP 0711942 : 2-14320

Constituent		Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Wet Chem									
Nitrite		300.0	10/24/2007:211123	CCB	ppm		0.014	0.3	
rance		000.0	10/2 / 2007 211120	CCV	ppm	15.00	105 %	90-110	
Nitrogen, Total	Kieldahl	351.1	10/28/2007:210507	Blank	mg/L	10.000	ND	< 0.5	
ranogen, rota	rijeraum	0.51.1	10/20/2007.210507	LCS	mg/L	2.000	98.2 %	69-125	
				MS	mg/L	2.000	5.6 %	25-149	435
				MSD	mg/L	2.000	11.6 %	25-149	435
				MSRPD	mg/L	2.000	0.12	≤0.5	
Phosphate		300.0	10/24/2007:210555	LCS	mg/L	15.00	99.2 %	90-110	
Thospitato			10/2 / 2007/210000	MS	mg/L	300.0	110 %	85-126	
				MSD	mg/L	300.0	101 %	85-126	
				MSRPD	mg/L	100.0	8.8%	≤41.1	
		300.0	10/24/2007:211123	CCB	ppm		0.000	0.5	
		500.0	10/2/12007.211125	CCV	ppm	15.00	108 %	90-110	
				CCB	ppm	15.00	0.000	0.5	
				CCV	ppm	15.00	108 %	90-110	
Solids, Total Dis	sovled	2540 C,E	10/25/2007:210417	Blank	mg/L		ND	<20	
bonds, rotar Die	301100	2010 0,2	10/20/2007/210/11/	LCS	mg/L	1000	99.1 %	90-110	
				LCS	mg/L	1000	101 %	90-110	
				Dup	mg/L	1 1000	0.3%	10.0	
Sulfate		300.0	10/24/2007:210555	LCS	mg/L	50.00	96.7 %	90-110	
Juliate		500.0	10/24/2007.210555	MS	mg/L	1000	114 %	78-137	
				MSD	mg/L	1000	105 %	78-137	
		Í	(	MSRPD	mg/L	100.0	6.8%	≤12.3	
		300.0	10/24/2007:211123	CCB	ppm	100.0	0.87	2	
		500.0	10/2//2007.211125	CCV	ppm	50.00	106 %	90-110	
			1	CCB	ppm	50.00	0.86	2	
				CCV	ppm	50.00	106 %	90-110	
Turbidity		2130B	10/23/2007:210355	Dup	NTU		0.0010	0.2	
rabidity		2130B	10/23/2007:210923	CCB	NTU		0.059	0.2	
		21500	10/25/2007.210925	CCV	NTU	2.000	91.5 %	90-110	
				CCB	NTU	2.000	0.060	0.2	
				CCV	NTU	2.000	91.5 %	90-110	
D.C. W					MIU	2.000	91.5 70	90-110	
Definition ICV	Initial Calibratio	n Varifiantian	Analyzed to verify the	instrument	alibration in	within aritar			
ICB			vzed to verify the instru				12.		
CCV			tion - Analyzed to veri				aritaria		
CCB			Analyzed to verify the				cintena.		
Blank			ify that the preparation				tion to the com	nlas	
LCS			mple - Prepared to veri						
			ble is spiked with a know						at comole
MS	matrix affects and		ie is spined with a Kilo	i amount (	<i></i>	10 1000001103	ac an intered	ion of now li	iai sampie
			MSD pair - A random s	ample dupli	cate is sniked	with a know	m amount of a	nalyted The	
MSD			w that sample matrix a			mui a MiOW	in amount of d	narywa. ille	
			ample with each batch			in dunlicate	The relative n	ercent differ	ence is an
Dup			paration and analysis.	proputor c	and under y 2001	aapnouto.	ine relative p	ereen unter	CARCE 15 (11)
			erence (RPD) - The MS	s relative ner	rcent differen	ce is an india	cation of precis	ion for the n	reparation
MSRPD	and analysis.			outre per	- one annor on	10 611 111010	- anon or process	non tor the p	paration
ND		sult was below t	he DQO listed for the a	malvte					
<1/4			ke concentration was le		forth of the sa	imple concer	utration		
			the criteria against wh						
DOO									
DQO Explaination	. Data Quanty Ob	<i>jeetive</i> 1113 15	the enterna against with	ion are quan	ty control dat	u is compare	<i></i>		

## **Quality Control - Inorganic**

FAX:			Remarks:	Address: Nipe Address: Nipe Phone: (805 Contact Persos Project Name: Purchase Orde Quote Number Sampler(s) Sampler(s) Lab Number: Lab Number: Samp I MW3	
Corporate Offices & Laboratory P.O. Box 272 / 853 Corporation Street Santa Paula, CA 93061-0272 TEL: (805) 392-2000 FAX: (805) 525-4172			5, 5,	Address:     Nipomo Community Services District       Address:     Nipomo CSD       Address:     Nipomo, CA 93444       Phone:     (805)929-1341     Fax:       Contact Person:     Dan Migliazzo       Project Name:     Southland     WWTP - GW -       Purchase Order Number:     Pickup Fee:       Quote Number:     Pickup Fee:       Compositor Semp Date:     /       Num     Location Description       J     MW3       J     MW3       J     MW3	ENVIR
		•2	<b>7</b>	V = 2 V = 2	ENVIRONMENTAL
		Recei	Relinquished	G Method of Sampling: Composite(C) Grab(G)	Z
T -1 16 N IA		Received By:	, juisho	Image: Second state in the se	E
500 S Blockto			4 1 B	Potable(P)         Non-Potable(NP)         Ag Water(AgW)         End           Bacti Type:         Other(O)         System(SYS)         Source(SR)         Waste(W)         End	
Office, & Laboratory 2500 Stagecoach Road Stocktor, CA 95215 TEL: (200) 942-0482 FAX (209) 942-0423		ALL C	17	Bacti Reason: Routine(ROUT) Repeat(RPT) Replace(RPL) Other(O) Special(SPL)	
Itory Road 15 182 182	¢		Date:	Field Test-Field Temp.	WWW.
		Å	Time:	→ Metals, Total-B,Ca,Mg,K,Na,Zn 250ml(P)-HNO3	Special fglinc.
		Received By:	Relinquished	Metals, Total-B,Ca.Mg,K,Na,Zn       TOT         250ml(P)-HNO3       Wet Chemistry-SO4,TDS,PO4,Total         N,NO2,NO3,MBAS,Conductivity,Cl,Br,Alk.       TOT         (CaCO3),NH3-N,Turbidity       See         Field Filter PO4       32oz(P), 40ml(VFS), 16oz(P)-H2SO4	<b>Special</b> www.fglinc.com
Office & Laboratory 563 East Lindo Avenue Choro, CA 95926 TEL: (500) 943 5818 TEL: (500) 943 3807				Field Test-Field pH PH = 15 MINUTE HOLD TIME!!	
<b>.aborato</b> Indo Aven 95926 ) 043 58 H	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Date:	Date:	Field - pH Date	E C
An CS	Party in the Constant of the Constant	Time:	Time:	Original   Field - pH Time   Field	HAIN OF (
		: Received By:	: Relinquished	Field Test-Field O2 Diss.	OF O
	o bara baran na manang taran ing kanang k	d By:	shed	32oz(P), 40mi(VFS), 16oz(P)-H2SO4     Se Reverse site       Field Test-Field pH     "pH = 15 MINUTE HOLD TIME!!       Field - pH Date     Field - pH Time       Field - pH Time     Field Test-Field O2 Diss.	HAIN OF CUSTODY Laboratory Copy (1 of 3)
	and the second second			format	ğ
Eleld Offic Visalia, Cali TEL: (559) Mobile: (559 FAX: (559)	Second and the second	Date:	Date:	ion	
Eleid Office Visatia, Catiforna TEL: (5:59) 734-9473 Mobie: (5:69) 737-2309 FAX: (5:59) 734-8455	and the second se	Time:	Time:		

Copy of document found at www.NoNewWipTax.com

	L Environmental vision Date: 10/18/07		Doc ID: F2REC005.011 Page: 1 of 1			
	Santa Paula - Condition Upon Receipt	(Attacl	1 to C	COC)		
San 1.	mple Receipt: Number of ice chests/packages received: Note as OTC if received over the counter unpackaged.		CR.	~		
2.	Were samples received in a chilled condition? Temps: Acceptable is 2° to 6° C. Also acceptable is received on ice (ROI) for the temperature (RRT) if sampled within one hour of receipt. Client contact documented below. If many packages are received at one time check for further review. Please notify Microbiology personnel immediately of base	for tempe tests/H.T	rature f .'s/rush	ailures n es/Bacti'	iust be	
3.	Do the number of bottles received agree with the COC?	<	Yes	No	N/A	
4.	Were samples received intact? (i.e. no broken bottles, leaks of	etc.) 🗧	Yes	No		
5.	Were sample custody seals intact?	$\leq$	N#A;	Yes	No	
Sigr	n and date the COC, obtain LIMS sample numbers, select meth	ods/test	s and j	print lat	oels.	
San 1.	nple Verification, Labeling and Distribution: Were all requested analyses understood and acceptable?	$\leq$	Yes	No		
2.	Did bottle labels correspond with the client's ID's?		Fes	No		
3.	Were all bottles requiring sample preservation properly press	erved?	Yes.	No	N/A	FGL
4.	VOAs checked for Headspace?		Yes	No	N/A	
5.	Were all analyses within holding times at time of receipt?	۲ ح	Xes	No		
6.	Have rush or project due dates been checked and accepted?		NA	Yes	No	
Atta	ach labels to the containers and include a copy of the COC for	lab deliv	very.			
Sam	ple Receipt, Login and Verification completed by (initials):		Ce	l		
Disc	crepancy Documentation:					
Any	v items above which are "No" or do not meet specifications (i.e					
1.	Person Contacted: Ph Initiated By: Da	one Nun te:	nber:			
	Problem:	, <b>6</b> , 201, 9				
	Resolution:					
		<b>.</b>	*			
2.	Person Contacted: Ph Initiated By: 1	one Nun Date:	nber:		an fa a ta a far an	Standards
	Problem:		*****			
	Resolution: Nip	omo Com		-14320 <mark>Y Serv</mark>	4	istric
	Resolution: Nip		munit	y Si	erv	ervices D .1942

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SJJ-10/23/2007-15:31:35





November 13, 2007

#### Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444 Lab ID : SI Customer : 2

: SP 0711941 : 2-14320

## Laboratory Report

Introduction: This report package contains total of 11 pages divided into 3 sections:

Case Narrative	(2 Pages)	: An overview of the work performed at FGL.
Sample Results	(5 pages)	: Results for each sample submitted.
Quality Control	(4 pages)	: Supporting Quality Control (QC) results.

#### **Case Narrative**

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
SW1	10/22/2007	10/22/2007	SP 0711941-001	SW
SW2	10/22/2007	10/22/2007	SP 0711941-002	SW
SW3	10/22/2007	10/22/2007	SP 0711941-003	SW
SW4	10/22/2007	10/22/2007	SP 0711941-004	SW
SW5	10/22/2007	10/22/2007	SP 0711941-005	SW

**Sampling and Receipt Information:** All samples were received, prepared and analyzed within the method specified holding times. All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

## **Inorganic - Metals QC**

200.7	<ul> <li>11/08/2007:210919 All preparation quality controls are within established criteria, except:</li> <li>The following note applies to Potassium:</li> <li>435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.</li> <li>The following note applies to Potassium:</li> <li>435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.</li> </ul>
	11/08/2007:211554 All analysis quality controls are within established criteria.
	10/26/2007:211090 All analysis quality controls are within established criteria.
3010	10/24/2007:210389 All preparation quality controls are within established criteria.

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#### Lab ID : SP 0711941 Customer : 2-14320

#### Inorganic - Wet Chemistry QC

2130B	10/23/2007:210355 All preparation quality controls are within established criteria.
	10/23/2007:210923 All analysis quality controls are within established criteria.
2320B	10/25/2007:210429 All preparation quality controls are within established criteria.
	10/25/2007:210986 All analysis quality controls are within established criteria.
2510B	10/25/2007:210416 All preparation quality controls are within established criteria.
	10/25/2007:210972 All analysis quality controls are within established criteria.
2540 C,E	10/25/2007:210417 All preparation quality controls are within established criteria.
300.0	<ul> <li>10/24/2007:210555 All preparation quality controls are within established criteria, except:</li> <li>The following note applies to Bromide:</li> <li>435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.</li> </ul>
	10/24/2007:211123 All analysis quality controls are within established criteria.
351.1	<ul> <li>11/05/2007:210770 All preparation quality controls are within established criteria, except: The following note applies to Nitrogen, Total Kjeldahl:</li> <li>435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.</li> <li>10/30/2007:210560 All preparation quality controls are within established criteria, except: The following note applies to Nitrogen, Total Kjeldahl:</li> <li>435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.</li> <li>10/28/2007:210507 All preparation quality controls are within established criteria, except:</li> <li>10/28/2007:210507 All preparation quality controls are within established criteria, except:</li> <li>The following note applies to Nitrogen, Total Kjeldahl:</li> <li>435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.</li> <li>10/28/2007:210507 All preparation quality controls are within established criteria, except:</li> <li>The following note applies to Nitrogen, Total Kjeldahl:</li> <li>435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.</li> </ul>
4500NH3G	11/09/2007:211573 All analysis quality controls are within established criteria.
	11/05/2007:211449 All analysis quality controls are within established criteria.
	11/05/2007:211398 All analysis quality controls are within established criteria.
4500NH3H	10/31/2007:210614 All preparation quality controls are within established criteria.
	10/29/2007:210532 All preparation quality controls are within established criteria.
5540C	10/23/2007:210351 All preparation quality controls are within established criteria.
	10/23/2007:210924 All analysis quality controls are within established criteria.

**Certification:** I certify that this data package is in compliance with NELAC standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

Approved By Kelly A. Dunnahoo, B.S.

Digitally signed by Kelly A. Dunnahoo, B.S. Title: Laboratory Director Date: 2007-11-13





November 13, 2007

### Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

Description : SW1 Project : Southland WWTP - SW Lab ID : SP 0711941-001 Customer ID : 2-14320

Sampled On : October 22, 2007-16:30 Sampled By : Not Available Received On : October 22, 2007-15:30 Matrix : Surface Water

#### Sample Results - Inorganic

Constituent	Decult	DOI	Linito	Note	Sample	Preparation	Sampl	e Analysis
Constituent	Result	PQL	Units	Note	Method	Date/ID	Method	Date/ID
Field Test	Ι							
pH	7.52		units			10/22/07 16:30	4500-H B	10/22/07 16:30
Temperature	15.7		øC			10/22/07 16:30	2550B	10/22/07 16:30
Oxygen, Dissolved	4.3		mg/L			10/22/07 16:30	4500-O G	10/22/07 16:30
Metals, Total P:1'5								
Boron	ND	0,1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Calcium	93	1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Magnesium	55	1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Potassium	3	1	mg/L		200,7	11/08/07:210919	200.7	11/08/07:211554
Sodium	148	1	mg/L		200.7	11/08/07:210919	200.7	11/08/07:211554
Zinc	0.02	0.02	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Wet Chemistry Pit								
Ammonia-N	ND	0.2	mg/L		4500NH3H	10/29/07:210532	4500NH3G	11/05/07:211449
Alkalinity (as CaCO3)-	380	10			222015	10/05/07 010/00	22200	10/05/08 040007
Soluble	380	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Bicarbonate	460	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Carbonate	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Hydroxide	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Bromide	0.59	0.03	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Chloride	155	5	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Conductivity	1400	1	umhos/cm		2510B	10/25/07:210416	2510B	10/25/07:210972
MBAS	ND	0.1	mg/L		5540C	10/23/07:210351	5540C	10/23/07:210924
Nitrate	18.0	0.4	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrate + Nitrite as N	4.1	0.1	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrite	ND	0.3	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrogen, Total as	4.1	0.5	_		251.1	10/20/03 2105/0	45000 11120	11/05/05 011000
Nitrogen	4.1	0.5	mg/L		351.1	10/30/07:210560	4500NH3G	11/05/07:211398
Nitrate + Nitrite	4.1	0.1	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Kjeldahl Nitrogen	ND	0.5	mg/L		351.1	10/30/07:210560	4500NH3G	11/05/07:211398
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		351,1	10/30/07:210560	4500NH3G	11/05/07:211398
Phosphate	ND	0.5	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Solids, Total Dissolved	900	20	-		2540.0.5	10/05/07 010/15	25400	10/07/07 011010
(TDS)	900	20	mg/L		2540 C,E	10/25/07:210417	2540C	10/26/07:211019
Sulfate	136	2	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Turbidity	5.5	0.2	NTU		2130B	10/23/07:210355	2130B	10/23/07:210923

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (), (P) Plastic, (VFS) VOA w/Filters+Syringes Preservatives: H2SO4 pH < 2, HNO3 pH < 2

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November 13, 2007

### Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

Description : SW2 Project : Southland WWTP - SW Lab ID : SP 0711941-002 Customer ID : 2-14320

Sampled On : October 22, 2007-11:55 Sampled By : Not Available Received On : October 22, 2007-15:30 Matrix : Surface Water

#### **Sample Results - Inorganic**

Constituent	Result	PQL	Units	Note	Sample	Preparation	Sampl	e Analysis
Constituent			Onits	Note	Method	Date/ID	Method	Date/ID
Field Test								
pH	7.53		units			10/22/07 11:55	4500-H B	10/22/07 11:55
Temperature	14.5		øC	1		10/22/07 11:55	2550B	10/22/07 11:55
Oxygen, Dissolved	4.3		mg/L			10/22/07 11:55	4500-O G	10/22/07 11:55
Metals, Total P:15			1					
Boron	ND	0.1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Calcium	80	1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Magnesium	54	1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Potassium	1	1	mg/L		200.7	11/08/07:210919	200.7	11/08/07:211554
Sodium	107	1	mg/L		200.7	11/08/07:210919	200.7	11/08/07:211554
Zinc	ND	0.02	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Wet Chemistry Pil								
Ammonia-N	ND	0.2	mg/L		4500NH3H	10/29/07:210532	4500NH3G	11/05/07:211449
Alkalinity (as CaCO3)-	220	10	-			10 0 5 0 5 0 10 10 0		
Soluble	330	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Bicarbonate	400	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Carbonate	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Hydroxide	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Bromide	0.44	0.03	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Chloride	120	5	mg/L	ĺ	300.0	10/24/07:210555	300.0	10/24/07:211123
Conductivity	1280	1	umhos/cm		2510B	10/25/07:210416	2510B	10/25/07:210972
MBAS	ND	0.1	mg/L		5540C	10/23/07:210351	5540C	10/23/07:210924
Nitrate	26.9	0.4	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrate + Nitrite as N	6.1	0.1	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrite	ND	0.3	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrogen, Total as	6.1	0.5			251.1	1000000000000000		
Nitrogen	6.1	0.5	mg/L		351.1	10/30/07:210560	4500NH3G	11/05/07:211398
Nitrate + Nitrite	6.1	0.1	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Kjeldahl Nitrogen	ND	0.5	mg/L		351,1	10/30/07:210560	4500NH3G	11/05/07:211398
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		351.1	10/30/07:210560	4500NH3G	11/05/07:211398
Phosphate	ND	0.5	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Solids, Total Dissolved	700		-			10/05/05 010/0-		
(TDS)	780	20	mg/L		2540 C,E	10/25/07:210417	2540C	10/26/07:211019
Sulfate	144	2	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Turbidity	1.9	0.2	NTU		2130B	10/23/07:210355	2130B	10/23/07:210923

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (), (P) Plastic, (VFS) VOA w/Filters+Syringes Preservatives: H2SO4 pH < 2, HNO3 pH < 2

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November 13, 2007

## Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

Description : SW3 Project : Southland WWTP - SW Lab ID : SP 0711941-003 Customer ID : 2-14320

Sampled On : October 22, 2007-12:55 Sampled By : Not Available Received On : October 22, 2007-15:30 Matrix : Surface Water

#### **Sample Results - Inorganic**

	ſ	1	T	[	Sample	Preparation	Samnl	e Analysis
Constituent	Result	PQL	Units	Note	Method	Date/ID	Method	Date/ID
					Methou	Date/ID	Methou	Date/ID
Field Test								
pH	8.31		units			10/22/07 12:55	4500-H B	10/22/07 12:55
Temperature	15.7		øC			10/22/07 12:55	2550B	10/22/07 12:55
Oxygen, Dissolved	16.0		mg/L			10/22/07 12:55	4500-O G	10/22/07 12:55
Metals, Total P:1'5								
Boron	0.2	0.1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Calcium	93	1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Magnesium	61	1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Potassium	2	1	mg/L		200.7	11/08/07:210919	200.7	11/08/07:211554
Sodium	159	1	mg/L		200.7	11/08/07:210919	200.7	11/08/07:211554
Zinc	ND	0.02	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Wet Chemistry Pil								
Ammonia-N	ND	0.2	mg/L		4500NH3H	10/29/07:210532	4500NH3G	11/05/07:211449
Alkalinity (as CaCO3)-	220							
Soluble	320	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Bicarbonate	400	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Carbonate	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Hydroxide	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Bromide	0.33	0.03	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Chloride	176	5	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Conductivity	1580	1	umhos/cm		2510B	10/25/07:210416	2510B	10/25/07:210972
MBAS	ND	0.1	mg/L		5540C	10/23/07:210351	5540C	10/23/07:210924
Nitrate	46.5	0.4	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrate + Nitrite as N	10.5	0.1	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrite	0.3	0.3	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrogen, Total as	10.5	0.5	-		251.1	1000/07-2105/0	4500NH3G	11/05/07-011008
Nitrogen	10.5	0.5	mg/L		351.1	10/30/07:210560	4500NH50	11/05/07:211398
Nitrate + Nitrite	10.5	0.1	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Kjeldahl Nitrogen	ND	0.5	mg/L		351.1	10/30/07:210560	4500NH3G	11/05/07:211398
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		351.1	10/30/07:210560	4500NH3G	11/05/07:211398
Phosphate	ND	0.5	mg/L	the procession of	300.0	10/24/07:210555	300.0	10/24/07:211123
Solids, Total Dissolved	1040		-		2540.0 5	10/25/07-210/17	25400	10/06/07-011010
(TDS)	1040	20	mg/L		2540 C,E	10/25/07:210417	2540C	10/26/07:211019
Sulfate	201	2	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Turbidity	5.0	0.2	NTU		2130B	10/23/07:210355	2130B	10/23/07:210923

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (), (P) Plastic, (VFS) VOA w/Filters+Syringes Preservatives: H2SO4 pH < 2, HNO3 pH < 2

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November 13, 2007

## Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

Description : SW4 Project : Southland WWTP - SW Lab ID : SP 0711941-004 Customer ID : 2-14320

Sampled On : October 22, 2007-14:10 Sampled By : Not Available Received On : October 22, 2007-15:30 Matrix : Surface Water

#### **Sample Results - Inorganic**

	T	Γ	T	I	Sample	Preparation	Samul	e Analysis
Constituent	Result	PQL	Units	Note	-	Date/ID	-	Date/ID
					Method	Date/ID	Method	Date/ID
Field Test								
pH	7.93		units			10/22/07 14:10	4500-H B	10/22/07 14:10
Temperature	16.3		øC			10/22/07 14:10	2550B	10/22/07 14:10
Oxygen, Dissolved	8.8		mg/L			10/22/07 14:10	4500-O G	10/22/07 14:10
Metals, Total Pil'5								
Boron	0.1	0.1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Calcium	89	1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Magnesium	57	1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Potassium	1	1	mg/L		200.7	11/08/07:210919	200.7	11/08/07:211554
Sodium	162	1	mg/L		200.7	11/08/07:210919	200.7	11/08/07:211554
Zinc	ND	0.02	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Wet Chemistry Pil								
Ammonia-N	ND	0.2	mg/L		4500NH3H	10/29/07:210532	4500NH3G	11/05/07:211449
Alkalinity (as CaCO3)-								
Soluble	330	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Bicarbonate	410	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Carbonate	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Hydroxide	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Bromide	0.33	0.03	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Chloride	185	5	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Conductivity	1600	1	umhos/cm		2510B	10/25/07:210416	2510B	10/25/07:210972
MBAS	ND	0.1	mg/L		5540C	10/23/07:210351	5540C	10/23/07:210924
Nitrate	41.2	0.4	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrate + Nitrite as N	9.3	0.1	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrite	ND	0.3	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrogen, Total as			_		251.1			41/05/05 041000
Nitrogen	9.9	0.5	mg/L		351.1	10/28/07:210507	4500NH3G	11/05/07:211398
Nitrate + Nitrite	9.3	0.1	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Kjeldahl Nitrogen	0.6	0.5	mg/L		351.1	10/28/07:210507	4500NH3G	11/05/07:211398
Nitrogen, Total Kjeldahl	0.6	0.5	mg/L	NT-0000	351.1	10/28/07:210507	4500NH3G	11/05/07:211398
Phosphate	ND	0.5	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Solids, Total Dissolved			-		2540.0.5	1005/02 010/12	25/00	10/07/07 011010
(TDS)	1030	20	mg/L		2540 C,E	10/25/07:210417	2540C	10/26/07:211019
Sulfate	205	2	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Turbidity	8.2	0.2	NTU		2130B	10/23/07:210355	2130B	10/23/07:210923

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (), (P) Plastic, (VFS) VOA w/Filters+Syringes Preservatives: H2SO4 pH < 2, HNO3 pH < 2

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November 13, 2007

#### Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

Description : SW5 Project : Southland WWTP - SW Lab ID : SP 0711941-005 Customer ID : 2-14320

Sampled On : October 22, 2007-15:10 Sampled By : Not Available Received On : October 22, 2007-15:30 Matrix : Surface Water

#### **Sample Results - Inorganic**

Constituent	Result	PQL	Units	Note	Sample	Preparation	Sample Analysis	
Constituent	Kesuit		Oints		Method	Date/ID	Method	Date/ID
Field Test								
pH	7.15		units			10/22/07 15:10	4500-H B	10/22/07 15:10
Temperature	15.6		øC			10/22/07 15:10	2550B	10/22/07 15:10
Oxygen, Dissolved	1.0		mg/L			10/22/07 15:10	4500-O G	10/22/07 15:10
Metals, Total P:1'5								
Boron	ND	0.1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Calcium	101	1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Magnesium	41	1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Potassium	2	1	mg/L	1	200.7	11/08/07:210919	200.7	11/08/07:211554
Sodium	182	1	mg/L		200.7	11/08/07:210919	200.7	11/08/07:211554
Zinc	ND	0.02	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Wet Chemistry P:1								
Ammonia-N	0.3	0.2	mg/L		4500NH3H	10/31/07:210614	4500NH3G	11/05/07:211449
Alkalinity (as CaCO3)-	250	10	тел		2320B	10/25/07:210429	22200	10/05/07-010007
Soluble	250	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Bicarbonate	310	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Carbonate	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Hydroxide	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Bromide	0.35	0.03	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Chloride	203	5	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Conductivity	1620	1	umhos/cm		2510B	10/25/07:210416	2510B	10/25/07:210972
MBAS	ND	0.1	mg/L		5540C	10/23/07:210351	5540C	10/23/07:210924
Nitrate	29.5	0.4	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrate + Nitrite as N	6.7	0.1	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrite	ND	0.3	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrogen, Total as	7.7	05			251.1	11/05/07 010720	4500314120	11/00/07 011/770
Nitrogen	1.1	0.5	mg/L		. 351.1	11/05/07:210770	4500NH3G	11/09/07:211573
Nitrate + Nitrite	6.7	0.1	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Kjeldahl Nitrogen	1.0	0.5	mg/L		351.1	11/05/07:210770	4500NH3G	11/09/07:211573
Nitrogen, Total Kjeldahl	1.0	0.5	mg/L		351.1	11/05/07:210770	4500NH3G	11/09/07:211573
Phosphate	1.9	0.5	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Solids, Total Dissolved	1110	20	-		0540.0.5	100505 010 05	07400	10/06/07 011000
(TDS)	1110	20	mg/L		2540 C,E	10/25/07:210417	2540C	10/26/07:211019
Sulfate	250	10	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Turbidity	47.7	0.2	NTU		2130B	10/23/07:210355	2130B	10/23/07:210923

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (), (P) Plastic, (VFS) VOA w/Filters+Syringes Preservatives: H2SO4 pH < 2, HNO3 pH < 2

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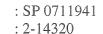




### November 13, 2007

Nipomo Community Services District

Lab ID Customer



**Quality Control - Inorganic** 

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	200.7	10/26/2007:211090	CCV	ppm	5.000	101 %	90-110	
			CCB	ppm		-0.006	0.10	
			CCV	ppm	5.000	106 %	90-110	
			ССВ	ppm		-0.016	0.10	
	3010	10/24/2007:210389	Blank	mg/L		ND	<0.1	
			LCS	mg/L	4.000	92.2 %	85-115	
			MS	mg/L	4.000	95.1 %	75-125	
			MSD	mg/L	4.000	93.1 %	75-125	
			MSRPD	mg/L	0.8000	1.9%	≤20.0	
			PDS	mg/L	4.000	120 %	75-125	
Calcium	200.7	10/26/2007:211090	CCV	ppm	25.00	100 %	90-110	
			CCB	ppm		0.008	1.0	
			CCV	ppm	25.00	102 %	90-110	
			CCB	ppm		0.01	1.0	
	3010	10/24/2007:210389	Blank	mg/L		ND	<1	
			LCS	mg/L	12.50	92.3 %	85-115	
			MS	mg/L	12.50	104 %	75-125	
			MSD	mg/L	12.50	88.4 %	75-125	
			MSRPD	mg/L	0.8000	3.3%	≤20.0	
			PDS	mg/L	12.50	-183 %	75-125	Р
Magnesium	200.7	10/26/2007:211090	CCV	ppm	25.00	96.7 %	90-110	
Ū.			CCB	ppm		0.009	1.0	
			CCV	ppm	25.00	99.3 %	90-110	
			CCB	ppm	[	0.009	1.0	
	3010	10/24/2007:210389	Blank	mg/L	[	ND	<1	
			LCS	mg/L	12.50	92.4 %	85-115	
			MS	mg/L	12.50	104 %	75-125	
			MSD	mg/L	12.50	89.7 %	75-125	
			MSRPD	mg/L	0.8000	3.6%	≤20.0	
			PDS	mg/L	12.50	-156 %	75-125	Р
Potassium	200.7	11/08/2007:210919	MS	mg/L	12.50	-1.7 %	75-125	435
			MSD	mg/L	12.50	110 %	75-125	
			MSRPD	mg/L	800.0	148%	≤20.0	435
	200.7	11/08/2007:211554	CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		-0.03	1.0	
			CCV	ppm	25.00	106 %	90-110	
			CCV	ppm	25.00	106 %	90-110	
			ССВ	ppm		0.11	1.0	
			CCB	ppm		0.11	1.0	
			CCV	ppm	25.00	102 %	90-110	
			ССВ	ppm		-0.05	1.0	
Sodium	200.7	11/08/2007:210919	MS	mg/L	12.50	-197 %	<1/4	
			MSD	mg/L	12.50	-84.3 %	<1/4	
			MSRPD	mg/L	800.0	10.8%	≤20.0	
	200.7	11/08/2007:211554	CCV	ppm	25.00	100 %	90-110	
			CCB	ppm		0.11	1.0	
			CCV	ppm	25.00	103 %	90-110	
			CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		0.18	1.0	
			CCB	ppm		0.18	1.0	
			CCV	ppm	25.00	97.6 %	90-110	
			CCB	ppm		0.009	1.0	
Zinc	200.7	10/26/2007:211090	CCV	ppm	1.000	96.9 %	90-110	
	U HUI HUI HUI HUI HUI HUI HUI HUI HUI HU		CCB	ppm		0.0004	0.02	
		[	CCV	ppm	1.000	97.2 %	90-110	

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## November 13, 2007 Nipomo Community Services District

Lab ID Customer : SP 0711941 : 2-14320

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Metals								
Zinc	200.7	10/26/2007:211090	CCB	ppm		-0.0007	0.02	
			Blank	mg/L		ND	< 0.02	
			LCS	mg/L	2.000	92.6 %	85-115	
			MS	mg/L	2.000	96.0 %	75-125	
			MSD	mg/L	2.000	92.1 %	75-125	
			MSRPD	mg/L	0.8000	4.1%	≤20.0	
			PDS	mg/L	2.000	114 %	75-125	
Wet Chem								
Alkalinity (as CaCO3)	2320B	10/25/2007:210429	Dup	mg/L		0.2%	3.42	
	2320B	10/25/2007:210986	ICV CCV	mg/l mg/l	234.9 234.9	103 % 102 %	90-110 90-110	
Ammonia Nitrogen	4500NH3G	11/05/2007:211398	ССВ	mg/l	2.54.9	0.039	0.2	
Anniona Nuogen	450014150	11105/2007.211570	CCV	mg/l	2.000	102 %	90-110	
			CCB	mg/l	2.000	0.044	0.2	
			CCV	mg/l	2.000	99.8 %	90-110	
			CCB	mg/l	2.000	0.046	0.2	
			CCV	mg/l	2.000	102 %	90-110	
			CCB	mg/l	2.000	0.047	0.2	
			CCV	mg/l	2.000	102 %	90-110	
	4500NH3G	11/05/2007:211449	ICB	mg/l		-0.012	0.2	
			ICV	mg/l	2.000	93.6 %	90-110	
			CCB	mg/l		0.046	0.2	
			CCV	mg/l	2.000	91.2 %	90-110	
			CCB	mg/l		0.035	0.2	
			CCV	mg/l	2.000	106 %	90-110	
			CCB	mg/l		0.016	0.2	
			CCV	mg/l	2.000	106 %	90-110	
	4500NH3G	11/09/2007:211573	ICB	mg/l		-0.056	0.2	
			ICV	mg/l	2.000	92.8 %	90-110	
			ССВ	mg/l		-0.036	0.2	
			CCV	mg/l	2.000	92.6 %	90-110	
	4500NH3H	10/29/2007:210532	Blank	mg/L		ND	<0.2	
			LCS	mg/L	2.000	80.6 %	63-116	
			MS	mg/L	2.000	90.2 %	17-127	
			MSD	mg/L	2.000	81.2 %	17-127	
	450000000000	10/21/2007 210/14	MSRPD	mg/L	2.000	9.4%	≤80.2	
	4500NH3H	10/31/2007:210614	Blank LCS	mg/L mg/L	2.000	ND 74.6 %	<0.2 63-116	
			MS		2.000			
			MS MSD	mg/L mg/L	2.000	91.7 % 85.9 %	17-127 17-127	
			MSRPD	mg/L mg/L	2.000	6.0%	≤80.2	
Bicarbonate	2320B	10/25/2007:210429	Dup	mg/L mg/l	2.000	0.0%	<u></u> 4.78	
Bromide	300.0	10/24/2007:210425	LCS	mg/L	5.000	100 %	90-110	
			MS	mg/L	100.0	109 %	90-121	
			MSD	mg/L	100.0	101 %	90-121	
			MSRPD	mg/L	100.0	7.9%	≤1.61	435
	300.0	10/24/2007:211123	CCB	ppb		0.0	30	
			CCV	ppb	5000	106 %	90-110	
			CCB	ppb		0.0	30	
			CCV	ppb	5000	110 %	90-110	
Carbonate	2320B	10/25/2007:210429	Dup	mg/l		0.0	10	
Chloride	300.0	10/24/2007:210555	LCS	mg/L	25.00	96.9 %	90-110	
			MS	mg/L	500.0	111 %	86-128	
			MSD	mg/L	500.0	104 %	86-128	
		40/07/000000000000000000000000000000000	MSRPD	mg/L	100.0	4.9%	≤23.0	
	300.0	10/24/2007:211123	CCB	ppm	05.00	0.05	1	
			CCV	ppm	25.00	104 %	90-110	L

## **Quality Control - Inorganic**

## November 13, 2007 Nipomo Community Services District

Lab ID Customer : SP 0711941 : 2-14320

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Wet Chem Chloride	300.0	10/24/2007:211123	CCB CCB CCV	ppm ppm ppm	25.00	0.05 0.05 107 %	1 1 90-110	
			CCV CCB CCV	ppm ppm ppm	25.00 25.00	107 % 0.05 107 %	90-110 1 90-110	
Conductivity	2510B	10/25/2007:210972	ICB ICV CCV	umhos/cm umhos/cm umhos/cm	998.0 998.0	0.1 99.1 % 99.2 %	1 95-105 95-105	
E. C.	2510B	10/25/2007:210416	Blank Dup	umhos/cm umhos/cm		ND 0.1%	<1 0.372	
Hydroxide	2320B	10/25/2007:210429	Dup	mg/l		0.0	10	
MBAS	5540C	10/23/2007:210351	MS MSD MSRPD	mg/L mg/L mg/L	1.000 1.000 1.000	100 % 100 % 0.0	90-110 90-110 ≤0.1	
	5540C	10/23/2007:210924	CCB CCV	mg/L mg/L	1.000	0.000 100 %	0.1 99-101	
Nitrate	300.0	10/24/2007:210555	LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L	20.00 400.0 400.0 100.0	98.5 % 112 % 104 % 6.6%	90-110 88-124 88-124 ≤29.1	
	300.0	10/24/2007:211123	CCB CCV CCB	ppm ppm ppm	20.00	0.000 105 % 0.029	0.4 90-110 0.4	
Nitrite	300.0	10/24/2007:210555	CCV LCS MS MSD	ppm mg/L mg/L mg/L	20.00 15.00 300.0 300.0	108 % 96.0 % 111 % 102 %	90-110 90-110 91-121 91-121	
	300.0	10/24/2007:211123	MSRPD CCB CCV CCB	mg/L ppm ppm ppm	100.0 15.00	8.0% 0.011 103 % 0.014	≤23.8 0.3 90-110 0.3	
Nitrogen, Total Kjeldahl	351.1	10/28/2007:210507	CCV Blank	ppm ppm mg/L	15.00	107 % ND	90-110 <0.5	
Nitrogen, Total Kjendam	551.1	10/28/2007.210307	LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	2.000 2.000 2.000 2.000	98.2 % 5.6 % 11.6 % 0.12	69-125 25-149 25-149 ≤0.5	435 435
	351.1	10/30/2007:210560	Blank LCS MS MSD	mg/L mg/L mg/L mg/L	2.004 2.004 2.004	ND 99.3 % -7.3 % -31.5 %	<0.5 69-125 25-149 25-149	435 435
	351.1	11/05/2007:210770	MSRPD Blank LCS MS MSD MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L	2.004 2.004 2.004 2.004 2.004	0.48 ND 110 % 1.3 % 7.9 % 0.13	$\begin{array}{c c} \leq 0.5 \\ < 0.5 \\ 69-125 \\ 25-149 \\ 25-149 \\ \leq 0.5 \end{array}$	435 435
Phosphate	300.0	10/24/2007:210555	MSRPD LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	15.00 300.0 300.0 100.0	99.2 % 110 % 101 % 8.8%	90-110 85-126 85-126 ≤41.1	5
	300.0	10/24/2007:211123	CCB CCV CCB CCV	ppm ppm ppm ppm	15.00 15.00	0.000 105 % 0.000 108 %	0.5 90-110 0.5 90-110	
Solids, Total Dissovled	2540 C,E	10/25/2007:210417	Blank LCS	mg/L mg/L	1000	ND 99.1 %	<20 90-110	

## **Quality Control - Inorganic**

## November 13, 2007 Nipomo Community Services District

Lab ID Customer

## : SP 0711941 : 2-14320

Constituent		Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Wet Chem									
Solids, Total Dis	sovled	2540 C,E	10/25/2007:210417	LCS	mg/L	1000	101 %	90-110	
		200.0	10/04/00/07 04/05/55	Dup	mg/L	<u> </u>	0.3%	10.0	
Sulfate		300.0	10/24/2007:210555	LCS	mg/L	50.00	96.7 %	90-110	
				MS MSD	mg/L	1000 1000	114 % 105 %	78-137 78-137	
				MSD MSRPD	mg/L mg/L	1000	6.8%	≤12.3	
		300.0	10/24/2007:211123	CCB		100.0	0.8%	$\frac{\leq 12.5}{2}$	
		300.0	10/24/2007:211123	CCB	ppm	50.00	104 %	90-110	
				CCB	ppm ppm	50.00	0.87	2	
				CCV	ppm	50.00	106 %	90-110	
Turbidity		2130B	10/23/2007:210355	Dup	NTU	50.00	0.0010	0.2	
Turblany		2130B	10/23/2007:210933	CCB	NTU		0.059	0.2	
		21500	10/23/2007.210723	CCV	NTU	2.000	91.5 %	90-110	
				CCB	NTU	2.000	0.060	0.2	
				CCV	NTU	2.000	91.5 %	90-110	
Definition				<u></u>					
ICV	: Initial Calibratic	n Verification -	Analyzed to verify the	e instrument	calibration is	within criter	ia.		
ICB			zed to verify the instru						
CCV			tion - Analyzed to ver				i criteria.		
CCB			Analyzed to verify the						
Blank			ify that the preparation						
LCS			mple - Prepared to ver						
MS	matrix affects ana	lyte recovery.	le is spiked with a kno						
MSD	recoveries are an	indication of ho	ASD pair - A random s w that sample matrix a	iffects analy	te recovery.			•	
Dup			ample with each batch paration and analysis.	is prepared a	and analyzed	in duplicate.	The relative p	ercent differ	ence is an
MSRPD			erence (RPD) - The MS	S relative pe	rcent differen	ce is an indi	cation of precis	sion for the p	reparation
ND		ult was below t	he DQO listed for the	analyte.					
<1/4			e concentration was le		forth of the sa	ample concer	ntration.		
DQO	: Data Quality Ob	jective - This is	the criteria against wh	ich the qual	ity control dat	ta is compare	ed.		
Explaination	- •		•			-			
435	: Sample matrix n	ay be affecting	this analyte. Data was	s accepted b	ased on the $D$	CS or CCV i	recovery.		

## **Quality Control - Inorganic**

Corporate Offices. & Laboratory P.O. Bux 272 / 853 Corporation Street Santa Paula, CA 93061-0272 TEL, (605) 382-2009 FAX, (FII5) 525-4172			Avertan Ass	Remarked and setting and setti				5 SWS	4 SW4	3 SW3	2 SW2 10	1 SW1	Samp Location Description Sa	Lab Number: SP + 1194	Compositor Setup Date: / /	Sampling Fee: Pickup Fee:	Sampler(s)	Quote Number:	Purchase Order Number:	Project Name: Southland WWTP - SW	Contact Person: Dan Migliazzo	Phone: (805)929-1341 Fax: (805	P. O. Box 326 Nipomo, CA 93444	Address: Nipomo CSD Aun: Dan Migliazzo	Client: Nipomo Community Services District		ENVIRO
<b>Office &amp; Laboratory</b> 2500 Stagecoach Road Stockton, CA 95215 TEL: (209) 942-0182 FAX: (209) 942-0423		Received By:	Shown for	Relinquished				10/72/17:5.10 G SW	0/22/67414·10 G SW	6/22/07 12.55 G SW	10/27 11-52 G SW	147767 16.30 G SW	1	of Sar e(P) Type: Reaso	nple No Oth	n-Potz ier(O)	Com **SEI ble(NF Syste (ROU -)	RE A m(S	ver g W (S)	Gra SE S ater(. Sour	AgW ce(S	** ') R) W			ict		ENVIRONMENTAL
	(Anant)	Date: Time: Received By:	Shown Jacon 10/22/07/7:30	· Time:			XXXXX AX	1 1,1,1	1	15.7 1 1,1,1	VH-S I I,1,1 7	15.7 1 1.1.1	250ml Wet C N,NO (CaCC Field 32oz(1	s, Tot (P)-H 2,NC 23),N Filter P), 4(	al-B, INO3 stry-{ 03,M H3-1 PO4 )ml(\	Ca,M SO4,T BAS,( N,Tur /FS),	g,K,Na DS,PO Conduc Didity 16oz(P	4,Tc tivity )-H2	,Cl, SO4	Br,A							<b>Special</b> www.fglinc.com
<b>Office &amp; Laboratory</b> 563 East Lindo Avenue Chico. CA 95928 TEL: (530) 343-5818 FAX (530) 343-3807	Juny	Date: Time Received By:	10/22/07				5	1 15.15	7-93 1 14-15 8.8	5.31 / 12.00 16.0	1.53 /	10/22 16.35	Field Field Field	- pH - pH	Date			}	E!!			1999-1999			SEE ACCESSE SHEE HE COMMUNELY EXSECTEMENTS AND COMPLETE MORE MIDDLING MIDDLING MIDDLING MIDDLING MIDDLING MIDDLING	erse side for Container Preservative and Compling	CHAIN OF CUSTODY Laboratory Copy (1 of 3)
Eield Ottice Visalia, California TEL: (559) 734-9473 Mobile: (559) 737-2399 FAX: (559) 734-8436		Date: Time:	LAQUE, § HILLE,	Date Time		Transmith Proving step man extensions of general part and a state of the general state o						BOOK years of Character Barren years of the second state of the se					an a							9999999 199999 1999 199		- information	ODY 3)

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FGL Environmental Revision Date: 10/18/07	Doc ID: F2REC005.011 Page: 1 of 1
Santa Paula - Condition Upon Receipt (A	Attach to COC)
<ul> <li>Sample Receipt:</li> <li>Number of ice chests/packages received: Note as OTC if received over the counter unpackaged.</li> </ul>	OR
2. Were samples received in a chilled condition? Temps: Acceptable is 2° to 6° C. Also acceptable is received on ice (ROI) for the temperature (RRT) if sampled within one hour of receipt. Client contact for documented below. If many packages are received at one time check for the further review. Please notify Microbiology personnel immediately of bacti	er temperature failures must be ests/H.T.'s/rushes/Bacti's to prioritize
3. Do the number of bottles received agree with the COC?	Yes No N/A
4. Were samples received intact? (i.e. no broken bottles, leaks etc	c.) The No
5. Were sample custody seals intact?	YA Yes No
Sign and date the COC, obtain LIMS sample numbers, select method	ds/tests and print labels.
Sample Verification, Labeling and Distribution: 1. Were all requested analyses understood and acceptable?	Yes No
2. Did bottle labels correspond with the client's ID's?	No No
3. Were all bottles requiring sample preservation properly preserv	ved? Tes No N/A FGL
4. VOAs checked for Headspace?	YES NO N/A
5. Were all analyses within holding times at time of receipt?	Yes No
6. Have rush or project due dates been checked and accepted?	NA Yes No
Attach labels to the containers and include a copy of the COC for lab	b delivery.
Sample Receipt, Login and Verification completed by (initials):	cle
Discrepancy Documentation:         Any items above which are "No" or do not meet specifications (i.e. 1)         1.       Person Contacted:         Initiated By:       Date:         Problem:       Date:	temps) must be resolved. ne Number:
Resolution:	
2. Person Contacted: Phon Initiated By: Da Problem:	ne Number:ate:
Resolution: Nipomo Co S	(2-14320) MMMUNITY Services District P 0711941

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November 9, 2007

Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444 Lab ID Customer

: SP 0711942 : 2-14320

### Laboratory Report

**Introduction:** This report package contains total of 6 pages divided into 3 sections:

Case Narrative	(2 Pages)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

#### **Case Narrative**

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
MW3	10/23/2007	10/22/2007	SP 0711942-001	MW

**Sampling and Receipt Information:** The sample was received, prepared and analyzed within the method specified holding times. All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

#### **Inorganic - Metals QC**

200.7	11/08/2007:210919 All preparation quality controls are within established criteria.
	11/08/2007:211554 All analysis quality controls are within established criteria.
	10/26/2007:211090 All analysis quality controls are within established criteria.
3010	10/24/2007:210389 All preparation quality controls are within established criteria.

## Inorganic - Wet Chemistry QC

2130B	10/23/2007:210923	All analysis quality controls are within established criteria.
	10/23/2007:210355	All preparation quality controls are within established criteria.

#### Lab ID : SP 0711942 Customer : 2-14320

2320B	10/25/2007:210986 All analysis quality controls are within established criteria.
2320B	10/25/2007:210429 All preparation quality controls are within established criteria.
2510B	10/25/2007:210416 All preparation quality controls are within established criteria.
	10/25/2007:210972 All analysis quality controls are within established criteria.
2540 C,E	10/25/2007:210417 All preparation quality controls are within established criteria.
300.0	<ul> <li>10/24/2007:210555 All preparation quality controls are within established criteria, except:</li> <li>The following note applies to Bromide:</li> <li>435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.</li> </ul>
	10/24/2007:211123 All analysis quality controls are within established criteria.
351.1	<ul> <li>10/28/2007:210507 All preparation quality controls are within established criteria, except:</li> <li>The following note applies to Nitrogen, Total Kjeldahl:</li> <li>435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.</li> </ul>
4500NH3G	11/05/2007:211449 All analysis quality controls are within established criteria.
	11/05/2007:211398 All analysis quality controls are within established criteria.
4500NH3H	10/29/2007:210532 All preparation quality controls are within established criteria.
5540C	10/23/2007:210351 All preparation quality controls are within established criteria.
	10/23/2007:210924 All analysis quality controls are within established criteria.

### Inorganic - Wet Chemistry QC

**Certification:** I certify that this data package is in compliance with NELAC standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

Approved By Kelly A. Dunnahoo, B.S.

Digitally signed by Kelly A. Dunnahoo, B.S. Title: Laboratory Director Date: 2007-11-09





November 9, 2007

## Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

Description : MW3 Project : Southland WWTP - GW - 2 Lab ID : SP 0711942-001 Customer ID : 2-14320

Sampled On : October 23, 2007-09:50 Sampled By : Not Available Received On : October 22, 2007-15:30 Matrix : Monitoring Well

#### **Sample Results - Inorganic**

Constituent	Result	PQL	Units	Note	Sample	Preparation	Sampl	e Analysis
Constituent	Result	IQL	Onits	note	Method	Date/ID	Method	Date/ID
Field Test	T		1	ĺ				
pH	6.46		units			10/23/07 09:50	4500-H B	10/23/07 09:50
Temperature	16.7		øC			10/23/07 09:50	2550B	10/23/07 09:50
Oxygen, Dissolved	4.7		mg/L			10/23/07 09:50	4500-O G	10/23/07 09:50
Metals, Total P:1'5			<u> </u>					
Boron	0.3	0.1	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Calcium	87	1	mg/L mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
	41	1	mg/L mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Magnesium Potassium	3	1			200,7	11/08/07:210919	200.7	
Sodium	215	1	mg/L		200.7	11/08/07:210919	200.7	11/08/07:211554
	0.21	0.02	mg/L		3010		200.7	11/08/07:211554
Zinc	0.21	0.02	mg/L		3010	10/24/07:210389	200.7	10/26/07:211090
Wet Chemistry <sup>P:1</sup>								
Ammonia-N	ND	0.2	mg/L		4500NH3H	10/29/07:210532	4500NH3G	11/05/07:211449
Alkalinity (as CaCO3)-	200	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Soluble		10	-		10100	10/20/07/2010/20	20200	10/25/07/210500
Bicarbonate	240	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Carbonate	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Hydroxide	ND	10	mg/L		2320B	10/25/07:210429	2320B	10/25/07:210986
Bromide	ND	0.03	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Chloride	218	5	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Conductivity	1680	1	umhos/cm		2510B	10/25/07:210416	2510B	10/25/07:210972
MBAS	ND	0.1	mg/L		5540C	10/23/07:210351	5540C	10/23/07:210924
Nitrate	76.7	0.4	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrate + Nitrite as N	17.3	0.1	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrite	ND	0.3	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Nitrogen, Total as	17.2	0.5			251.1	10/00/07 010:007	150000000	
Nitrogen	17.3	0.5	mg/L		351.1	10/28/07:210507	4500NH3G	11/05/07:211398
Nitrate + Nitrite	17.3	0.1	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Kjeldahl Nitrogen	ND	0.5	mg/L		351.1	10/28/07:210507	4500NH3G	11/05/07:211398
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		351.1	10/28/07:210507	4500NH3G	11/05/07:211398
Phosphate	ND	0.5	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Solids, Total Dissolved								
(TDS)	1090	20	mg/L		2540 C,E	10/25/07:210417	2540C	10/26/07:211019
Sulfate	260	10	mg/L		300.0	10/24/07:210555	300.0	10/24/07:211123
Turbidity	1.0	0.2	NTU		2130B	10/23/07:210355	2130B	10/23/07:210923
ND=Non-Detected POL=Practical		I		. (1170			1	

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (), (P) Plastic, (VFS) VOA w/Filters+Syringes Preservatives: H2SO4 pH < 2, HNO3 pH < 2

Corporate Offices & Laboratory P.O. Box 272 / 853 Corporation Street Santa Paula, CA 93061-0272 TEL: 805/392-2000 FAX: 805/525-4172 CA NELAP Certification No. 01110CA 
 Office & Laboratory
 Office & Laboratory

 2500 Stagecoach Road
 563 E. Lindo Avenue

 Stockton, CA 95215
 Chico, CA 95926

 TEL: 209/942-0182
 TEL: 530/343-5818

 FAX: 209/942-0423
 FAX: 530/343-3807

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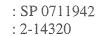




#### November 9, 2007

Nipomo Community Services District

Lab ID Customer



**Quality Control - Inorganic** 

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Metals								
Boron	200.7	10/26/2007:211090	CCV	ppm	5.000	101 %	90-110	
			CCB	ppm		-0.006	0.10	
			CCV	ppm	5.000	106 %	90-110	
			CCB	ppm		-0.016	0.10	
	3010	10/24/2007:210389	Blank	mg/L		ND	<0.1	
			LCS	mg/L	4.000	92.2 %	85-115	
			MS	mg/L	4.000	95.1 %	75-125	
			MSD	mg/L	4.000	93.1 %	75-125	
		1	MSRPD	mg/L	0.8000	1.9%	≤20.0	
			PDS	mg/L	4.000	120 %	75-125	
Calcium	200.7	10/26/2007:211090	CCV	ppm	25.00	100 %	90-110	
			CCB	ppm		0.008	1.0	
			CCV	ppm	25.00	102 %	90-110	
			CCB	ppm		0.01	1.0	
	3010	10/24/2007:210389	Blank	mg/L		ND	<1	
			LCS	mg/L	12.50	92.3 %	85-115	
			MS	mg/L	12.50	104 %	75-125	
			MSD	mg/L	12.50	88.4 %	75-125	
			MSRPD	mg/L	0.8000	3.3%	≤20.0	
			PDS	mg/L	12.50	-183 %	75-125	Р
Magnesium	200.7	10/26/2007:211090	CCV	ppm	25.00	96.7 %	90-110	
			CCB	ppm		0.009	1.0	
			CCV	ppm	25.00	99.3 %	90-110	
			CCB	ppm		0.009	1.0	
	3010	10/24/2007:210389	Blank	mg/L	1	ND	<1	
			LCS	mg/L	12.50	92.4 %	85-115	
			MS	mg/L	12.50	104 %	75-125	
			MSD	mg/L	12.50	89.7 %	75-125	
			MSRPD	mg/L	0.8000	3.6%	≤20.0	
			PDS	mg/L	12.50	-156 %	75-125	Р
Potassium	200.7	11/08/2007:210919	MS	mg/L	12.50	127 %	<1/4	
			MSD	mg/L	12.50	123 %	75-125	
			MSRPD	mg/L	800.0	0.5%	≤20.0	
	200.7	11/08/2007:211554	CCV	ppm	25.00	103 %	90-110	
			CCB	ppm	22.00	-0.01	1.0	
			CCV	ppm	25.00	103 %	90-110	
		}	CCB	ppm		-0.03	1.0	
Sodium	200.7	11/08/2007:210919	MS	mg/L	12.50	-1360 %	<1/4	
			MSD	mg/L	12.50	-1390 %	<1/4	
			MSRPD	mg/L	800.0	0.07%	≤20.0	
	200.7	11/08/2007:211554	CCV	ppm	25.00	98.0 %	90-110	
			CCB	ppm		0.19	1.0	
			CCV	ppm	25.00	100 %	90-110	
			CCB	ppm	20.00	0.11	1.0	
Zinc	200.7	10/26/2007:211090	CCV	ppm	1.000	96.9 %	90-110	,
Line	200.7	10/20/2007.211070	ССВ	ppm	1.000	0.0004	0.02	
			CCV	ppm	1.000	97.2 %	90-110	
			CCB	ppm	1.000	-0.0007	0.02	
	3010	10/24/2007:210389	Blank	mg/L		-0.0007	<0.02	
	5010	1012712001.210307	LCS	mg/L	2.000	92.6 %	×0.02 85-115	
			MS	mg/L	2.000	92.0 % 96.0 %	75-115	
			MSD	mg/L mg/L	2.000	90.0 %	75-125	
			MSRPD	mg/L mg/L	0.8000	92.1 % 4.1%	/3-125 ≤20.0	
	800		PDS	mg/L	2.000	4.1% 114 %	≤20.0 75-125	
	1		PIN					

Office & Laboratory Office & Laboratory 563 E. Lindo Avenue Chico, CA 95926 TEL: 530/343-5818 FAX: 530/343-3807 2500 Stagecoach Road Stockton, CA 95215 TEL: 209/942-0182 FAX: 209/942-0423

Field Office Visalia, California TEL: 559/734-9473 Mobile: 559/737-2399 FAX: 559/734-8435

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## November 9, 2007 Nipomo Community Services District

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#### Lab ID Customer

## : SP 0711942 : 2-14320

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Alkalinity (as CaCO3)	2320B	10/25/2007:210429	Dup	mg/L		0.6%	3.42	
	2320B	10/25/2007:210986	CCV	mg/l	234.9	102 %	90-110	
			CCV	mg/l	234.9	101 %	90-110	
Ammonia Nitrogen	4500NH3G	11/05/2007:211398	CCB	mg/l		0.039	0.2	
U			CCV	mg/l	2.000	102 %	90-110	
			CCB	mg/l		0.044	0.2	
			CCV	mg/l	2.000	99.8 %	90-110	
	4500NH3G	11/05/2007:211449	ССВ	mg/l		0.035	0.2	
			CCV	mg/l	2.000	106 %	90-110	
			CCB	mg/l		0.016	0.2	
			CCV	mg/l	2.000	106 %	90-110	
	4500NH3H	10/29/2007:210532	Blank	mg/L	2.000	ND	<0.2	
	45001411511	10/23/2007.210332	LCS	mg/L mg/L	2.000	80.6 %	63-116	
			MS	mg/L	2.000	90.2 %	17-127	
			MSD	mg/L mg/L	2.000	81.2 %	17-127	
			MSD		2.000	9.4%		
		10/05/0007 010/00		mg/L	2.000		≤80.2	
Bicarbonate	2320B	10/25/2007:210429	Dup	mg/l	5 000	0.6%	4.78	
Bromide	300.0	10/24/2007:210555	LCS	mg/L	5.000	100 %	90-110	
			MS	mg/L	100.0	109 %	90-121	
			MSD	mg/L	100.0	101 %	90-121	
			MSRPD	mg/L	100.0	7.9%	≤1.61	435
	300.0	10/24/2007:211123	CCB	ppb		0.0	30	
			CCV	ppb	5000	110 %	90-110	
			CCB	ppb		0.0	30	
			CCV	ppb	5000	107 %	90-110	
Carbonate	2320B	10/25/2007:210429	Dup	mg/l		0.0	10	
Chloride	300.0	10/24/2007:210555	LCS	mg/L	25.00	96.9 %	90-110	
Cilionae	500.0	10/24/2007.210555	MS	mg/L	500.0	111 %	86-128	
			MSD	mg/L	500.0	104 %	86-128	
			MSRPD		100.0	4.9%	≤23.0	
	200.0	10/04/0007 011102		mg/L	100.0			
	300.0	10/24/2007:211123	CCB	ppm	25.00	0.05	1	
			CCV	ppm	25.00	107 %	90-110	
			CCB	ppm	25.00	0.05	1	
			CCV	ppm	25.00	107 %	90-110	
Conductivity	2510B	10/25/2007:210972	ICB	umhos/cm		0.1	1	
			ICV	umhos/cm	998.0	99.1 %	95-105	
			CCV	umhos/cm	998.0	99.2 %	95-105	
E. C.	2510B	10/25/2007:210416	Blank	umhos/cm		ND	<1	
			Dup	umhos/cm		0.1%	0.372	
Hydroxide	2320B	10/25/2007:210429	Dup	mg/l		0.0	10	
MBAS	5540C	10/23/2007:210351	MS	mg/L	1.000	100 %	90-110	
			MSD	mg/L	1.000	100 %	90-110	
			MSRPD	mg/L	1.000	0.0	≤0.1	
	5540C	10/23/2007:210924	CCB	mg/L mg/L	*	0.000	0.1	
	55400	10/23/2007.210924	CCV	mg/L mg/L	1.000	100 %	99-101	
Nitroto	300.0	10/24/2007:210555	LCS		20.00	98.5 %	99-101	
Nitrate	500.0	10/24/2007:210333	MS	mg/L mg/I	400.0		\$	
				mg/L		112 %	88-124	
			MSD	mg/L	400.0	104 %	88-124	
	200.0	10/04/0007 011100	MSRPD	mg/L	100.0	6.6%	≤29.1	
	300.0	10/24/2007:211123	CCB	ppm	00.00	0.029	0.4	
			CCV	ppm	20.00	108 %	90-110	
			CCB	ppm		0.010	0.4	
			CCV	ppm	20.00	108 %	90-110	
Nitrite	300,0	10/24/2007:210555	LCS	mg/L	15.00	96.0 %	90-110	
			MS	mg/L	300.0	111 %	91-121	
			MSD	mg/L	300.0	102 %	91-121	
			MSRPD	mg/L	100.0	8.0%	≤23.8	
	300.0	10/24/2007:211123	CCB	ppm		0.014	0.3	
			CCV	ppm	15.00	107 %	90-110	

## **Quality Control - Inorganic**

## November 9, 2007 **Nipomo Community Services District**

Å

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### Lab ID Customer

: SP 0711942 : 2-14320

Constituent		Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Wet Chem				1					
Nitrite		300.0	10/24/2007:211123	ССВ	ppm		0.014	0.3	
Turne		500.0	10/2//2007.211125	CCV	ppm	15.00	105 %	90-110	
Nitrogen, Total	Kieldahl	351.1	10/28/2007:210507	Blank	mg/L		ND	<0.5	
Millogen, rota	njerdani	551.1	10/20/2001.210507	LCS	mg/L	2.000	98.2 %	69-125	
				MS	mg/L	2.000	5.6 %	25-149	435
				MSD	mg/L	2.000	11.6 %	25-149	435
				MSRPD	mg/L	2.000	0.12	≤0.5	,00
Phosphate		300.0	10/24/2007:210555	LCS	mg/L	15.00	99.2 %	90-110	
1 nospinate				MS	mg/L	300.0	110 %	85-126	
				MSD	mg/L	300.0	101 %	85-126	
				MSRPD	mg/L	100.0	8.8%	≤41.1	
		300.0	10/24/2007:211123	CCB	ppm		0.000	0.5	
		500.0	10/2//2007/211125	CCV	ppm	15.00	108 %	90-110	
			1	CCB	ppm	10100	0.000	0.5	
				CCV	ppm	15.00	108 %	90-110	
Solids, Total Di	sovled	2540 C.E	10/25/2007:210417	Blank	mg/L		ND	<20	
Solius, Total Di	550 100	2540 C,E	10/20/2007.210/11/	LCS	mg/L	1000	99.1 %	90-110	
				LCS	mg/L	1000	101 %	90-110	
				Dup	mg/L		0.3%	10.0	
Sulfate		300.0	10/24/2007:210555	LCS	mg/L	50.00	96.7 %	90-110	
Sunate		500.0	10/24/2007.210555	MS	mg/L	1000	114 %	78-137	
				MSD	mg/L	1000	105 %	78-137	
				MSRPD	mg/L	100.0	6.8%	≤12.3	
		300.0	10/24/2007:211123	CCB	ppm	100.0	0.87	2	
		500.0	10/24/2007.211125	CCV	ppm	50.00	106 %	90-110	
				ССВ	ppm	50.00	0.86	2	
				CCV	ppm	50.00	106 %	90-110	
Turbidity		2130B	10/23/2007:210355	Dup	NTU	50.00	0.0010	0.2	
Turbluity		2130B	10/23/2007:210933	CCB	NTU		0.059	0.2	
		21506	10/23/2007.210923	CCV	NTU	2.000	91.5 %	90-110	
				CCB	NTU	2.000	0.060	0.2	
				CCV	NTU	2.000	91.5 %	90-110	
		1	<u> </u>		NIU	2.000	91.5 %	90-110	L
Definition	T Mat Oalthard		A	·					
ICV			- Analyzed to verify the				lia.		
ICB			yzed to verify the instru				aritaria		
CCV			tion - Analyzed to ver						
CCB			Analyzed to verify the ify that the preparation					mlaa	
Blank			ample - Prepared to ver						
LCS			ole is spiked with a kno						hot complo
MS			he is spiked with a kno	wir annount	of allafyte. If	le recoveries	s are an inuicat	lion of now t	nat sample
	matrix affects an		AcD nois A condom o	omalo duali	ooto is spileod	with a know	m amount of a	polytod Th	_
MSD			MSD pair - A random s ow that sample matrix a			will a knov	vir amount Of a	maryteu. The	-
			ample with each batch			in dunlicata	The relative r	percent diffe	onco is on
Dup	indication of pred	cision for the pre	eparation and analysis.			•	*		
MSRPD	: MS/MSD Relat and analysis.	ive Percent Diff	erence (RPD) - The MS	5 relative pe	rcent differen	ce is an indi	cation of preci-	sion for the p	preparation
ND	· · ·	sult was below	the DQO listed for the	analyte.					
<1/4			ke concentration was le		forth of the sa	imple conce	ntration.		
D00			the criteria against wh						
Explaination		•	0	*	-	4			
435	· Sample matrix r	nav be affecting	this analyte. Data was	s accepted b	ased on the $D$	CS or CCV	recovery.		

# **Quality Control - Inorganic**

Corporate Offices & Laboratory P.O. Box 272 / 853 Corporation Street Sonta Paula, CA 93061-0272 TEL: (805) 392-2000 FAX: (805) 525-4172		Remarks:	Address:       Nipomo Community Services District         Address:       Nipomo CSD         Ann:       Dan Migliazzo         Am:       Dan Migliazzo         Phone:       (805)929-1341         Fax:       (805)929-1341         Phone:       Southland WWTP = GW = 2         Project Name:       Southland WWTP = GW = 2         Purchase Order Number:       Pickup Fee:         Quote       Number:         Sampler(s)       Pickup Fee:         Sampler(s)       Date         Num       Location Description         Num       MW3         1	ENVIRONMENTAL
		्र २	G Method of Sampling: Composite(C) Grab(G)	IMENI
Office, & Laboratory, 2500 Shagecoach Road Stocktor, CA 95215 TEL, (209) 942-0182 FAX (209) 942-0423	Received By:	Relinquished	Image: Composition of composition	ſAL
	A A	Date: Time; 10/2 \$ 07 1515	Field Test-Field Temp.	<b>Special</b> www.fglinc.com
~	Received By:	Relinquished		<b>al</b> c. <i>com</i>
Office & Laboratory 563 East Lindo Avenue Chiro, CA 95926 TEL. (500) 343 5818 LAX (530) 343 3807	Date:	Date:	32oz(P), 40ml(VFS), 16oz(P)-H2SO4     See Reverse side       See Reverse side     See Reverse side	CHAI
	Time: Received By:	Time: Relinquished	A     Field Test-Field O2 Diss.	HAIN OF CUSTODY Laboratory Copy (1 of 3)
Ejeld Office Visalia, Galific TEL: (559) 7 Mable, (559) FAX (559) 7	Date:	Date:	pling information	STODY of 3)
Elaid Office Visalia, California TEL: (559) 734-9473 Mobie: (559) 737-2389 FAX: (559) 734-8475	Time:	Ţime:		

Copy of document found at <a href="https://www.NoNewWipTax.com">www.NoNewWipTax.com</a>

	L Environmental /ision Date: 10/18/07			Doc ID: Page: 1	F2REC of 1	005.0
	Santa Paula - Condition Upon Rece	eipt (A	ttach to	COC)		
San	nple Receipt:		<u>~</u> ~			
1.	Number of ice chests/packages received: Note as OTC if received over the counter unpackaged.	218	4	<u> </u>		
2.	Were samples received in a chilled condition? Temps: Acceptable is 2° to 6° C. Also acceptable is received on ice (ROI) temperature (RRT) if sampled within one hour of receipt. Client of documented below. If many packages are received at one time che further review. Please notify Microbiology personnel immediately	) for the sa ontact for ck for tes	temperatur ts/H.T.'s/ru	e failures n shes/Bacti'	ust be	
3.	Do the number of bottles received agree with the COC?		Yes	No	N/A	
4.	Were samples received intact? (i.e. no broken bottles, le	eaks etc.	) Yes	p No		
5.	Were sample custody seals intact?		N##	F Yes	No	
Sign	a and date the COC, obtain LIMS sample numbers, select	method	s/tests and	d print lat	oels.	
San	nple Verification, Labeling and Distribution:					
1.	Were all requested analyses understood and acceptable?	•	Yes	D No		
2.	Did bottle labels correspond with the client's ID's?		· Fr	b No	-	
3.	Were all bottles requiring sample preservation properly	preserv	ed?	ς Νο	N/A	FG
4.	VOAs checked for Headspace?		- A	S No	N/A	
5.	Were all analyses within holding times at time of receip	t?	À	5 No		
5.	Have rush or project due dates been checked and accept	ed?	N/#	Yes	No	
Atta	ach labels to the containers and include a copy of the COC	c for lab	delivery.			
Sam	ple Receipt, Login and Verification completed by (initial	s):	0			
Disc	crepancy Documentation:					
	items above which are "No" or do not meet specification					
-		Phone	e Number	± 1 		
	Initiated By: Problem:	Date:				
	Resolution:					
2.	Person Contacted:	Phone	e Number	8 6 1964 - 1975 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977		-
	Initiated By: Problem:	Uat	e:	ana kanga sa kanga s		
			(	2-14320	•)	
	Resolution:	Nipomo	Commun		P	istr
		*				
			Sr 1	0711	<b>74</b> 2	

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November 12, 2007

Nipomo CSD

Atin: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

#### Laboratory Report

Introduction: This report package contains total of 5 pages divided into three sections:

Case Narrative(2 Pages) : An overview of the work performed at FGL.Chemical Results(1 Page) : Results for each sample submitted.Quality Control(2 Pages) : Supporting Quality Control (QC) results.

This report package pertains to the following sample:

Sample Description	Date Sampled	Date Received	FGL Lab Sample ID #	Matrix
Effluent	10/17/2007	10/17/2007	SP 711739-01	WW

Sampling and Receipt Information: The sample was received, prepared and analyzed within the method specified holding times. All samples were received on ice. All samples were checked for pH if acid or base preservation required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Forms.

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Wet Chemistry QC

300.0	10/17/2007:B215 All preparation quality controls are within established criteria.
	10/17/2007:A - IC204 All analysis quality controls are within established criteria.
351.1	<ul> <li>10/23/2007:A242 All preparation quality controls are within established criteria, except: The following note applies to Kjeldahl Nitrogen:</li> <li>408 Matrix Spike(MS) or Post Digestion Spike(PDS) has no Acceptance Range (DQO) because of high analyte concentration in the sample. Data was accepted based on the LCS or CCV recovery.</li> </ul>
	10/30/2007:A - FI203 All analysis quality controls are within established criteria.
4500NH3H	10/22/2007:A203 All preparation quality controls are within established criteria.
	10/24/2007:B - FI203 All analysis quality controls are within established criteria.

Case narrative continued on next page...

Lab ID : SP 711739 Customer : 2014320 November 12, 2007

Nipomo CSD

Lab ID : SP 711739 Customer : 2014320

**Certification:** I certify that this data package is in compliance with NELAC Standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following signature.

FGL ENVIRONMENTAL

KAD:cea

Kelly A. Dunnahoo, B.S. Laboratory Director





November 12, 2007

Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

Description : Effluent Project : Southland WWTP 97-75 Lab ID : SP 711739-01 Customer ID: 2-14320

Sampled On : October 17, 2007-08:50 Sampled By : Rick Motley Received On : October 17, 2007-16:00 Matrix : Waste Water

Sample Results - Inorganic

Constituent	Results	PQL	Units	Note	Sample Method	Preparation Date/ID	Sampl Method	e Analysis Date/ID
Constituent	Results	1 QL		noie			meniou	Date/ID
Field Test								
pH	7.97	-	units			10/17/07:FS00		10/17/2007:
Temperature	18.5		oC			10/17/07:FS00		10/17/2007:
Special Inorg. P:1,4								
Un-ionized Ammonia-N	0.58	0.04*	mg/L		4500NH3H	10/22/07:A203	4500NH3G	10/24/2007:B00
Wet Chemistry P:1								
Ammonia-N	32	2*	mg/L		4500NH3H	10/22/07:A203	4500NH3G	10/24/2007:B00
Nitrate	ND	0.4	mg/L		300.0	10/17/07:B215	300.0	10/18/2007:A00
						17:35		05:11
Nitrite	ND	0.3	mg/L		300.0	10/17/07:B215	300.0	10/18/2007:A00
						17:35		05:11
Nitrogen, Total	27	2.5*	mg/L		Calculation		Calculation	
Nitrate + Nitrite as N	ND	0.1	mg/L		300.0	10/17/07:B215	300.0	10/18/2007:A00
						17:35		05:11
Kjeldahl Nitrogen	27	2.5*	mg/L		351.1	10/23/07:A242	4500NH3G	10/30/2007:A00

ND=Non-Detect. PQL=Practical Quantitation Limit.  $\blacklozenge$  PQL adjusted for dilutions, concentrations, dry weight reporting, or limited sample. Containers: (P) Plastic Preservatives: (1) Cool 4°C, (4) H2SO4 pH < 2

 Office & Laboratory
 Office & Laboratory

 2500 Stagecoach Road
 563 East Lindo Avenue

 Stockton, CA 95215
 Chico, CA 95926

 TEL: (209) 942-0182
 TEL: (530) 343-5818

 CopA of documents and to be sold to

SP 711739: Chemical Results Page 1

 Field Office

 Visalia, California

 TEL:
 (559) 734-9473

 FAX:
 (559) 734-8435

 Mobile:
 (559) 737-2399





#### ANALYTICAL CHEMISTS November 12, 2007 Nipomo CSD

Lab ID : SP 711739 Customer : 2-14320

## Quality Control - Inorganic

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Un-ionized Ammonia-N	4500NH3G	10/24/2007:B	00-1CB 00-CCB 00-ICV 00-CCV	mg/l mg/l mg/l mg/l	2.000 2.000	ND ND 98.4% 99.1%	<0.2 <0.2 90-110 90-110	
Wet Chem Kjeldahl Nitrogen	351.1	10/23/2007:A242 (CH 776099-01)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	2.000 2.000 2.000	ND 94.0% 150% -37.5% 15.1%	<0.5 69-125 <¼ <¼ ≤25.7	408 408
Ammonia Nitrogen	4500NH3G	10/30/2007:A	00-1CB 00-CCB 00-1CV 00-CCV	mg/l mg/l mg/l mg/l	2.000 2.000	ND ND 94.7% 98.4%	<0.2 <0.2 90-110 90-110	
Nitrate	300.0	10/17/2007:B215 (SP 711720-01)	LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L	20.00 400.0 400.0	102 % 105 % 105 % 0.1 %	90-110 88-124 88-124 ≤29.1	
Ammonia-N	4500NH3H	10/22/2007:A203 (SP 711542-03)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	2.000 2.000 2.000	ND 80.0% 91.5% 83.4% 5.9%	< 0.05 63-116 17-127 17-127 $\le 80.2$	
Nitrate	300.0	10/17/2007:B215 (SP 711720-01)	LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L	20.00 400.0 400.0	102 % 105 % 105 % 0.1 %	90-110 88-124 88-124 ≤29.1	
	300.0	10/17/2007:A	00-ICB 00-CCB 00-ICV 00-CCV	ppm ppm ppm ppm	40.00 20.00	ND ND 103 % 100 %	<0.4 <0.4 90-110 90-110	
Nitrite	300.0	10/17/2007:B215 (SP 711720-01)	LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L	15.00 300.0 300.0	101 % 105 % 105 % 0.07 %	90-110 91-121 91-121 $\leq 23.8$	
	300.0	10/17/2007:A	00-ICB 00-CCB 00-ICV 00-CCV	ppm ppm ppm ppm	30.00 15.00	ND ND 103% 99.4%	<0.3 <0.3 90-110 90-110	

Explanations and definitions are continued on next page ...

## November 12, 2007 Nipomo CSD

## Quality Control - Inorganic

Explanation 408	ns Matrix Spike(MS) or Post Digestion Spike(PDS) has no Acceptance Range (DQO) because of high analyte concentration in the sample. Data was accepted based on the LCS or CCV recovery.
	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte
	recovery.
MS/MSD	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
ICB	: Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
ICV	: Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
	: Non-detect - Result was below the DQO listed for the analyte.
	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Corporate Offices & Laboratory P.O. Box 272 * 853 Corporation Street Sante Paula: :::A 93061-0272 TEL: (8051-392-2000 Fax: Vane) 515-24172					Remarks:	Client:       Niponio Community Services District         Address:       Nipomo CSD         Address:       Nipomo CSD         Attn:       Dan Migliazzo         P.O. Box 326       Nipomo, CA 93444         Phone:       (805)929-1341       Fax:         Contact Person:       Dan Migliazzo         Project Name:       Southland WWTP         Purchase Order Number:       Pickup Fee:         Quote Number:       Pickup Fee:         Compositor Setup Date:       // //b / O / Time:         Sampling Fee:       Pickup Fee:         Mum       Location Description       Sampled         1       Effluent       / % / ///         1       Effluent       / % / ///	ENVIRONMENTAL	
			Re		Re	Pree:     1	YMENN	
Office & Laboratory 2500 Stagecoach Roard Stockton CA 95215 TEL: (209) 942-0182		于	Received By:	Kint Mothy 1	Relinquished	Image: Constraint of the second se		
atory 1 Road 15 182		10/17/07 2:55	Date: Time:	Jalo7 955	Date: Time:	Field Test-Field pH       Image: Special Inorg - Uniopized Ammonia	Weekly	
Offic Se3 E Chico TEL:	and a second		Received By:	MAK	Relinquished	Requires Field pH & Temperature to Calculate	7 e. (SAZZ	
Office & Laboratory 563 East Lindo Avenue Chico, CA 95926 TEL: (530) 344-5818	and the second			bate: Time:	10/17/07	Date: Time:	Field Test-Field Temp.	CALAIN OF Laboratory (
			Received By:	/	: Relinquished	Idoz(P)-H2SO4     Reverse side for Container, Preservative and Sampling information	AIN OF CUSTODY aboratory Copy (1 of 3)	
Field Office Visata: California Yuu (559) 734-9173 Nohiel (559) 737-0390 Mohiel (559) 737-0390			Date: Time:		Date: Time:	Copy of document found at www.NoNewWipTax.com		

# Santa Paula - Condition Upon Receipt (Attach to COC)

#### Sample Receipt:

- Number of ice chests/packages received: Note as OTC if received over the counter unpackaged.
- 3. Do the number of bottles received agree with the COC?
- 4. Were samples received intact? (i.e. no broken bottles, leaks etc.)
- 5. Were sample custody seals intact?



Yes

Yes

es

Yes

Tes

es les

No

No

No

No

No

No

Yes

N/A

N/A

No

FGL

Sign and date the COC, obtain LIMS sample numbers, select methods/tests and print labels.

#### Sample Verification, Labeling and Distribution:

- 1. Were all requested analyses understood and acceptable?
- 2. Did bottle labels correspond with the client's ID's?
- 3. Were all bottles requiring sample preservation properly preserved?
- 4. Were all analyses within holding times at time of receipt?
- 5. Have rush or project due dates been checked and accepted?

Attach labels to the containers and include a copy of the COC for lab delivery.

Sample Receipt, Login and Verification completed by (initials):

	repancy Documentation: items above which are "No" or do not meet specificatio Person Contacted:	Phone Number:
	Resolution:	
2.	Person Contacted: Initiated By: Problem:	
	Resolution:	(2-14320) Nipomo Community Services District SP 0711739





November 12, 2007

Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

#### Laboratory Report

Introduction: This report package contains total of 5 pages divided into three sections:

Case Narrative(2 Pages) : An overview of the work performed at FGL.Chemical Results(1 Page) : Results for each sample submitted.Quality Control(2 Pages) : Supporting Quality Control (QC) results.

This report package pertains to the following sample:

Sample Description	Date Date Sampled Received		FGL Lab Sample ID #	Matrix
Effluent	10/10/2007	10/10/2007	SP 711362-01	ww

**Sampling and Receipt Information:** The sample was received, prepared and analyzed within the method specified holding times. All samples were received on ice. All samples were checked for pH if acid or base preservation required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Forms.

Quality Control: All samples were prepared and analyzed according to the following tables:

#### Inorganic - Wet Chemistry QC

300.0	10/11/2007:A215 All preparation quality controls are within established criteria.				
	10/11/2007:A - IC204 All analysis quality controls are within established criteria.				
351.1	<ul> <li>10/23/2007:A242 All preparation quality controls are within established criteria, except: The following note applies to Kjeldahl Nitrogen:</li> <li>408 Matrix Spike(MS) or Post Digestion Spike(PDS) has no Acceptance Range</li> <li>(DQO) because of high analyte concentration in the sample. Data was accepted based on the LCS or CCV recovery.</li> </ul>				
	10/30/2007:A - FI203 All analysis quality controls are within established criteria.				
4500NH3H	10/19/2007:A203 All preparation quality controls are within established criteria.				
	10/23/2007:A - FI203 All analysis quality controls are within established criteria.				

Case narrative continued on next page ...

Lab ID : SP 711362 Customer : 2014320 November 12, 2007

Nipomo CSD

Lab ID : SP 711362 Customer : 2014320

**Certification:** I certify that this data package is in compliance with NELAC Standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following signature.

FGL ENVIRONMENTAL

Kelly A. Dunnahoo, B.S. Laboratory Director

KAD:cea





November 12, 2007

Nipomo CSD Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

Description : Effluent Project : Southland WWTP 97-75 Lab ID : SP 711362-01 Customer ID: 2-14320

Sampled On : October 10, 2007-08:40 Sampled By : Rick Motley Received On : October 10, 2007-16:20 Matrix : Waste Water

Sample Results - Inorganic

					Sample	Preparation	Sampl	e Analysis
Constituent	Results	PQL	Units	Note	Method	Date/ID	Method	Date/ID
Field Test								
pH	7.8		units			10/10/07:FS00		10/10/2007:
Temperature	10.4		oC			10/10/07:FS00		10/10/2007:
Special Inorg. P:1,4 Un-ionized Ammonia-N	0.61	0.04*	mg/L		4500NH3H	10/19/07:A203	4500NH3G	10/23/2007:A00
				+				
Wet Chemistry P:1								
Ammonia-N	34	2*	mg/L		4500NH3H	10/19/07:A203	4500NH3G	10/23/2007:A00
Nitrate	ND	0.4	mg/L		300.0	10/11/07:A215	300.0	10/12/2007:A00
						15:20		05:50
Nitrite	ND	0.3	mg/L		300.0	10/11/07:A215	300.0	10/12/2007:A00
			-			15:20		05:50
Nitrogen, Total	31	5*	mg/L		Calculation		Calculation	
Nitrate + Nitrite as N	ND	0.1	mg/L		300.0	10/11/07:A215	300.0	10/12/2007:A00
			J			15:20		05:50
Kjeldahl Nitrogen	31	5*	mg/L		351.1	10/23/07:A242	4500NH3G	10/30/2007:A00

ND=Non-Detect. PQL=Practical Quantitation Limit.  $\blacklozenge$  PQL adjusted for dilutions, concentrations, dry weight reporting, or limited sample. Containers: (P) Plastic Preservatives: (1) Cool 4°C, (4) H2SO4 pH < 2

SP 711362: Chemical Results Page 1

Visalia, California TEL: (559) 734-9473 FAX: (559) 734-8435 Mobile: (559) 737-2399

Field Office





### ANALYTICAL CHEMISTS November 12, 2007 Nipomo CSD

Lab ID : SP 711362 Customer : 2-14320

## Quality Control - Inorganic

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Un-ionized Ammonia-N	4500NH3H	10/19/2007:A203 (CH 776212-01)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	2.000 2.000 2.000	ND 74.9% 93.1% 79.6% 14.8%	<0.2 63-116 17-127 17-127 ≤80.2	
	4500NH3G	10/23/2007:A	00-ICB 00-CCB 00-ICV 00-CCV	mg/l mg/l mg/l mg/l	2.000 2.000	ND ND 99.4% 96.2%	<0.2 <0.2 90-110 90-110	
Wet Chem Kjeldahl Nitrogen	351.1	10/23/2007:A242 (CH 776099-01)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	2.000 2.000 2.000	ND 94.0% 150% -37.5% 15.1%	<0.5 69-125 <¼ <¼ ≤25.7	408 408
Ammonia Nitrogen	4500NH3G	10/30/2007:A	00-ICB 00-CCB 00-ICV 00-CCV	mg/l mg/l mg/l mg/l	2.000 2.000	ND ND 94.7% 98.4%	<0.2 <0.2 90-110 90-110	
Nitrate	300.0	10/11/2007:A215 (STK739565-01)	LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L	20.00 400.0 400.0	99.7% 107% 108% 0.8%	90-110 88-124 88-124 ≤29.1	
Ammonia-N	4500NH3H	10/19/2007:A203 (CH 776212-01)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	2.000 2.000 2.000	ND 74.9% 93.1% 79.6% 14.8%	< 0.2 63-116 17-127 17-127 $\le 80.2$	
Nitrate	300.0	10/11/2007:A215 (STK739565-01)	LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L	20.00 400.0 400.0	99.7% 107% 108% 0.8%	90-110 88-124 88-124 ≤29.1	
	300.0	10/11/2007:A	00-ICB 00-CCB 00-ICV 00-CCV	ppm ppm ppm ppm	40.00 20.00	ND ND 102% 99.1%	<0.4 <0.4 90-110 90-110	
Nitrite	300.0	10/11/2007:A215 (STK739565-01)	LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L	15.00 300.0 300.0	99.9% 106% 107% 0.9%	90-110 91-121 91-121 ≤23.8	
	300.0	10/11/2007:A	00-ICB 00-CCB 00-ICV 00-CCV	ppm ppm ppm ppm	30.00 15.00	ND ND 102% 99.2%	<0.3 <0.3 90-110 90-110	

Explanations and definitions are continued on next page...

 SP 711302:
 Guality
 Control Page 1

 Office & Laboratory
 Field Office

 563 East Lindo Avenue
 Visalia, California

 Chico, CA 95926
 TEL:

 TEL:
 (530) 343-5818

 VipTaccom43-3807
 Mobile:

## November 12, 2007 Nipomo CSD

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## Quality Control - Inorganic

Explanation 408	ns Matrix Spike(MS) or Post Digestion Spike(PDS) has no Acceptance Range (DQO) because of high analyte concentration in the sample. Data was accepted based on the LCS or CCV recovery.
Definitions	
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS/MSD	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
ICB	: Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
ICV	: Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
ND	: Non-detect - Result was below the DQO listed for the analyte.
< 1/4	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

SP 711362: Quality Control Page 2

Corporate Offices & Laboratory P.O. Box 272 / 853 Corporation Street Santa Paula, CA 93061-0272 TEL, 1805) 352-2000 FAX: IRNSI 505.1172				Remarks:	Image: Nipomo Community Services District         Address: Nipomo CSD         Address: Nipomo CSD         Address: Nipomo CSD         Attn:: Dan Migliazzo         Phone:       (805)929-1341         Fax:       (805)929-1341         Project Name:       Southland WWTP 97-75         Project Name:       Southland WWTP 97-75         Purchase Order Number:       Pickup Fee:         Quote Number:       Pickup Fee:         Compositor Setup Date:       C. / f. / C. / Time: 4         Lab Number:       Sampler(S)         Num       Location Description         1       Effluent         /////sing       /o///sing         1       Effluent         /o///sing       /o///sing	ENVIRONMENTAL
Offlige & Laborationy 2500 Stagecoach Ruad Stockton, CA 95215 FEL, 1209 942-0182 FAX, John March 199	Mr 10	Level Car		Relinquished D	SC       and Time       L	
			Idistas sina lih	Date: Time: Relinquished	Field Test-Field pH     TEST DESCRIPTION       Image: Provide the state of	Weekly where follow com
Office & Laboration:     Field       563 East Lindo Avenue     Mis       Chico CA 95926     Th       TEL: 6301 9435810     Min       TEV: 1501 9435810     Min		Timg: Received By:	IN 10 BO 110 EST-	Date: Time: Relinquished	See Requires Field pH & Temperature to Calculate     See Reverse side for Container, Preservative and Sampling information       See Reverse side for Container, Preservative and Sampling information     See Reverse side for Container, Preservative and Sampling information	Laboratory Copy (1 of 3)
Fiald Office Missilla California Tetra (ESC) (2019) Manhar (550) T37-2004 Fialanta (550) T37-2004		Date: Time:		Date: Time:	л Мобо	

Copy of document found at www.NoNewWipTax.com

# Santa Paula - Condition Upon Receipt (Attach to COC)

### Sample Receipt:

121 - 123 - 133 - 134 - 134 - 134 - 134 - 134 - 134 - 134 - 134 - 134 - 134 - 134 - 134 - 134 - 134 - 134 - 134

1.	Number of ice chests/packages received: Note as OTC if received over the counter unpackaged.					
2.	Were samples received in a chilled condition? Temps: Acceptable is above freezing to 6° C. Also acceptable is received of received at room temperature (RRT) if sampled within one hour of must be documented below. If many packages are received at one prioritize further review. Please notify Microbiology personnel im-	on ice (ROI) receipt. Clie time check f	ent contact f or tests/H.T	for temp .'s/rushe	erature fa s/Bacti's	ilures
3.	Do the number of bottles received agree with the COC?		Yes	No	N/A	
4.	Were samples received intact? (i.e. no broken bottles, le	eaks etc.)	TES	No		
5.	Were sample custody seals intact?		-AHA	Yes	No	
Sign	and date the COC, obtain LIMS sample numbers, select	methods/t	ests and p	rint lab	els.	
1.	were all requested analyses understood and acceptable?	?	- Tes	No		
2.	Did bottle labels correspond with the client's ID's?	5.	Yes	No	N T / A	Por
3.	Were all bottles requiring sample preservation properly			No	N/A	FGL
4.	Were all analyses within holding times at time of receip		Yes	No		
5.	Have rush or project due dates been checked and accept		N/A	Yes	No	
	ch labels to the containers and include a copy of the COC		elivery.			
Sam	ple Receipt. Login and Verification completed by (initial	s):		$\leq$		
	repancy Documentation: items above which are "No" or do not meet specification Person Contacted:	Phone N	ps) must l Number:			
	Resolution:					
2.	Person Contacted: Initiated By: Problem:	Phone M Date:	Number:			
	Resolution:	Nipomo C	(2-1 0mmunity 5P 0	711	362	





# ANALYTICAL CHEMISTS

November 12, 2007

Lab ID : SP 709968 Customer : 2014320

Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

### Laboratory Report

Introduction: This report package contains total of 5 pages divided into three sections:

Case Narrative (2 Pages): An overview of the work performed at FGL. Chemical Results (1 Page): Results for each sample submitted. Quality Control (2 Pages): Supporting Quality Control (QC) results.

This report package pertains to the following sample:

Sample Description	Date Sampled	Date Received	FGL Lab Sample ID #	Matrix
Effluent	09/07/2007	09/07/2007	SP 709968-01	ww

Sampling and Receipt Information: The sample was received, prepared and analyzed within the method specified holding times. All samples were received on ice. All samples were checked for pH if acid or base preservation required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Forms.

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Wet Chemistry QC

300.0	09/07/2007:C215 All preparation quality controls are within established criteria.					
	09/07/2007:A - IC204 All analysis quality controls are within established criteria.					
351.1	09/21/2007:A242 All preparation quality controls are within established criteria.					
	09/25/2007:A - FI203 All analysis quality controls are within established criteria.					
4500NH3H	09/12/2007:A203 All preparation quality controls are within established criteria.					
	09/18/2007:B - F1203 All analysis quality controls are within established criteria.					

Case narrative continued on next page...

November 12, 2007

Nipomo CSD

Lab ID : SP 709968 Customer : 2014320

**Certification:** I certify that this data package is in compliance with NELAC Standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following signature.

FGL ENVIRONMENTAL

Kelly A. Dunnahoo, B.S. Laboratory Director

KAD:cea





# ANALYTICAL CHEMISTS

November 12, 2007

Nipomo CSD Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

Description : Effluent Project : Southland WWTP 97-75 Lab ID : SP 709968-01 Customer ID: 2-14320

Sampled On : September 7, 2007-10:00 Sampled By : Rick Motley Received On : September 7, 2007-15:30 Matrix : Waste Water

Sample Results - Inorganic

Constituent	Results	PQL	Units	Note	Sample Method	Preparation Date/ID	Sampl Method	e Analysis Date/ID
Field Test pH Temperature	7.9 10.5	-	units oC			09/07/07:FS00 09/07/07:FS00		09/07/2007: 09/07/2007:
Special Inorg. P:1,4 Un-ionized Ammonia-N	0.27	0.02*	mg/L		4500NH3H	09/12/07:A203	4500NH3H	09/18/2007:B00
Wet Chemistry <sup>P:1</sup> Ammonia-N Nitrate	15 2.0	1 <sup>●</sup> 0.4	mg/L mg/L		4500NH3H 300.0	09/12/07:A203 09/07/07:C215	4500NH3H 300.0	09/18/2007:B00 09/08/2007:A00
Nitrite	22.6	0.3	mg/L		300.0	18:00 09/07/07:C215 18:00	300.0	09:31 09/08/2007:A00 09:31
Nitrogen, Total Nitrate + Nitrite as N	8.0 7.3	0.5 0.1	mg/L mg/L		Calculation 300.0	09/07/07:C215 18:00	Calculation 300.0	09/08/2007:A00 09:31
Kjeldahl Nitrogen	21	2.5*	mg/L		351.1	09/21/07:A242	4500NH3G	09/25/2007:A00

ND=Non-Detect. PQL=Practical Quantitation Limit.  $\blacklozenge$  PQL adjusted for dilutions, concentrations, dry weight reporting, or limited sample. Containers: (P) Plastic Preservatives: (1) Cool 4°C, (4) H2SO4 pH < 2

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 Stockton, CA 95926

 CA ELAP Certification No. 1563
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SP 709968: Chemical Results Page 1

Field Office Visalia, California

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#### ANALYTICAL CHEMISTS November 12, 2007 Nipomo CSD

Lab ID : SP 709968 Customer : 2-14320

### Quality Control - Inorganic

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Un-ionized Ammonia-N	4500NH3H	09/18/2007:B	00-ICB 00-CCB 00-ICV 00-CCV	mg/l mg/l mg/l mg/l	2.000 2.000	ND ND 97.8% 98.6%	<0.2 <0.2 90-110 90-110	
Wet Chem Kjeldahl Nitrogen	351.1	09/21/2007:A242 (SP 709846-01)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	2.000 2.000 2.000	ND 101% 42.6% 130% 1.7	< 0.5 69-125 25-149 25-149 $\le 0.5$	
Ammonia Nitrogen	4500NH3G	09/25/2007:A	00-ICB 00-CCB 00-ICV 00-CCV	mg/l mg/l mg/l mg/l	2.000 2.000	ND ND 93.7% 101%	<0.2 <0.2 90-110 90-110	
Nitrate	300.0	09/07/2007:C215 (STK738299-01)	LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L	20.00 400.0 400.0	98.8% 105% 104% 0.4%	90-110 88-124 88-124 ≤29.1	
Ammonia-N	4500NH3H	09/12/2007:A203 (SP 709788-01)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	2.000 2.000 2.000	ND 98.0% 87.0% 76.2% 12.9%	<0.2 63-116 17-127 17-127 ≤80.2	
Nitrate	300.0	09/07/2007:C215 (STK738299-01)	LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L	20.00 400.0 400.0	98.8% 105% 104% 0.4%	90-110 88-124 88-124 ≤29.1	
	300.0	09/07/2007:A	00-ICB 00-CCB 00-ICV 00-CCV	ppm ppm ppm ppm	40.00 20.00	ND ND 99.7% 97.2%	<0.4 <0.4 90-110 90-110	
Nitrite	300.0	09/07/2007:C215 (STK738299-01)	LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L	15.00 300.0 300.0	98.9% 106% 105% 0.4%	90-110 91-121 91-121 ≤23.8	
	300.0	09/07/2007:A	00-ICB 00-CCB 00-ICV 00-CCV	ppm ppm ppm ppm	30.00 15.00	ND ND 99.9% 97.3%	<0.3 <0.3 90-110 90-110	
LCS : Laboratory Co recovery. MS/MSD : Matrix Spikes how that sar	ontrol Standard/S - A random s nple matrix affe	verify that the pre ample - Prepared to ample is spiked wit cts analyte recovery nalyzed to verify the	Daration pro	ocess is not at the prepa a amount of	contributing ration proce analyte.	contamination ss is not affe The recoverie	to the s ecting analy	/te

Definitions are continued on next page ...

# November 12, 2007 Nipomo CSD

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Lab ID : SP 709968 Customer : 2-14320

# Quality Control - Inorganic

D	efinitions		
	ICV	:	Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
	CCB	:	Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
	CCV	:	Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
			Non-detect - Result was below the DQO listed for the analyte.
	DQO	:	Data Quality Objective - This is the criteria against which the quality control data is compared.

SP 709968: Quality Control Page 2

P O. Box 272: 853 Corporation Street Santa Paula, DA 93061-0272 TEL: (805) 362-2000 F VV renet sine (Free)	R	Remarks:	S: Nipomo CSD Attr: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444 ( $(805)929-1341$ Fax: ( $(805)929-509$ Person: Dan Migliazzo Name: <b>Southland WWTP 97-75</b> e Order Number: umber: umber: umber: umber: umber: umber: umber: umber: umber: umber: umber: umber: umber: umber: umber: umber: umber: umber: f(s) $f(s)$ $f(s)$ $f(s)$ $f(s)f(s)$ $f(s)$	Client: Nipomo Community Services District
Office & Laboratory 2500 Stagecoach Road Stockton, CA 95215 TEL: (209) 942-0152		Relinquished	G       Method of Sampling:       Composite(C)       Grab(G)         Image: Second Structure       Type of Sample       **SEE REVERSE SIDE**         Potable(P)       Non-Potable(NP)       Ag Water(AgW)         Bacti Type:       Other(O)       System(SYS)       Source(SR)         Waster(O)       System(SYS)       Source(RPL)         Other(O)       Special(SPL)	08/06/2007
V	1 10:3 0 Time:	Date: Time: Relinquished	<ul> <li>Field Test-Field pH</li> <li>!!pH = 15 MINUTE HOLD TIME!!</li> <li>Field - pH Date</li> <li>Field - pH Time</li> <li>Special Inorg Un-ionized Ammonia</li> <li>Requires Field pH &amp; Temperature to Calculate 16oz(P)-H2SO4</li> </ul>	Weekly WIGHTC.COTT
Office & Laboratory 553 East Lindo Avenue Chino CA 95926 TEL: (530) 343-5818	Time:	Date: Time: Retinquished	<ul> <li>Wet Chemistry-Total N,NO2,NO3,NH3-N 16oz(P)</li> <li>Field Test-Field Temp.</li> </ul>	CHAIN OF CIUSTOUY Laboratory Copy (1 of 3) See Reverse side for Container, Preservative and Sampling information
Eield Office Visalia: California UCL (1559) 734 (or X) Mobile: (559) 737 (139) ria v. Laku, raquistus	Date: Time:	Date: Time:	found of www.NoNewWinTox.com	()))) 3) information M060

Copy of document found at www.NoNewWipTax.com

# Santa Paula - Condition Upon Receipt (Attach to COC)

Sam 1.	<b>ple Receipt:</b> Number of ice chests/packages received: Note as OTC if received over the counter unpackaged.		44 republication			
2.	Were samples received in a chilled condition? Temps Acceptable is above freezing to 6° C. Also acceptable is received on received at room temperature (RRT) if sampled within one hour of re must be documented below. If many packages are received at one tin prioritize further review. Please notify Microbiology personnel immediate	ceipt. Clie ne check fo	ent contact : or tests/H.T	for temp .'s/rushe	erature fai s/Bacti's	ilures
3.	Do the number of bottles received agree with the COC?		Yes	No	N/A	
4.	Were samples received intact? (i.e. no broken bottles, lead	ks etc.)	VES	No		
5.	Were sample custody seals intact?		XHA	Yes	No	
Sign	and date the COC, obtain LIMS sample numbers, select m	nethods/te	ests and p	orint lab	els.	
1.	Were all requested analyses understood and acceptable?		Xes	No		
2.	Did bottle labels correspond with the client's ID's?		A CES	No	<b>XT / A</b>	TOT
3.	Were all bottles requiring sample preservation properly p		? Æes	No	N/A	FGL
4.	Were all analyses within holding times at time of receipt?		Ces Silv	No		
5.	Have rush or project due dates been checked and accepted		AHA 	Yes	No	
	ch labels to the containers and include a copy of the COC t		elivery.	$\Delta$		
Sam	ple Receipt, Login and Verification completed by (initials)	):	C C	4		
		Phone N	ps) must <sup>/</sup> lumber:	<b>.</b>		
	Resolution:					
2.	Person Contacted: Initiated By: Problem:		Jumber:			
	Resolution:					
		Nipomo		070	rvices 9961	
			TA-02/0	11/200	کلہ والے و	e a seu e





# ANALYTICAL CHEMISTS

November 12, 2007

Lab ID : SP 710760 Customer : 2014320

Nipomo CSD

Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

### Laboratory Report

Introduction: This report package contains total of 5 pages divided into three sections:

Case Narrative(2 Pages): An overview of the work performed at FGL.Chemical Results(1 Page): Results for each sample submitted.Quality Control(2 Pages): Supporting Quality Control (QC) results.

This report package pertains to the following sample:

Sample Description	Date Sampled	Date Received	FGL Lab Sample ID #	Matrix
Effluent	09/26/2007	09/26/2007	SP 710760-01	ww

Sampling and Receipt Information: The sample was received, prepared and analyzed within the method specified holding times. All samples were received on ice. All samples were checked for pH if acid or base preservation required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Forms.

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Wet Chemistry QC

351.1	10/16/2007:A242 All preparation quality controls are within established criteria.							
	10/18/2007:A - FI203 All analysis quality controls are within established criteria.							
4500NH3H	09/28/2007:A203 All preparation quality controls are within established criteria.							
	10/04/2007:C - FI203 All analysis quality controls are within established criteria.							
4500NO2B	09/26/2007:C251 All preparation quality controls are within established criteria.							
	09/26/2007:C - UV203 All analysis quality controls are within established criteria.							
4500NO3F	10/01/2007:A220 All preparation quality controls are within established criteria.							
	10/01/2007:C - FI203 All analysis quality controls are within established criteria, except: The following note applies to Nitrate + Nitrite as N: 220 The absolute value of the CCB was greater than the DQO. However, all results were either five times greater than the CCB concentration or ND relative to the PQL.							

 Corporate Offices & Leboratory;
 Office & Laboratory

 P.O. Box 2727653 Computation Street
 on next
 2506 Stagecoach Road

 Santa Paula, CA 93061-0272
 Stockton, CA 95215

 TEL: (805) 392-2000
 TEL: (209) 942-0182

 FAX: (805) 525-4172
 Copyort document/found

 CA NELAP Certification No. 01110CA
 CA ELAP Certification No. 01110CA

 Att
 2505 Stagecoach Road
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 Chico, CA 95926

 TEL:
 (209) 942-0182
 TEL:

 Copyoft document found at
 www.NoNewWiptaxcoms43-3807

 CA ELAP Certification No. 1563

Office & Laboratory

Case Narrative Page 1 Field Office Visalia, California TEL: (559) 734-9473 FAX: (559) 734-9473 Mobile: (559) 737-2399 November 12, 2007

Nipomo CSD

Lab ID : SP 710760 Customer : 2014320

**Certification:** I certify that this data package is in compliance with NELAC Standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following signature.

FGL-ENVIRONMENTAL Kelly A. Dunnahoo, B.S.

KAD:cea

Kelly A. Dunnahoo, B. Laboratory Director





# ANALYTICAL CHEMISTS

November 12, 2007

Nipomo CSD Attn: Dan Migliazzo P. O. Box 326 Nipomo, CA 93444

Description : Effluent Project : Southland WWTP 97-75 Lab ID : SP 710760-01 Customer ID: 2-14320

Sampled On : September 26, 2007-09:20 Sampled By : Rick Motley Received On : September 26, 2007-00:00 Matrix : Waste Water

Sample Results - Inorganic

					-	Preparation	-	e Analysis
Constituent	Results	PQL	Units	Note	Method	Date/ID	Method	Date/ID
Field Test								<u>.</u>
pН	9.40	-	units			09/26/07:FS00		09/26/2007:
Temperature	10.05		oC			09/26/07:FS00		09/26/2007:
Special Inorg. P:1,4								
Un-ionized Ammonia-N	0.38	0.04*	mg/L		4500NH3H	09/28/07:A203	4500NH3G	10/04/2007:C00
Wet Chemistry P:1								
Ammonia-N	21	2*	mg/L		4500NH3H	09/28/07:A203	4500NH3G	10/04/2007:C00
Nitrate	1.0	0.4	mg/L		4500NO3F	10/01/07:A220	4500NO3F	10/01/2007:C00
						14:02		15:45
Nitrite	0.4	0.3	mg/L		4500NO2B	09/26/07:C251	4500NO2B	09/26/2007:C00
						17:00		17:40
Nitrogen, Total	28	5*	mg/L		Calculation		Calculation	
Nitrate + Nitrite as N	0.2	0.1	mg/L		4500NO3F	10/01/07:A220	4500NO3F	10/01/2007:C00
						14:02		15:45
Kjeldahl Nitrogen	28	5*	mg/L		351.1	10/16/07:A242	4500NH3G	10/18/2007:A00

ND=Non-Detect. PQL=Practical Quantitation Limit.  $\blacklozenge$  PQL adjusted for dilutions, concentrations, dry weight reporting, or limited sample. Containers: (P) Plastic Preservatives: (1) Cool 4°C, (4) H2SO4 pH < 2

SP 710760: Chemical Results Page 1

 Field Office

 Visalia, California

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 (559) 734-9473

 FAX:
 (559) 734-8435

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#### ANALYTICAL CHEMISTS November 12, 2007 Nipomo CSD

Lab ID : SP 710760 Customer : 2-14320

# Quality Control - Inorganic

Constituent	Method	Date/ID	Туре	Units	Conc.	QC Data	DQO	Note
Un-ionized Ammonia-N	4500NH3H	09/28/2007:A203 (CH 775627-01)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	2.000 2.000 2.000	ND 75.0% 74.6% 77.2% 3.3%	<0.2 63-116 17-127 17-127 ≤80.2	
	4500NH3G	10/04/2007:C	00-ICB 00-CCB 00-ICV 00-CCV	mg/l mg/l mg/l mg/l	2.000 2.000	ND ND 101 % 108 %	<0.2 <0.2 90-110 90-110	
Wet Chem Kjeldahl Nitrogen	351.1	10/16/2007:A242	Blank LCS	mg/L mg/L	2.000	ND 83.0%	< 0.5 69-125	
Ammonia Nitrogen	4500NH3G	10/18/2007:A	00-ICB 00-CCB 00-ICV 00-CCV	mg/l mg/l mg/l mg/l	2.000 2.000	ND ND 100% 101%	<0.2 <0.2 90-110 90-110	
Nitrate + Nitrite as N	4500NO3F	10/01/2007:A220 (CH 775653-01)	MS MSD MSRPD	mg/L mg/L mg/L	4.000 4.000	66.3% 114% 15.5%	5-285 5-285 ≤30.4	
Ammonia-N	4500NH3H	09/28/2007:A203 (CH 775627-01)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	2.000 2.000 2.000	ND 75.0% 74.6% 77.2% 3.3%	< 0.2 63-116 17-127 17-127 $\le 80.2$	
Nitrate + Nitrite as N	4500NO3F	10/01/2007:A220 (CH 775653-01)	MS MSD MSRPD	mg/L mg/L mg/L	4.000 4.000	66.3% 114% 15.5%	5-285 5-285 ≤30.4	
	4500NO3F	10/01/2007:C	00-ICB 00-CCB 00-ICV 00-CCV	mg/l mg/l mg/l mg/l	4.000 4.000	ND ND 103% 103%	<0.1 <0.1 90-110 90-110	
Nitrite as Nitrogen	4500NO2B	09/26/2007:C251 (SP 710783-01)	MS MSD MSRPD	mg/L mg/L mg/L	0.4568 0.4568	26.5% 26.2% 0.0014	1-173 1-173 ≤0.1	
	4500NO2B	09/26/2007:C	00-CCB 00-CCV	mg/L mg/L	0.1522	ND 96.6%	<0.1 90-110	
		was greater than tion or ND relative			all results	were either fi	ve times	
	ontrol Standard/S	verify that the prep ample - Prepared to ample is spiked wit	verify that	it the prepar	ation proce		ecting analy	rte

Definitions are continued on next page ...

# November 12, 2007 Nipomo CSD

Lab ID : SP 710760 Customer : 2-14320

# Quality Control - Inorganic

Definitions	
	how that sample matrix affects analyte recovery.
ICB	: Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
ICB ICV CCB	: Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
ND	: Non-detect - Result was below the DQO listed for the analyte.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

SP 710760: Quality Control Page 2

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Corporate Cifices & Laboratory P.O. Box 2722 833 Corporation Street Santa Paula, CA 93061-0272 TEL: (805) 392-2000 FEL: (805) 392-2000			Remarks:		
c	Received By	R)	Relinquished	S     B     B     C       G     Method of Sampling:     Composite(C)     Grab(G)	NGRON
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N/A

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Yes

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No

No

No

Yes

# Santa Paula - Condition Upon Receipt (Attach to COC)

#### Sample Receipt:

- Number of ice chests/packages received: Note as OTC if received over the counter unpackaged.
- 3. Do the number of bottles received agree with the COC?
- 4. Were samples received intact? (i.e. no broken bottles, leaks etc.)
- 5. Were sample custody seals intact?

Sign and date the COC, obtain LIMS sample numbers, select methods/tests and print labels.

#### Sample Verification, Labeling and Distribution:

- 1. Were all requested analyses understood and acceptable?
- 2. Did bottle labels correspond with the client's ID's?
- 3. Were all bottles requiring sample preservation properly preserved?
- 4. Were all analyses within holding times at time of receipt?
- 5. Have rush or project due dates been checked and accepted?

Attach labels to the containers and include a copy of the COC for lab delivery.

Sample Receipt, Login and Verification completed by (initials):

#### Discrepancy Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1.	Person Contacted:	Phone Number:
	Initiated By:	Date:
	Problem:	

Resolution:

Resolution:

2.	Person Contacted:	Phone Number:
	Initiated By:	Date:
	Problem:	

(2-14320) Nipomo Community Services District SP 0710760 SJJ-09/26/2007-15:22:25

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# ATTACHMENT 2 WATER RESOURCES INVESTIGATION REPORT 03-4279 (SELECTED EXCERPTS)

# Use of Water-Quality Indicators and Environmental Tracers to Determine the Fate and Transport of Recycled Water in Los Angeles County, California

By Robert Anders and Roy A. Schroeder

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations Report 03-4279

Prepared in cooperation with the WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

Sacramento, California 2003

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# Use of Water-Quality Indicators and Environmental Tracers to Determine the Fate and Transport of Recycled Water in Los Angeles County, California

By Robert Anders and Roy A. Schroeder

### ABSTRACT

Tertiary-treated municipal wastewater (recycled water) has been used to replenish the Central Basin in Los Angeles County for over 40 years. Therefore, this area provides an excellent location to investigate (1) the fate and transport of wastewater constituents as they travel from the point of recharge to points of withdrawal, and (2)/(2)the long-term effects that artificial recharge using recycled water has on the quality of the groundwater basin. The U.S. Geological Survey has been conducting such investigations in this area for about 10 years, beginning in 1992. For this investigation, a variety of inorganic, organic, and isotopic constituents were analyzed in samples from 23 production wells within 500 feet of the San Gabriel and Rio Hondo Coastal Basin Spreading Grounds, and tritium/helium-3, chlorofluorocarbons, dissolved gases, and nitrogen isotopes were analyzed in five multiple-well monitoring sites along a 10-mile flow path extending from just upgradient of the spreading grounds southward through the Central Basin.

Spearman rank-order correlation coefficients and level of significance calculated for about 40 water-quality indicators and several physical features show significant correlations between numerous inorganic and organic constituents that indicate the presence of recycled water. On the basis of a simple two-member mixing model, chloride, boron, ultraviolet absorbance at 254 nanometers, and excitation-

emission fluorescence yielded the most reasonable estimates of wastewater percentages in the production wells. Tritium/helium-3 age determinations indicated that samples of ground water tested range in age from less than 2 to more than 50 years. Chloride and boron concentrations, along with tritium/helium-3 age determinations, indicate more rapid recharge and (or) displacement of pre-existing ground water at the San Gabriel Coastal Basin Spreading Grounds than at the Rio Hondo Coastal Basin Spreading Grounds. Nitrogen-15 enrichment of the groundwater nitrate and dissolved nitrogen indicates that denitrification, an important process for the removal of nitrate at the shallower depths beneath the spreading grounds, continues to occur at distances of several miles from the spreading grounds and over a period of many years. Analysis of dissolved gases shows that areas that contain recycled water have no detectable methane, whereas methane is present in the native ground water older than 50 years. The absence of methane in the younger ground water suggests that artificial recharge using recycled water has the desirable effect of increasing slightly the redox potential of the ground-water basin. Finally, measured chlorofluorocarbon concentrations and tritium/helium-3 age determinations indicate that chlorofluorocarbon concentrations are markedly elevated above atmosphere-water equilibrium in ground water older than about 20 years but still young enough to contain recycled water.

Results of the nonparametric test are summarized in table 3. Correlation coefficients (multiplied by 100 to convert decimal values to whole numbers) are listed for each pair of constituents above the diagonal that divides the table. Level of significance ( $\alpha$ ) is designated below the diagonal by three stars ( $\alpha < 0.001$ ; strongly significant), two stars  $(\alpha = 0.001$  to 0.05; highly significant), and one star  $(\alpha = 0.05 \text{ to } 0.10; \text{ moderately significant}); \text{ and referred}$ to as strong, moderate, and weak in subsequent discussions. The three levels of significance are related to the correlation coefficients by the following:  $\alpha < 0.001$ ,  $\rho > 0.65$ ;  $\alpha = 0.001$  to 0.05,  $\rho = 0.65$  to 0.40; and  $\alpha = 0.05$  to 0.10,  $\rho = 0.40$  to 0.35. The 45 constituents are listed in order as groups that consist of inorganic species, trace elements, isotopes, "calculated" values, microbes, organic indicators, and \ physical features.

High numbers of significant correlations are readily apparent within certain groups; for example, several inorganic species and organic indicators. Correlations for more than half of the inorganic pairs and half of the organic pairs are strongly significant ( $\alpha$ <0.001). The high number for inorganic species is at least partly an autocorrelation of all major ions with dissolved-solids concentration (TDS) and specific conductance (SC). As expected, correlations are weaker, but still significant, for inorganic species that are less conservative, such as calcium (Ca), magnesium (Mg), alkalinity (ALK), and sulfate (SO<sub>4</sub>).

The high number of significant correlations for organic pairs is explained by the fact that the organic compounds and broad organic indicators have a common source in the recycled water. In fact, only trihalomethanes (THMs) are uncharacteristic in that they exhibit few significant correlations (2 out of 10 pairs) within the organic group. This could mean that there are THM sources other than chlorinated recycled water, or that THM biodegradation and (or) sorption differs greatly from that of the other constituents tested.

When the two groups are considered together, about half the inorganic-organic pairs exhibit statistically significant correlation; but the number is much higher for sodium and chloride. This reflects the addition of salt to wastewater during the treatment process (Nightingale and McCormick, 1985; Umari and others, 1995). In fact, the correlation coefficients between chloride and organic pairs are increased further when bromide is used to remove natural chloride and yield "excess" chloride (exCl), as discussed in the section "Two-Member Mixing Models for Selected Constituents." Note that the absence of any significant correlations between bromide (Br) and organic constituents supports the method used to calculate "excess" chloride. Two other inorganic constituents, "excess" boron (exB) and "backcalculated" nitrogen (calN) assumed to be nitrate, also exhibit high numbers of significant correlations with organic pairs and, therefore, are also discussed in detail in the same section.

Three trace elements-iron (Fe), manganese (Mn), and zinc (Zn)—were analyzed in the production wells. Concentrations of these trace elements in recycled water (effluent) are 43, 17, and 160 µg/L, respectively (see table 2). Although zinc is abundant in wastewater, experiments at the constructed research site indicate that it is reduced by about two-thirds over a distance of less than 25 ft during recharge (Schroeder and others, 2003). Hence, it is not surprising that zinc in the production wells shows no significant correlations with any other constituents that are indicators of recycled water. Elevated iron and manganese concentrations are present in some of the wells, but they are unlikely to have their origin in recycled water. Rather they likely are both mobilized or removed from aquifer soils in response to local environmental conditions. Fe and Mn are moderately correlated (table 3), reflecting their similar behavior under reducing (soluble) and oxidizing (insoluble) conditions.

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#### "Excess" Chloride and Boron

Two constituents added to water during the treatment process, Cl and B, were evaluated as tracers or recyled water in the subsurface. If unfractionated sea salt in atmospheric precipitation is the sole source of chloride (Cl) and bromide (Br), and both halides exhibit completely conservative physical and chemical behavior during subsurface transport, the Cl/Br mass ratio in ground water would be equal to 287, the ratio found in seawater (Schroeder and others, 1993). Cl is indeed enriched relative to Br in the production wells, and in the recycled water itself (Schroeder and others, 1997). Deviation from a seawater-dilution line can be used to estimate recycled-water percentages, designated "excess" chloride, if it is assumed that the process of water reuse adds only Cl but no Br, using the following equation:

$$[Cl] = (120 - x)287[Br] \tag{1}$$

where

[Cl]	= chloride concentration measured in
	production well [mg/L];
120	= chloride concentration measured in
	recycled water [mg/L];
287[ <i>Br</i> ]	= chloride concentration in production

well without recycled water [mg/L]; and
 x = calculated percentage of recycled water
 [%].

Similarly, boron (B) is added to the recycled water in large amounts during water reuse, primarily owing to its presence as a softener in detergents. It is used in a two-member mixing model to calculate recycled water percentages, designated "excess" boron, with the effluent concentration of 399  $\mu$ g/L being one end member. The two-member mixing model assumes that the lowest concentration measured in any of the 23 production wells (93  $\mu$ g/L in well 23) represents conditions in which there is no contribution from recycled water. The percentage of recycled water can be estimated using the following equation:

$$[B] = x(399) + (1 - x)[B_{Native}]$$
(2)

where

[B]	= boron concentration measured in production well [µg/L];
399	= boron concentration measured in recycled water $[\mu g/L]$ ;
$[B_{Native}]$	= boron concentration in production well without recycled water [ $\mu$ g/L]; and
x	= calculated percentage of recycled water [%].

Linear regression analysis was performed on the recycled-water percentages using the software program S-Plus (Mathsoft, Inc., Cambridge, Mass.) and the robust MM regression method. Regression models such as the robust MM regression method are useful for fitting linear relations when the random variation in the data is not Gaussian (normal) or when the data contain significant outliers. Furthermore, the results of the robust MM linear regression method returns a model that is almost identical in structure to a standard linear regression model allowing for the production of regression plots. On the basis of the results of the analysis, "excess" Cl and "excess" B are correlated with a coefficient of determination,  $r^2$ , of 0.58 (fig. 7). The fact that "excess" chloride and "excess" boron are correlated supports the hypothesis that both constituents are at least semiquantitative indicators of the percentage of recycled water in the production wells, although the underlying assumptions are only approximately correct since the regression line neither passes through the origin nor has a slope of 1. Furthermore, the calculated percentages are higher than the average amount of about 30 percent that would be expected on the basis of quantity and sources of water delivered to the spreading grounds for recharge during the last 10 years. It is anticipated that these recycledwater percentages can be improved with more reliable information on background concentrations of ground water prior to recharge, spatial variations within the Montebello Forebay, and the contribution of ground water from the San Gabriel Valley.

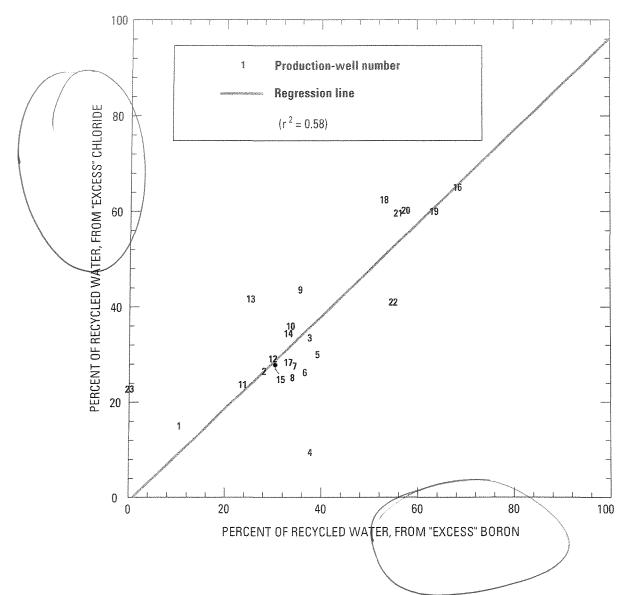


Figure 7. Estimates of recycled-water percentages in selected production wells based on "excess" chloride and "excess" boron values, Los Angeles County, California.

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#### Boron Isotopes

Isotopic analyses of B may provide another method for quantifying recycled-water percentages (Vengosh and others, 1994). A delta boron-11 ( $\delta^{11}$ B) value of +6 per mil ( $^{0}/_{oo}$ ) for an effluent sample and values of about +13  $^{0}/_{oo}$  measured in a few of the production wells indicate that boron is isotopically depleted in recycled water (Schroeder and others, 1997). Furthermore, regression analysis indicates a negative correlation between "excess" Cl and  $\delta^{11}$ B (fig. 8) and supports the use of boron as an indicator of recycled water, although the correlation between  $\delta^{11}$ B and "excess" Cl ( $r^2 = 0.14$ ) is considerably weaker than the correlation between "excess" Cl and "excess" B.

#### Nitrogen Isotopes

Nitrogen-isotopes measured during artificial recharge experiments at the San Gabriel Coastal Basin Spreading Grounds provided evidence that denitrification occurs beneath the reservoir site (Anders and Schroeder, 1997). The process of denitrification is accompanied by enrichment in nitrogen-15 in the remaining nitrate. Analyses of the effluent sample (table 2) yielded a delta nitrogen-15 ( $\delta^{15}N$ ) value of +11.5 % for nitrate and concentrations of 6.4 and 4.5 mg/L as N for oxidized (NO<sub>3</sub> + NO<sub>2</sub>) and reduced (NH<sub>4</sub> + organic) species, respectively. A  $\delta^{15}$ N value of +25.4 % of or ammonia was reported in Schroeder and others (1997). Combining the isotope and concentration data yields an initial nitrogen isotope ratio of  $+17.2 \,^{\circ}/_{\circ\circ}$  for total N. This value represents a maximum that would occur if all forms of N were completely converted to NO3 and implies that any increment above this value for  $\delta^{15}$ N-NO<sub>3</sub> in the ground water would indicate

denitrification. Because nearly all of the 23 production wells have  $\delta^{15}$ N values that are higher than +17.2 °/<sub>00</sub>, and all have values that markedly exceed the  $\delta^{15}$ N value for NO<sub>3</sub> in recycled water, most of the NO<sub>3</sub> in the production wells is concluded to be the result of partially denitrified recycled water (fig. 9).

On the basis of the assumption of complete oxidation of N in recycled water followed by partial denitrification and negligible dilution with native waters, this enrichment of  $\delta^{15}$ N-NO<sub>3</sub> can be expressed in terms of an isotope-separation (fractionation) factor,  $\epsilon$ , by the Rayleigh fractionation equation:

$$\delta^{15}N_f = \delta^{15}N_i + \varepsilon Ln \frac{[NO_3]_f}{[NO_2]_i}$$
(3)

where

$\delta^{I3}N_f$	= final nitrogen isotope ratio measured in
5	well at time of sampling $[^{0}/_{00}]$ ;
\$15NI.	- initial (at time of recharge) aitrogen

 $N_i$  = initial (at time of recharge) nitrogen isotope ratio [ $^{0}/_{00}$ ];

$$[NO_3]_f$$
 = final nitrate concentration [mg/L]; and

 $[NO_3]_i$  = initial (at time of recharge) nitrate concentration [mg/L].

Previous calculations using the Rayleigh fractionation equation and isotope-ratio and nitrateconcentration data from before and after recharge experiments at the research site yielded an isotopeseparation factor of about -22 % (Anders and Schroeder, 1997) (fig. 9). Therefore, the amount of NO3 removal by denitrification during recharge and (or) subsequent ground-water transport to a production well can be estimated from measured isotope ratios by assuming that the isotope-separation factor of  $-22 \, ^{\circ}/_{\circ \circ}$ exists throughout the aquifer. Using the above assumptions yields N removals as high as 50 percent, with the highest N-removal percentage found in well 19M4 (production well number 16) in which  $\delta^{15}N =$ +31.36 °/<sub>00</sub>. Actual removal rates are likely to be slightly greater than calculated owing to lower  $\delta^{15}N$ values commonly found in stormwater used for recharge, which are composed of N of natural and fertilizer origins that typically have  $\delta^{15}N$  values much lower than those found in wastewater (Heaton, 1986, and Hübner, 1986). Furthermore, attempts were made to relate isotope ratios to plausible individual variables such as ground-water traveltimes or distance from the spreading grounds, depth of well, redox state as evidenced by oxygen and manganese concentrations, and even NO3 concentration itself. However, these attempts failed to yield any obvious relation owing to the complex interplay of all variables listed, in addition to timing and composition of recharge and mixing of water from different depths (Schroeder and others, 1997).

The youngest  ${}^{3}\text{H}/{}^{3}\text{He}$  age of 0.6 year was found in the water sample collected from a depth of 120 ft below land surface adjacent to the San Gabriel Coastal Basin Spreading Grounds (2S/12W-25G8). Other water samples collected from monitoring wells adjacent to the San Gabriel Coastal Basin Spreading Grounds at depths between 255 and 1,200 ft below land surface had  ${}^{3}H/{}^{3}He$  ages ranging from 3.2 to 22.0 years. <sup>3</sup>H/<sup>3</sup>He ages for water samples collected from monitoring wells located adjacent to the Rio Hondo Coastal Basin Spreading Grounds at depths between 160 and 930 ft below land surface ranged from 2.7 to 30.8 years. The  ${}^{3}\text{H}/{}^{3}\text{He}$  age for water samples collected from the monitoring wells located in the city of Downey at depths between 270 and 960 ft below land surface ranged from 25.9 to 34.1 years. These <sup>3</sup>H/<sup>3</sup>He ages indicate that recycled water is present to a depth of more than 900 ft below land surface adjacent to both spreading grounds and to a distance of more than 4 mi downgradient from both spreading grounds.

Linear regression analysis with the robust MM regression method (Mathsoft, Inc., Cambridge, Mass.) was preformed using the <sup>3</sup>H/<sup>3</sup>He ages and the depth of the monitoring wells located adjacent to the San Gabriel Coastal Basin (2S/12W-25G4 through 25G8) and Rio Hondo Coastal Basin Spreading Grounds (2S/12W-26D10 through 26D14). The resulting correlation was higher adjacent to the Rio Hondo Coastal Basin Spreading Grounds ( $r^2 = 0.89$ ) then adjacent to the San Gabriel Coastal Basin Spreading Grounds ( $r^2 = 0.56$ ) (fig. 16).

Although these correlations were calculated using a small number of data points and do not take into consideration asymmetric vertical flow that probably exists beneath the spreading grounds, they do provide some information about the recharge characteristics of the recycled water applied at the spreading grounds. The lower correlation for the monitoring wells adjacent to the San Gabriel Coastal Basin Spreading Grounds, along with similar <sup>3</sup>H/<sup>3</sup>He ages of 22.1 and 20.9 years for water samples collected from 580 (2S/12W-25G5) and 850 (2S/12W-25G4) ft below land surface, respectively (fig. 15), probably is due to mixing and (or) complete displacement of recharged water with pre-existing ground water at these depths. The higher correlation for the monitoring wells ( at the Rio Hondo Coastal Basin Spreading Grounds owing to the linear increase in age with depth suggests less displacement of pre-existing ground water than at the San Gabriel Coastal Basin Spreading Grounds.

#### Tracers of Recycled Water

#### Chloride and Boron

Chemical results from the production wells suggested that Cl and B would be most useful in locating the extent of the recycled water along the flow path, and this expectation is confirmed by data from the multiple-well monitoring sites (fig. 17). Values of "excess" Cl and "excess" B were determined for the monitoring wells following the same procedure used for estimating recycled-water percentages in the production wells (table 6). One end-member used to calculate the "excess" boron value was the average boron concentration from the monitoring well in Lakewood previously identified as containing no contribution from recycled water (62.5 mg/L in well 4S/12W-5H7). The "excess" Cl and "excess" B values of the monitoring wells show an  $r^2$  of 0.42 (fig. 18). Similarly, the "excess" Cl and "excess" B values of the production wells show an  $r^2$  of 0.58 (fig. 7).

The percentage of recycled water in three of the five monitoring wells (2S/12W-25G6-8) adjacent to the San Gabriel River Coastal Basin Spreading Grounds is similar to the highest values found in the production wells along the east side of the San Gabriel Coastal Basin Spreading Grounds (figs. 7 and 18). The high percentage of recycled water at the San Gabriel Coastal Basin Spreading Grounds exceeds the 35-percent limit DOHS sets on the allowable amount of recycled water that can be applied during any 3-year period, suggesting either greater use of this side for replenishment purposes during the dry months or higher natural levels of B and Cl on this side. Furthermore, those "excess" Cl and "excess" B values not showing a strong correlation either have a high concentration of bromide (4S/12W-5H10) or boron (3S/12W-9J6, 2S/11W-18C4, and 2S/11W-18C7) probably owing to surface anthropogenic effects such as oil-field brines and (or) local aquifer properties such as clay content or soil type.

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# ATTACHMENT 3 CORRESPONDENCE

**From:** Gardner, David [FWI] Sent: Thursday, December 13, 2007 12:29 PM **To:** Salazar, Valerie [FWI] Subject: FW: Nipomo Data

Attachments: Effluent 17th Oct 07 FGLDocSP\_0711739.pdf; Effluent 24th Oct 07 FGLDocSP\_0712008.pdf; Effluent 7th Sept 07 FGLDocSP\_0709968.pdf; Effluent 26th Sept 07 FGLDocSP\_0710760.pdf; Effluent 10th Oct 07 FGLDocSP\_0711362.pdf

From: Roberts, Shawn [FWI] Sent: Monday, November 26, 2007 1:51 PM To: Gardner, David [FWI] **Cc:** Sorensen, Paul [FWI]; Roberts, Shawn [FWI] Subject: Nipomo Data

David,

Well details are as follows:

Well/ Test	Installation	Surface Elev.	Seal Depth	Screen Depth Interval	Depth to Top of First Clay Layer	Elevation of Top of First Clay Layer	Depth to Top of Main Aquitard (Blue Clay)	Elevation of Top of Main Aquitard (Blue Clay)	Date Measurement	Depth to Water	Elevation of Water
Hole		(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)		(feet)	(feet)
PZ	Jan 2000	300	40	42-52	51	249	-	-	July 2007	30.2	271
MW-1	Jan 2000	298	-	35-75	27	271	80	218	July 2007	37.9	262
MW-2	Jan 2000	300	-	40-85	-	-	85	215	July 2007	40.9	260
MW-3	Jan 2000	302	-	50-130	-	-	135	167	July 2007	44.2	260

All effluent data I have is attached. I note that only the sample from the 24<sup>th</sup> mentions composite collection. I will follow up with the lab/NCSD for more data.

The Shallow well field chemistry was as follows:

- pH 7.71, EC 348 (does not appear correct), Temp 17.3 I did not bother with DO due to having used a bailer for collection
- The well ran dry and was sampled after 1 hour of recovery (It had not fully recovered)
- Well depth 30.4 feet
- Static 21.7 feet
- Well elevation probably about 273 feet asl

#### Thanks

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