FIGURE 4.27
Palmdale Water Reclamation Plant MW 2
Chloride and TDS

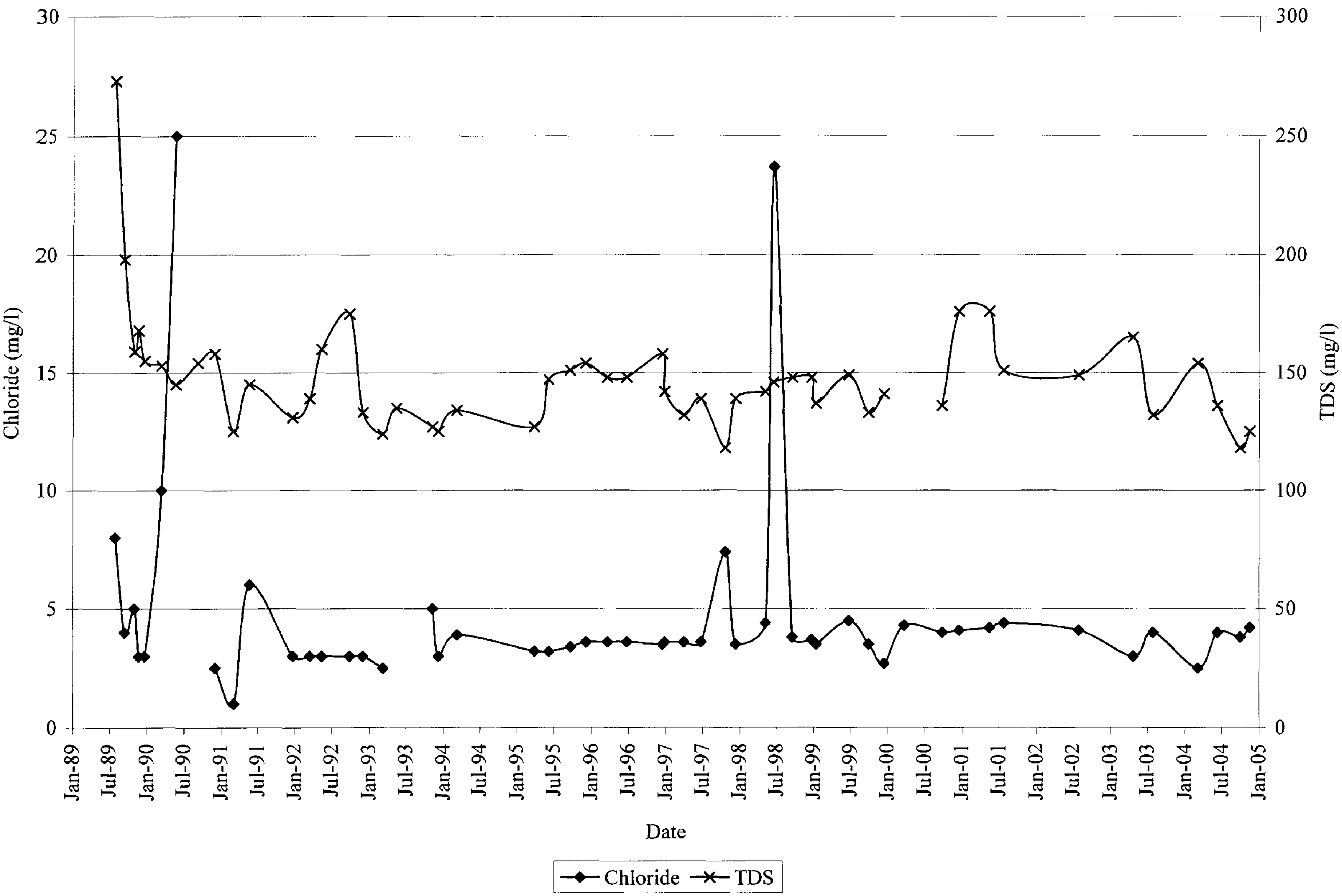

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

FIGURE 4.28
Palmdale Water Reclamation Plant MW 2
MBAS, NH_3, TKN, NO_3^-

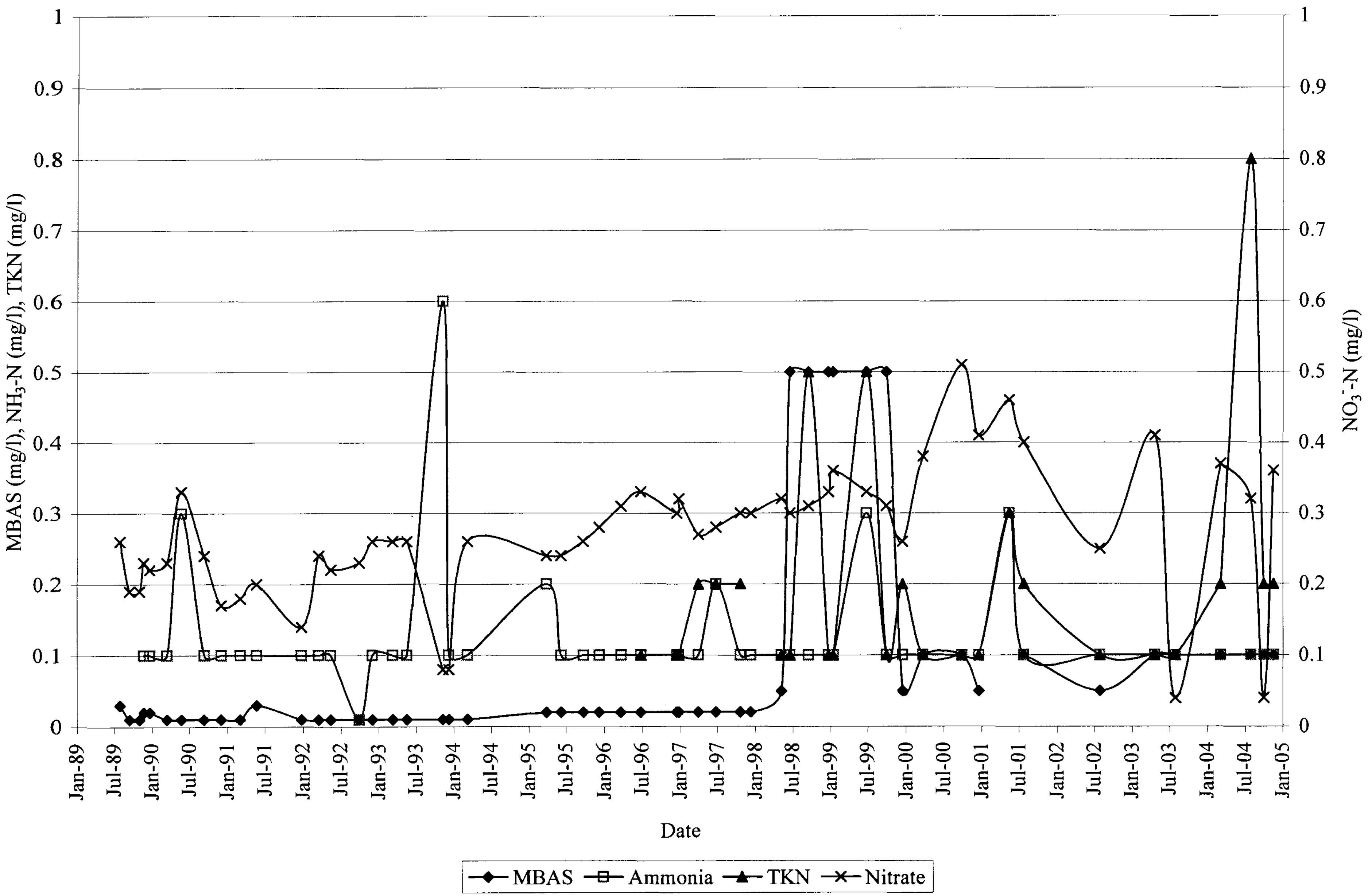

FIGURE 4.28a
Palmdale Water Reclamation Plant MW 2
Groundwater Elevation and Depth to Groundwater

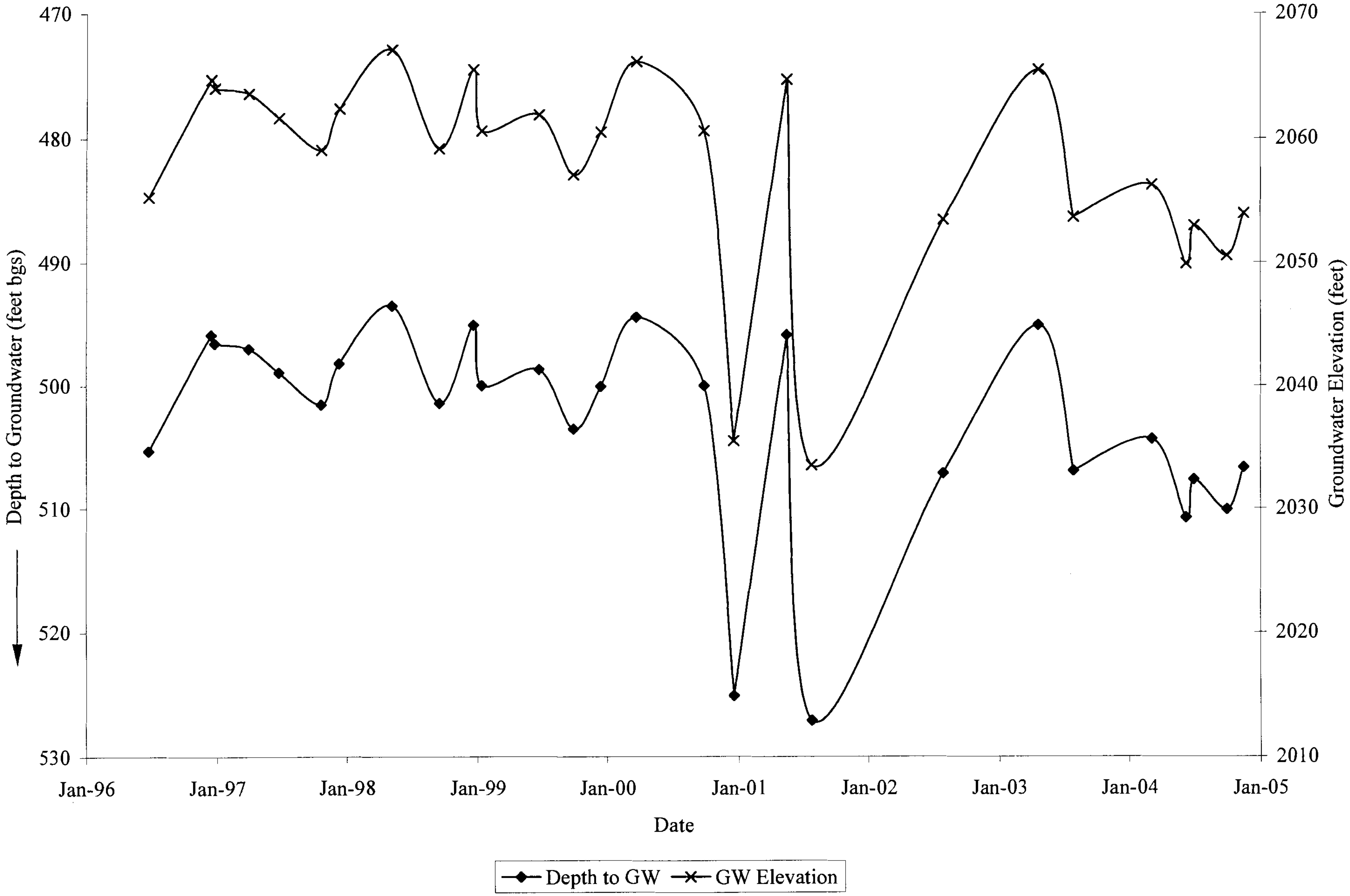

FIGURE 4.29
Palmdale Water Reclamation Plant MW 4
Chloride and TDS

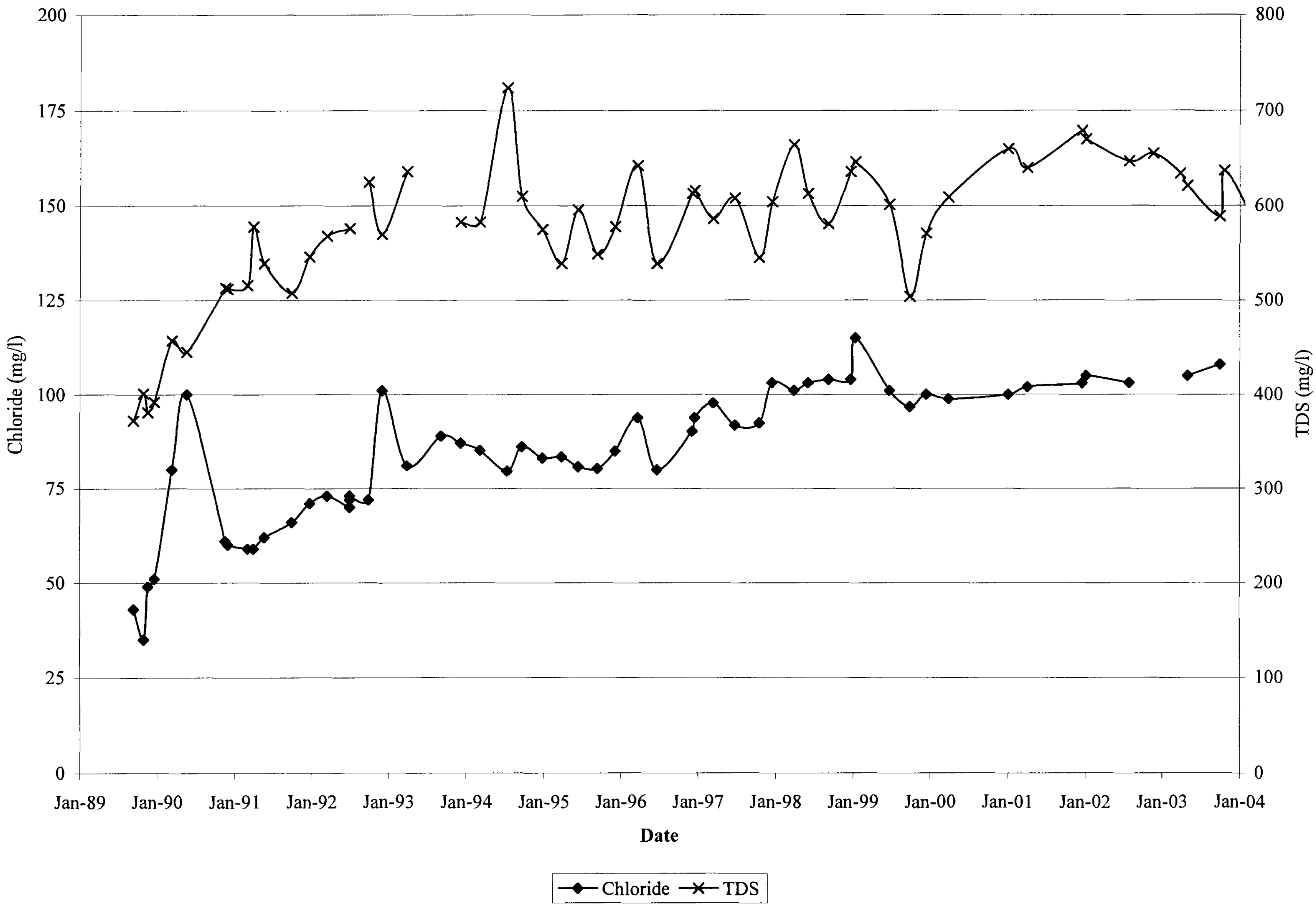

FIGURE 4.30
Palmdale Water Reclamation Plant MW 4
MBAS, NH_3, TKN, NO_3^-

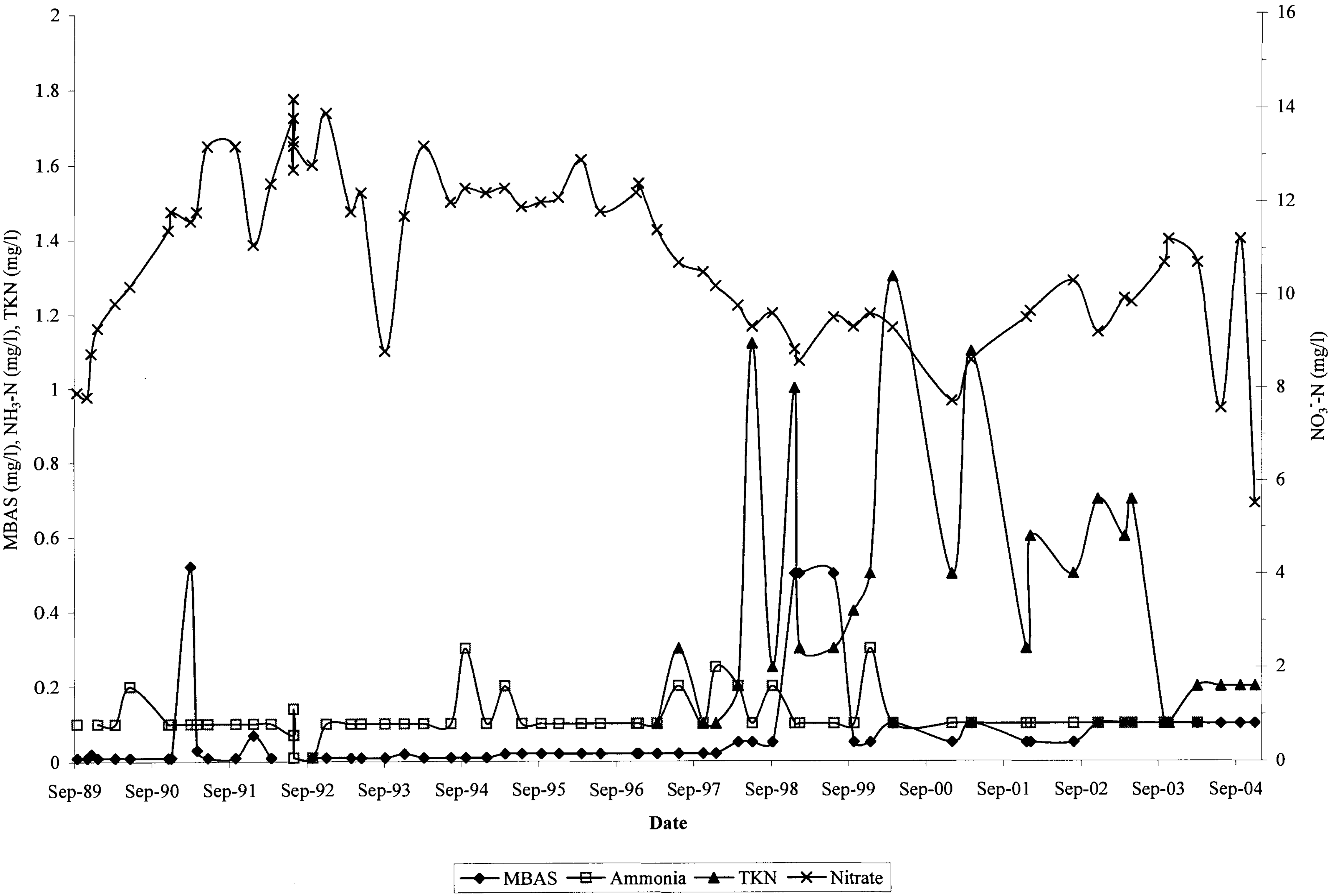

FIGURE 4.30a
Palmdale Water Reclamation Plant MW 4
Groundwater Elevation and Depth to Groundwater

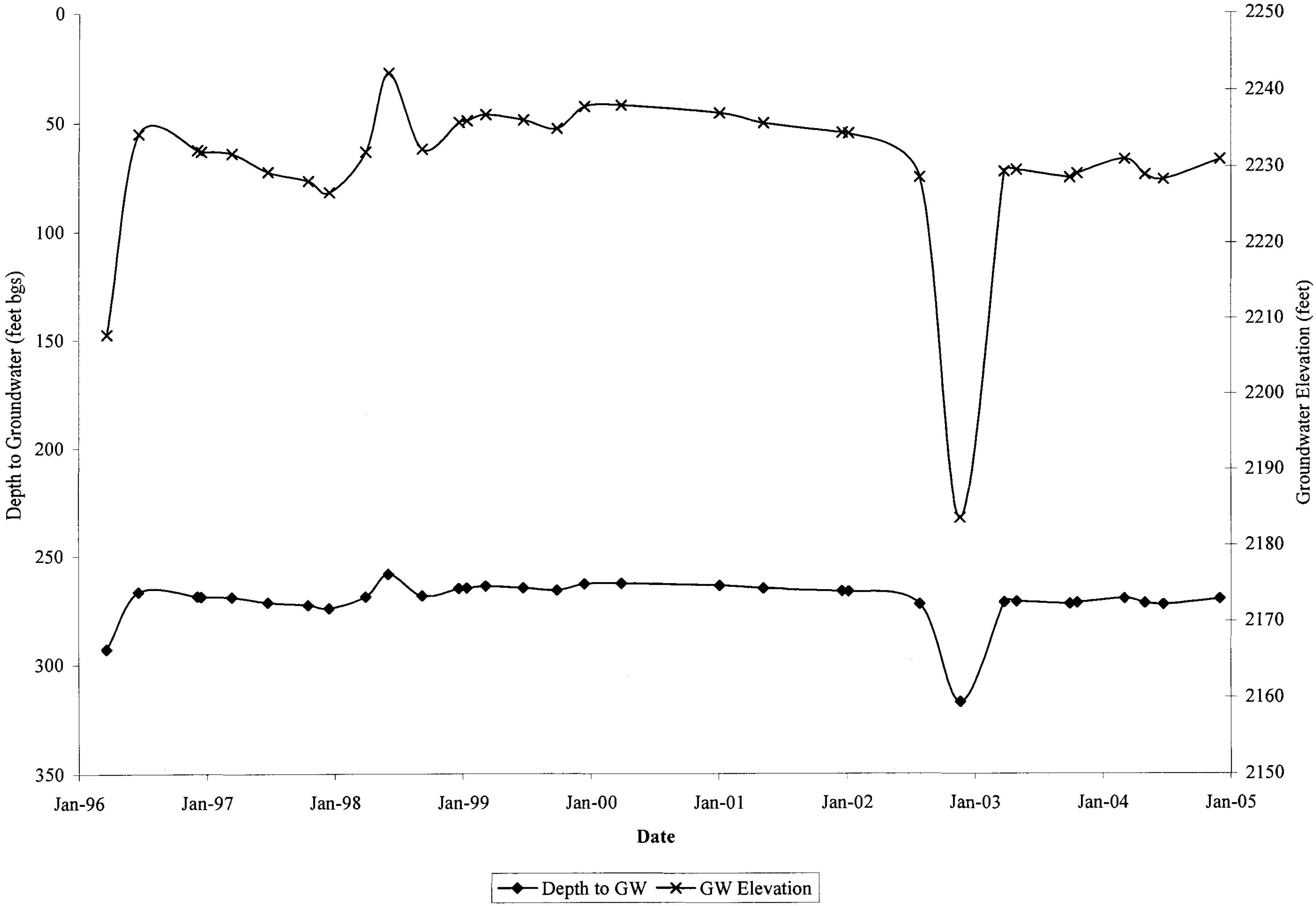

FIGURE 4.31
Palmdale Water Reclamation Plant MW 15
Chloride and TDS

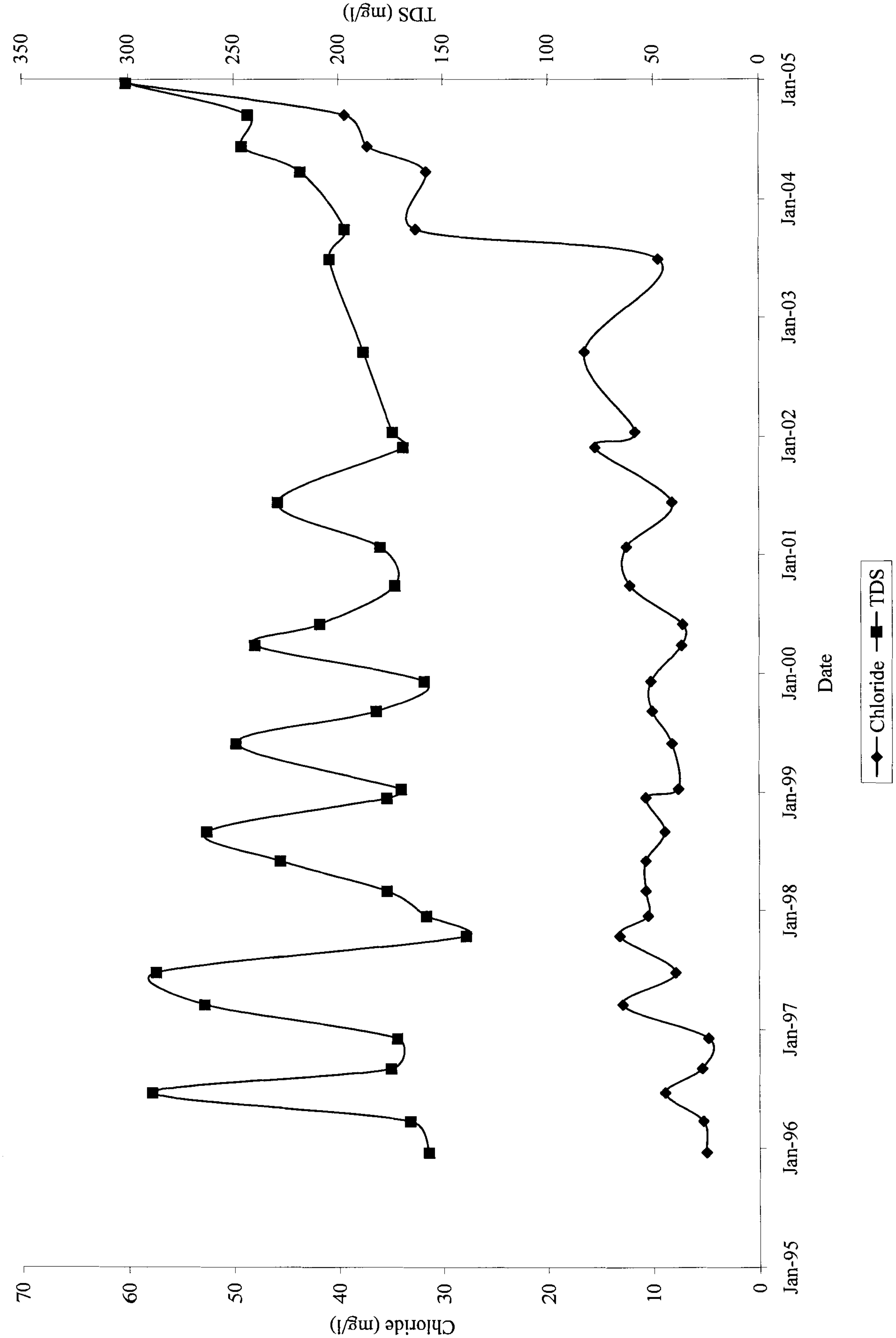

FIGURE 4.32

Palmdale Water Reclamation Plant MW 15

MBAS, NH_3, TKN, NO_3^-

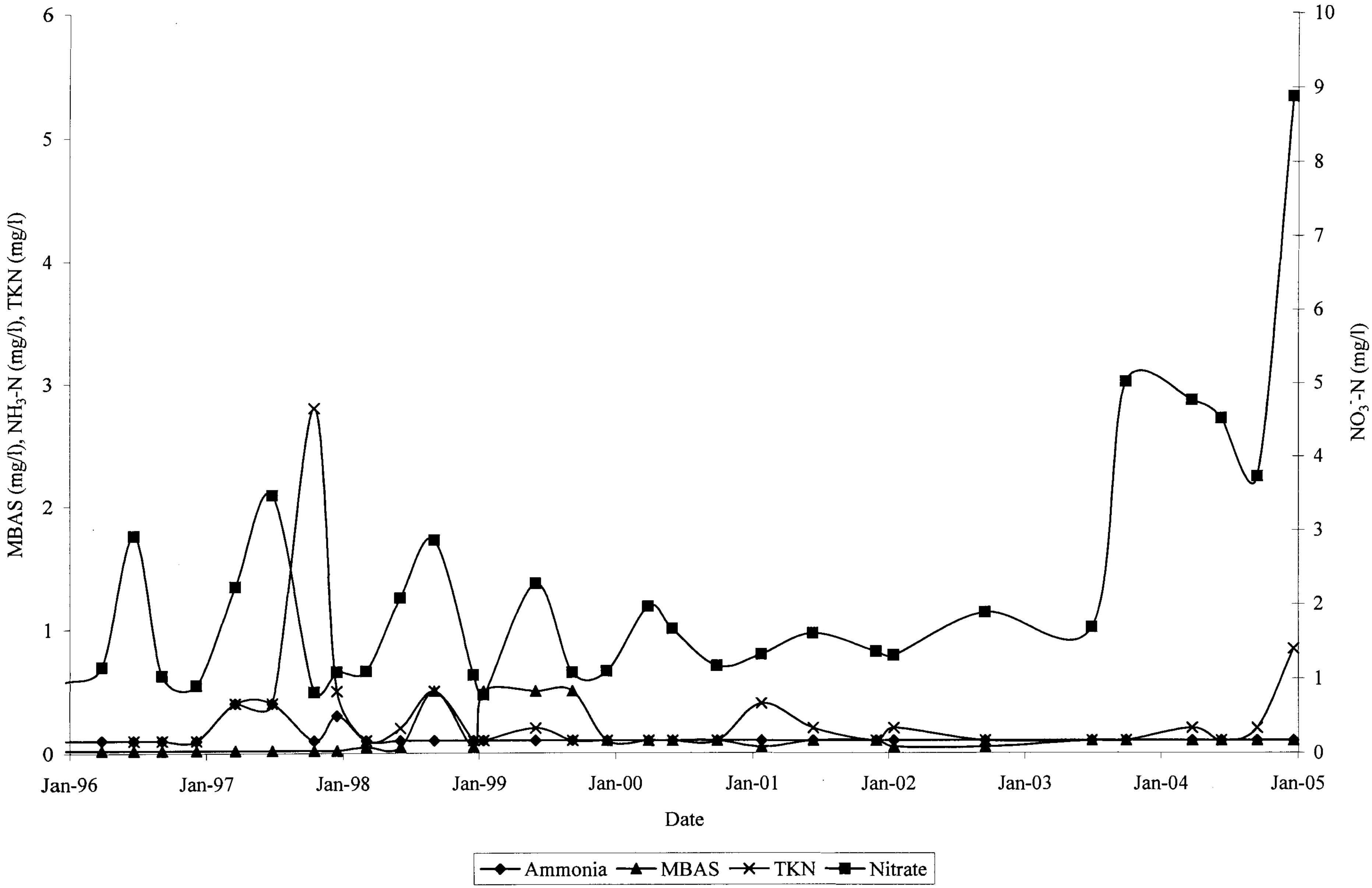

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

FIGURE 4.32a

Palmdale Water Reclamation Plant MW 15

Groundwater Elevation and Depth to Groundwater

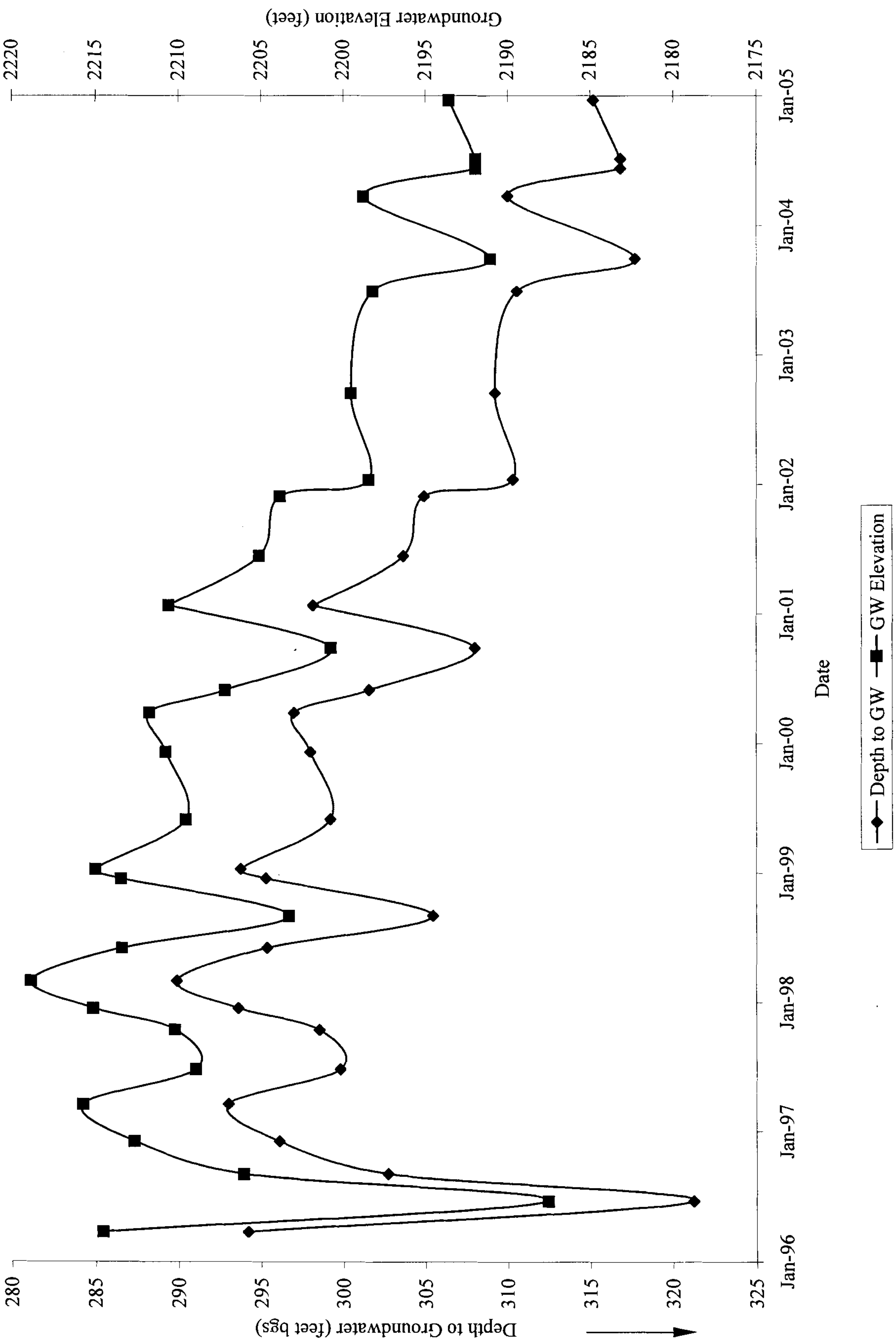

FIGURE 4.33
Palmdale Water Reclamation Plant MW 16
Chloride and TDS

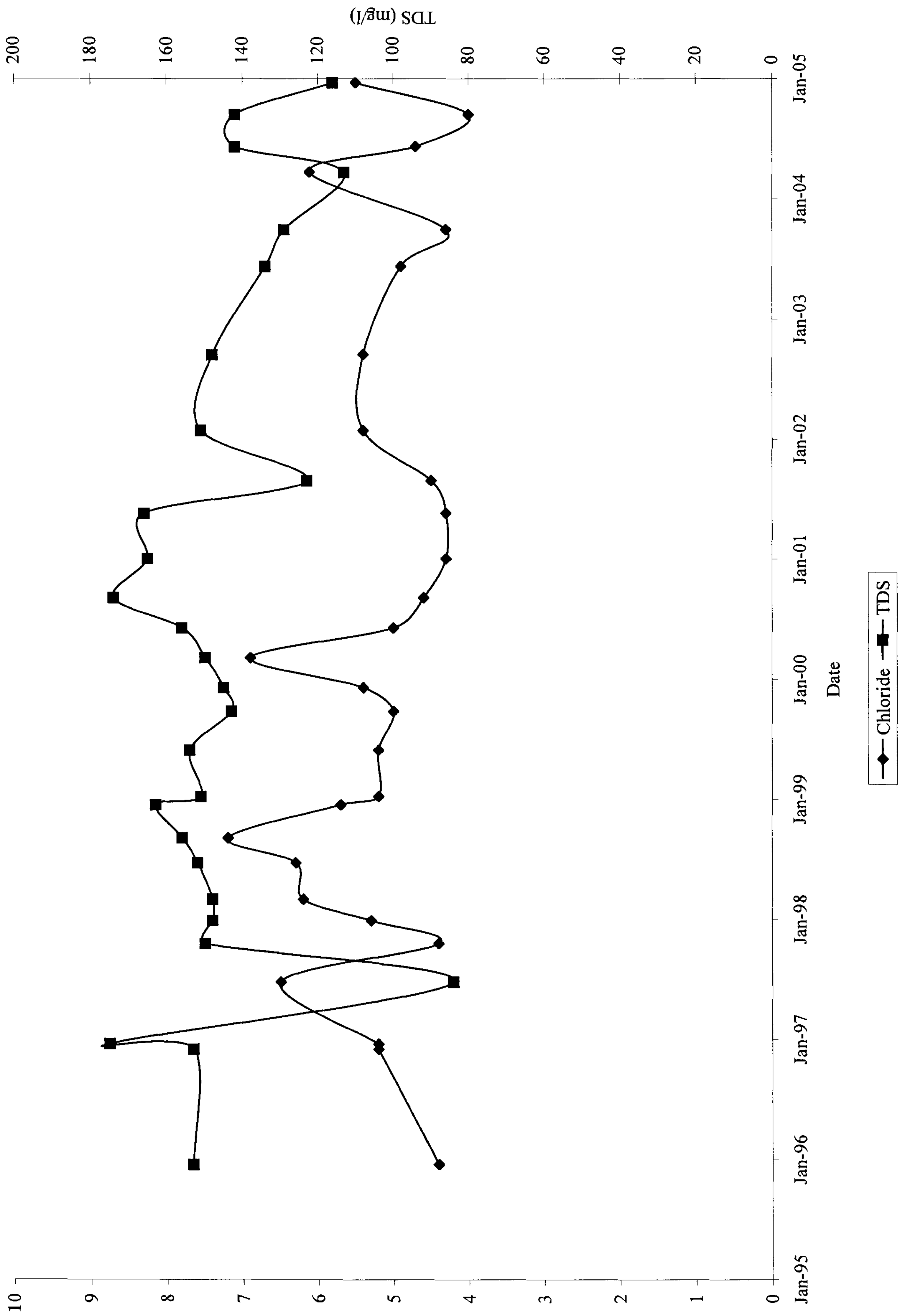

FIGURE 4.34

Palmdale Water Reclamation Plant MW 16

MBAS, NH_3, TKN, NO_3^-

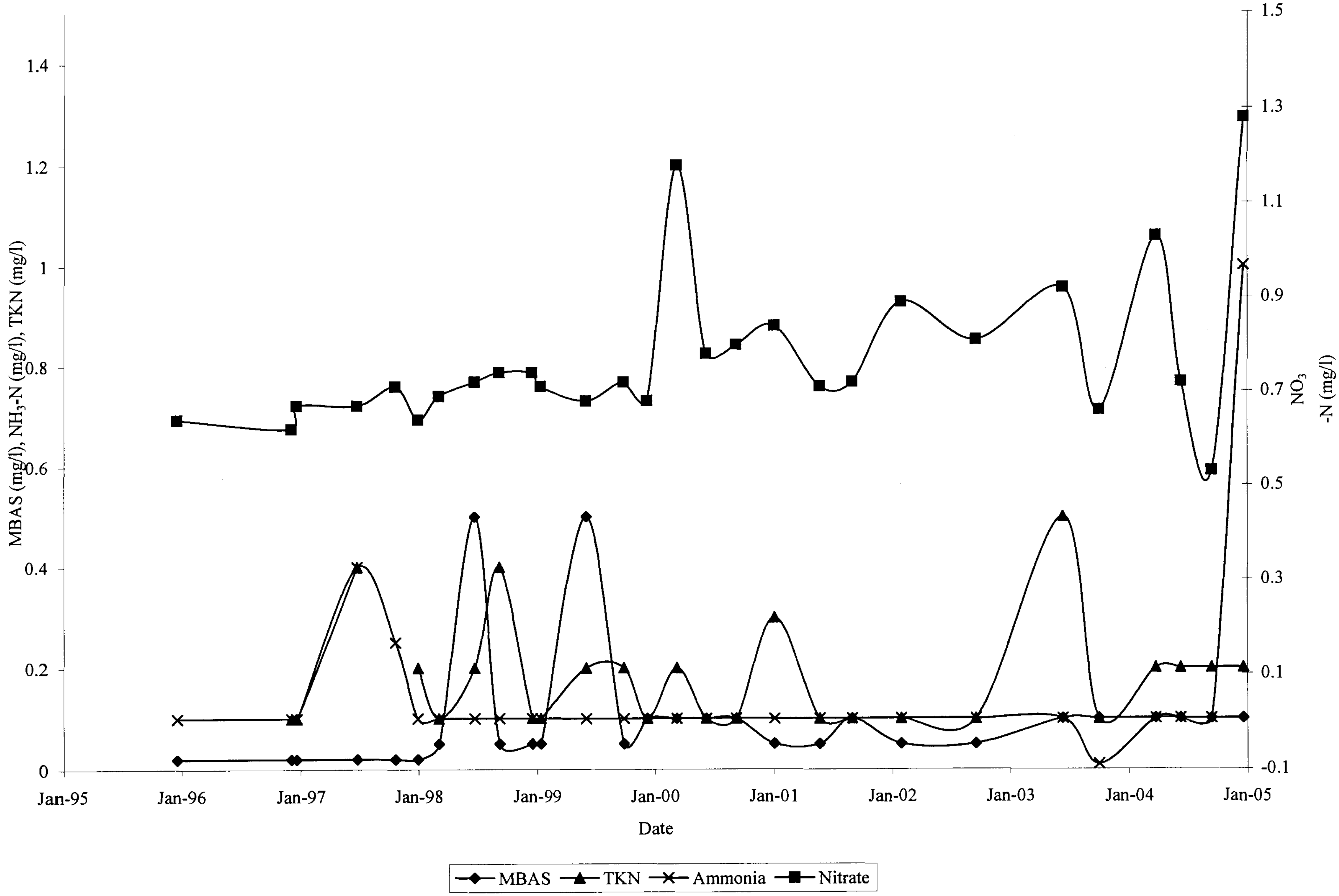

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

FIGURE 4.34a

Palmdale Water Reclamation Plant MW 16

Groundwater Elevation and Depth to Groundwater

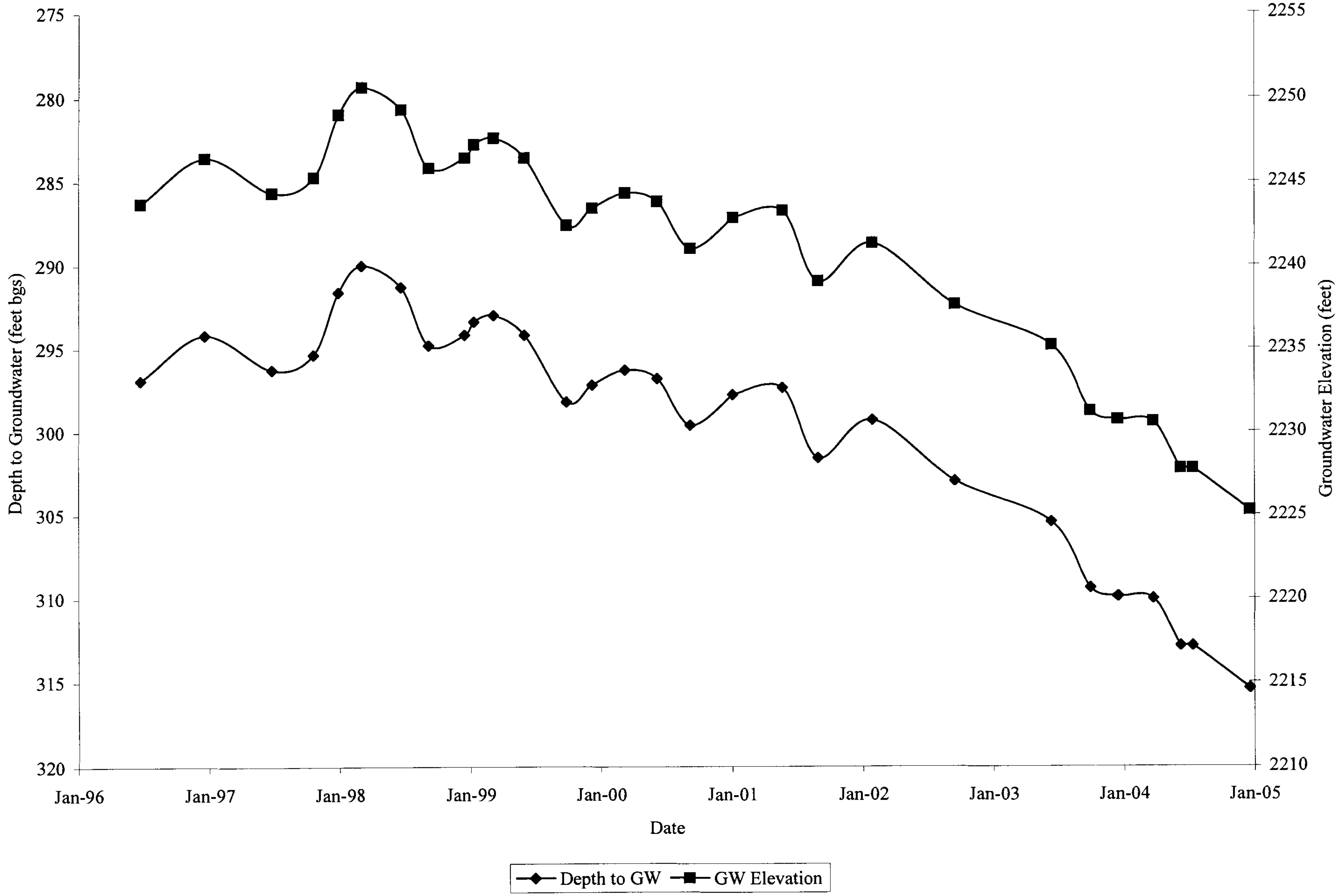

FIGURE 4.36

Palmdale Water Reclamation Plant MW 17

MBAS, NH_3, TKN, NO_3^-

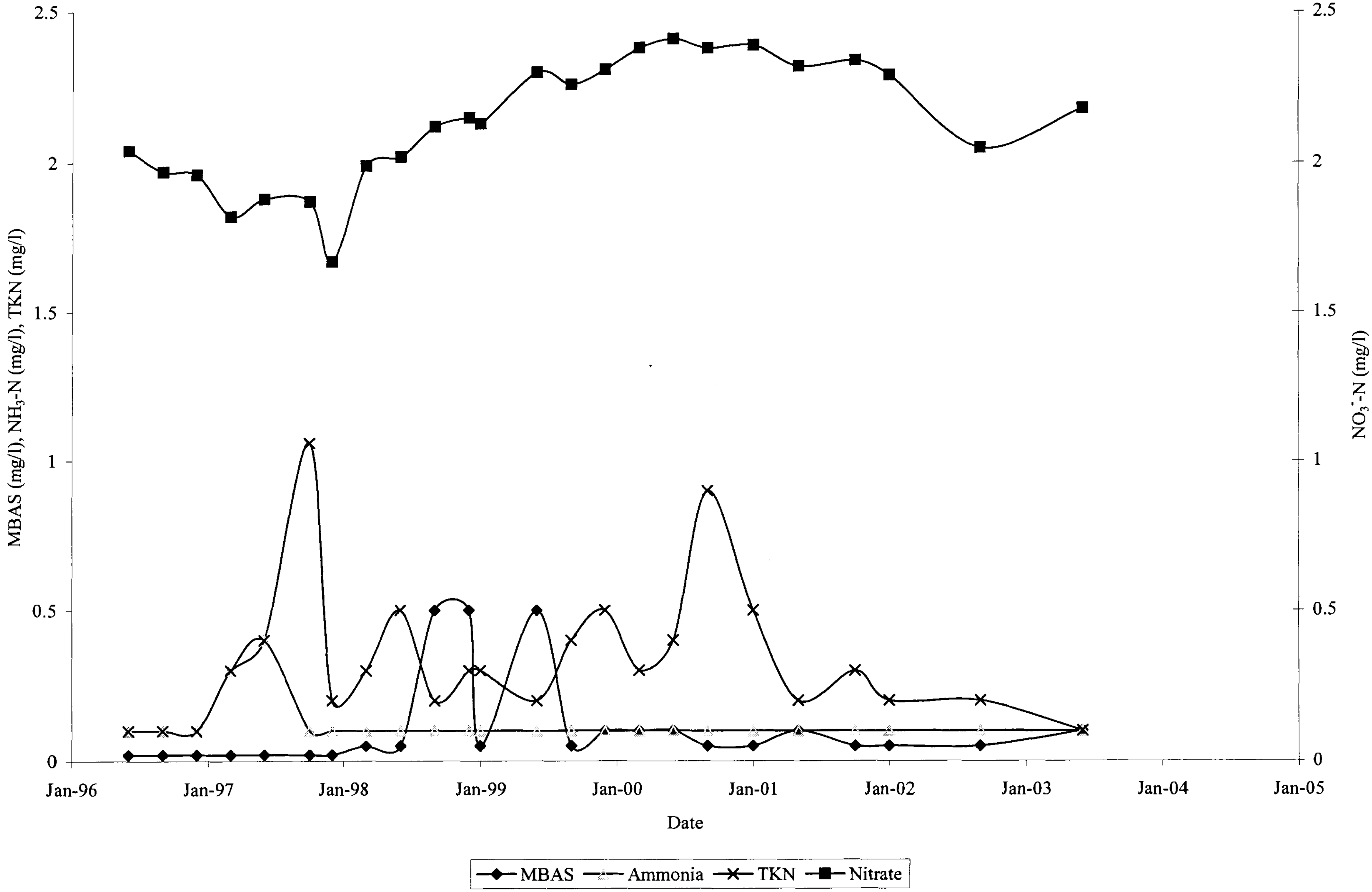

FIGURE 4.37
Palmdale Water Reclamation Plant MW 18
Chloride and TDS

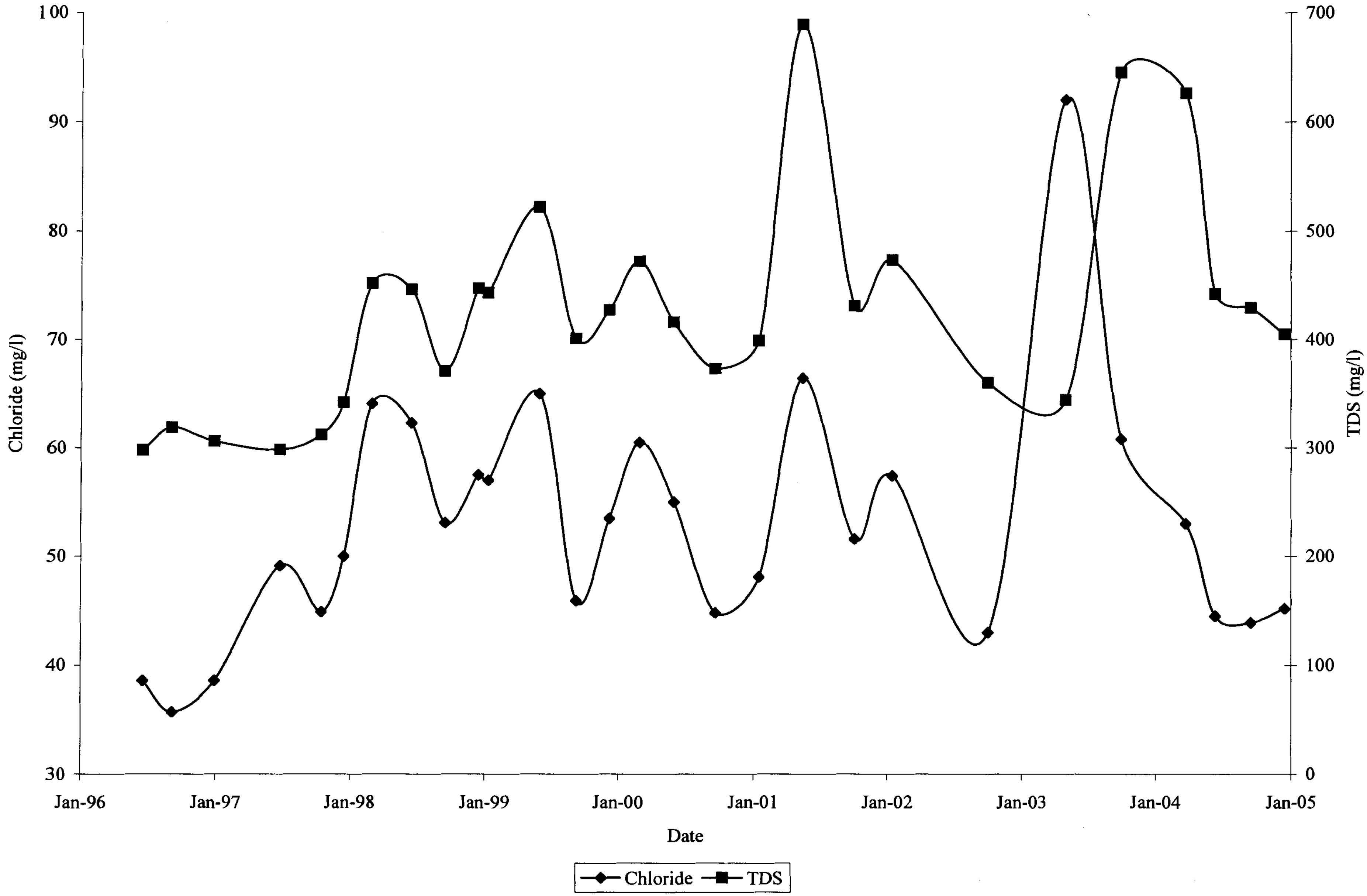

FIGURE 4.38
Palmdale Water Reclamation Plant MW 18
MBAS, NH_3, TKN, NO_3^-

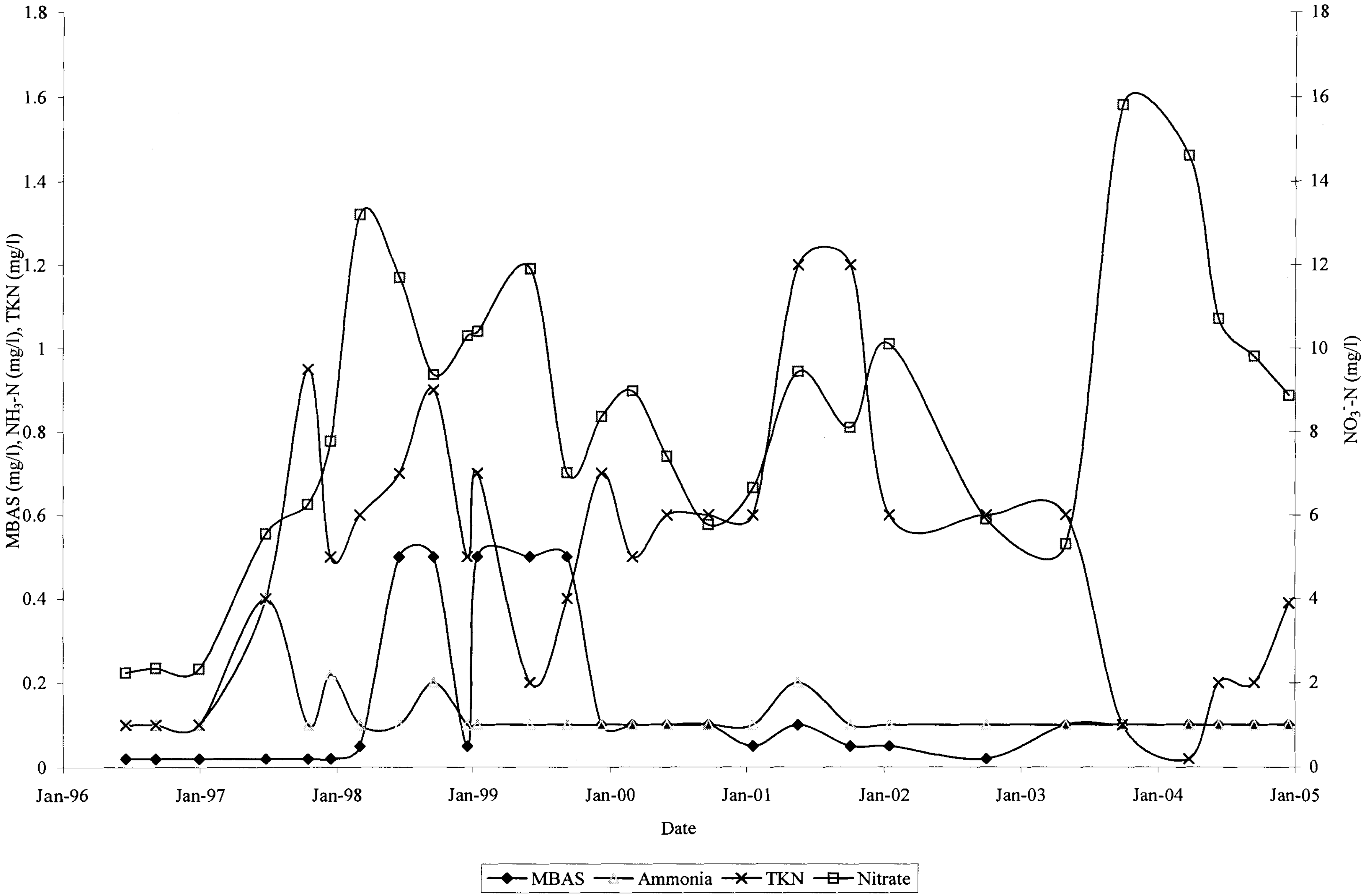

FIGURE 4.39

Palmdale Water Reclamation Plant MW 18

Groundwater Elevation and Depth to Groundwater

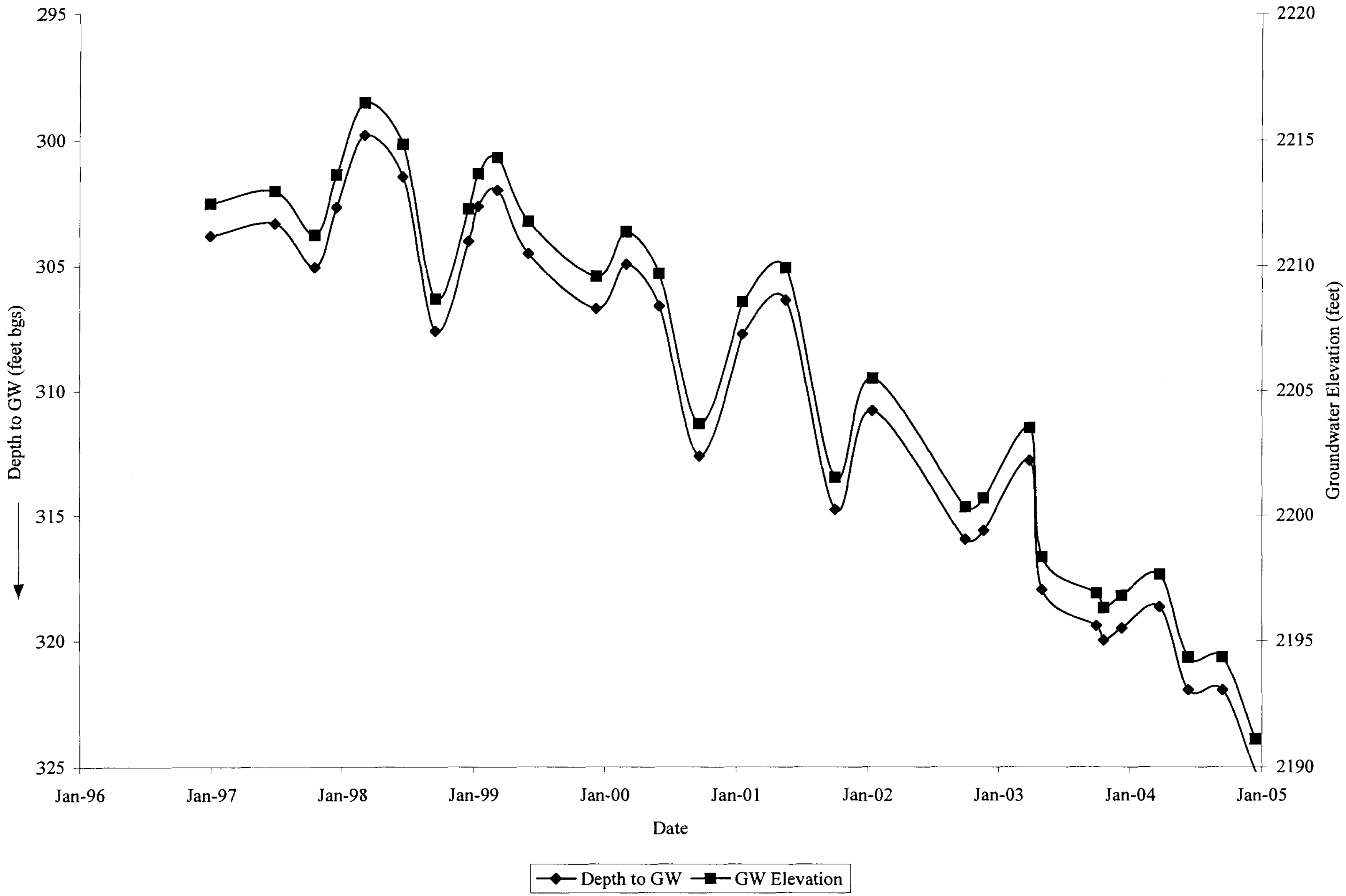

FIGURE 4.40

Palmdale Water Reclamation Plant MW19

Chloride and TDS

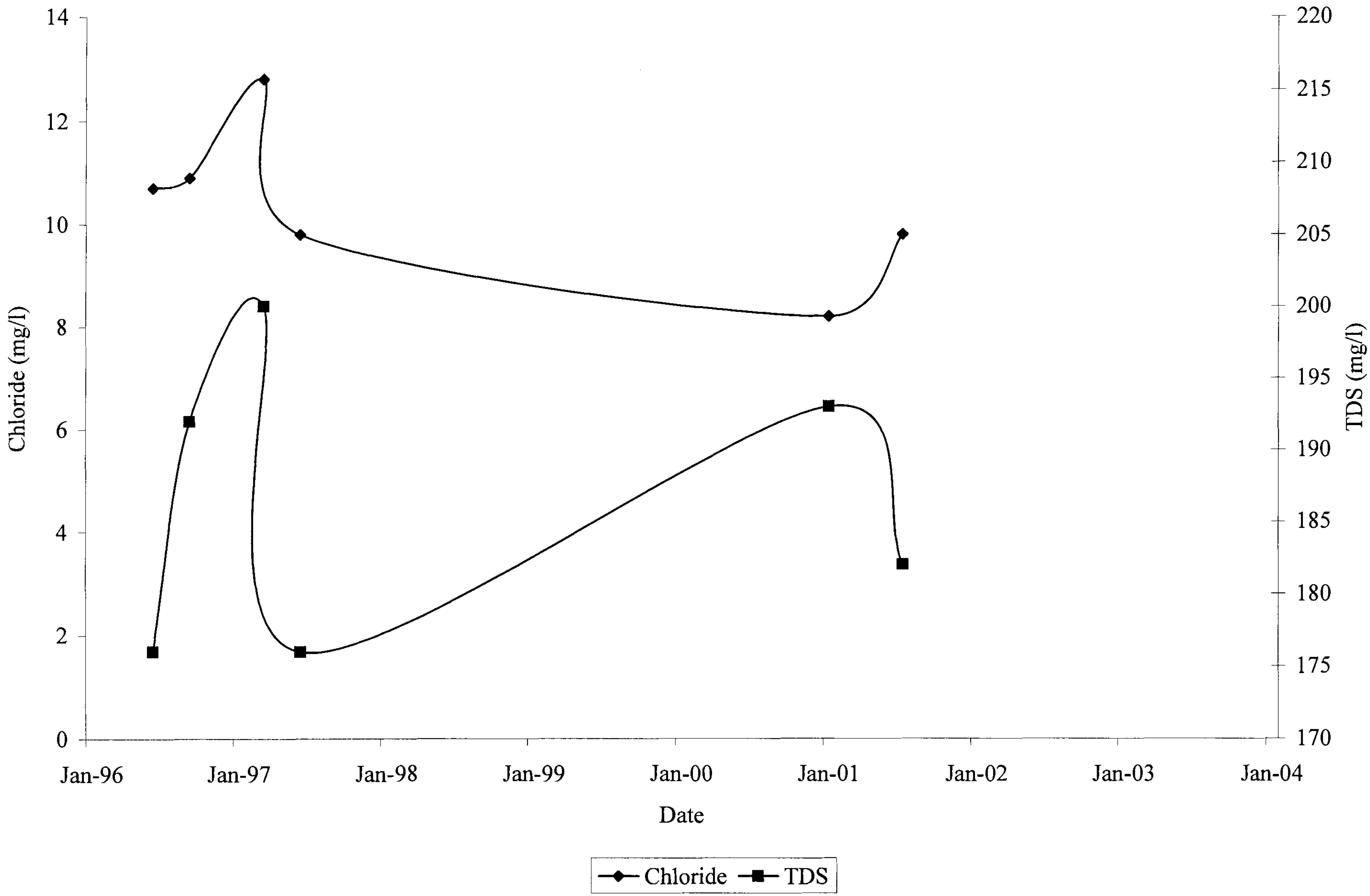

FIGURE 4.41

Palmdale Water Reclamation Plant MW19

MBAS, NH_3, TKN, NO_3^-

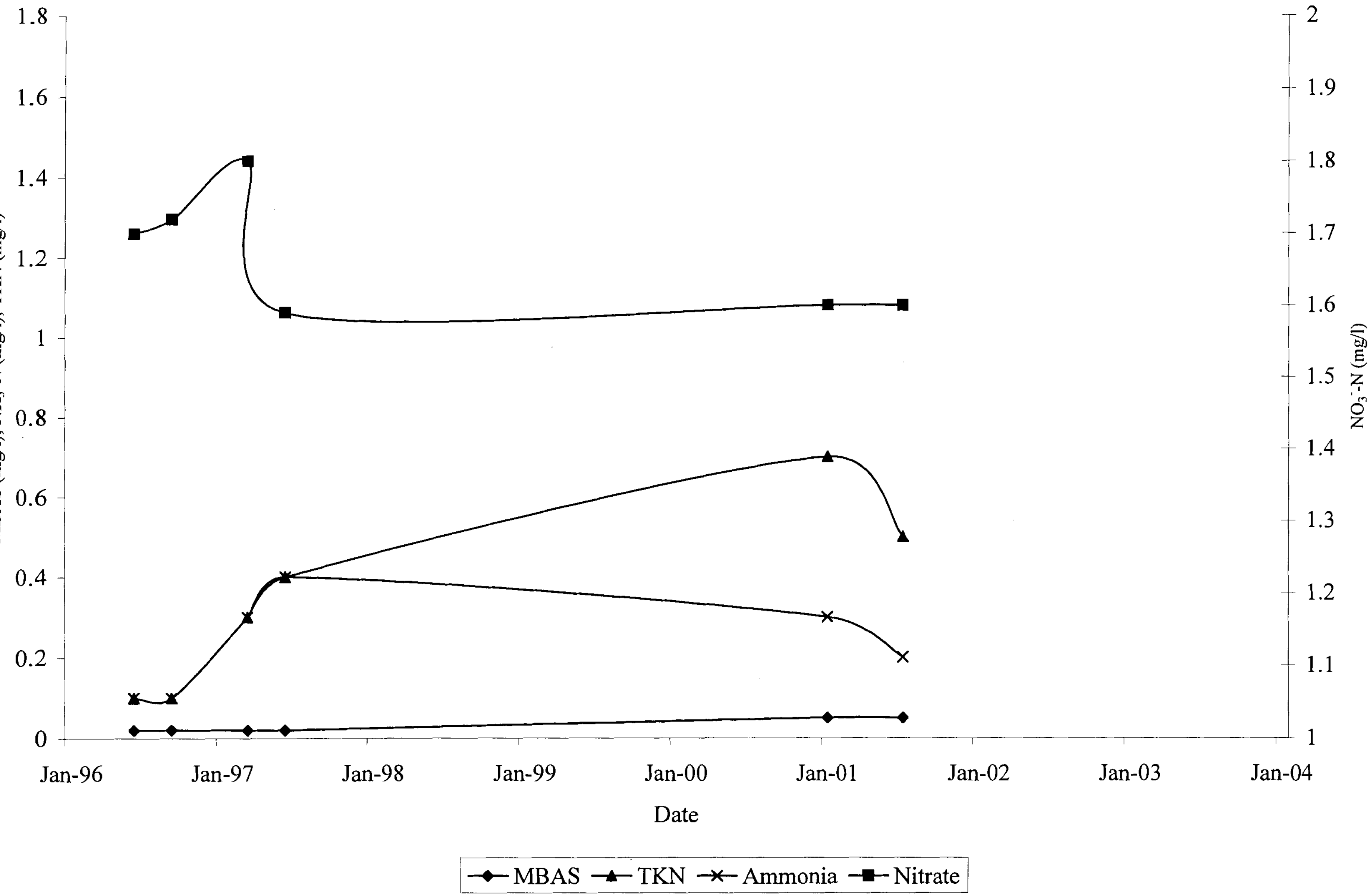

FIGURE 4.42
Palmdale Water Reclamation Plant MW 20
Chloride and TDS

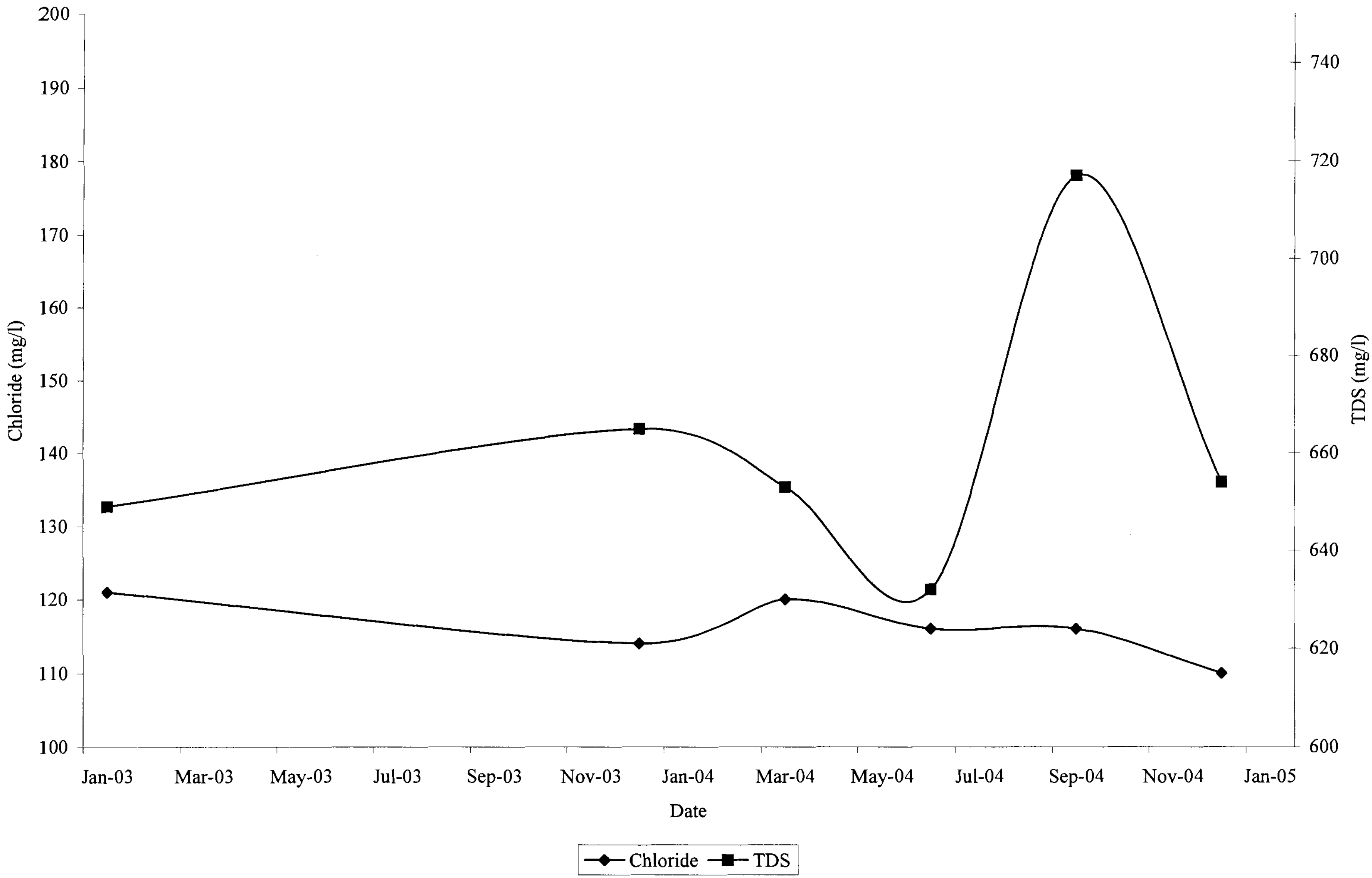

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

FIGURE 4.43
Palmdale Water Reclamation Plant MW 20
MBAS, NH_3, TKN, NO_3^-

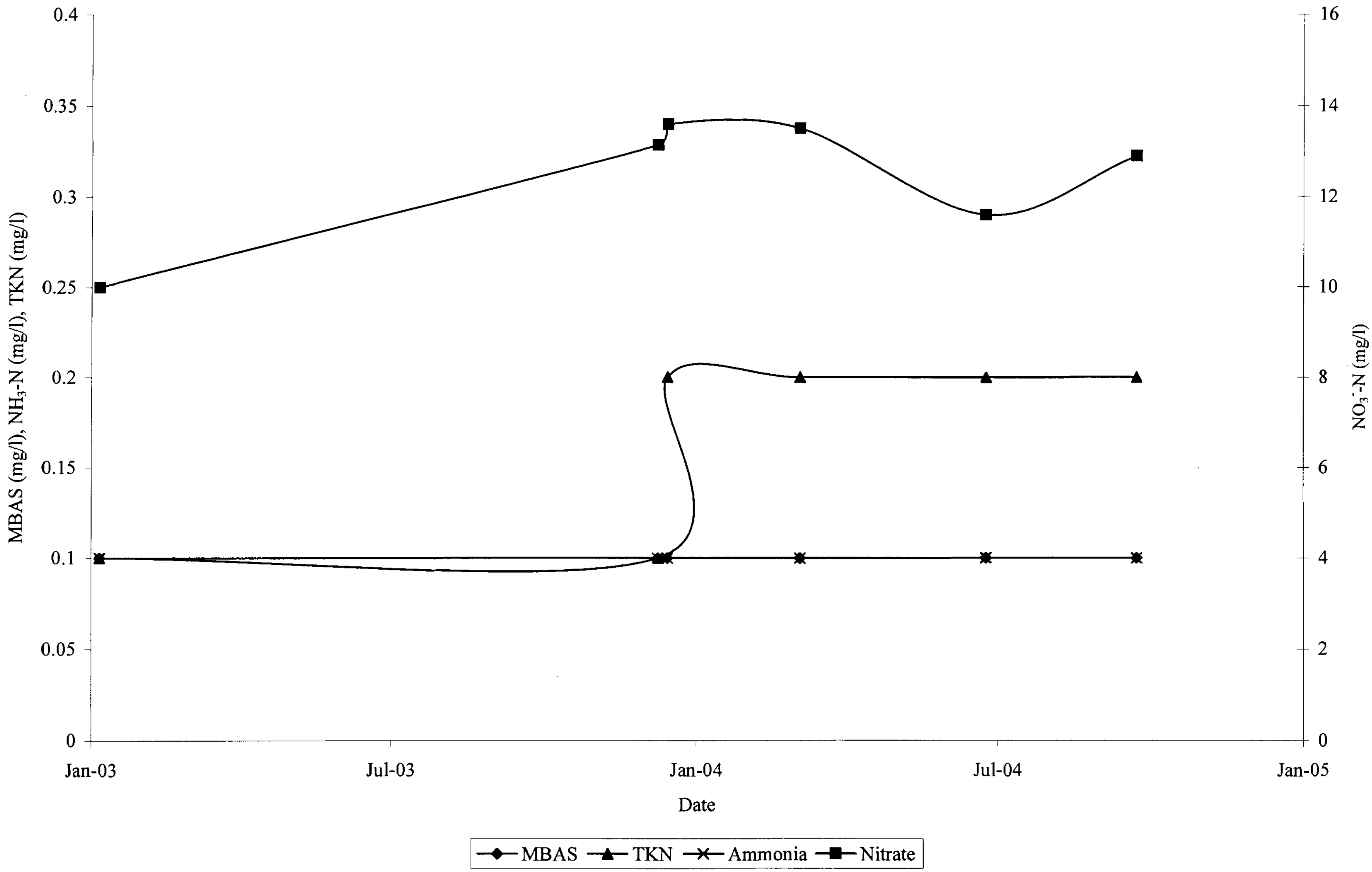

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

FIGURE 4.44

Palmdale Water Reclamation Plant MW 20

Groundwater Elevation and Depth to Groundwater

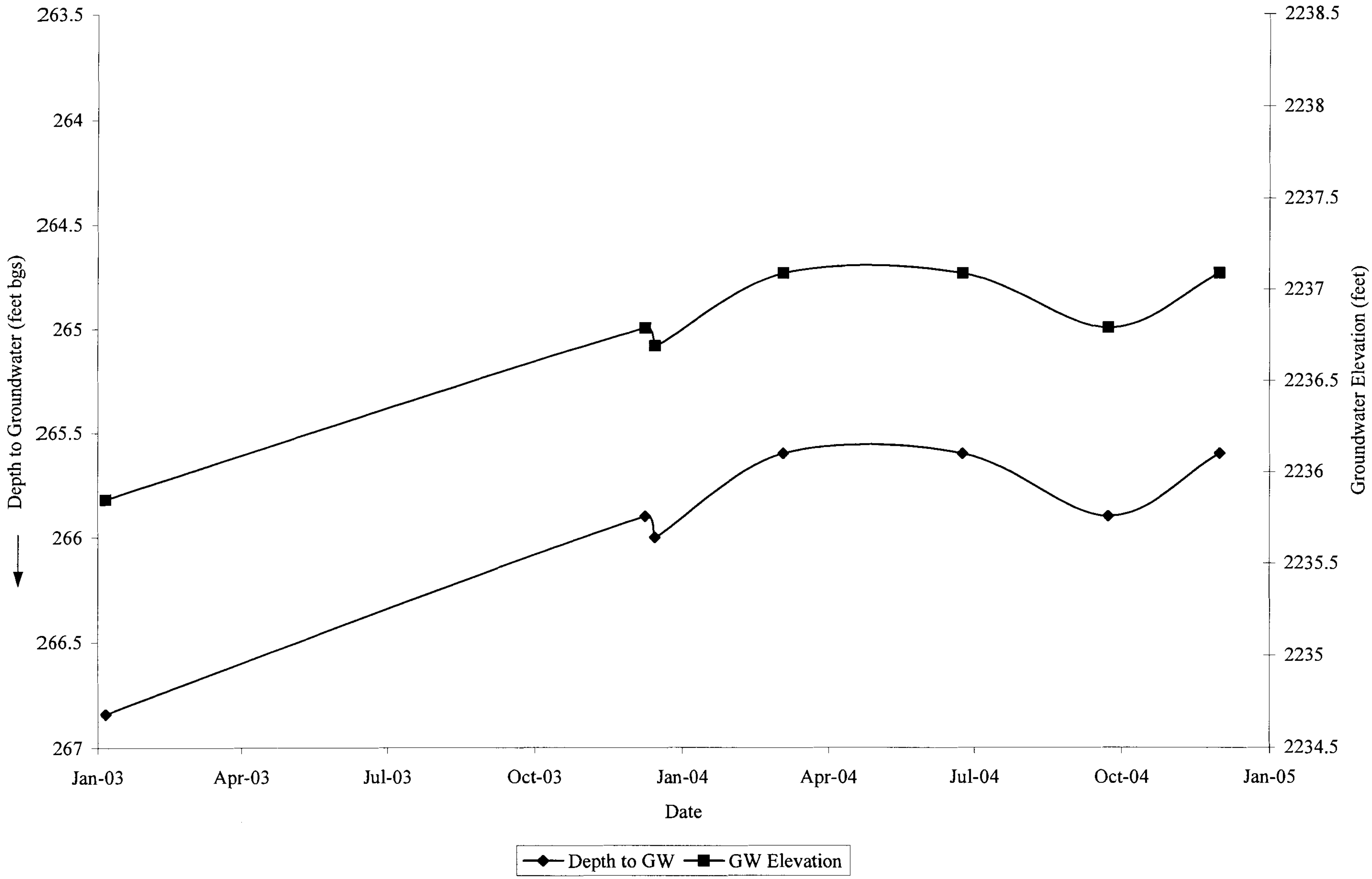

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

FIGURE 4.45
Palmdale Water Reclamation Plant MW 21
Chloride and TDS

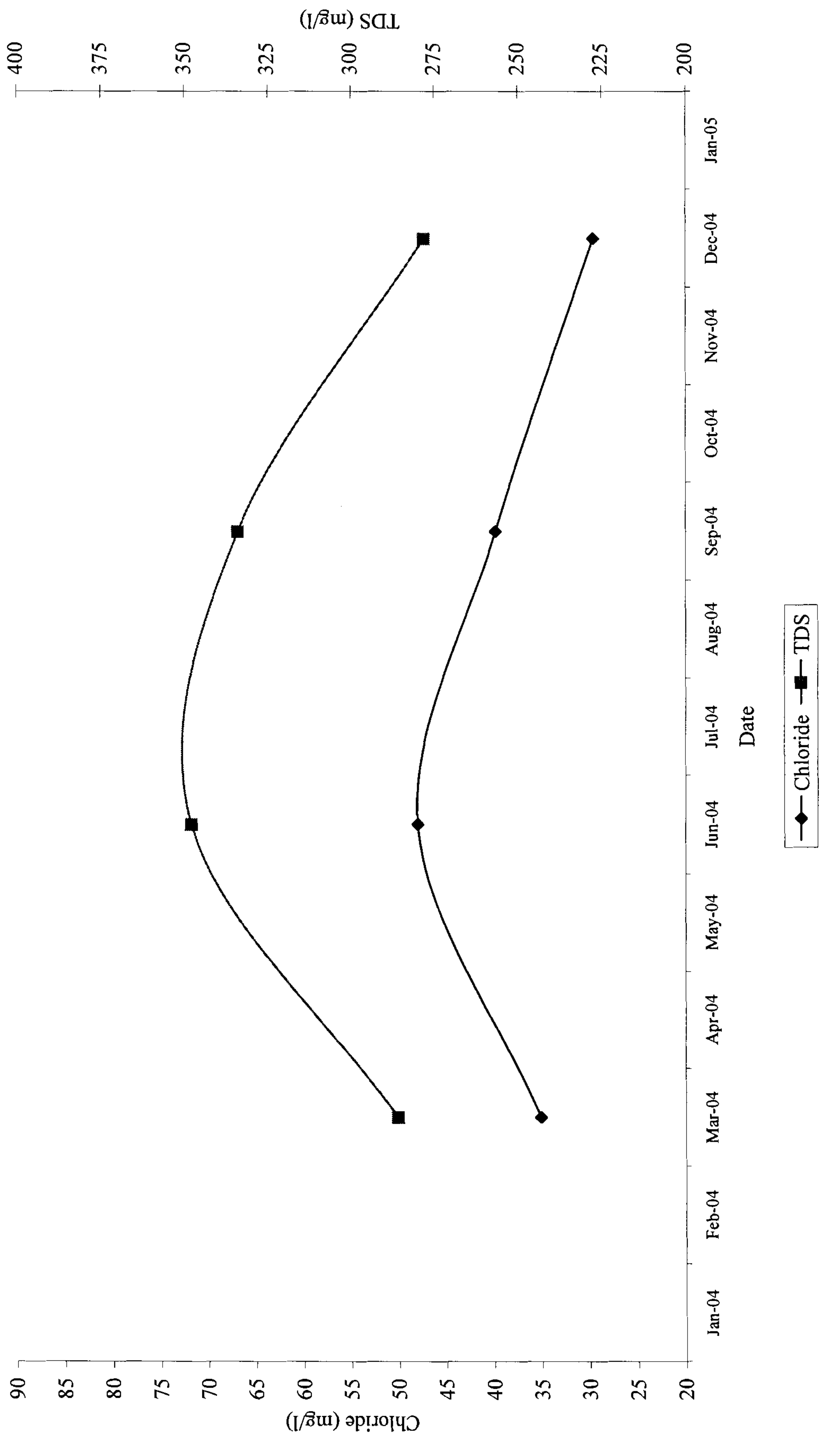

FIGURE 4.46

Palmdale Water Reclamation Plant MW 21

MBAS, NH_3, TKN, NO_3^-

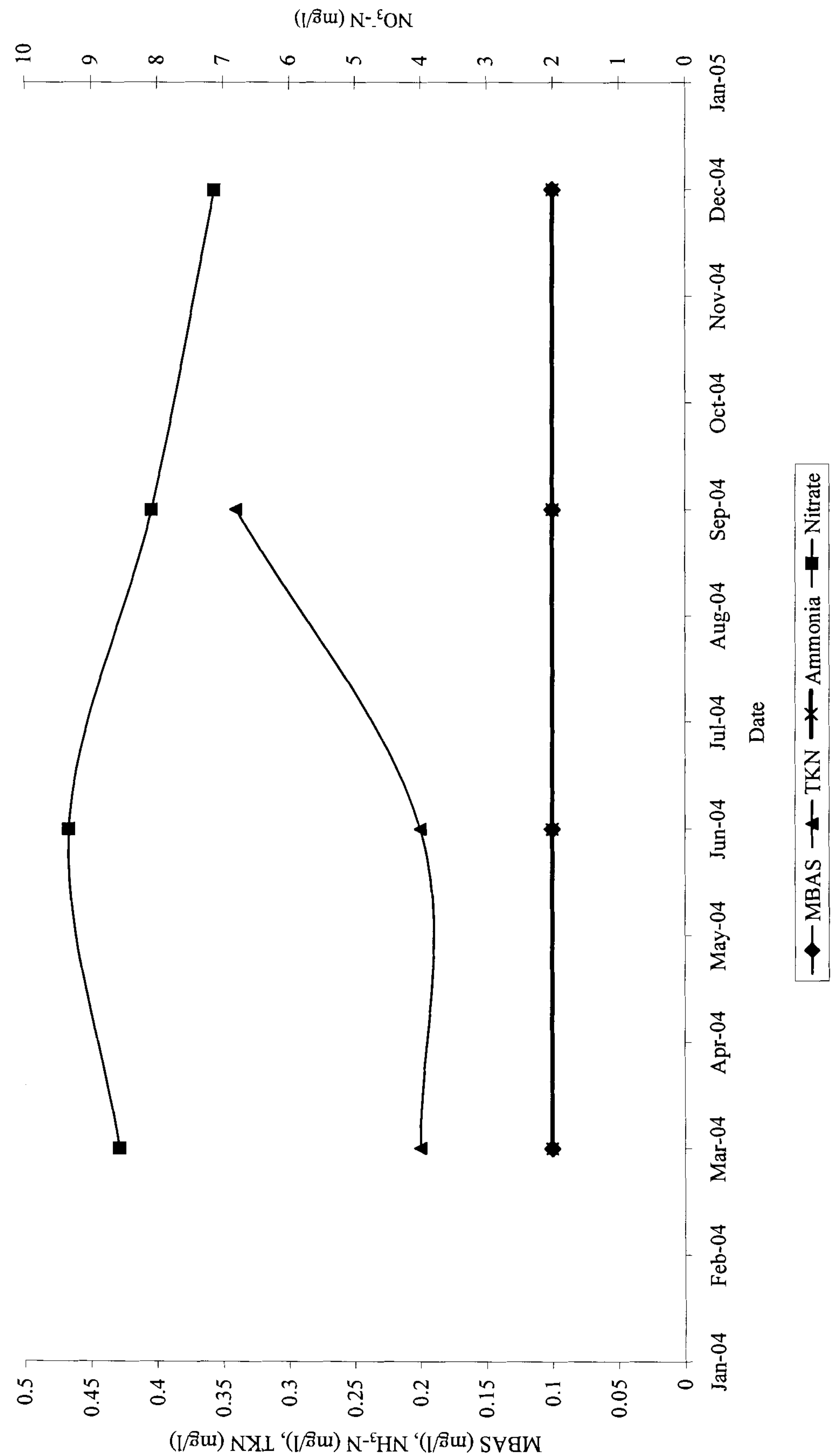

FIGURE 4.47

Palmdale Water Reclamation Plant MW 21

Groundwater Elevation and Depth to Groundwater

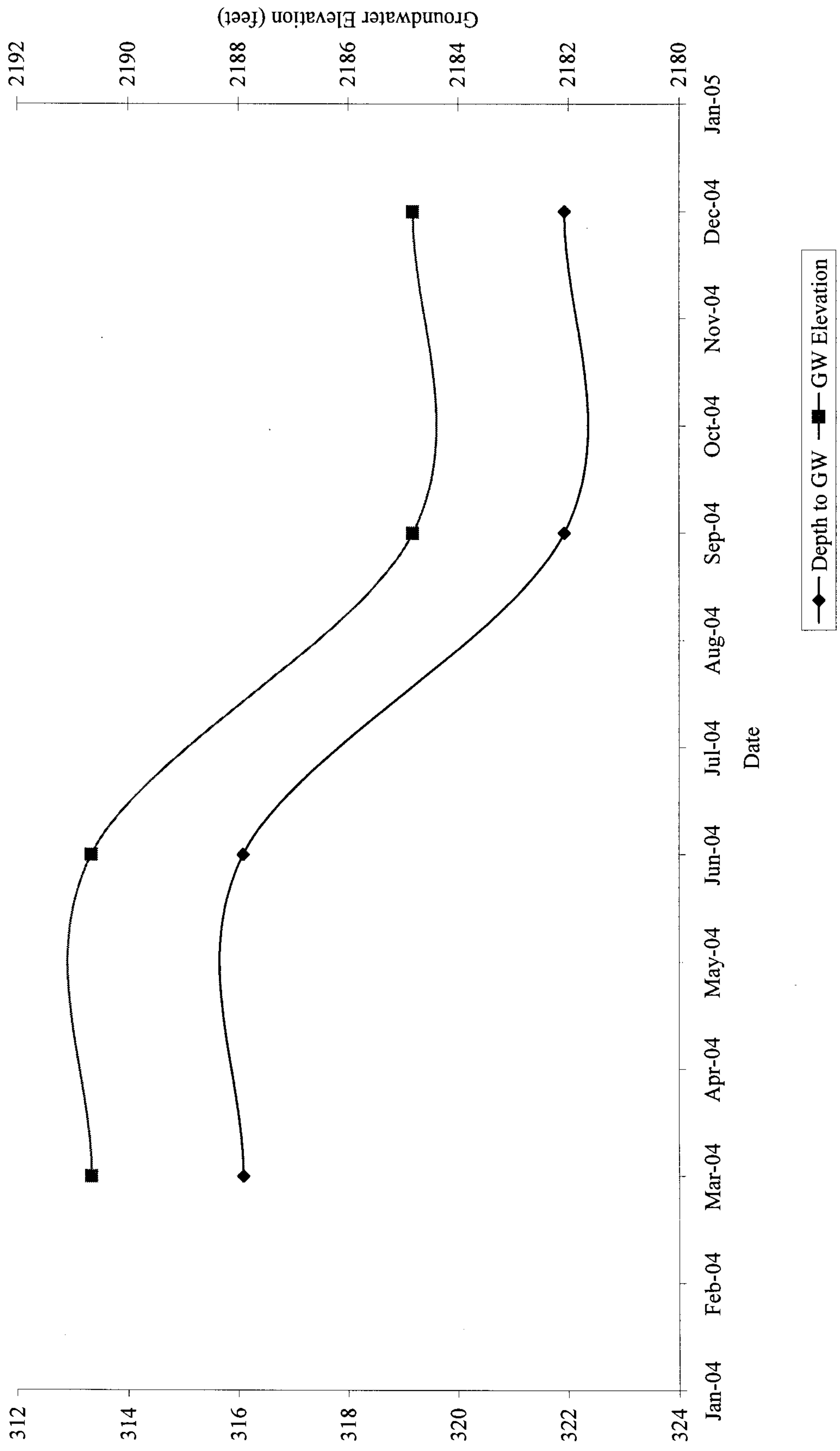

FIGURE 4.48
Palmdale Water Reclamation Plant MW 22
Chloride and TDS

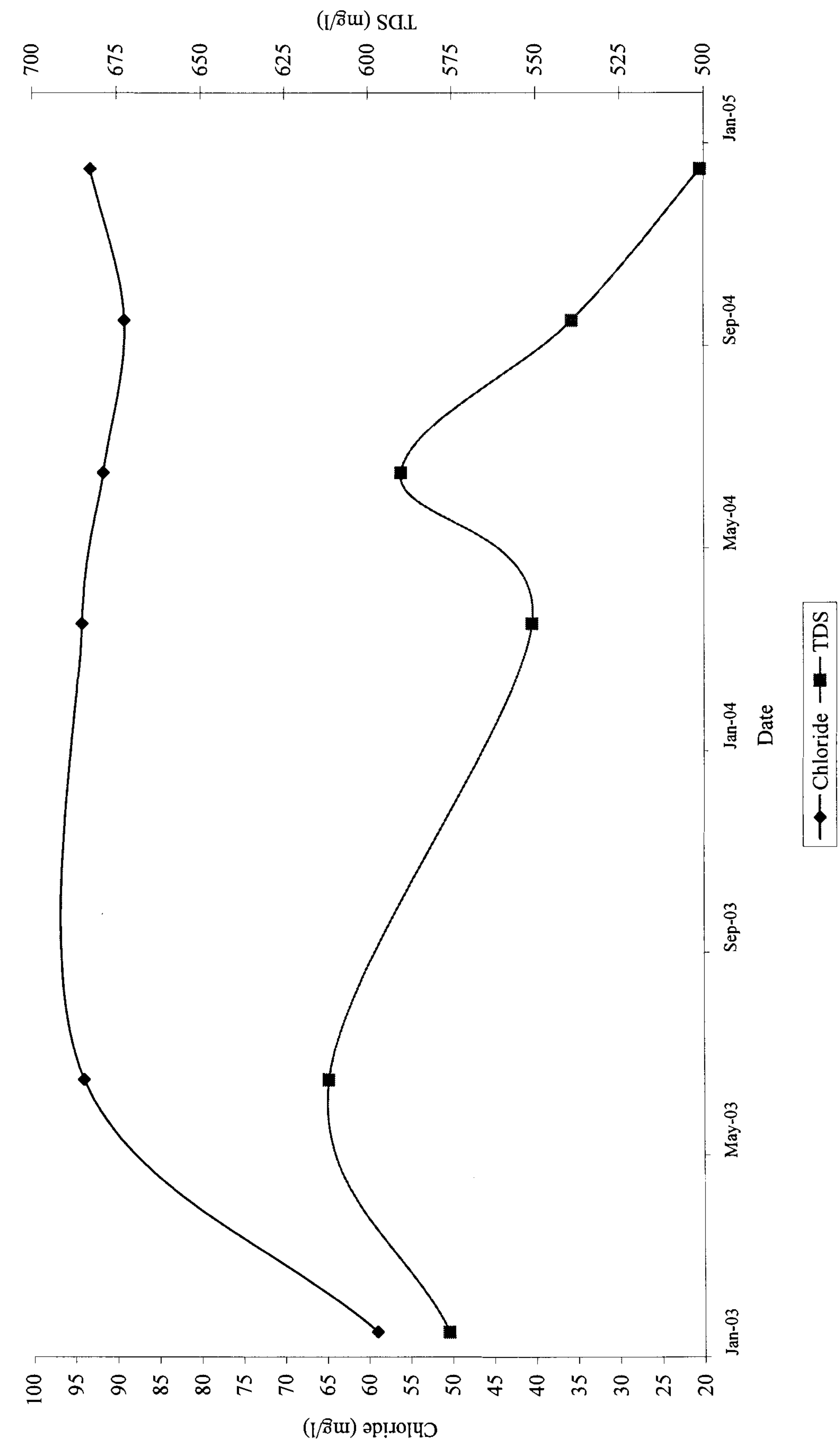

FIGURE 4.49
Palmdale Water Reclamation Plant MW 22
MBAS, NH_3, TKN, NO_3^-

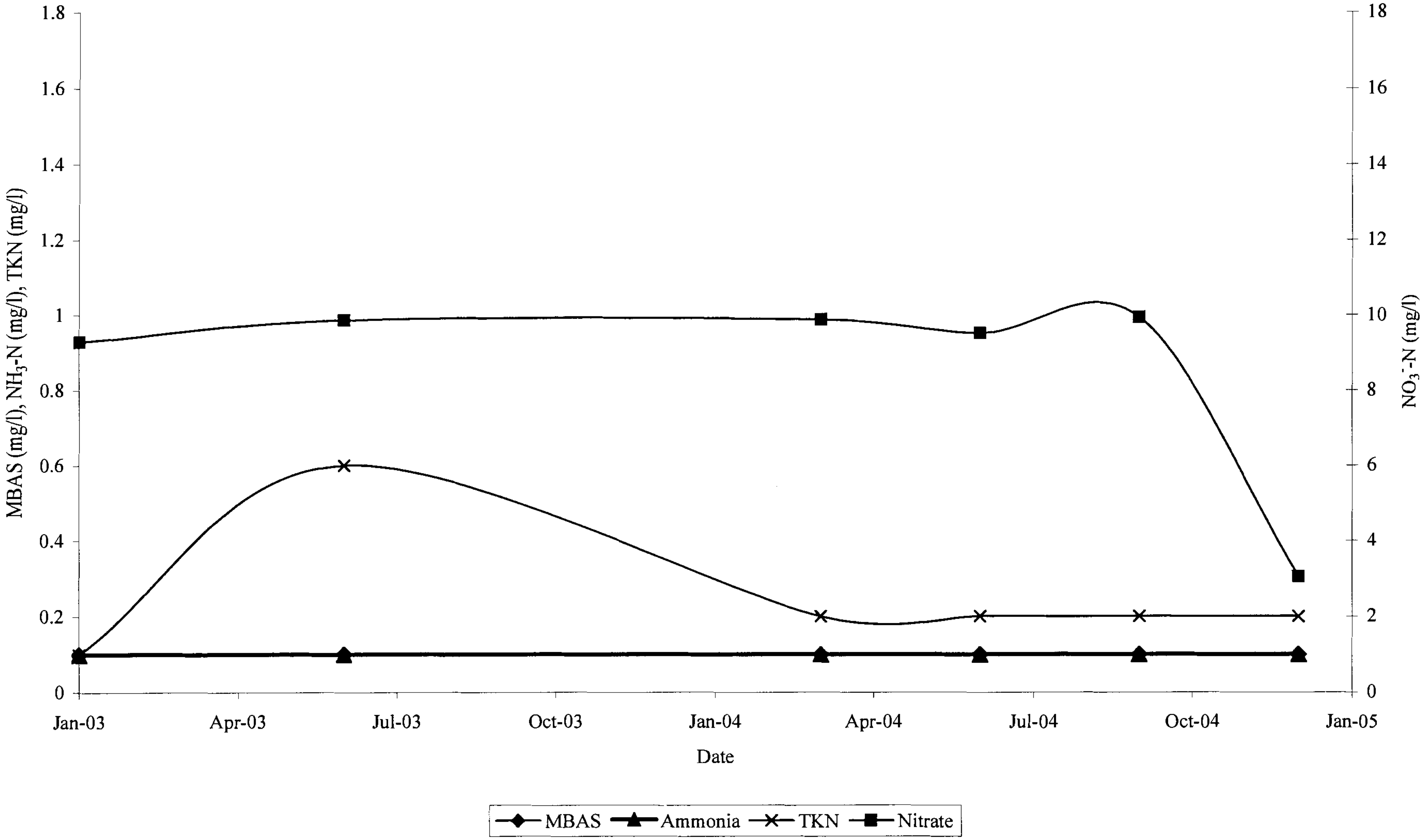

FIGURE 4.50

Palmdale Water Reclamation Plant MW 22

Groundwater Elevation and Depth to Groundwater

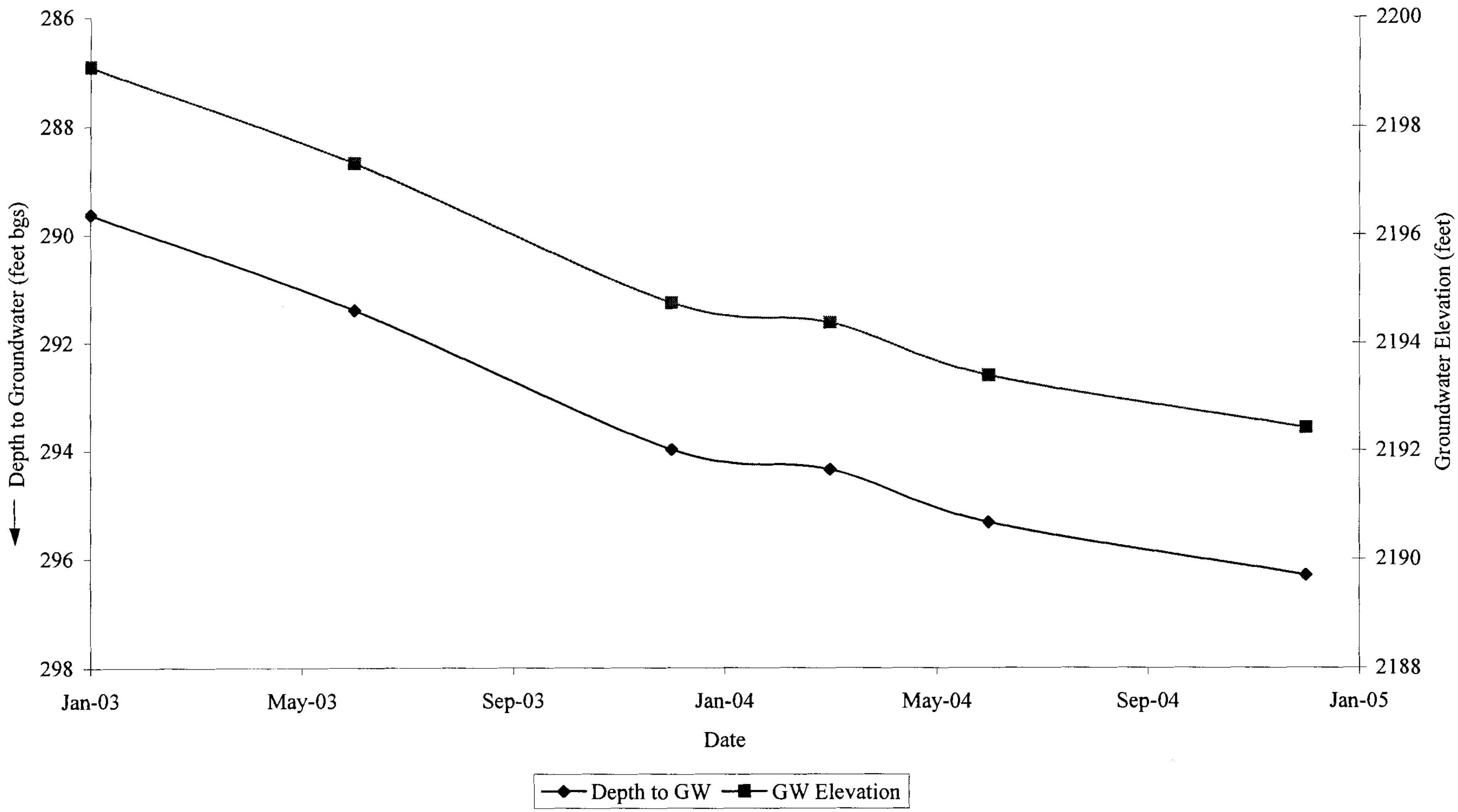

FIGURE 4.51
Palmdale Water Reclamation Plant MW 23
Chloride and TDS

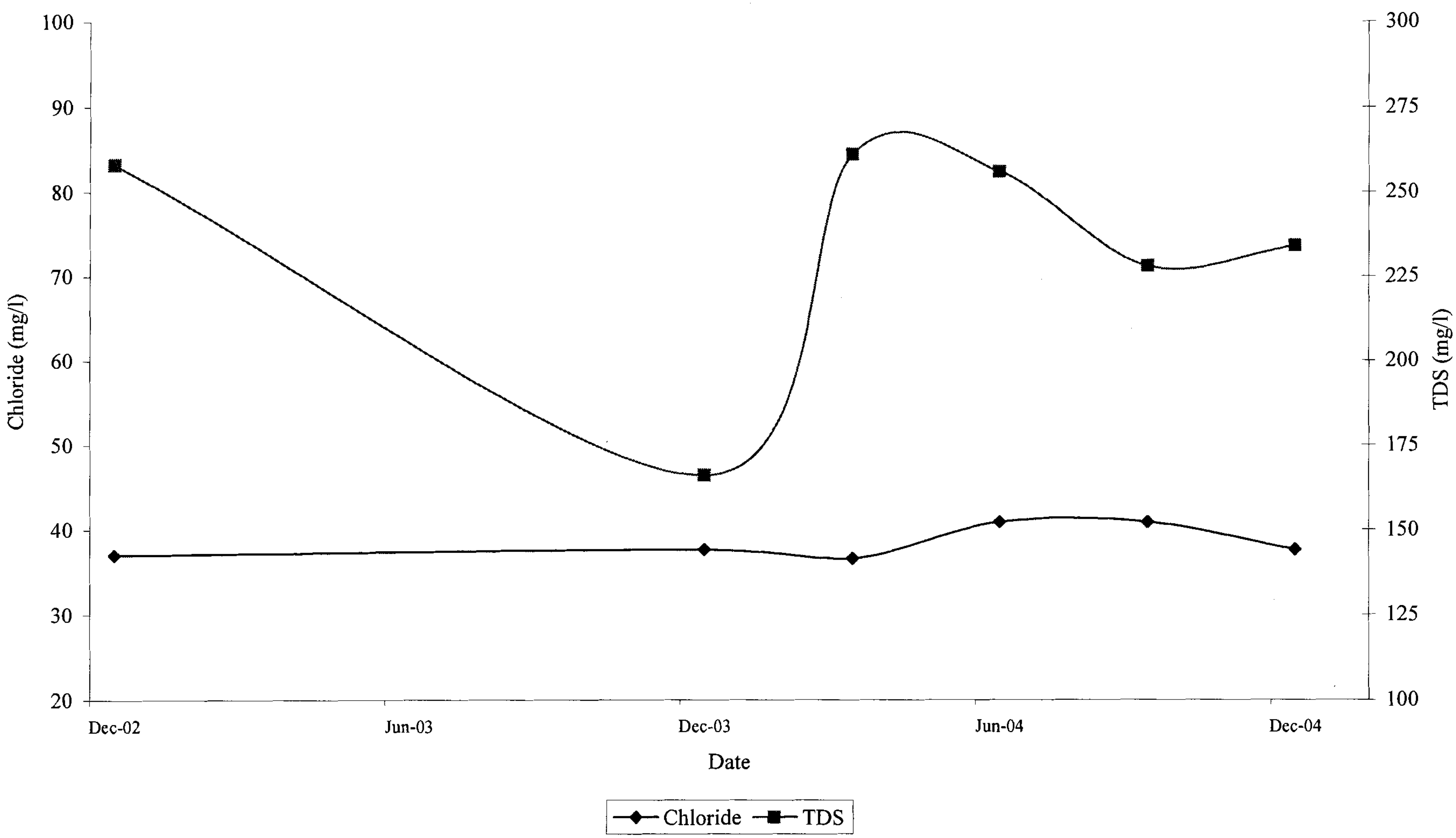

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

FIGURE 4.52
Palmdale Water Reclamation Plant MW 23
MBAS, NH_3, TKN, NO_3^-

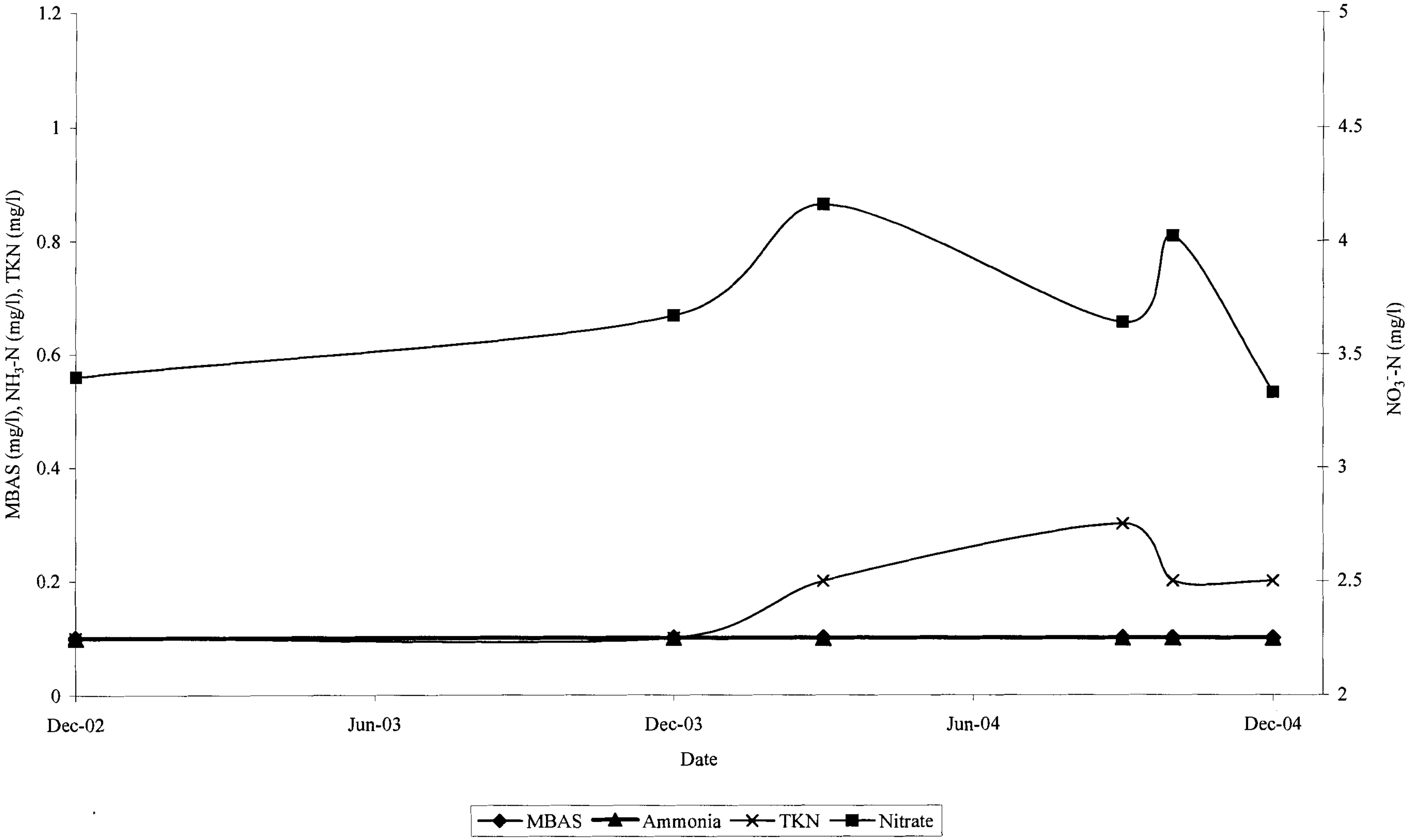

FIGURE 4.53
Palmdale Water Reclamation Plant MW 23
Groundwater Elevation and Depth to Groundwater

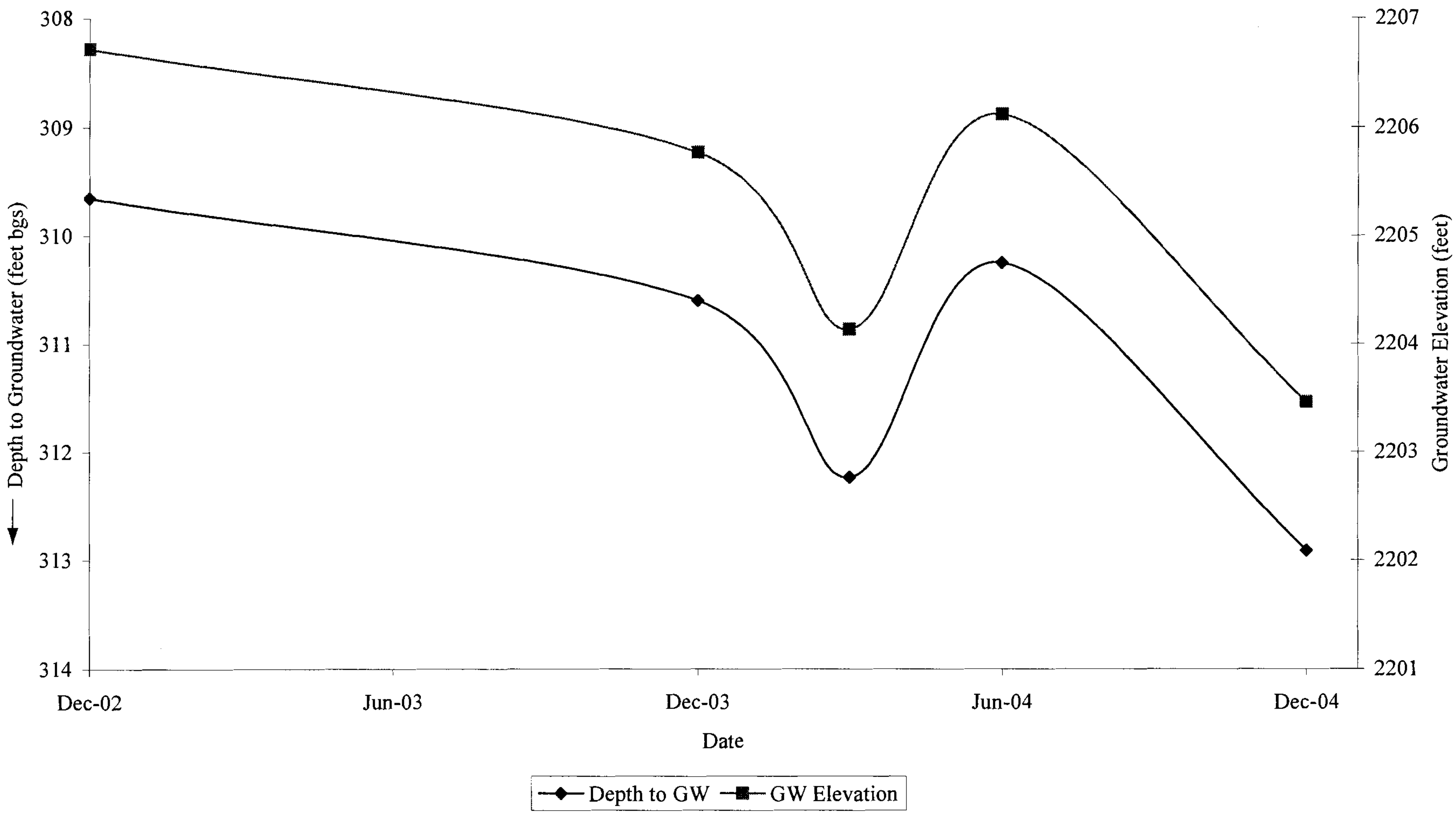

FIGURE 4.54
Palmdale Water Reclamation Plant MW 24
Chloride and TDS

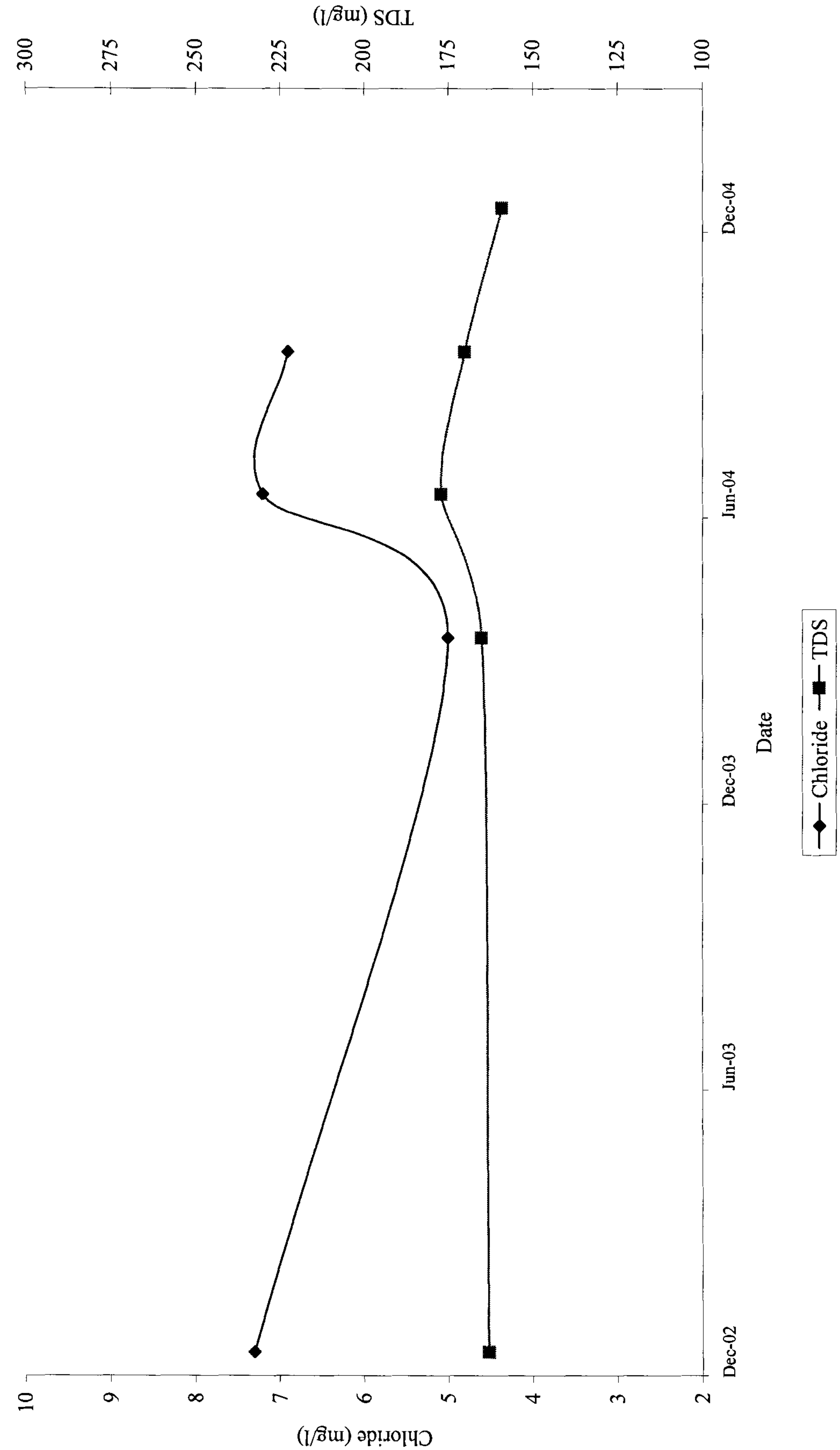

FIGURE 4.55
Palmdale Water Reclamation Plant MW 24
MBAS, NH_3, TKN, NO_3^-

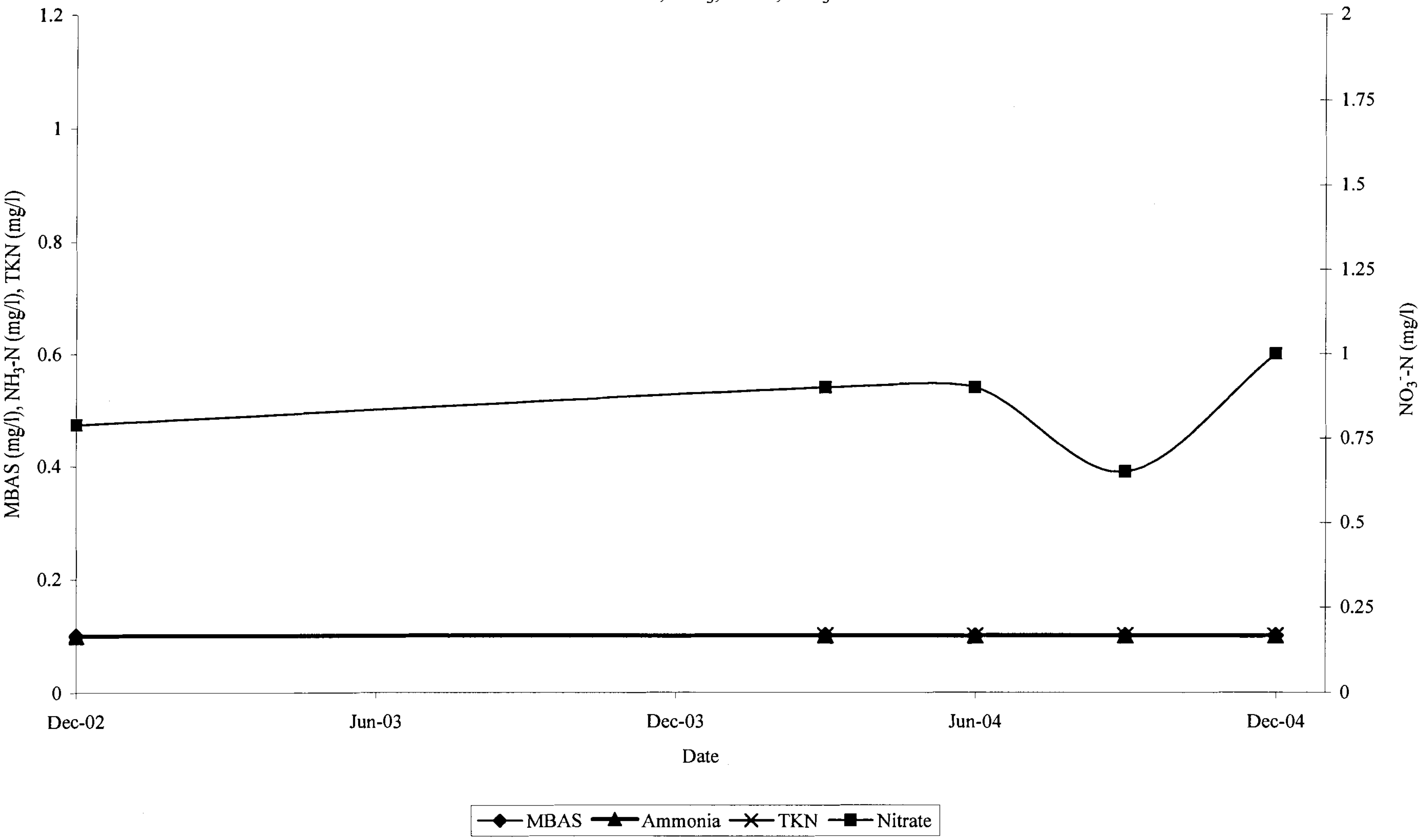

FIGURE 4.56
Palmdale Water Reclamation Plant MW 24
Groundwater Elevation and Depth to Groundwater

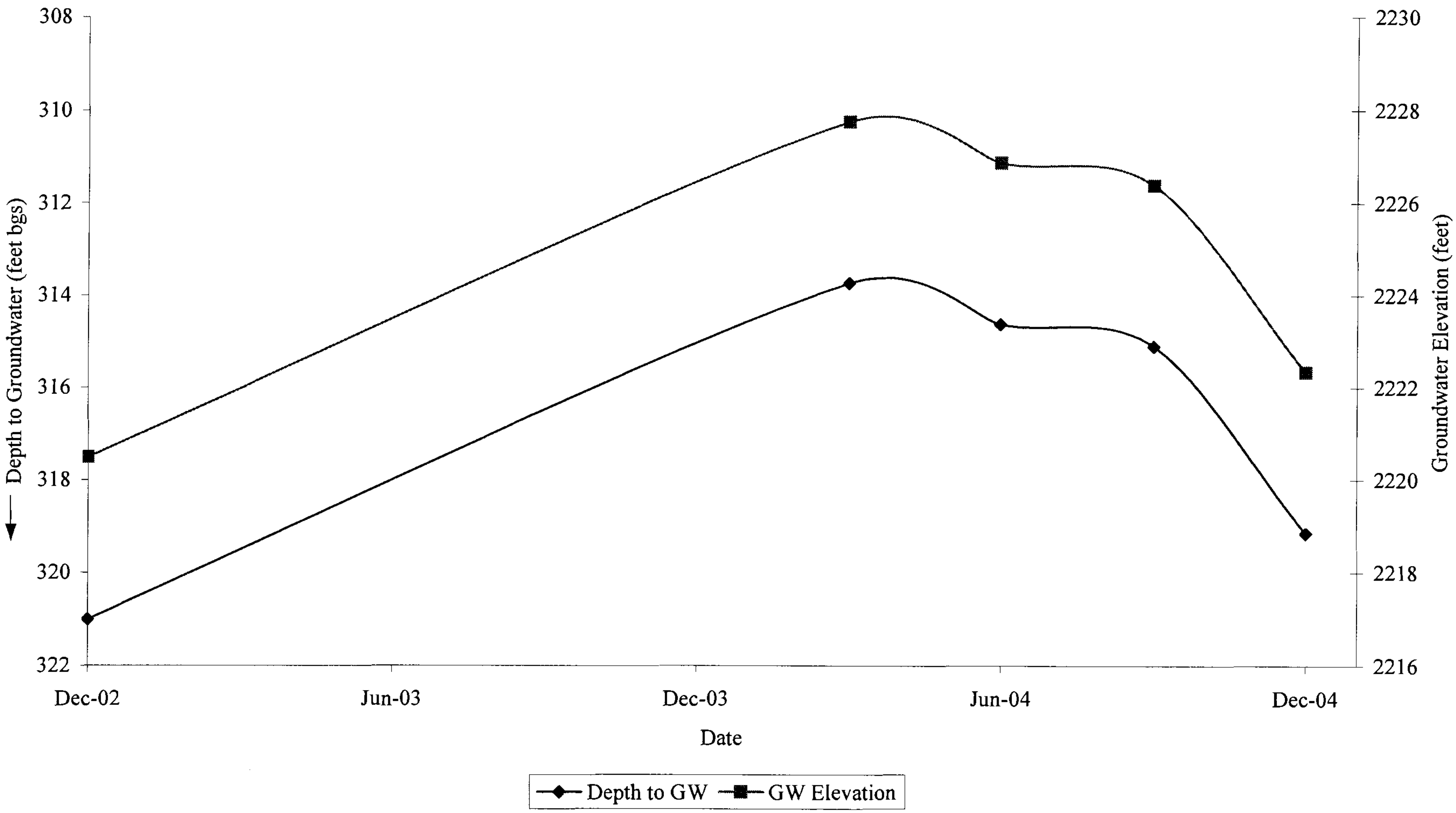

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FIGURE 4.57
Palmdale Water Reclamation Plant MW 25
Chloride and TDS

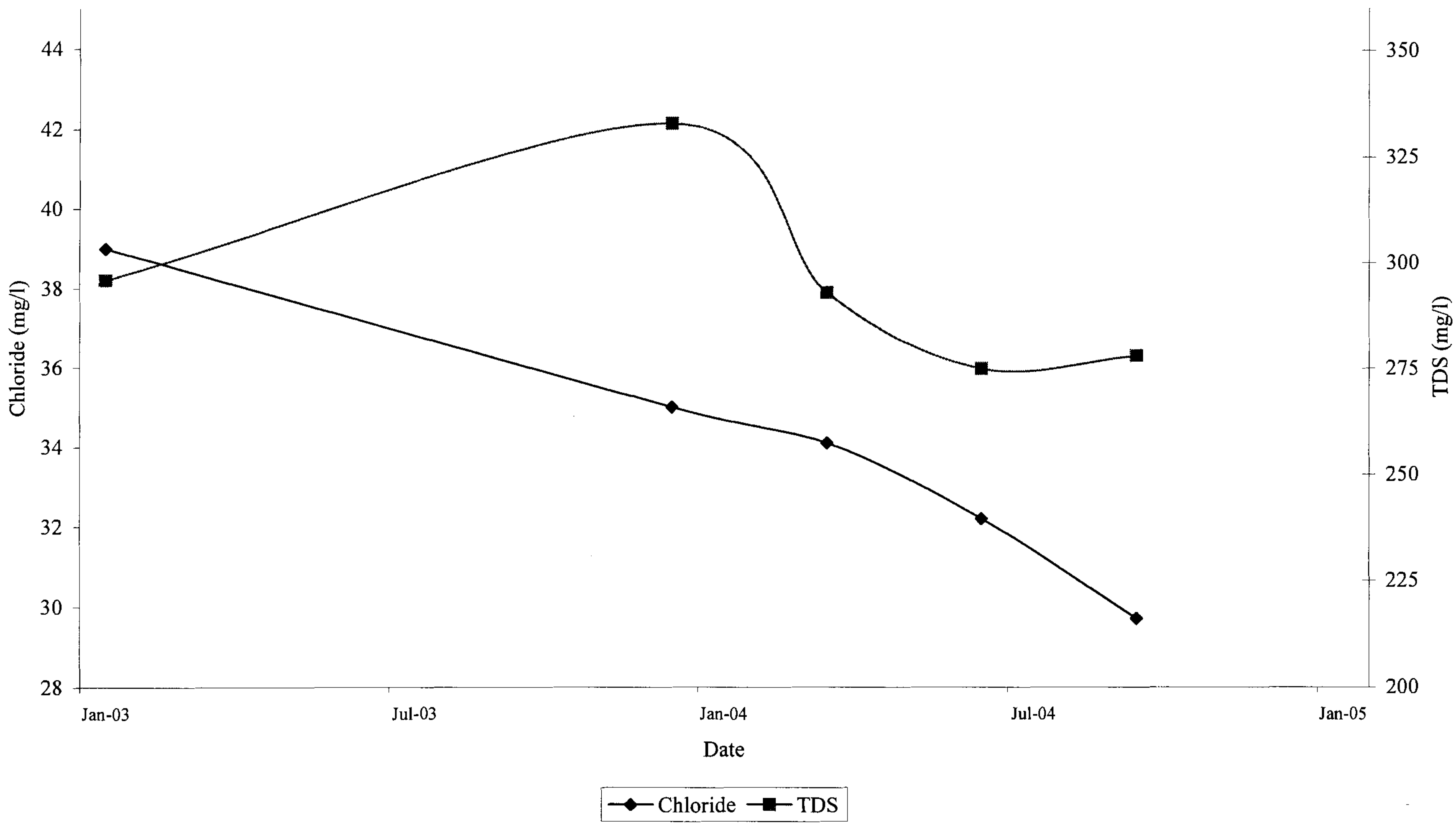

FIGURE 4.58
Palmdale Water Reclamation Plant MW 25
MBAS, NH_3, TKN, NO_3^-

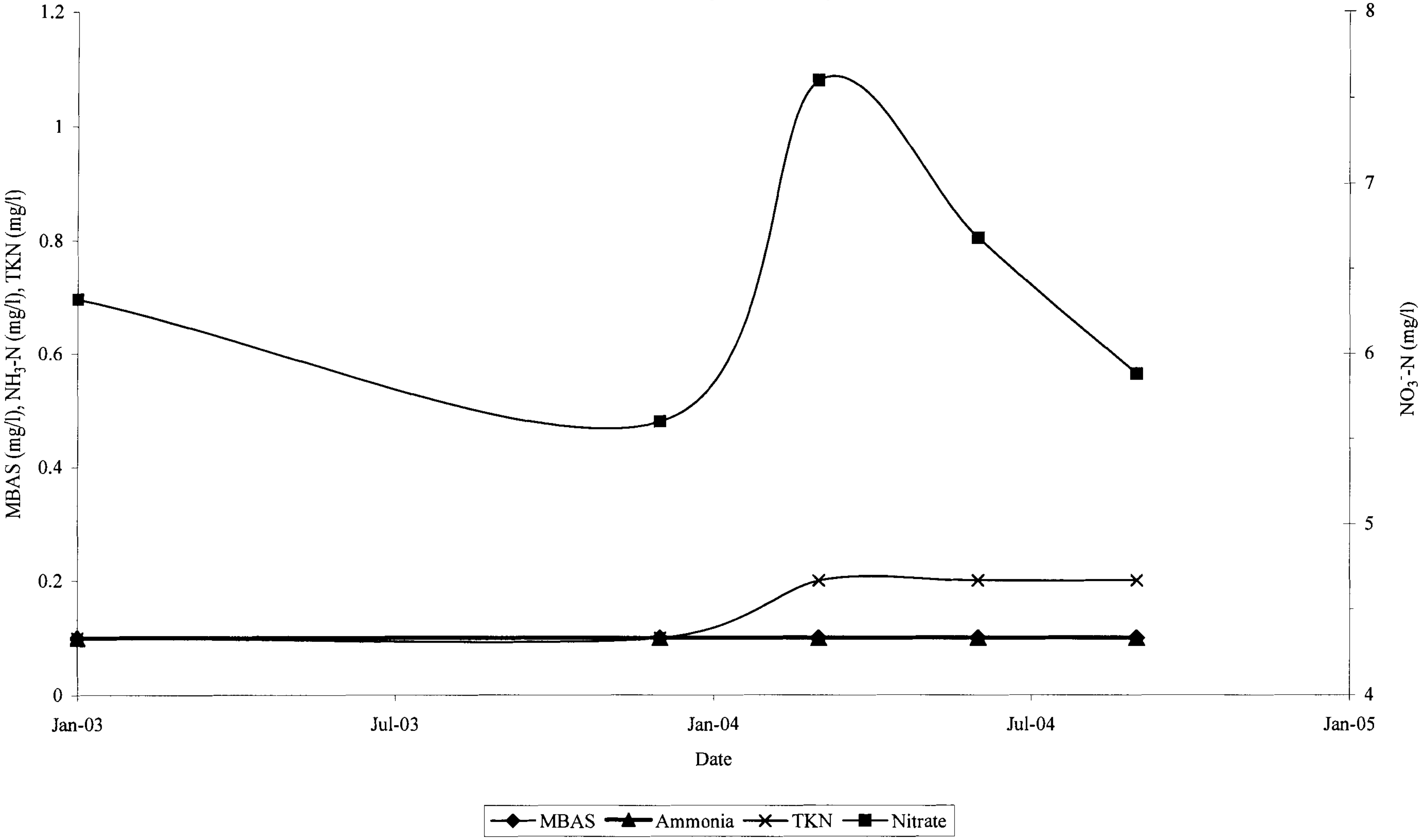

FIGURE 4.59
Palmdale Water Reclamation Plant MW 25
Groundwater Elevation and Depth to Groundwater

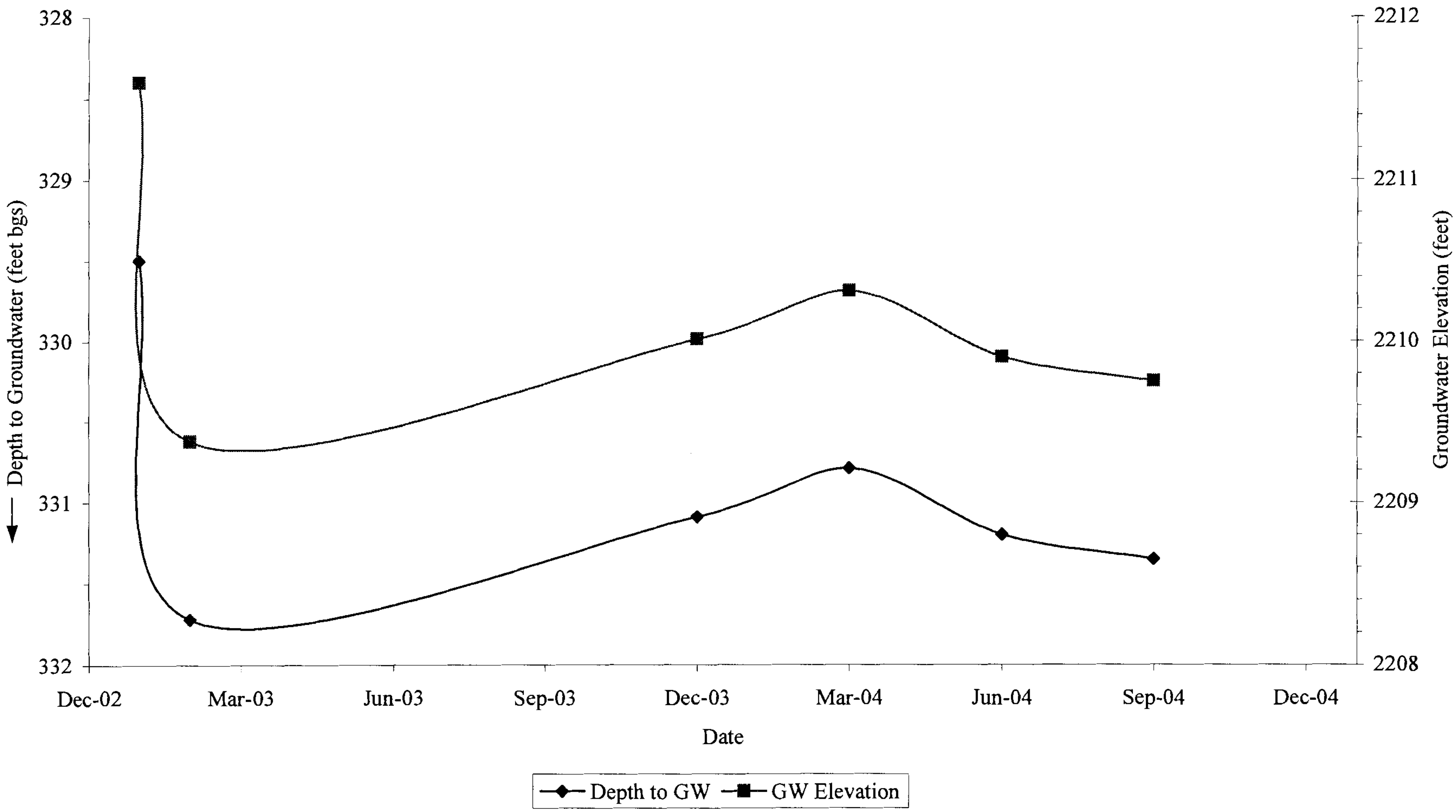

FIGURE 4.60
Palmdale Water Reclamation Plant MW 26
Chloride and TDS

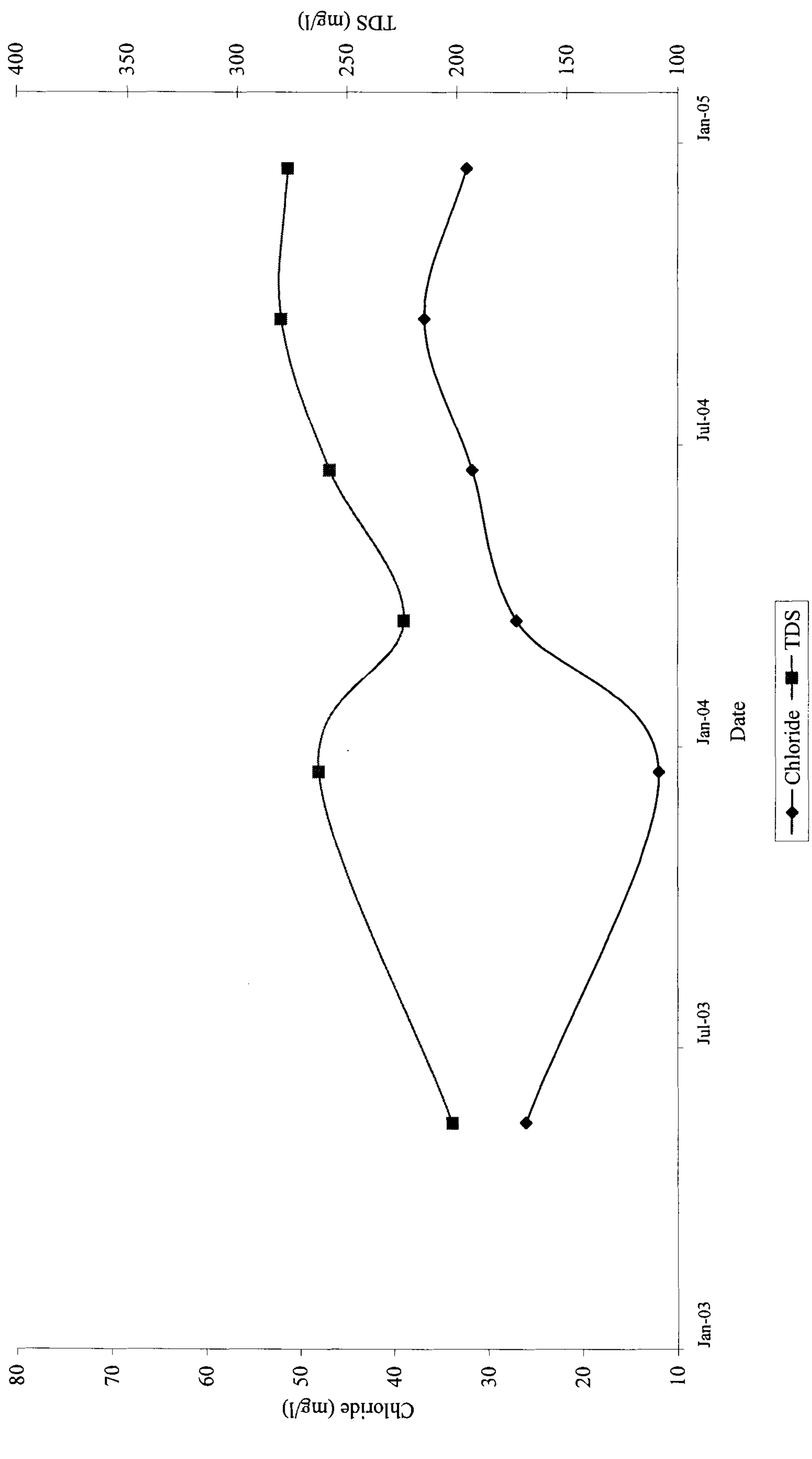

FIGURE 4.61
Palmdale Water Reclamation Plant MW 26
MBAS, NH_3, TKN, NO_3^-

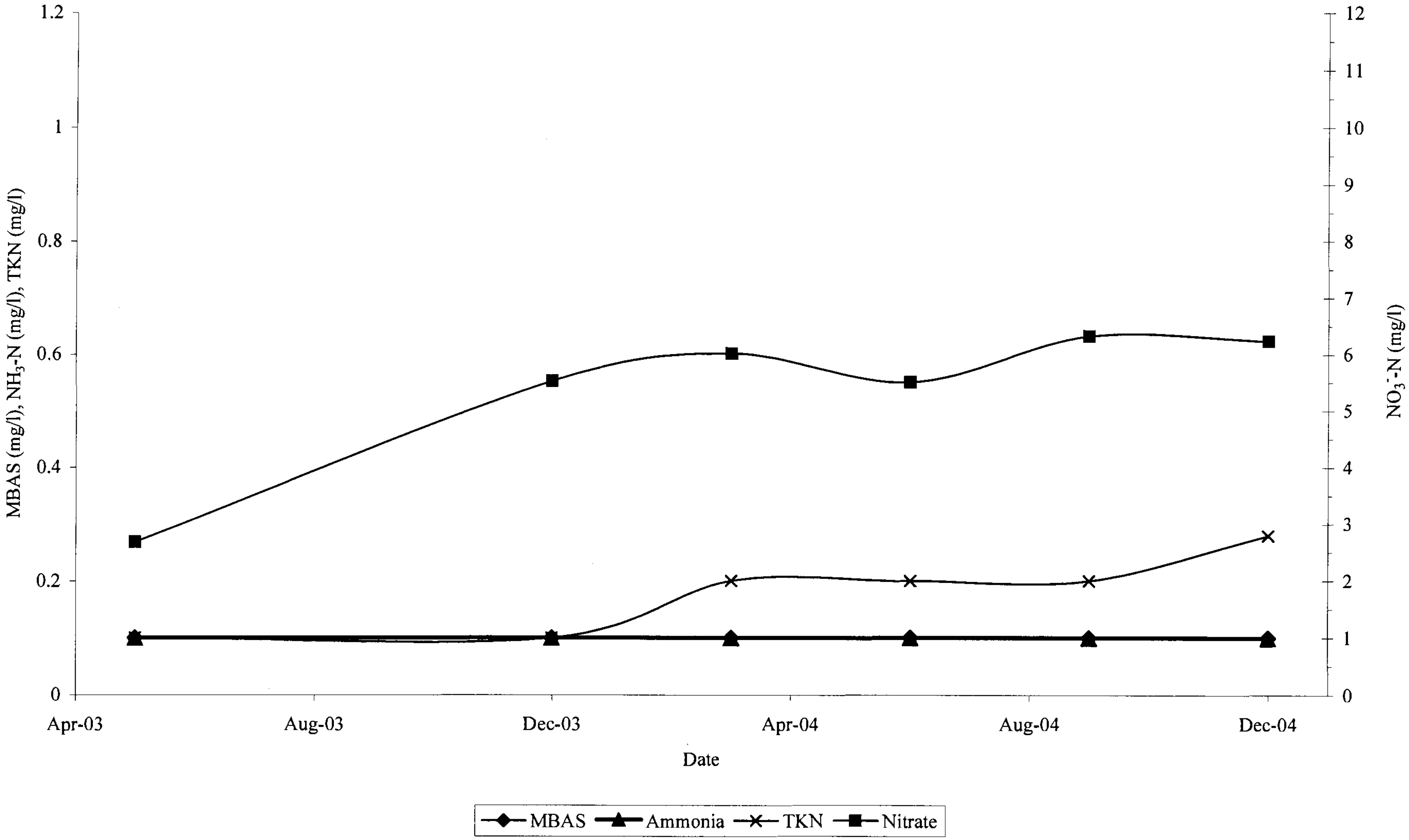

FIGURE 4.62
Palmdale Water Reclamation Plant MW 26
Groundwater Elevation and Depth to Groundwater

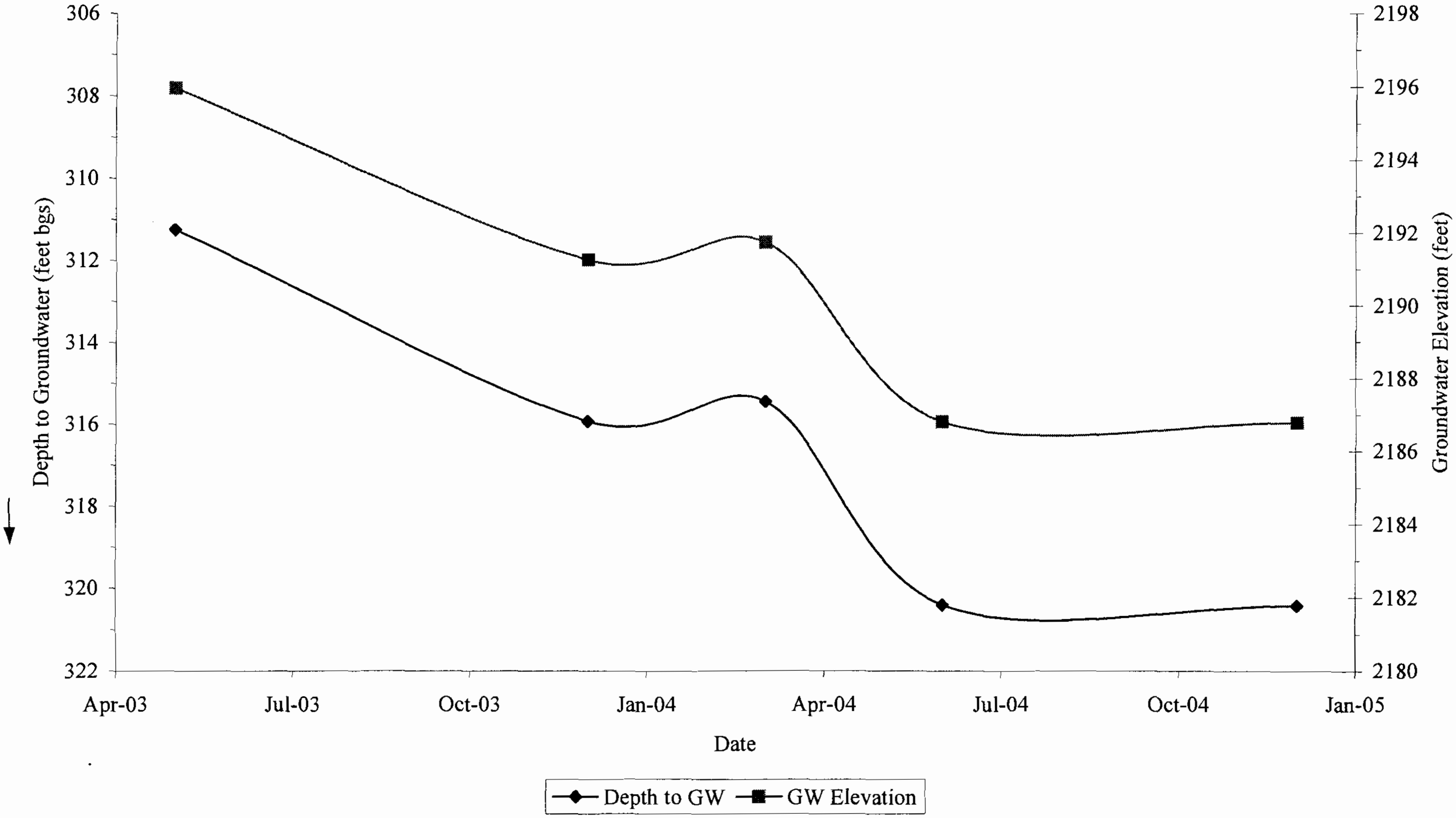

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FIGURE 4.63
Palmdale Water Reclamation Plant MW 27
Chloride and TDS

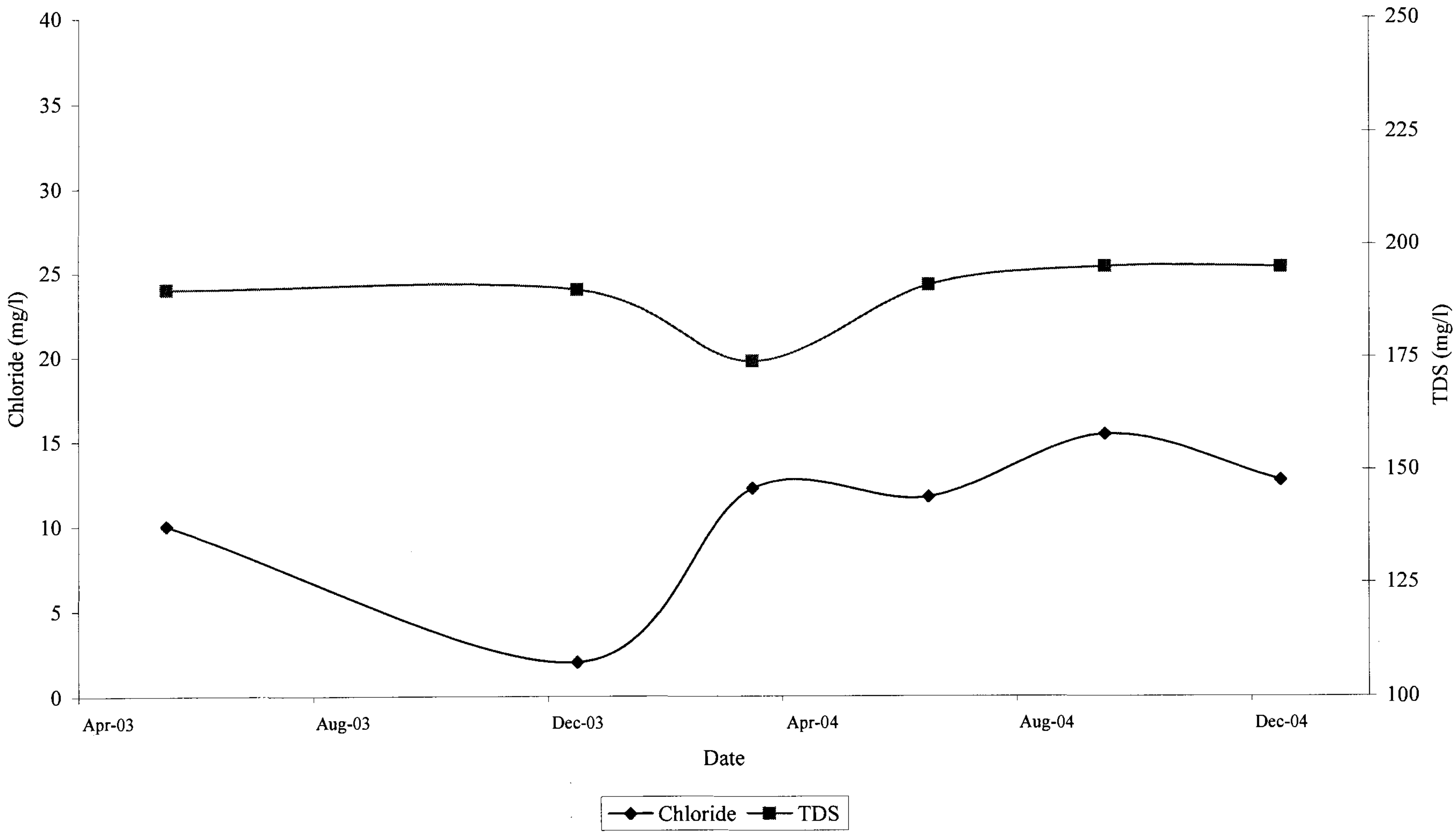

FIGURE 4.64
Palmdale Water Reclamation Plant MW 27
MBAS, NH_3, TKN, NO_3^-

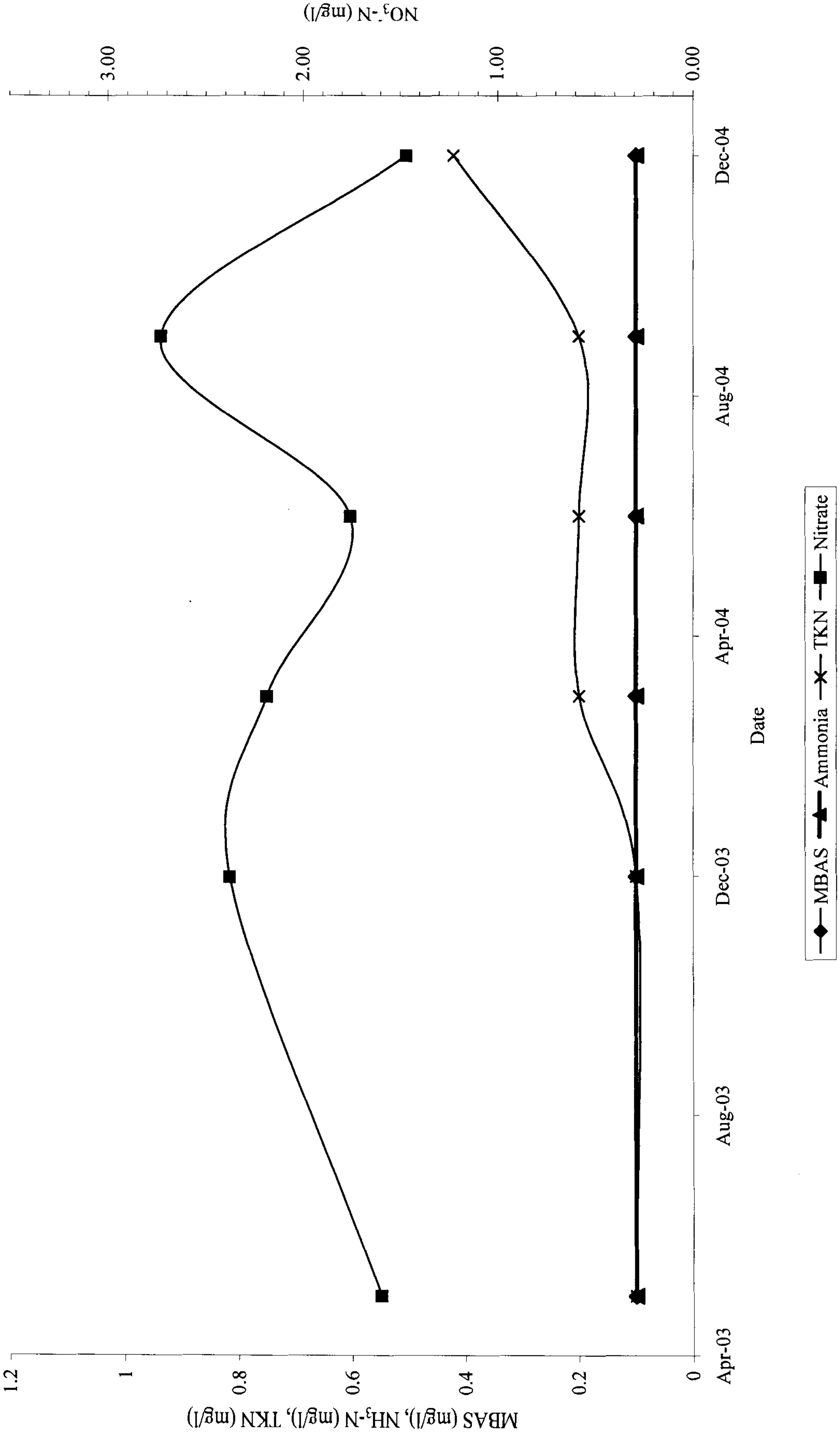

FIGURE 4.65
Palmdale Water Reclamation Plant MW 27
Groundwater Elevation and Depth to Groundwater

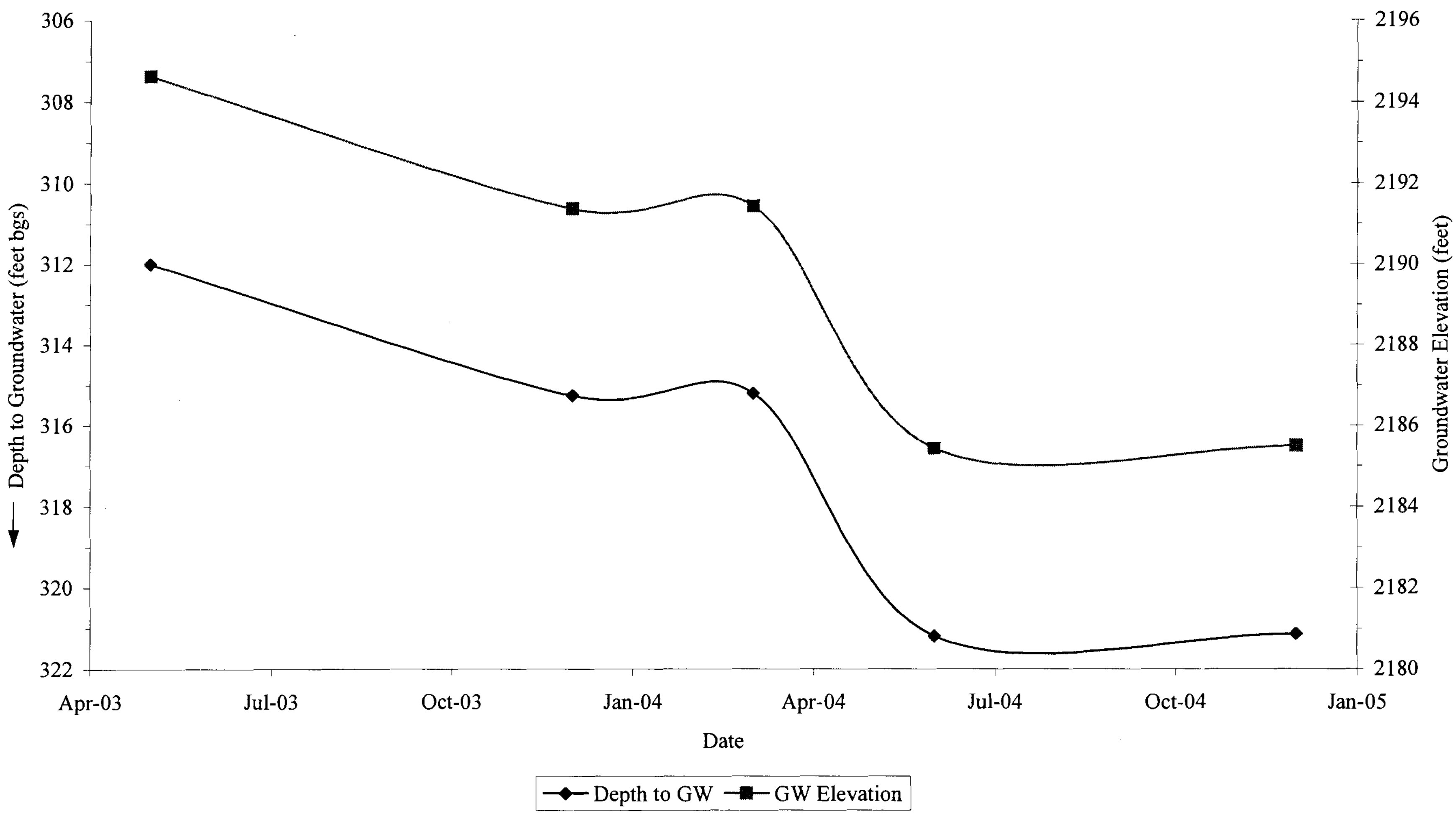

FIGURE 4.66
Palmdale Water Reclamation Plant MW 28
Chloride and TDS

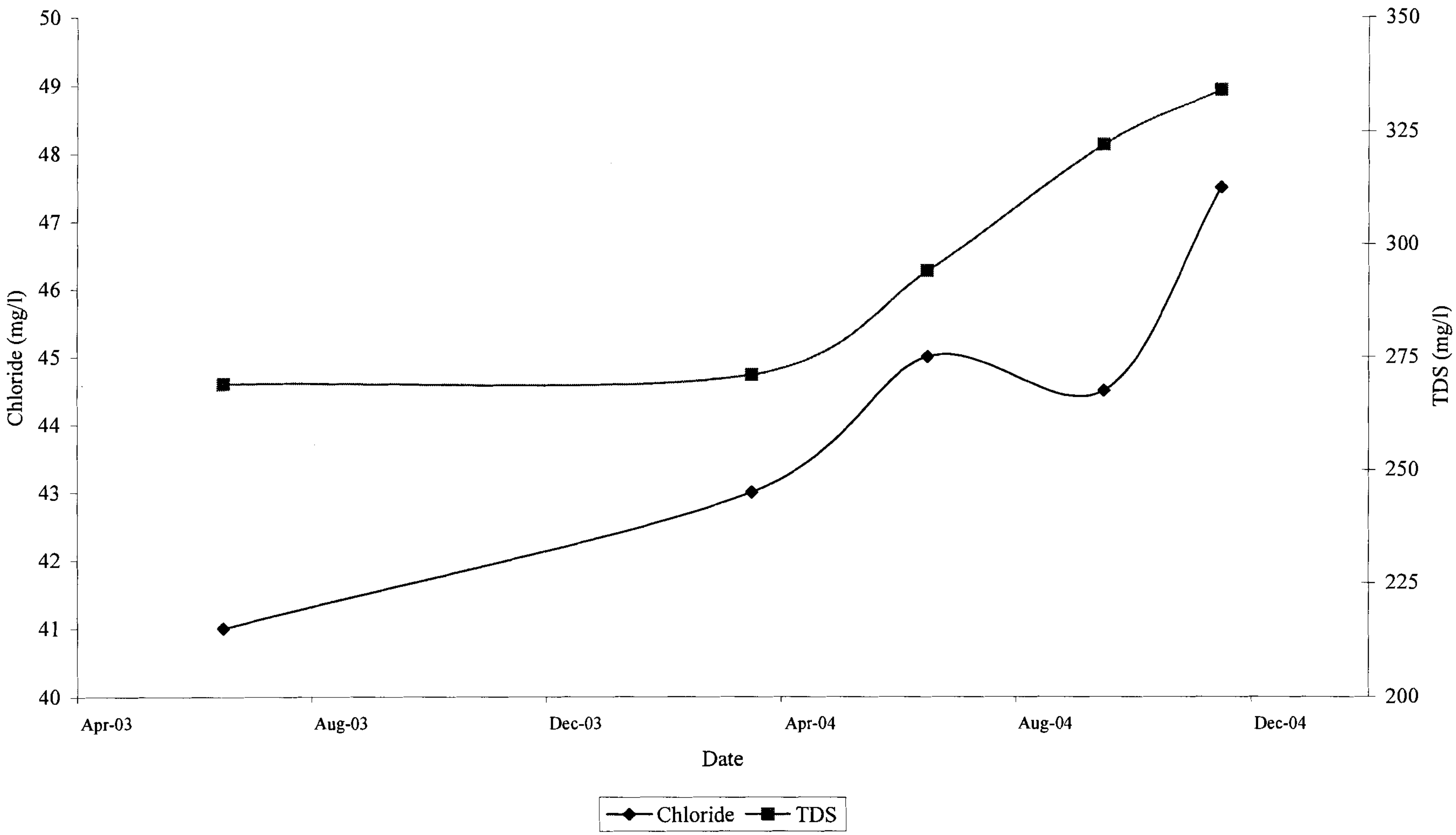

FIGURE 4.67
Palmdale Water Reclamation Plant MW 28
MBAS, NH_3, TKN, NO_3^-

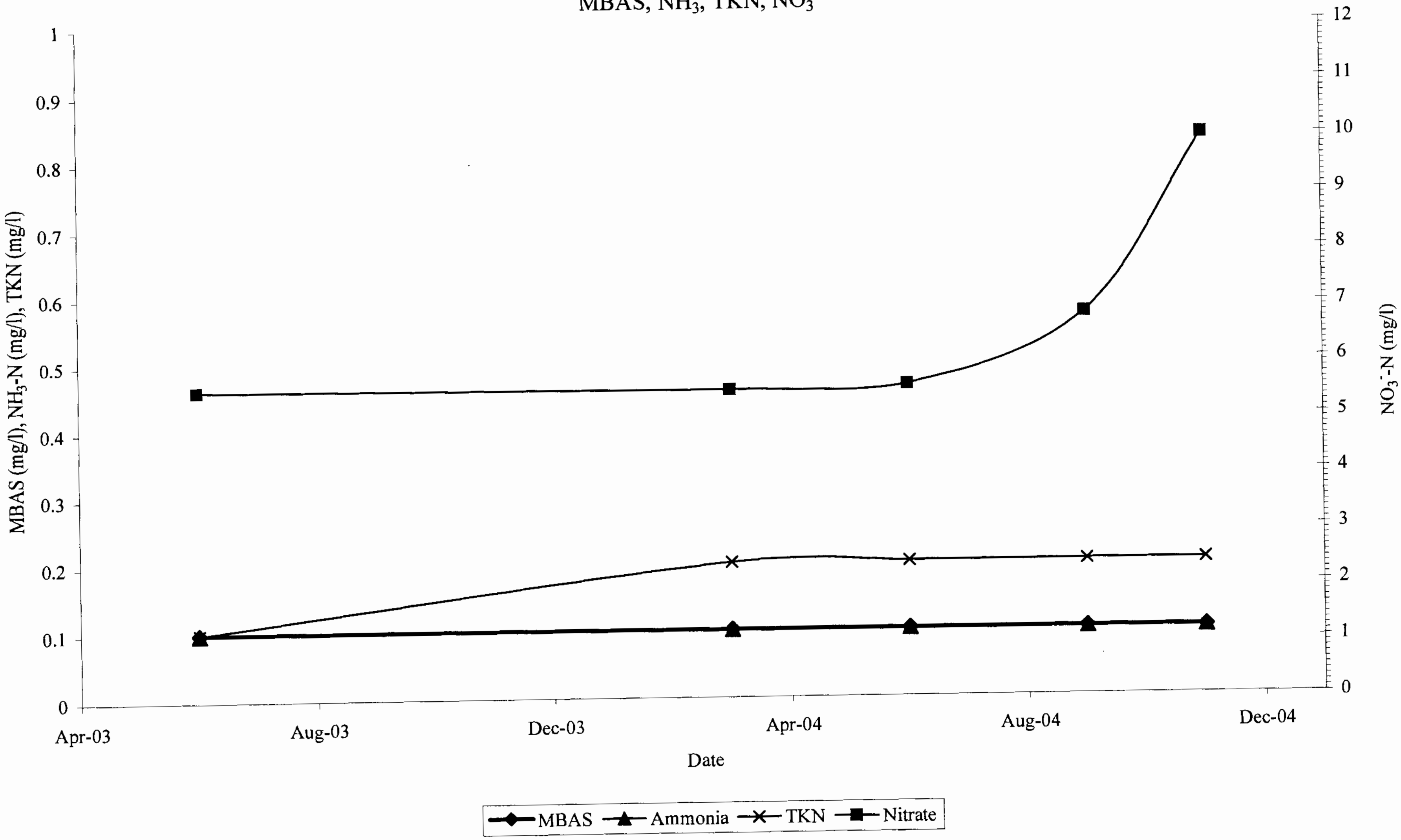

FIGURE 4.68

Palmdale Water Reclamation Plant MW 28

Groundwater Elevation and Depth to Groundwater

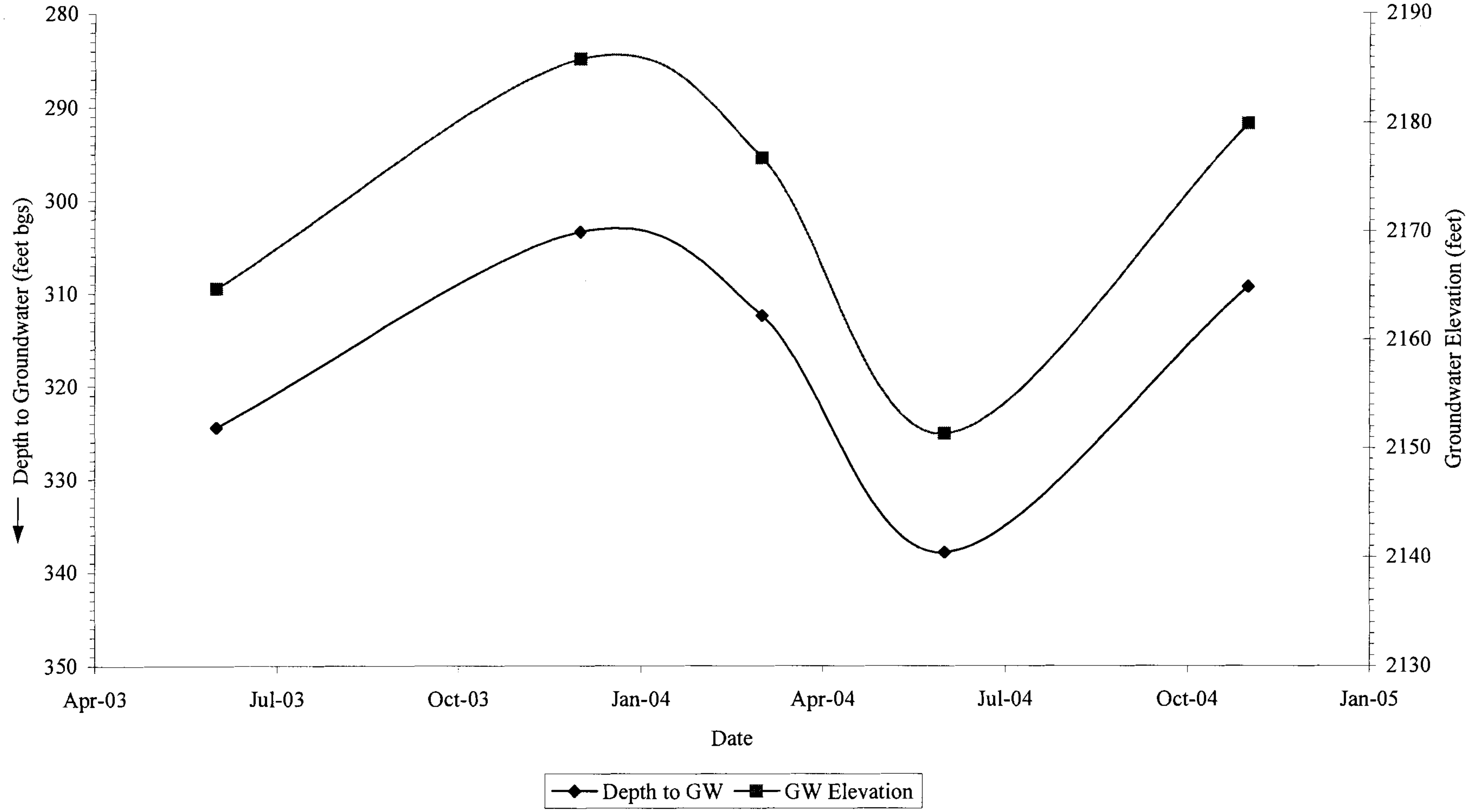

FIGURE 4.69
Palmdale Water Reclamation Plant MW 29
Chloride and TDS

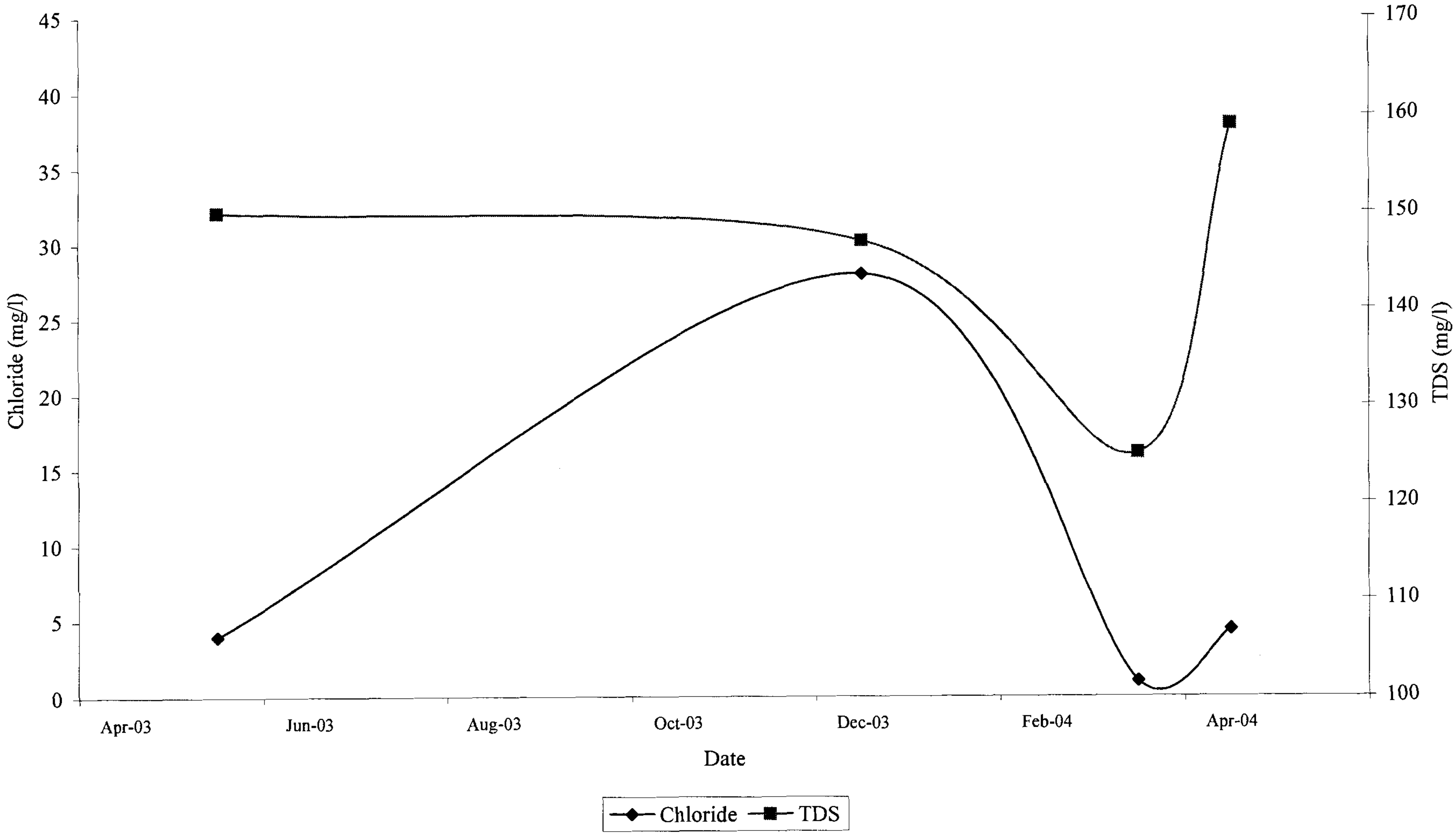

FIGURE 4.70
Palmdale Water Reclamation Plant MW 29
MBAS, NH_3, TKN, NO_3^-

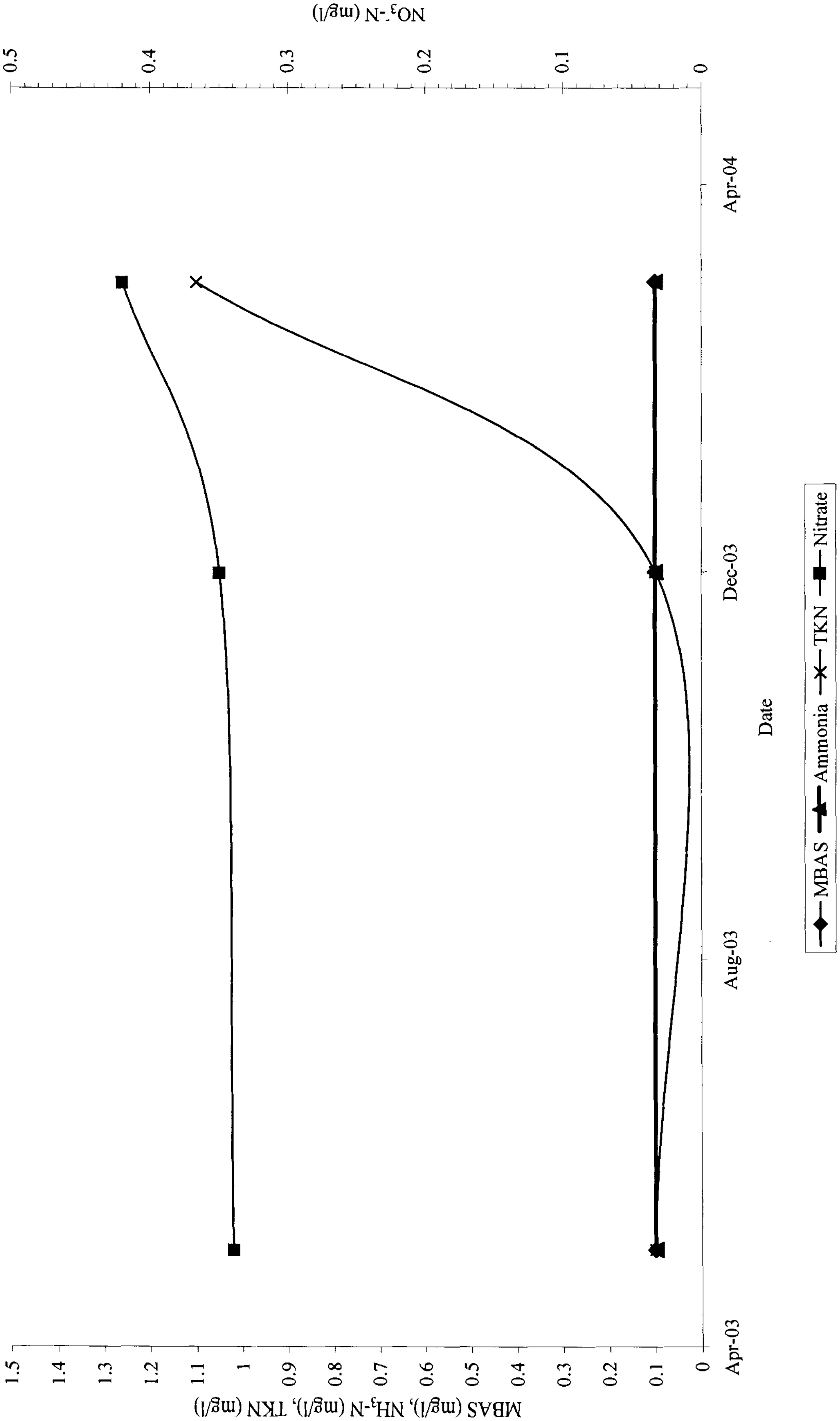

FIGURE 4.71

Palmdale Water Reclamation Plant MW 29

Groundwater Elevation and Depth to Groundwater

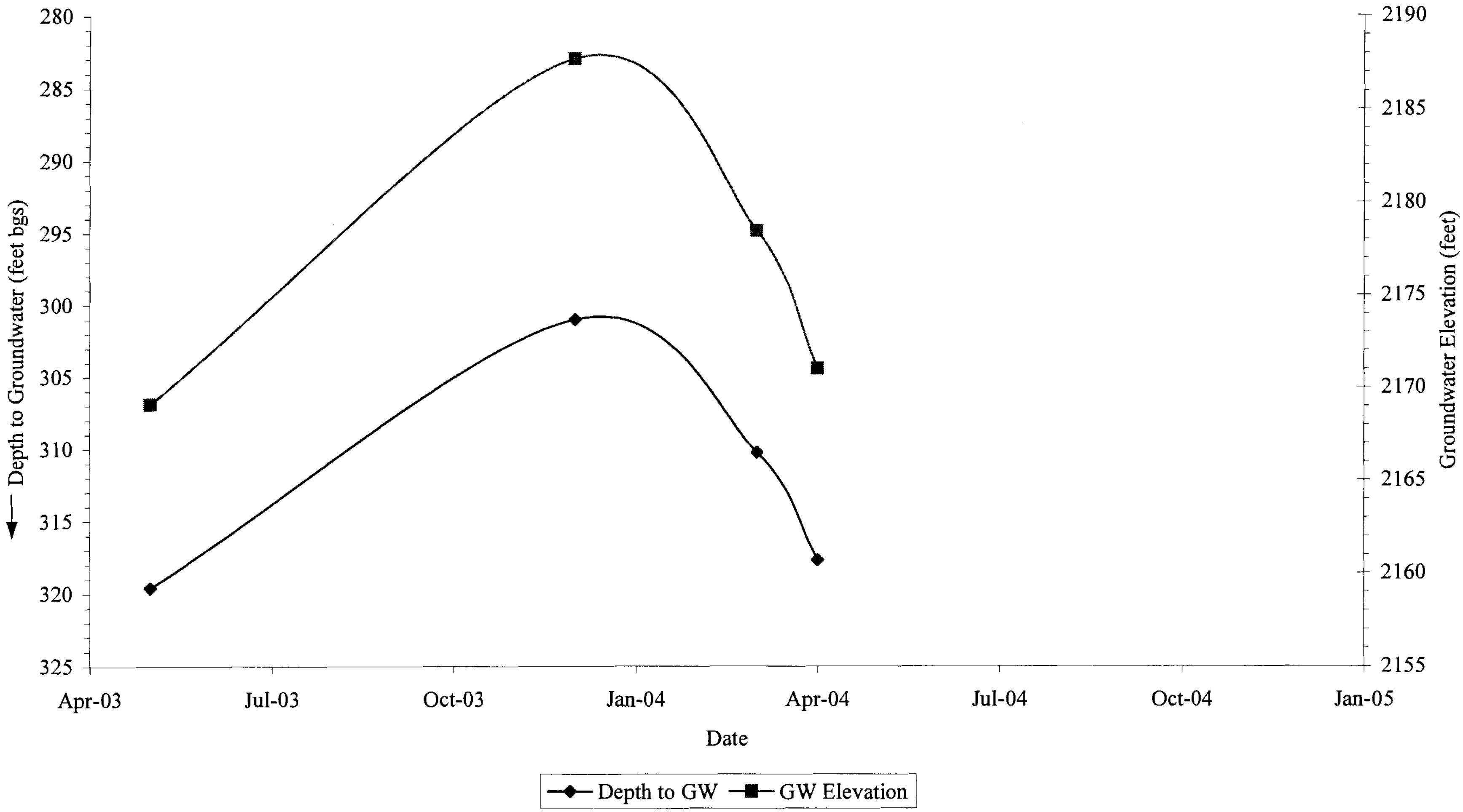

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FIGURE 4.72
Palmdale Water Reclamation Plant MW 38
Chloride and TDS

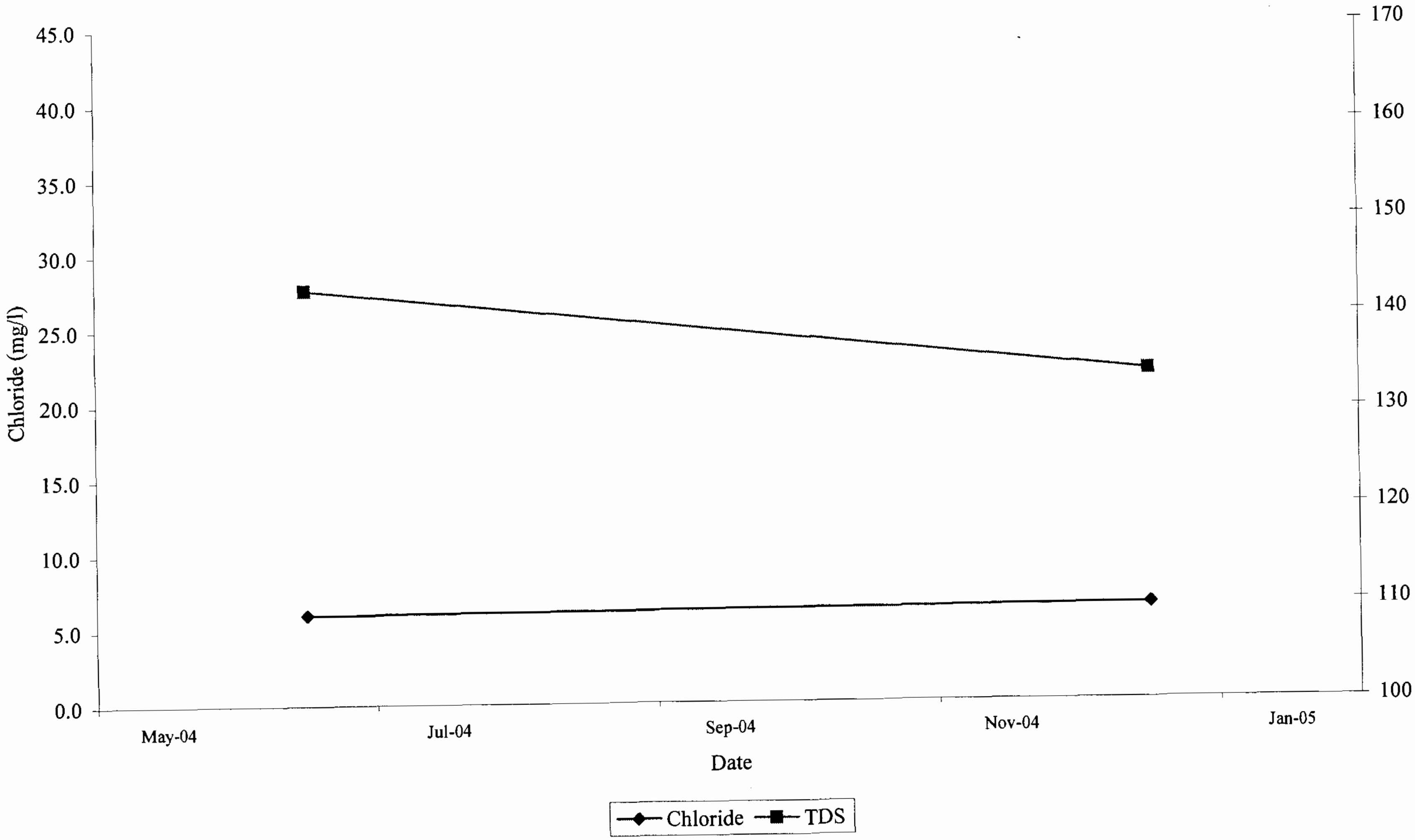

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FIGURE 4.73
Palmdale Water Reclamation Plant MW 38
MBAS, NH_3, TKN, NO_3^-

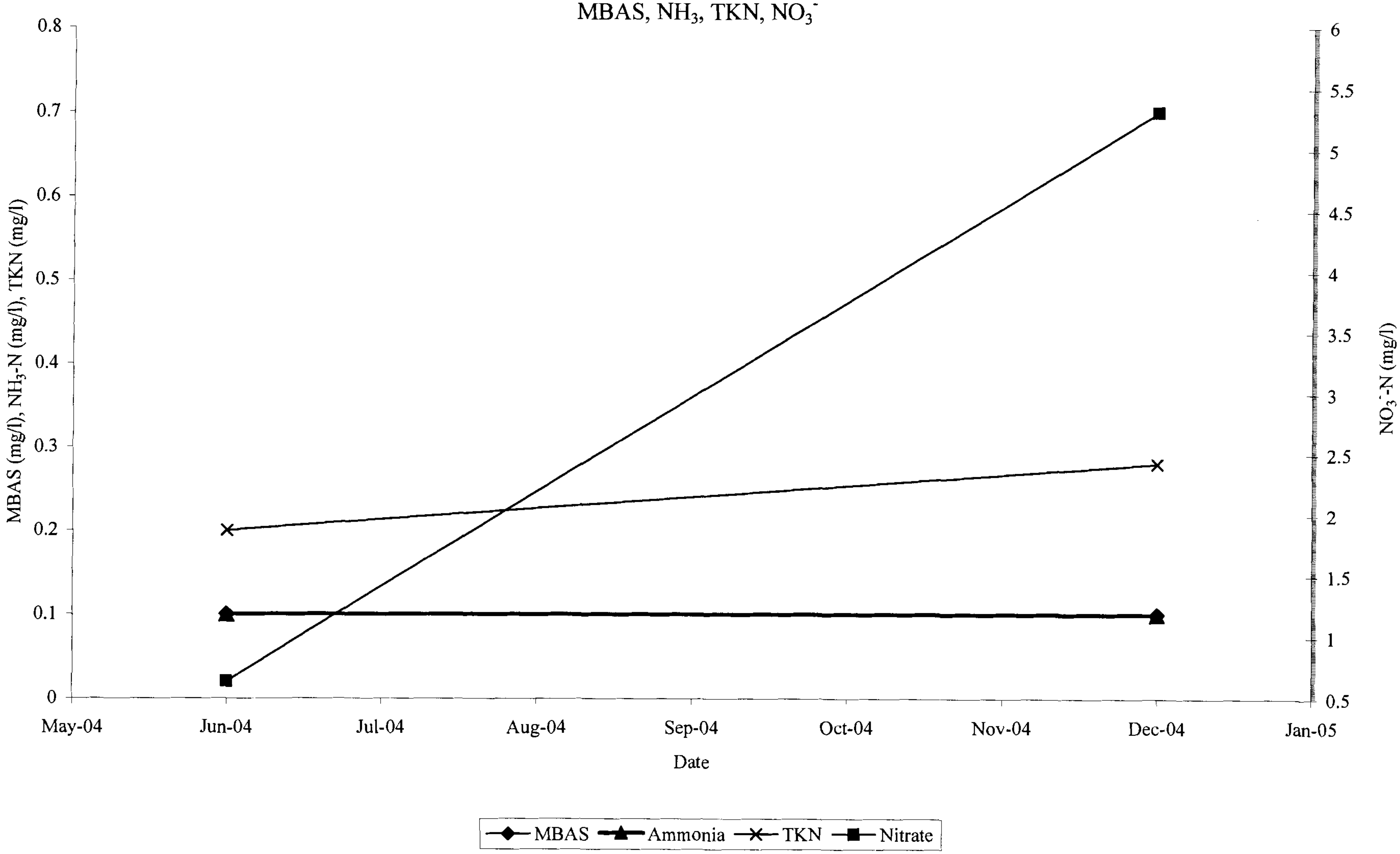
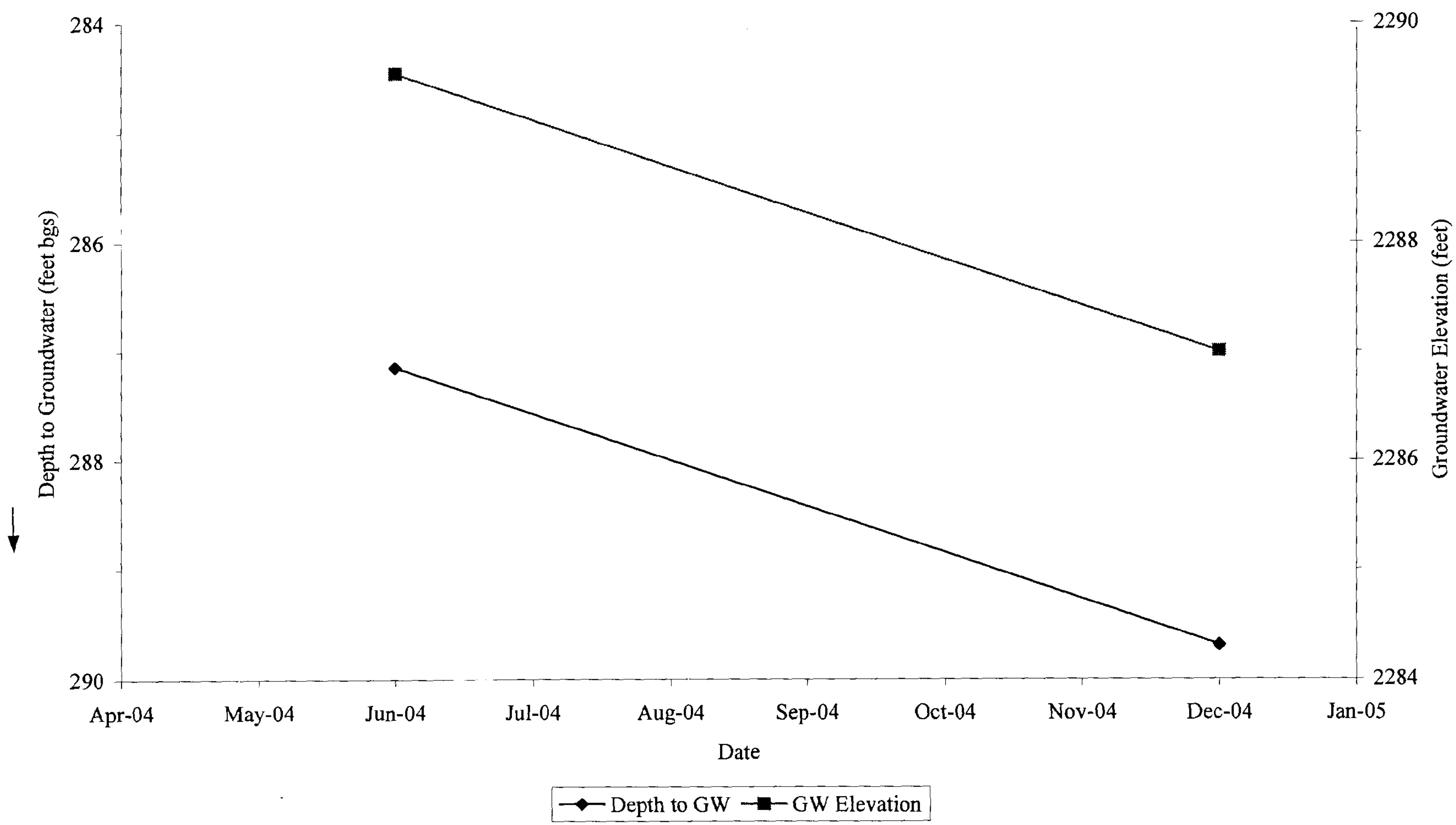


FIGURE 4.74
Palmdale Water Reclamation Plant MW 38
Groundwater Elevation and Depth to Groundwater



PALMDALE WATER RECLAMATION PLANT

CHAPTER 5

EFFLUENT MANAGEMENT SITE MONITORING, OPERATIONS AND CHEMICAL USE REPORT

CHAPTER 5

EFFLUENT MANAGEMENT SITE MONITORING, OPERATIONS AND CHEMICAL USE REPORT

5.1 INTRODUCTION

The Effluent Management Site Monitoring, Operations and Chemical Use Monitoring Reports were completed by the District's consultant, Dellavalle Laboratories, and are presented in this chapter as one report. The information provided in this report, along with the Palmdale WRP monthly reports submitted to the WQCB, demonstrates that all recycled water applied complies with the State Department of Health Services water recycling requirements specified in the Palmdale WRP WDRs.

As stated in MRP 6-00-57-A01, Section 1.G.2, the monthly summary of the amount of water and nitrogen supplied, and the recycled water balance for the quarter, should be compared to the values proposed in the Annual Cropping Plan and any significant differences must be addressed. However, since the Annual Cropping Plan was submitted on December 15, 2004, and covers the calendar year 2005, no comparisons were made during 2004. The comparisons will begin during the 1st quarter 2005.

CONSULTING AND MONITORING ACTIVITIES

ANNUAL 2004 REPORT

Prepared for

Palmdale Water Reclamation Plant Effluent Management Site

February 16, 2005

Prepared by

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ARCPACS NO 01538
President

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Palmdale Water Reclamation Plant
Annual Effluent Management Site

May through December 2004 Monitoring Report

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May through December 2004

INTRODUCTION

County Sanitation District No. 20 of Los Angeles County (District) treats wastewater generated in the City of Palmdale and adjacent unincorporated areas at its Palmdale Water Reclamation Plant (PWRP). Reclaimed Water from the PWRP is used for agricultural irrigation or applied to land northeast of the PWRP. The Effluent Management Site (EMS) is depicted in **Figure 1: Palmdale Water Reclamation Plant Effluent Management Site.** Designations in the site correspond to effluent outlets.

The revised Monitoring and Reporting Program No. 6-00-57-A01 (MRP) issued by the Lahontan Regional Water Quality Control Board (Regional Board) on February 26, 2004 for the Palmdale WRP requires additional monitoring of the Effluent Management Site beginning May 1, 2004. The MRP also requires the District submit detailed quarterly and annual reports to the Regional Board. District has contracted with Dellavalle Laboratory, Inc. (Dellavalle) for fulfilling these monitoring and reporting requirements starting June 1, 2004.

This Annual report reflects all data and calculations generated during daily and monthly monitoring during the months of May through December 2004. Data was collected for the month of May by Franklin Gaudi with the Irrigation Training and Research Center (ITRC) at Cal Poly, San Luis Obispo, California and then by Abebe Gebrehiwet, Andrew Carlson and Lee Boydstun of Dellavalle Laboratory, Inc. during the months of June through December 2004. Nat Dellavalle with Dellavalle Laboratory analyzed the data and prepared the monthly, quarterly and annual reports. This report highlights any differences between actual operation and anticipated operations including any differences between the actual water applied, nitrogen applied, crop production, and total amount of nitrogen harvested to anticipated values.

EFFLUENT MANAGEMENT SITE MONITORING REPORT

Amounts of water applied to each field are presented in **Attachment A: Summary of Flows – January – December 2004** and annual totals are summarized in **Table 1.**

Water and Nitrogen Applied

The volume of water applied monthly to each field was based on daily individual meter readings collected by District personnel except for Section 9. Total water applied based on individual meters deviated from the amount based on the Pump Station Effluent Meter. In order to provide a conservative estimate of applied water, the amount of water applied to Section 9 is the difference between meter readings for all other fields and the Pump Station Effluent Meter.

The deviations are an indication that some meters may not have been working correctly. In June the meter at Outlet 1AKN in Section 9 was removed for maintenance for repair so the sum of individual readings may understate water delivered. In December a problem was identified with the Pump Station Effluent Meter. Repairs are underway. Where differences are persistent the District staff or one of its consultants shall investigate the situation to identify meters needing repair or maintenance, or if the differences are within the accuracy of the meters. In this report and all quarterly reports for 2004 all calculations have been based on individual meters except for Section 9. No adjustments to calculations are needed. Summaries are presented in **Table 1**. Data from the Pump Station Effluent Meter was used to identify meter problems that have or are being corrected.

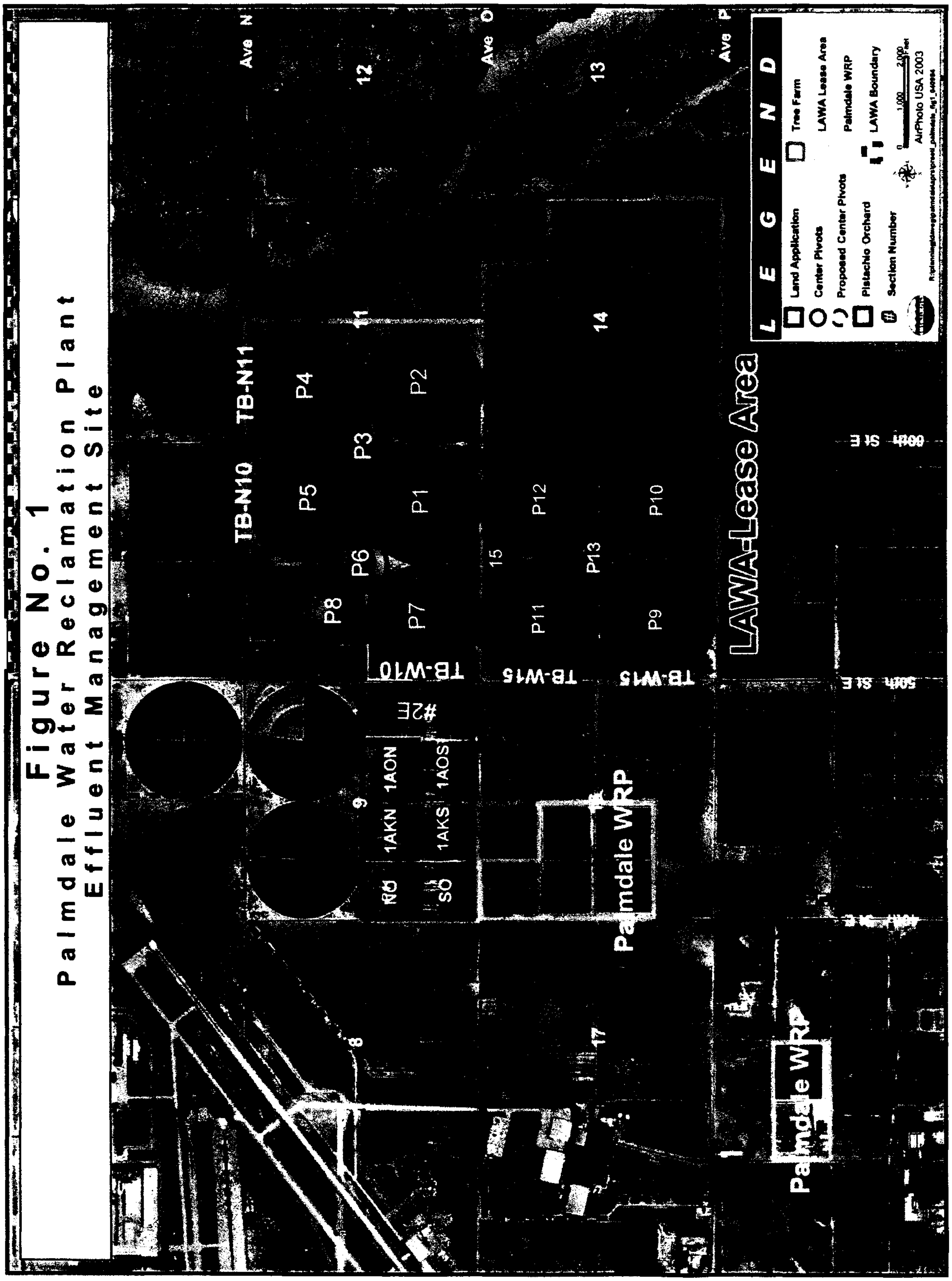

Figure No. 1
Palmdale Water Reclamation Plant Effluent Management Site

The amount of nitrogen applied to each field is based on water applied, and the average ammonium and total nitrogen characteristics of effluent measured by the District. An assumption used in the March 30, 2004 Abatement Report for the Palmdale Water Reclamation Plant was used in the analysis to calculate the amount of nitrogen applied. In **Attachment B: Summary Nitrogen Balance Calculation Tables** total and ammonic nitrogen is calculated using

$$\text{Applied nitrogen} = \sum \left(\frac{N}{mg/L} \right) \cdot \begin{pmatrix} effluent \\ applied \\ MG \end{pmatrix} \cdot \left(\frac{1L}{0.2642g} \right) \cdot \left(\frac{106}{1.0MG} \right) \cdot \left(\frac{1lb}{453.5924g} \right) \cdot \left(\frac{1g}{103mg} \right).$$

Amounts of nitrogen applied, including ammonium-nitrogen, at each location is presented in **Attachment B** under the heading **"Effluent Nitrogen Data."** It is assumed that 25% of applied ammonic nitrogen is volatilized. Amounts of Ammonic-nitrogen volatilized are shown separately in the same attachments under the heading **"25% NH_3."**

Table 1. Water Applied Summary

Location	Area *(Acres)*	Crop	Average Daily Volume Applied Effluent *MGD*	Total Volume Applied *MG*
Pivot #1 (P1)	125	Alfalfa	0.55	203.07
Pivot #2 (P2)	125	Alfalfa	0.54	197.24
Pivot #3 (P3)	21	Fallow/Alfalfa	0.07	24.62
Pivot #4 (P4)	125	Alfalfa	0.56	205.01
Pivot #5 (P5)	125	Fallow/Alfalfa	0.29	106.81
Pivot #6 (P6)	21	SG/Fallow	0.13	45.94
Pivot #7 (P7)	125	SG/Fallow/BOW	0.61	222.20
Pivot #8 (P8)	32	Sudan/Fallow	0.30	109.51
Pivot #9 (P9)*	125	Open/Alfalfa/BOW	0.45	68.84
Pivot #10 (P10)*	125	Open/Oats	0.47	72.53
Pivot #11 (P11)*	125	Open/BOW	0.59	89.81
Pivot #12 (P12)*	125	Open/Oats	0.61	93.97
Pivot #13 (P13)*	21	Open/BOW	0.10	14.61
Tree Farm	28	Trees	0.11	41.64
Tree Rows	4	Trees	0.03	9.27
Pistachios	23	Pistachios	0.11	39.75
Section 9	320	N/A	4.08	1,493.49
Average for Year*/Total			8.30*	**3,038.31**

*Average Daily Flow is since application of reclaimed water began on these fields. (Total average flow is based on entire year.)
BOW = Barley- Oat-Wheat mixture

Nitrogen Harvested

Amounts of nitrogen harvested are based on results of site-specific plant tissue analyses and total amount of dry matter harvested from each field using

$$N_h = dm \times N_c$$

where N_h is nitrogen harvested in pounds, dm is dry matter in pounds and N_c is percent nitrogen in dry matter harvested. Dry matter harvested is presented in **Attachment B: Summary Nitrogen Balance Calculation Tables** under the heading "**Harvest Data.**" is based on moisture content of tissue samples, bale weights and bale counts with a few exceptions. Green chop forage is harvested and sampled with more moisture than hay, about 45% vs. about 10 %. Green chop yield is estimated based on hay yield of a comparable area and is expressed as 10% moisture equivalent.

Tissue analyses data are presented in **Attachment B: Summary Nitrogen Balance Calculation Tables** under the heading "Harvest Data." Amounts of nitrogen harvested during the year are summarized in **Table 2: Nitrogen Balance**. Positive nitrogen balance numbers indicate that more nitrogen was applied than harvested while negative values indicate that more nitrogen was harvested than applied. Applied nitrogen in excess of harvested nitrogen is available for deep percolation and other losses.

More nitrogen was harvested with alfalfa than applied with effluent. It was anticipated that alfalfa would harvest more nitrogen than applied with effluent. Alfalfa has the unique ability, in a symbiotic relationship with Rhizobium bacteria, to scavenge nitrogen from the soil solution and the ability to fix atmospheric nitrogen when none is available in the soil solution. This assures availability of healthy robust plant for nitrogen recovery and maximum protection of groundwater. Because the amount of nitrogen fixed by alfalfa is not easily quantified the nitrogen balance is not a good estimate of nitrogen available for deep percolation or other losses. Use of nitrogen concentration in deep samples is used in these situations.

Some winter forage harvested during 2004 was planted during late 2003 and some winter forage planted in late 2004 will not be harvested until 2004. Estimated nitrogen removal by winter forage is based on the calendar year.

No nitrogen site-specific uptake data is available at this time for tree barriers, or the tree farm. Literature values are used to estimate nitrogen harvested by tree barriers and at the tree farm. Limited information about nitrogen uptake of the tree barriers and nursery plants is available. Efforts will be made to obtain more information.

Table 2. Nitrogen Balance

Location	Crop	Total N Applied	Total NH_3 Volatilized	Total N Harvested	Balance
		tons	*tons*	*tons*	*tons*
Pivots					
Pivot #1 (P1)	Alfalfa	30.12	4.56	47.79	-22.24
Pivot #2 (P2)	Alfalfa	28.98	4.42	45.95	-21.39
Pivot #3 (P3)	Fallow/Alfalfa	3.62	0.56	1.52	1.54
Pivot #4 (P4)	Alfalfa	30.48	4.60	52.37	-26.49
Pivot #5 (P5)	Fallow/Alfalfa	15.70	2.44	8.05	5.21
Pivot #6 (P6)	SG/Fallow	6.64	1.02	3.30	2.33
Pivot #7 (P7)	SG/Fallow/BOW	33.70	5.18	16.43	12.09
Pivot #8 (P8)	Sudan	16.37	2.55	5.37	8.46
Pivot #9 (P9)	Open/Alfalfa/BOW	9.47	1.47	0.00	7.99
Pivot #10 (P10)	Open/Oats	10.08	1.56	0.00	8.52
Pivot #11 (P11)	Open/BOW	12.45	1.95	0.00	10.50
Pivot #12 (P12)	Open/Oats	13.05	1.99	0.00	11.06
Pivot #13 (P13)	Open/BOW	2.01	0.31	0.00	1.70

BOW is Barley-Oat-Wheat mixture, winter forage. "Open" designates the period prior to a crop.

Water Balance

The water balance is a comparison of applied water plus rainfall and the sum of water lost to crop evapotranspiration, evaporation from bare soil and deep percolation. Consideration is given to water added or removed from storage in the soil profile and water required to compensate for distribution uniformity and a leaching fraction. While water required for the leaching fraction and to compensate for distribution uniformity will result in deep percolation, it is considered beneficial use required in all irrigated agriculture. Water added to control wind erosion is also considered beneficial use. Another beneficial use is irrigation of transplants such as the pine trees recently planted in the windbreaks. Because root systems are disrupted, soil moisture must be maintained with frequent irrigations.

Applied-water quantities are taken from flows presented in **Attachment A**. Crop evapotranspiration is estimated using CIMIS data from the DWR CIMIS weather station at Victorville and crop factors taken from University of California data or provided by ITRC. The crop factor considers characteristics of individual crop species and stage of growth. Following application of water to bare soil, a factor of 0.2 is used for two days then decreased in a straight-line function over ten days. The crop factor for the tree barriers is 1.2 adjusted for the percent ground cover in each area.

Crop evapotranspiration and evaporation from bare soil is estimated using

$$ETc = ETo \times kc$$

where ETc is evapotranspiration of the crop in inches, ETo is reference ET from the Victorville CIMIS station and kc is the crop factor. Data from the onsite CIMIS station will be available in early 2005, please refer to the section "California Irrigation Management Information System Station" of this report for the status of the onsite CIMIS station. ETc values provided by ITRC are presented in **Attachment C: Deep Percolation Calculations.** Applied water, estimated ETc and water available for leaching are presented in **Table 3 - Water Balance.** Where more than one crop was grown in a pivot estimated ETc is for all crops grown during the year.

Less water was applied to alfalfa than predicted from CIMIS data during summer months. Considering that more nitrogen was harvested, water application rates could be increased without placing groundwater at risk and obtaining greater crop yield at the same time. During fall and winter applied water exceeded the ETc. Construction of pivots precluded effluent application in Section 9 so excess application was applied to pivots during fall and winter months.

The water balance overstates the amount of water available for deep percolation. During October and December of this year, the area experienced rainfall at heavier than normal levels. Rainfall occurred at a rate faster than the infiltration rate. Runoff from rainfall was observed on some fields. Runoff is included in the water balance even though it left the field and could not have percolated because it is not possible to measure or estimate the volume of runoff. Irrigation with reclaimed water did not occur during these periods of heavy rainfall, therefore, no effluent was observed running off fields.

Another impact of weather was desiccating impact of high winds that occurred in December. Additional water had to be applied to recently planted fields to maintain seed viability and young seedlings. Dry sand is more erodible than wet sand. Therefore, additional water was needed for fields that were being prepared for planting. Pivots impacted were P7, P9, P10, P11, P12 and P13. These types of water applications are beneficial use of water and are agronomic.

Table 3: Water Balance

Location	Crop	Acres	Water Applied	Estimated ET	Balance		Deep Percolation	
			Total	Total	Totals		Totals	
			ins	ins	ins	ac-ins	ins	ac-ins
Pivot #1 (P1)	Alfalfa	125	59.83	63.23	-3.40	-425.00	16.42	2052.5
Pivot #2 (P2)	Alfalfa	125	58.11	63.23	-5.12	-640.00	16.07	2008.75
Pivot #3 (P3)	Fallow/Alfalfa	21	43.17	28.43	14.74	309.54	26.68	560.28
Pivot #4 (P4)	Alfalfa	125	60.4	63.23	-2.83	-353.75	13.47	1683.75
Pivot #5 (P5)	Fallow/Alfalfa	125	31.47	28.43	3.04	380.00	17.71	2213.75
Pivot #6 (P6)	SG/Fallow	21	80.56	53.24	27.32	573.72	38.50	808.50
Pivot #7 (P7)	SG/Fallow/BOW	125	65.46	53.24	12.22	1527.5	28.46	3557.50
Pivot #8 (P8)	Sudan	32	126.03	53.24	72.79	2329.28	83.56	2673.92
Pivot #9 (P9)	Open/Alfalfa/BOW	125	13.81	2.75	11.06	1382.5	18.36	2295.00
Pivot #10 (P10)	Open/Oats	125	21.37	3.84	17.53	2191.25	24.83	3103.75
Pivot #11 (P11)	Open/BOW	125	26.46	4.05	22.41	2801.25	29.71	3713.75
Pivot #12 (P12)	Open/Oats	125	27.68	4.37	23.31	2913.75	30.61	3826.25
Pivot #13 (P13)	Open/BOW	21	25.62	4.50	21.12	443.52	28.42	596.82
S Side of Tree Farm (4A)	Pistachios	23	63.65	43.56	4.90	112.70	37.11	853.53

Deep Percolation of Water

Some deep percolation of water is typical of any farming operation as a result of the need to remove salts from the root zone and the need to overcome non-uniformity of irrigation methods. In addition, due to susceptibility of soils at the EMS to wind erosion, water must be applied to minimize erosion. The wind will also desiccate soil near the surface requiring extra water for seeds, seedlings and transplants. Where applied water equals or exceeds crop use, deep percolation occurs.

The amount of deep percolation is estimated per the methodology provided by ITRC described in the District's Abatement Report and Addendum. Because no irrigation system applies uniformly, water must be applied to assure that the part of a field that receives the least amount has sufficient water to meet ETc. Where applied water is equal to or greater than ETc, deep percolation is the difference between applied water and crop use. Where crops are under-irrigated, no deep percolation occurs in part of the field. The method provided by ITRC is used when fields are under-irrigated. Deep percolation estimates are calculated in **Attachment C: Deep Percolation Calculations** and summarized in **Table 3: Water Balance.**

Crop Cycle

Crops grown during 2004 are presented in **Table 3**. New alfalfa was planted in P3, P5 and P9 during the fall. Sudan grass was planted in P6, P7 and P8 during early summer. Winter forage, oats or a barley-oats-wheat mixture (BOW) was planted in P 7, P10, P11, P12 and P13. Growth is initiated on the day irrigation occurred after planting. Those dates are shown in Table 5 on page 9.

Eight alfalfa cuttings were harvested from pivots P1, P2, P4 and one from pivots P3 and P5 during 2004, a total of twenty-six harvests. In the fourth quarter, alfalfa growth rate slowed due to cooler temperatures and reduced yields. Also, rainfall interfered with harvest in addition to reducing yields. A longer time period was required for harvest, so effluent application was diverted to land application sites. Some alfalfa planted in P9 during September failed due to wind damage. The damaged area was replanted with a barley-oat-wheat mixture (BOW).

Winter forage was harvested from pivots P3, P5, P6, P7, P8 and the corners, for a total of 5 harvests. Three cuttings of Sudan grass hay was harvested from pivots P6, P7 and P8 for a total of nine harvests.

The annual pistachio harvest occurred during September.

Oleanders were planted in the tree barrier north of pivot 5 (North Section 10) on June 29. The objective was to determine if oleander would provide an adequate screen for drift. Thirty trees were harvested from the tree farm to replace existing wind barriers. One-hundred-forty-two were placed in the new tree barriers on the east side of Section 9. Ninety were used at the Lancaster Water Reclamation Plant and thirty were sold. No harvest occurred at tree barriers.

Crop production data is presented in **Attachment B: Summary Nitrogen Balance Calculation Tables** under the heading **"Harvest Data"**. Harvest data is summarized in **Table 4: Yield Summary**.

Water could not be applied to P6, P7 and P8, designated as land application with a crop during December, as it would interfere with seedbed preparation. Construction activities reduced the amount of water that could be applied to Section 9. Water was applied to P1 and P2. No harm to alfalfa resulted.

Table 4. Yield Summary

Location	Crop	March	May	June	July	Aug	Sept	Oct	Nov	Dec	Totals
		tons	*tons*	*tons*	*tons*	*tons*	*tons*	*tons*	*tons*	*tons*	*tons*
Pivot 1	Alfalfa	210	227	208	219	202	200		168		1434
Pivot 2	Alfalfa	209	209	210	219	199	202		80	29	1356
Pivot 3	WF/Alfalfa		67							14	81
Pivot 4	Alfalfa	194	237	207	222	197	196	142		58	1453
Pivot 5	WF/Alfalfa		393							85	478
Pivot 6	WF/SG			74		34	34	37			178
Pivot 7	WF/SG/WF			449		201	211		61		922
Pivot 8	WF/SG			107		51	52		49		259
S Side of Tree Farm	Pistachios						40				40

WF is winter forage.

California Irrigation Management Information System Station

The District has committed to the Regional Board to install a California Irrigation Management Information System (CIMIS) weather station at the EMS for future evaluation of wind speed and direction. The site was completed on October 14. California Department of Water Resources personnel installed the weather station during December 8 and 9. DWR is performing quality control checks and calibration activities. First usable data is expected in early February. Wind deposited sand on turf at the station on October 18 and November 26, depicted in **Figures 2 and 3.** Sand was removed with rakes and shovels following each event. Winter forage will be established around the station to help stabilize sand so that data from the station will be reliable.

Figure No. 2

Figure No. 3

EFFLUENT MANAGEMENT SITE OPERATIONS REPORT

Summary of Daily Wind Speed and Direction

Beginning December 21, 2004, daily wind speed and direction sheets are printed and kept on file at the PWRP. This data will continue to be stored at the site and reported in future quarterly reports. Wind speed and direction will be reported from the CIMIS station once testing is completed by DWR and the system is operational.

Report of Periods when Irrigation Ceased due to High Winds

There was no stoppage due to high winds during 2004.

Summary of the Evaluation of Wind Barriers

No drift was observed reaching the wind barriers; therefore, no evaluation could be made of their effectiveness.

Summary of Maintenance Activities

No farm maintenance activities were recorded during May. During June, following harvest of winter forage hay, three fields, P6, P7 and P8, were disced, planted with Sudan grass and irrigation resumed. Dates of first irrigations are presented in **Table 5**. Sudan grass was terminated following the final harvest. Seedbeds were prepared in pivots P6, P7 and P8 and winter forage was planted in P7.

Table 5: Dates of Irrigation Resumption Following Planting

Pivots	Crop	Date Irrigation Started
Pivot 1	Alfalfa	*
Pivot 2	Alfalfa	*
Pivot 3	WF/Alfalfa	9/3
Pivot 4	Alfalfa	*
Pivot 5	WF/Alfalfa	9/2
Pivot 6	WF/ SG	6/18
Pivot 7	WF/SG/WF	6/18 and 12-29
Pivot 8	WF/SG/Fallow	6/16
Pivot 9	Alfalfa/WF	12/1
Pivot 10	WF	11/23
Pivot 11	WF	11/29
Pivot 12	WF	11/2
Pivot 13	WF	11/22

* Established prior to 2004
WF is winter forage. SG is Sudan grass.

Following harvest of winter forage hay, sand was applied to areas of pivot P5 in an attempt to enhance infiltration in preparation for planting alfalfa. Alfalfa was planted in P3 and P5 following seedbed preparation.

Installation of irrigation systems in pivots P9, P10, P11, P12 and P13 in Section 15 was completed during 2004. Land grading in each new pivot area progressed. Alfalfa was planted in P9 for alfalfa. Winter forage was planted in the other Section 15 pivots.

A series of windstorms destroyed the alfalfa and in part of P9. The area was replanted with winter forage. After observing irrigation and precipitation events in Section 15, it is clear that pivots P11 and P12 will require additional grading before alfalfa is planted. The failed alfalfa stand and the need for additional grading may result in abandonment of alfalfa in pivot P9. It is advisable to delay planting multi-year crops like alfalfa in newly developed fields until several crops have been grown and all major grading has been completed.

Construction of a new distribution system was initiated in Section 9 where eight mini pivots are to be installed. Construction of pivots is complete in the southwest quarter of section 9 and planting of winter forage was completed.

Summary of Aerosol Reduction Measures

During May, drop tubes and coarse water droplet nozzles were installed on pivot irrigation systems in P4, P5 and P8 as aerosol reduction measures. There was visible reduction of aerosols from the lower drops and coarser droplets. In no case was any aerosol seen moving off-site from any pivot. While it may not have been necessary to lower and install coarser droplet nozzles to prevent off-site drift, they did provide a greater margin of safety. This small margin of safety occurred at the expense of reduced distribution uniformity as crop canopy blocked the spray.

Summary of Daily Inspections for Ponding, Off-site Flow and Off-site Drift

No ponding occurred during 2004. Standing water occurred intermittently in the area with solid set sprinklers between pivots P1 and P2 (solid set sprinklers were used to grow a cover crop in the corner to prevent blowing sand?). Accumulation of water occurred as a result of back flushing of filters located at the site. The district addressed the situation. Standing water was observed near the center of pivot 4. The area affected is about 1.1 acres. Prolonged wetness is indicated by death of the alfalfa and growth of grassy weeds. Standing water was observed at the next to the last tower in the wheel track on the northeast side of Pivot 6. Approximately forty feet of the wheel track is depressed two feet, causing the standing water. In both cases water is accumulating in depressions more rapidly than infiltration and evaporation dissipates the water. Accumulated water dissipated prior to harvests when applications are stopped. One way to remedy this problem is to deposit soil in the depressions so that water will not accumulate. Filling the depression may eliminate standing water or move it down slopes. Several adjustments over time may be required to minimize such areas. Adjustments can be made between crops like annual forages or during winter alfalfa dormancy. Adjustments during cropping periods are not feasible because different cultural practices are required for germination and crop establishment than for the established crop. Adjustments would also interfere with effluent reuse by the established crop. Due to the heavy rains this fall, adjustments have not been possible. Driving equipment over wet soils could damage crops. Should adding soil not be possible, an alternative measures will be taken. The farm operator, PWRP operations and project engineer were notified about this condition.

Periods of rapid rainfall resulted in observed runoff from the fields. Irrigation with reclaimed water did not occur during these periods and all runoff was due entirely to rainfall. No effluent ran off any field.

No off-site drift of effluent occurred during the period of May through December 2004.

CHEMICAL USE MONITORING REPORT

On July 9, Weedar 64 was applied to pivot P7 at the rate of one pint per acre to control broadleaf weeds. The active ingredient is 2,4-Dichlorophenoxyacetic acid and dimethylamine salt. A copy of the MSDS sheet and a specimen label was presented with the July monthly report. On August 6 and September 28, spraying was observed at the tree barrier at section 10 north of pivot P5. The driver reported using Roundup® for weed control. During October Raptor herbicide was applied to pivots P3 and P5 to control weeds in seedling alfalfa. A specimen label and MSDS sheet was submitted with the October monthly report. No other chemical fertilizers, herbicides or other pesticides were used on or around pivots during the May through December period.

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Attachment A
Summary of Flows – January – December 2004

DELLAVALLE
Laboratory, Inc.
Chemists and Consultants

Attachment A

Summary of Flows - January - December 2004

Days	Flow in MG	Total Flow To LAWA (MG)	Pivot 1 (MG)	Pivot 2 (MG)	Pivot 3 (MG)	Pivot 4 (MG)	Pivot 5 (MG)	Pivot 6 (MG)	Pivot 7 (MG)	Pivot 8 (MG)	Pivot 9 (MG)	Pivot 10 (MG)	Pivot 11 (MG)	Pivot 12 (MG)	Pivot 13 (MG)	Tree Farm (MG)	Pistachios (MG)	Tree Rows (MG)	Section 9 (MG)
31	January	282.22	7.75	7.75	0.86	7.74	8.60	0.92	29.01	18.53	0	0	0	0	0	3.60	5.76	0.69	191.01
29	February	244.72	10.82	6.73	1.03	4.60	3.00	1.02	12.42	5.18	0	0	0	0	0	0.89	0.36	0.54	198.13
31	March	274.59	9.01	16.16	3.88	13.70	19.03	3.76	29.12	11.17	0	0	0	0	0	3.12	1.61	0.75	163.26
30	April	233.39	21.33	16.78	4.97	19.91	21.09	5.35	25.09	14.10	0	0	0	0	0	4.23	3.69	1.33	95.52
31	May	241.38	23.43	17.09	1.40	27.21	1.62	3.04	21.82	4.44	0	0	0	0	0	9.53	6.52	0.76	124.52
30	June	227.12	23.65	21.59	0	24.63	1.10	4.67	11.94	6.60	0	0	0	0	0	10.00	7.35	0.97	114.62
31	July	228.40	29.41	30.68	0	29.23	3.26	4.50	34.48	15.48	0	0	0	0	0	5.17	6.49	1.07	68.63
31	August	274.86	26.67	29.47	1.99	32.78	5.81	7.39	20.12	13.62	17.04	10.64	14.16	14.82	4.53	2.41	5.89	1.24	64.48
30	September	220.22	20.70	21.81	4.63	27.47	22.79	7.25	14.77	10.02	13.63	17.80	15.98	28.00	4.18	1.22	2.08	1.27	6.62
31	October	274.82	18.46	19.26	2.8	5.92	10.51	7.4	18.69	10.34	18.96	15.02	21.89	20.96	2.59	0.29	0	0.25	101.48
30	November	256.50	0	0	1.01	5.24	4.88	0.64	0	0.03	11.72	8.28	7.76	20.08	2.78	0.08	0	0.15	193.85
31	December	280.09	9.84	9.9	2.05	6.6	5.32	0	4.74	0	7.49	20.59	30.00	10.31	0.53	1.10	0	0.25	171.37
Days in Rpt Period	Total	3038.31	203.07	197.24	24.82	205.01	106.81	45.94	222.2	109.51	68.84	72.53	89.81	93.97	14.61	41.64	39.75	9.27	1493.49
366	Avg Flow (MGD)	8.30	0.55	0.54	0.07	0.56	0.29	0.13	0.61	0.30	0.45	0.47	0.59	0.61	0.10	0.11	0.11	0.03	4.08

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

Attachment B
Summary Nitrogen Balance Calculation Tables

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Attachment B
Summary Nitrogen Balance Calculation Tables

Pivot 1			Effluent Nitrogen Data			Harvest Data							10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January	125	7.75	40.06	2,591	1.30										26.60	1,720	430	0.22	0.24	0.8	14.12	95	0.05	430	2161	1.08
February	125	10.82	39.26	3,547	1.77										24.10	2,176	544	0.27	3.21	10.9	14.12	1,284	0.64	544	3003	1.50
March	125	9.01	35.94	2,702	1.35	1	3506	420720	210.36	4.34	16433	8.22			23.50	1,767	442	0.22	0.00	0.0	14.12	0	0.00	16875	(14173)	-7.09
April	125	21.33	35.80	6,372	3.19										22.26	3,960	990	0.50	0.08	0.3	14.12	34	0.02	990	5382	2.69
May	125	23.43	43.27	8,460	4.23	1	4320	453600	226.80	3.87	15864	7.93			22.56	4,411	1,103	0.55	0.32	1.1	14.12	127	0.06	16967	(8506)	-4.25
June	125	23.65	33.21	6,554	3.28	1	3961	415905	207.95	3.66	13676	6.84			20.35	4,016	1,004	0.50	0.06	0.2	14.12	24	0.01	14680	(8125)	-4.06
July	125	29.41	36.00	8,836	4.42	1	4180	438900	219.45	3.15	12609	6.30			20.80	5,105	1,276	0.64	0.48	1.6	14.12	191	0.10	13885	(5049)	-2.52
August	125	28.67	31.59	7,557	3.78	1	4058	405800	202.90	3.41	12985	6.49			21.32	5,101	1,275	0.64	0.82	2.8	14.12	328	0.16	14260	(6703)	-3.35
September	125	20.70	33.93	5,860	2.93	1	3813	400365	200.18	3.44	12017	6.01			19.53	3,373	843	0.42	1.72	5.8	14.12	689	0.34	12860	(7000)	-3.50
October	125	18.46	32.18	4,957	2.48										20.06	3,093	773	0.39	5.20	17.6	14.12	2,079	1.04	773	4184	2.09
November	125	0.00	34.37	0	0.00	1	Grn Chp	336000	168.00	4.0	12005	6.00			20.23	0	0	0.00	0.00	0.0	14.12	0	0.00	12005	(12005)	-6.00
December	125	9.84	34.06	2,797	1.40										21.83	1,792	448	0.22	4.29	14.6	14.12	1,718	0.86	448	2349	1.17
	125	203.07		60,233	30.12				1435.6			47.79					9128	4.56				6,570	3.3	104716	(44483)	-22.24

Pivot 2			Effluent Nitrogen Data			Harvest Data							10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January	125	7.75	40.06	2,591	1.30										26.60	1,720	430	0.22	0.24	0.8	14.12	95	0.05	430	2161	1.08
February	125	8.73	39.28	2,206	1.10										24.10	1,353	338	0.17	2.00	6.6	14.12	802	0.40	338	1868	0.93
March	125	18.18	35.94	4,852	2.43	1	3480	417600	208.80	4.52	16968	8.49			23.50	3,173	793	0.40	0.40	1.4	14.12	160	0.08	17781	(12929)	-6.46
April	125	16.76	35.60	5,013	2.51										22.26	3,116	779	0.39	0.00	0.0	14.12	0	0.00	779	4234	2.12
May	125	17.09	43.27	6,171	3.09	1	3972	417060	208.53	3.57	13227	6.61			22.56	3,217	804	0.40	0.00	0.0	14.12	0	0.00	14032	(7861)	-3.93
June	125	21.59	33.21	5,983	2.99	1	2550*	420000	210.00	3.52	12958	6.48			20.35	3,666	917	0.46	0.00	0.0	14.12	0	0.00	13875	(7891)	-3.95
July	125	30.68	36.00	9,217	4.61	1	3600*	438000	219.00	3.4	13502	6.75			20.80	5,325	1,331	0.67	0.67	2.3	14.12	269	0.13	14834	(5616)	-2.81
August	125	29.47	31.59	7,768	3.88	1	3971	397100	198.55	3.6	12660	6.33			21.32	5,243	1,311	0.66	0.97	3.3	14.12	389	0.19	13970	(6202)	-3.10
September	125	21.81	33.93	6,174	3.09	1	3856	404880	202.44	3.9	14423	7.21			19.53	3,553	888	0.44	2.04	6.9	14.12	816	0.41	15312	(9137)	-4.57
October	125	19.26	32.18	5,172	2.59										20.06	3,227	807	0.40	5.43	18.4	14.12	2,174	1.09	807	4365	2.18
November	125	0.00	34.37	0	0.00	1	Grn Chp	160000	80.00	4.2	6026	3.01			20.23	0	0	0.00	0.00	0.0	14.12	0	0.00	6026	(6026)	-3.01
December	125	9.90	34.06	2,814	1.41	1	33 L	58000	29.00	4.1	2117	1.06			21.83	1,803	451	0.23	4.31	14.6	14.12	1,725	0.86	2567	246	0.12
	125	197.24		57,962	28.98				1356.3			45.95					8849	4.42				6,430	3.2	100751	(42789)	-21.39

*Note: June Harvest 2550 regular bales plus additional 76 tons of Green Chop (210 ton total); July 2600 bales + 39 tons Green Chop (219 Total)

Pivot 3			Effluent Nitrogen Data			Harvest Data							10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January	21	0.86	40.06	287	0.14										26.60	191	48	0.02	0.00	0.0	14.12	0	0.00	48	240	0.12
February	21	1.03	39.28	338	0.17										24.10	207	52	0.03	1.74	1.0	14.12	117	0.06	52	286	0.14
March	21	3.88	35.94	1,164	0.58										23.60	761	190	0.10	0.59	0.3	14.12	40	0.02	190	973	0.49
April	21	4.97	35.80	1,465	0.74										22.26	923	231	0.12	1.99	1.1	14.12	134	0.07	231	1254	0.63
May	21	1.40	43.27	506	0.25	1	1280	134400	67.20	1.74	2025	1.01			22.56	264	66	0.03	0.08	0.0	14.12	5	0.00	2091	(1585)	-0.79
June	21	0.00	33.21	0	0.00										20.35	0	0	0.00		0.0	14.12	0	0.00	0	0	0.00
July	21	0.00	36.00	0	0.00										20.80	0	0	0.00		0.0	14.12	0	0.00	0	0	0.00
August	21	1.99	31.59	525	0.26										21.32	354	89	0.04	3.49	2.0	14.12	235	0.12	89	436	0.22
September	21	4.63	33.93	1,311	0.66										19.53	754	189	0.09	6.79	3.9	14.12	456	0.23	189	1122	0.56
October	21	2.80	32.18	752	0.38										20.06	469	117	0.06	6.44	3.7	14.12	433	0.22	117	635	0.32
November	21	1.01	34.37	290	0.14										20.23	170	43	0.02	0.49	0.3	14.12	33	0.02	43	247	0.12
December	21	2.05	34.06	583	0.29	1	16 L	28000	14.00	4.1	1022	0.51			21.83	373	93	0.05	5.07	2.9	14.12	341	0.17	1115	(533)	-0.27
	21	24.62		7,238	3.62				81.2			1.52					1117	0.56				1,793	0.9	4163	3075	1.54

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

Attachment B

Summary Nitrogen Balance Calculation Tables

Pivot 4			Effluent Nitrogen Data			Harvest Data							10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January	125	7.74	40.06	2,587	1.29										26.60	1,718	430	0.21	0.24	0.8	14.12	95	0.05	430	2158	1.08
February	125	4.80	39.28	1,506	0.75										24.10	925	231	0.12	1.38	4.7	14.12	551	0.28	231	1277	0.64
March	125	13.70	35.94	4,109	2.05	1	3240	388800	194.40	4.84	15282	7.64			23.50	2,687	672	0.34	0.07	0.2	14.12	29	0.01	15954	(11845)	-5.92
April	125	19.91	35.80	5,948	2.97										22.25	3,697	924	0.46	0.01	0.0	14.12	4	0.00	924	5024	2.51
May	125	27.21	43.27	9,825	4.91	1	260L + 312R	474760	237.38	4.32	18649	9.32			22.56	5,122	1,281	0.64	0.95	3.2	14.12	382	0.19	19930	(10105)	-5.05
June	125	24.63	33.21	6,826	3.41	1	3936	413280	206.64	3.85	13596	6.80			20.35	4,182	1,046	0.52	0.13	0.4	14.12	53	0.03	14642	(7816)	-3.91
July	125	29.23	36.00	8,762	4.39	1	4231	444255	222.13	3.5	14304	7.15			20.80	5,073	1,268	0.63	0.45	1.5	14.12	181	0.09	15573	(6791)	-3.40
August	125	32.78	31.59	8,635	4.32	1	3936	393600	196.80	3.8	13748	6.87			21.32	5,826	1,457	0.73	1.68	5.7	14.12	671	0.34	15205	(6570)	-3.29
September	125	27.47	33.93	7,776	3.89	1	3739	392595	196.30	4.1	14686	7.34			19.53	4,476	1,119	0.56	3.70	12.6	14.12	1,462	0.74	15806	(8028)	-4.01
October	125	5.92	32.18	1,590	0.79	1	162 L	283500	141.75	4.0	10155	5.08			20.08	992	248	0.12	1.50	5.1	14.12	602	0.30	10403	(8813)	-4.41
November	125	5.24	34.37	1,503	0.75										20.23	884	221	0.11	0.01	0.0	14.12	3	0.00	221	1282	0.64
December	125	6.60	34.06	1,876	0.94	1	67 L	116000	58.00	4.1	4325	2.16			21.83	1,202	300	0.15	3.34	11.3	14.12	1,336	0.67	4625	(2749)	-1.37
	125	205.01		60,965	30.48				1453.4			52.37					9197	4.60				5,388	2.7	113943	(52978)	-26.49

Pivot 5			Effluent Nitrogen Data			Harvest Data							10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January	125	8.60	40.06	2,875	1.44										26.60	1,909	477	0.24	0.36	1.2	14.12	142	0.07	477	2398	1.20
February	125	3.00	39.28	983	0.49										24.10	603	151	0.08	0.82	2.8	14.12	327	0.16	151	833	0.42
March	125	19.03	35.94	5,707	2.85										23.50	3,732	933	0.47	0.07	0.2	14.12	26	0.01	933	4774	2.39
April	125	21.09	35.80	6,300	3.15										22.25	3,916	979	0.49	0.26	0.9	14.12	105	0.05	979	5321	2.66
May	125	1.62	43.27	585	0.29	1	7492	786660	393.33	1.36	9629	4.81			22.56	305	76	0.04	0.00	0.0	14.12	0	0.00	9705	(9120)	-4.56
June	125	1.10	33.21	305	0.15										20.35	187	47	0.02	0.32	1.1	14.12	130	0.06	47	258	0.13
July	125	3.26	36.00	979	0.49										20.80	566	141	0.07	0.96	3.3	14.12	384	0.19	141	838	0.42
August	125	5.61	31.59	1,479	0.74										21.32	998	250	0.12	1.65	5.6	14.12	661	0.33	250	1229	0.61
September	125	22.79	33.93	6,452	3.23										19.53	3,713	928	0.46	5.39	18.3	14.12	2,155	1.08	928	5523	2.76
October	125	10.51	32.18	2,822	1.41										20.08	1,761	440	0.22	4.63	15.7	14.12	1,851	0.93	440	2382	1.19
November	125	4.88	34.37	1,400	0.70										20.23	824	206	0.10	0.21	0.7	14.12	83	0.04	206	1194	0.60
December	125	5.32	34.06	1,512	0.76	1	97 L	170000	85.00	4.2	6472	3.24			21.83	969	242	0.12	3.05	10.3	14.12	1,219	0.61	6714	(5202)	-2.60
	125	106.81		31,399	15.70				478.3			8.05					4870	2.44				7,084	3.5	20971	10428	5.21

Pivot 6			Effluent Nitrogen Data			Harvest Data							10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January	21	0.92	40.06	308	0.15										26.60	204	51	0.03	0.00	0.0	40.00	0	0.00	51	256	0.13
February	21	1.02	39.28	334	0.17										24.10	205	51	0.03	1.72	1.0	40.00	326	0.16	51	283	0.14
March	21	3.76	35.94	1,128	0.56										23.50	737	184	0.09	0.47	0.3	40.00	90	0.04	164	943	0.47
April	21	5.35	35.80	1,596	0.80										22.25	993	248	0.12	2.59	1.5	40.00	494	0.25	248	1350	0.67
May	21	3.04	43.27	1,098	0.55										22.56	572	143	0.07	2.55	1.5	40.00	486	0.24	143	955	0.48
June	21	4.87	33.21	1,294	0.65	1	84 Large	147000	73.50	1.68	2320	1.16			20.35	793	198	0.10	7.16	4.1	40.00	1,362	0.68	2519	(1224)	-0.61
July	21	4.50	36.00	1,352	0.68										20.80	781	195	0.10	0.11	0.1	40.00	21	0.01	195	1157	0.58
August	21	7.39	31.59	1,946	0.97	1	342R+18L	68094	34.05	2.3	1357	0.68			21.32	1,315	329	0.16	4.27	2.4	40.00	814	0.41	1686	262	0.13
September	21	7.25	33.93	2,052	1.03	1	39 L	68250	34.13	2.6	1478	0.74			19.53	1,181	295	0.15	6.67	3.8	40.00	1,269	0.63	1773	280	0.14
October	21	7.40	32.18	1,987	0.99	1	42 L	73500	36.75	2.2	1439	0.72			20.08	1,240	310	0.15	12.86	7.3	40.00	2,447	1.22	1749	238	0.12
November	21	0.64	34.37	164	0.09										20.23	108	27	0.01	0.10	0.1	40.00	16	0.01	27	157	0.08
December	21	0.00	34.06	0	0.00										21.83	0	0	0.00	0.00	0.0	40.00	0	0.00	0	0	0.00
	21	45.94		13,283	6.64				178.4			3.30					2033	1.02				7,328	3.7	8627	4656	2.33

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

Pivot 7			Effluent Nitrogen Data				Harvest Data						10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January	125	29.01	40.06	9,698	4.85										26.60	6,439	1,610	0.80	6.26	21.3	40.00	7,097	3.55	1610	8068	4.04
February	125	12.42	39.28	4,071	2.04										24.10	2,496	624	0.31	3.59	12.2	40.00	4,070	2.03	624	3447	1.72
March	125	29.12	35.94	8,733	4.37										23.50	5,710	1,428	0.71	1.92	6.5	40.00	2,170	1.08	1428	7306	3.65
April	125	25.09	35.80	7,495	3.75										22.25	4,658	1,165	0.58	0.94	3.2	40.00	1,064	0.53	1165	6331	3.17
May	125	21.82	43.27	7,879	3.94										22.56	4,108	1,027	0.51	3.65	12.4	40.00	4,137	2.07	1027	6852	3.43
June	125	11.94	33.21	3,309	1.65	1	1526 R + 417L	897610	448.81	1.70	13946	8.97			20.35	2,028	507	0.25	2.48	8.4	40.00	2,814	1.41	14452	(11143)	-5.57
July	125	34.48	36.00	10,359	5.18										20.80	5,985	1,496	0.75	1.25	4.2	40.00	1,411	0.71	1496	8863	4.43
August	125	20.12	31.59	5,304	2.65	1	360R+208L	402520	201.26	2.0	7833	3.82			21.32	3,579	895	0.45	0.00	0.0	40.00	0	0.00	8526	(3224)	-1.61
September	125	14.77	33.93	4,181	2.09	1	2048R+116L	421540	210.77	2.2	7912	3.96 .			19.53	2,408	602	0.30	0.00	0.0	40.00	0	0.00	8513	(4332)	-2.17
October	125	16.69	32.18	5,019	2.51										20.08	3,132	783	0.39	5.38	18.3	40.00	6,100	3.05	783	4236	2.12
November	125	0.00	34.37	0	0.00	1	33L + Grn Chp	122000	61.00	3.1	3365	1.68			20.23	0	0	0.00	0.00	0.0	40.00	0	0.00	3365	(3365)	-1.68
December	125	4.74	34.06	1,347	0.67										21.83	863	216	0.11	2.98	10.1	40.00	3,382	1.69	216	1131	0.57
	125	222.20		67,395	33.70				921.8			16.43					10352	5.18				32,244	16.1	43207	24188	12.09

Pivot 8			Effluent Nitrogen Data				Harvest Data						10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January	32	18.53	40.06	6,194	3.10										26.60	4,113	1,028	0.51	19.04	16.5	40.00	5,523	2.76	1028	5166	2.58
February	32	5.16	39.28	1,698	0.85										24.10	1,042	260	0.13	5.89	5.1	40.00	1,710	0.85	260	1438	0.72
March	32	11.17	35.94	3,350	1.67										23.50	2,190	548	0.27	6.10	5.3	40.00	1,768	0.88	548	2802	1.40
April	32	14.10	35.80	4,212	2.11										22.25	2,618	654	0.33	9.41	8.2	40.00	2,730	1.37	654	3558	1.78
May	32	4.44	43.27	1,603	0.80										22.56	836	209	0.10	2.33	2.0	40.00	677	0.34	209	1394	0.70
June	32	6.60	33.21	1,829	0.91	1	980 R + 65 L	213500	106.75	2.05	3983	1.99			20.35	1,121	280	0.14	6.56	5.7	40.00	1,903	0.95	4263	(2434)	-1.22
July	32	15.48	36.00	4,661	2.33										20.80	2,687	672	0.34	8.38	7.3	40.00	2,430	1.21	672	3979	1.99
August	32	13.62	31.59	3,590	1.80	1	190R+47L	102560	51.29	2.1	1912	0.96			21.32	2,423	606	0.30	6.99	6.1	40.00	2,027	1.01	2518	1072	0.54
September	32	10.02	33.93	2,837	1.42	1	59L	103250	51.63	2.6	2334	1.17			19.53	1,633	408	0.20	5.49	4.8	40.00	1,591	0.80	2742	94	0.05
October	32	10.34	32.18	2,777	1.39										20.08	1,733	433	0.22	11.78	10.2	40.00	3,418	1.71	433	2344	1.17
November	32	0.03	34.37	9	0.00	1	56 L	98000	49.00	2.8	2505	1.25			20.23	5	1	0.00	0.00	0.0	40.00	0	0.00	2506	(2498)	-1.25
December	32	0.00	34.06	0	0.00										21.83	0	0	0.00	1.59	1.4	40.00	461	0.23	0	0	0.00
	32	109.51		32,749	16.37				258.7			5.37					5100	2.55				24,235	12.1	15834	16915	8.46

Tree Farm			Effluent Nitrogen Data				Harvest Data						10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January	28	3.60	40.06	1,203	0.60							0.05			26.60	799	200	0.10		0.0	40.00	0	0.00	200	1004	0.50
February	28	0.89	39.28	292	0.15							0.07			24.10	179	45	0.02		0.0	40.00	0	0.00	45	247	0.12
March	28	3.12	35.94	936	0.47							0.10			23.50	612	153	0.08		0.0	40.00	0	0.00	153	783	0.39
April	28	4.23	35.80	1,264	0.63							0.17			22.25	785	196	0.10		0.0	40.00	0	0.00	196	1067	0.53
May	28	9.53	43.27	3,441	1.72							0.19			22.56	1,794	449	0.22		0.0	40.00	0	0.00	449	2993	1.50
June	28	10.00	33.21	2,771	1.39							0.23			20.35	1,698	425	0.21		0.0	40.00	0	0.00	425	2347	1.17
July	28	5.17	36.00	1,553	0.78							0.23			20.80	897	224	0.11		0.0	40.00	0	0.00	224	1329	0.66
August	28	2.41	31.59	635	0.32							0.22			21.32	429	107	0.05		0.0	40.00	0	0.00	107	528	0.26
September	28	1.22	33.93	345	0.17							0.14			19.53	199	50	0.02		0.0	40.00	0	0.00	50	296	0.15
October	28	0.29	32.18	78	0.04							0.11			20.05	49	12	0.01		0.0	40.00	0	0.00	12	66	0.03
November	28	0.08	34.37	23	0.01							0.07			20.23	14	3	0.00		0.0	40.00	0	0.00	3	20	0.01
December	28	1.10	34.06	313	0.16							0.06			21.83	200	50	0.03		0.0	20.00	0	0.00	50	263	0.13
	28	41.64		12,854	6.43				0.00			1.64					1914	0.96				0	0.0	1914	10941	5.47

Attachment B

Summary Nitrogen Balance Calculation Tables

Tree Rows			Effluent Nitrogen Data			Harvest Data							10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January	4	0.69	40.06	231	0.12							0.01			26.60	153	38	0.02		0.0	40.00	0	0.00	38	192	0.10
February	4	0.54	39.28	177	0.09							0.01			24.10	109	27	0.01		0.0	40.00	0	0.00	27	150	0.07
March	4	0.75	35.94	225	0.11							0.01			23.50	147	37	0.02		0.0	40.00	0	0.00	37	188	0.09
April	4	1.33	35.80	397	0.20							0.02			22.25	247	62	0.03		0.0	40.00	0	0.00	62	336	0.17
May	4	0.76	43.27	274	0.14							0.03			22.56	143	36	0.02		0.0	40.00	0	0.00	36	239	0.12
June	4	0.97	33.21	269	0.13							0.03			20.35	165	41	0.02		0.0	40.00	0	0.00	41	228	0.11
July	4	1.07	36.00	321	0.16							0.03			20.80	186	46	0.02		0.0	40.00	0	0.00	46	275	0.14
August	4	1.24	31.59	327	0.16							0.03			21.32	221	55	0.03		0.0	40.00	0	0.00	55	272	0.14
September	4	1.27	33.93	360	0.18							0.02			19.53	207	52	0.03		0.0	40.00	0	0.00	52	308	0.15
October	4	0.25	32.18	67	0.03							0.00			20.06	42	10	0.01		0.0	40.00	0	0.00	10	57	0.03
November	4	0.15	34.37	43	0.02							0.00			20.23	25	6	0.00		0.0	40.00	0	0.00	6	37	0.02
December	4	0.25	34.06	71	0.04							0.00			21.83	46	11	0.01		0.0	20.00	0	0.00	11	60	0.03
	4	9.27		2,762	1.38				0.00			0.19					422	0.21				0	0.0	422	2340	1.17

Pistachios			Effluent Nitrogen Data			Harvest Data							10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Harvest	Reported Crop Harvest	Reported Crop Harvest (lbs) (net green weight)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January	23	5.76	40.06	1,925	0.96										26.60	1,279	320	0.16		0.0	40.00	0	0.00	320	1606	0.80
February	23	0.36	39.28	118	0.06										24.10	72	18	0.01		0.0	40.00	0	0.00	18	100	0.05
March	23	1.61	35.94	483	0.24										23.50	316	79	0.04		0.0	40.00	0	0.00	79	404	0.20
April	23	3.69	35.80	1,102	0.55										22.25	685	171	0.09		0.0	40.00	0	0.00	171	931	0.47
May	23	6.52	43.27	2,354	1.18										22.56	1,227	307	0.15		0.0	40.00	0	0.00	307	2047	1.02
June	23	7.35	33.21	2,037	1.02										20.35	1,246	312	0.16		0.0	40.00	0	0.00	312	1725	0.86
July	23	6.49	36.00	1,950	0.97										20.80	1,128	282	0.14		0.0	40.00	0	0.00	282	1668	0.83
August	23	5.69	31.59	1,553	0.78										21.32	1,048	262	0.13		0.0	40.00	0	0.00	262	1291	0.65
September	23	2.06	33.93	589	0.29	1		79353	39.68	1.98	694	0.35			19.53	339	85	0.04		0.0	40.00	0	0.00	779	(190)	-0.10
October	23	0.00	32.18	0	0.00										20.06	0	0	0.00		0.0	40.00	0	0.00	0	0	0.00
November	23	0.00	34.37	0	0.00										20.23	0	0	0.00		0.0	40.00	0	0.00	0	0	0.00
December	23	0.00	34.06	0	0.00										21.83	0	0	0.00		0.0	20.00	0	0.00	0	0	0.00
	23	39.75		12,111	6.06				39.68			0.35					1835	0.92				0	0.0	2530	9582	4.79

Pivot 9			Effluent Nitrogen Data			Harvest Data							10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January		0.00	40.06	0	0.00										26.60	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
February		0.00	39.28	0	0.00										24.10	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
March		0.00	35.94	0	0.00										23.50	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
April		0.00	35.80	0	0.00										22.25	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
May		0.00	43.27	0	0.00										22.56	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
June		0.00	33.21	0	0.00										20.35	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
July		0.00	36.00	0	0.00										20.80	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
August	125	17.04	31.59	4,492	2.25										21.32	3,032	758	0.38	0.00	0.0	14.12	0	0.00	758	3734	1.87
September	125	13.63	33.93	3,858	1.93										19.53	2,221	555	0.28	0.00	0.0	14.12	0	0.00	555	3303	1.65
October	125	16.96	32.18	5,092	2.55										20.06	3,177	794	0.40	0.00	0.0	14.12	0	0.00	794	4297	2.15
November	125	11.72	34.37	3,362	1.68										20.23	1,978	494	0.25	0.00	0.0	14.12	0	0.00	494	2867	1.43
December	125	7.49	34.06	2,129	1.06										21.83	1,364	341	0.17	0.00	0.0	14.12	0	0.00	341	1788	0.89
	125	66.84		18,932	9.47				0.00			0.0					2943	1.47				0	0.0	2943	15969	7.99

Attachment B

Summary Nitrogen Balance Calculation Tables

Pivot 10			Effluent Nitrogen Data			Harvest Data							10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January		0.00	40.06	0	0.00										26.60	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
February		0.00	39.28	0	0.00										24.10	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
March		0.00	35.94	0	0.00										23.50	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
April		0.00	35.80	0	0.00										22.25	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
May		0.00	43.27	0	0.00										22.56	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
June		0.00	33.21	0	0.00										20.35	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
July		0.00	36.00	0	0.00										20.80	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
August	125	10.84	31.59	2,857	1.43										21.32	1,928	482	0.24	0.00	0.0	14.12	0	0.00	482	2375	1.19
September	125	17.80	33.93	5,039	2.52										19.53	2,900	725	0.36	0.00	0.0	14.12	0	0.00	725	4314	2.16
October	125	15.02	32.18	4,034	2.02										20.08	2,517	629	0.31	0.00	0.0	14.12	0	0.00	629	3404	1.70
November	125	8.28	34.37	2,375	1.19										20.23	1,397	349	0.17	0.00	0.0	14.12	0	0.00	349	2026	1.01
December	125	20.59	34.06	5,852	2.93										21.83	3,750	937	0.47	0.00	0.0	14.12	0	0.00	937	4915	2.46
	125	72.53		20,157	10.08				0.00			0.0					3123	1.56				0	0.0	3123	17034	8.52

Pivot 11			Effluent Nitrogen Data			Harvest Data							10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January		0.00	40.06	0	0.00										26.60	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
February		0.00	39.28	0	0.00										24.10	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
March		0.00	35.94	0	0.00										23.50	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
April		0.00	35.80	0	0.00										22.25	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
May		0.00	43.27	0	0.00										22.56	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
June		0.00	33.21	0	0.00										20.35	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
July		0.00	36.00	0	0.00										20.80	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
August	125	14.16	31.59	3,736	1.87										21.32	2,523	631	0.32	0.00	0.0	14.12	0	0.00	631	3107	1.55
September	125	15.98	33.93	4,524	2.26										19.53	2,604	651	0.33	0.00	0.0	14.12	0	0.00	651	3873	1.94
October	125	21.89	32.18	5,878	2.94										20.08	3,668	917	0.46	0.00	0.0	14.12	0	0.00	917	4961	2.48
November	125	7.76	34.37	2,226	1.11										20.23	1,310	327	0.16	0.00	0.0	14.12	0	0.00	327	1898	0.95
December	125	30.00	34.06	8,527	4.26										21.83	5,464	1,366	0.68	0.00	0.0	14.12	0	0.00	1366	7161	3.58
	125	89.81		24,893	12.45				0.00			0.0					3892	1.95				0	0.0	3892	21001	10.50

Pivot 12			Effluent Nitrogen Data			Harvest Data							10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January		0.00	40.06	0	0.00										26.60	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
February		0.00	39.28	0	0.00										24.10	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
March		0.00	35.94	0	0.00										23.50	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
April		0.00	35.80	0	0.00										22.25	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
May		0.00	43.27	0	0.00										22.56	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
June		0.00	33.21	0	0.00										20.35	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
July		0.00	36.00	0	0.00										20.80	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
August	125	14.62	31.59	3,854	1.93										21.32	2,601	650	0.33	0.00	0.0	14.12	0	0.00	650	3204	1.60
September	125	28.00	33.93	7,926	3.96										19.53	4,562	1,140	0.57	0.00	0.0	14.12	0	0.00	1140	6786	3.39
October	125	20.96	32.18	5,629	2.81										20.08	3,512	878	0.44	0.00	0.0	14.12	0	0.00	878	4751	2.38
November	125	20.08	34.37	5,759	2.88										20.23	3,389	847	0.42	0.00	0.0	14.12	0	0.00	847	4912	2.46
December	125	10.31	34.06	2,930	1.47										21.83	1,878	469	0.23	0.00	0.0	14.12	0	0.00	469	2461	1.23
	125	93.97		26,099	13.05				0.00			0.0					3985	1.99				0	0.0	3985	22113	11.06

EXHIBIT L5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

Attachment B

Summary Nitrogen Balance Calculation Tables

Pivot 13			Effluent Nitrogen Data			Harvest Data							10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January		0.00	40.06	0	0.00										26.60	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
February		0.00	39.28	0	0.00										24.10	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
March		0.00	35.94	0	0.00										23.50	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
April		0.00	35.80	0	0.00										22.25	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
May		0.00	43.27	0	0.00										22.56	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
June		0.00	33.21	0	0.00										20.35	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
July		0.00	36.00	0	0.00										20.60	0	0	0.00	0.00	0.0	14.12	0	0.00	0	0	0.00
August	21	4.53	31.59	1,194	0.60										21.32	806	201	0.10	0.00	0.0	14.12	0	0.00	201	993	0.50
September	21	4.18	33.93	1,183	0.59										19.53	681	170	0.09	0.00	0.0	14.12	0	0.00	170	1013	0.51
October	21	2.59	32.18	696	0.35										20.08	434	108	0.05	0.00	0.0	14.12	0	0.00	108	587	0.29
November	21	2.78	34.37	797	0.40										20.23	469	117	0.06	0.00	0.0	14.12	0	0.00	117	680	0.34
December	21	0.53	34.06	151	0.08										21.83	97	24	0.01	0.00	0.0	14.12	0	0.00	24	127	0.06
	21	14.61		4,021	2.01				0.00			0.0					622	0.31				0	0.0	622	3399	1.70

Section 9			Effluent Nitrogen Data			Harvest Data							10 lbs/acre/year				25% NH3		METHOD 2 Deep Percolation					METHOD 1 Nitrogen Removal		
Month	Acres	Irrigation Flow (MG)	Effluent N (mg/l)	Applied N (lbs)	Applied N (tons)	Cuttings	Reported Crop Harvest (bales)	Reported Crop Harvest (lbs)	Reported Crop Harvest (tons)	Tissue Analysis % N	Crop Nitrogen Content lbs-N	Crop Nitrogen Content tons-N	Loss Nitrogen Denitrification lbs	Loss Nitrogen Denitrification tons	Effluent Ammonia mg/l	Applied Ammonia lbs	Loss Nitrogen Ammonia lbs	Loss Nitrogen Ammonia tons	Deep Perc (in)	Deep Perc (MG)	N in Deep Perc (mg-N/L)	Nitrogen (lbs)	Nitrogen (tons)	Removed (lbs)	Net (lbs)	Net (tons)
January	320	191.01	40.06	63,851	31.93										26.60	42,397	10,599	5.30		0.0	49.00	0	0.00	10599	53252	26.63
February	320	198.13	39.28	64,948	32.47										24.10	39,845	9,961	4.98		0.0	49.00	0	0.00	9961	54987	27.49
March	320	163.26	35.94	48,962	24.48										23.50	32,015	8,004	4.00		0.0	49.00	0	0.00	8004	40958	20.48
April	320	95.52	35.80	28,535	14.27										22.25	17,735	4,434	2.22	0.00	0.0	49.00	0	0.00	4434	24101	12.05
May	320	124.52	43.27	44,962	22.48										22.56	23,441	5,860	2.93	0.00	0.0	49.00	0	0.00	5860	39101	19.55
June	320	114.62	33.21	31,766	15.88										20.35	19,464	4,866	2.43	0.00	0.0	49.00	0	0.00	4866	26900	13.45
July	320	68.63	36.00	20,619	10.31										20.60	11,912	2,978	1.49	0.00	0.0	49.00	0	0.00	2978	17641	8.82
August	320	64.48	31.59	16,997	8.50										21.32	11,471	2,868	1.43	0.00	0.0	49.00	0	0.00	2868	14129	7.06
September	320	6.62	33.93	1,874	0.94										19.53	1,079	270	0.13	0.00	0.0	49.00	0	0.00	270	1604	0.80
October	320	101.48	32.18	27,252	13.63										20.08	17,004	4,251	2.126	0.00	0.0	49.00	0	0.00	4251	23001	11.50
November	320	193.65	34.37	55,600	27.80										20.23	32,716	8,179	4.089	0.00	0.0	49.00	0	0.00	8179	47422	23.71
December	320	171.37	34.06	48,709	24.35										21.83	31,210	7,802	3.901	0.00	0.0	49.00	0	0.00	7802	40907	20.45
	320	1493.49		454,075	227.04												70072	35.04				0	0.0	70072	384003	192.00

Note 1: Data presented in "Deep Perc (in)" was developed using methods described in Section 3.2 of the Nitrogen Discharge Report.

Note 2:Data color coded Red in the "Nitrogen Removal" column ("Net (lbs)" and (Net (tons)") represent negative numbers indicating more nitrogen was removed by crops and other mechanism than was applied.

Attachment C
Deep Percolation Calculations

DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Attachment C
Deep Percolation Calculations

Pivot 1 Alfalfa 125 Acres

IRRIGATION WATER — IRRIGATION + RAINFALL

0.75

Month	Flow (MG)	Flow (in)	ET 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Precip 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Over/Unde	Deep Perc (in)
January	7.75	2.28	2.20	3.0	2.3	1.5	0.01	3.05	2.29	1.53	0.0	0.24
February	10.82	3.19	2.61	4.3	3.2	2.1	2.63	6.88	5.82	4.76	4.8	3.21
March	9.01	2.65	4.95	3.5	2.7	1.8	0.19	3.73	2.84	1.96	0.0	0.00
April	21.33	6.28	7.54	8.4	6.3	4.2	0.00	8.38	6.28	4.19	0.0	0.08
May	23.43	6.90	7.49	9.2	6.9	4.6	0.00	9.20	6.90	4.60	0.0	0.32
June	23.65	6.97	8.54	9.3	7.0	4.6	0.00	9.29	6.97	4.65	0.0	0.06
July	29.41	8.66	9.20	11.6	8.7	5.8	0.00	11.55	8.66	5.78	0.0	0.48
August	28.67	8.45	8.22	11.3	8.4	5.6	0.00	11.26	8.45	5.63	0.0	0.82
September	20.70	6.10	4.39	8.1	6.1	4.1	0.00	8.13	6.10	4.07	0.0	1.72
October	18.46	5.44	3.76	7.3	5.4	3.6	3.52	10.77	8.96	7.15	7.1	5.20
November	0.00	0.00	2.37	0.0	0.0	0.0	0.44	0.44	0.44	0.44	0.0	0.00
December	9.84	2.90	1.95	3.9	2.9	1.9	3.34	7.21	6.24	5.27	5.3	4.29
		59.83	63.23				10.13					16.42

Pivot 2 Alfalfa 125 Acres

IRRIGATION WATER — IRRIGATION + RAINFALL

0.75

Month	Flow (MG)	Flow (in)	ET 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Precip 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Over/Unde	Deep Perc (in)
January	7.75	2.28	2.20	3.0	2.3	1.5	0.01	3.05	2.29	1.53	0.0	0.24
February	6.73	1.98	2.61	2.6	2.0	1.3	2.63	5.27	4.61	3.95	4.0	2.00
March	16.18	4.77	4.95	6.4	4.8	3.2	0.19	6.55	4.96	3.37	0.0	0.40
April	16.78	4.94	7.54	6.6	4.9	3.3	0.00	6.59	4.94	3.30	0.0	0.00
May	17.09	5.03	7.49	6.7	5.0	3.4	0.00	6.71	5.03	3.36	0.0	0.00
June	21.59	6.36	8.54	8.5	6.4	4.2	0.00	8.48	6.36	4.24	0.0	0.00
July	30.68	9.04	9.20	12.1	9.0	6.0	0.00	12.05	9.04	6.03	0.0	0.67
August	29.47	8.68	8.22	11.6	8.7	5.8	0.00	11.58	8.68	5.79	0.0	0.97
September	21.81	6.43	4.39	8.6	6.4	4.3	0.00	8.57	6.43	4.28	0.0	2.04
October	19.26	5.67	3.76	7.6	5.7	3.8	3.52	11.09	9.19	7.30	7.3	5.43
November	0.00	0.00	2.37	0.0	0.0	0.0	0.44	0.44	0.44	0.44	0.0	0.00
December	9.90	2.92	1.95	3.9	2.9	1.9	3.34	7.23	6.26	5.28	5.3	4.31
		58.11	63.23				10.13					16.07

Pivot 3 Winter Forage/Alfalfa 21 Acres

IRRIGATION WATER — IRRIGATION + RAINFALL

0.75

Month	Flow (MG)	Flow (in)	ET 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Precip 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Over/Unde	Deep Perc (in)
January	0.86	1.51	2.29	2.0	1.5	1.0	0.01	2.02	1.52	1.02	0.0	0.00
February	1.03	1.81	2.70	2.4	1.8	1.2	2.63	5.04	4.44	3.83	3.8	1.74
March	3.88	6.80	6.95	9.1	6.8	4.5	0.19	9.26	6.99	4.73	0.0	0.59
April	4.97	8.72	6.81	11.6	8.7	5.8	0.00	11.62	8.72	5.81	0.0	1.99
May	1.40	2.46	2.78	3.3	2.5	1.6	0.00	3.27	2.46	1.84	0.0	0.08
June	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	
July	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	
August	1.99	3.49	0.00	4.7	3.5	2.3	0.00	4.65	3.49	2.33	2.3	3.49
September	4.63	8.12	1.33	10.8	8.1	5.4	0.00	10.83	8.12	5.41	5.4	6.79
October	2.80	4.91	1.99	6.5	4.9	3.3	3.52	10.07	8.43	6.79	6.8	6.44
November	1.01	1.77	1.73	2.4	1.8	1.2	0.44	2.80	2.21	1.62	0.0	0.49
December	2.05	3.59	1.86	4.8	3.6	2.4	3.34	8.13	6.93	5.74	5.7	5.07
		43.17	28.43				10.13					26.68

Attachment C
Deep Percolation Calculations

Pivot 4	Alfalfa	125 Acres										
	IRRIGATION WATER							IRRIGATION + RAINFALL				
			0.75									
Month	Flow (MG)	Flow (in)	ET 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Precip 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Over/Unde	Deep Perc (in)
January	7.74	2.28	2.20	3.0	2.3	1.5	0.01	3.05	2.29	1.53	0.0	0.24
February	4.60	1.36	2.61	1.8	1.4	0.9	2.63	4.44	3.99	3.53	3.5	1.38
March	13.70	4.04	4.95	5.4	4.0	2.7	0.19	5.57	4.23	2.88	0.0	0.07
April	19.91	5.87	7.54	7.8	5.9	3.9	0.00	7.82	5.87	3.91	0.0	0.01
May	27.21	8.02	7.49	10.7	8.0	5.3	0.00	10.69	8.02	5.34	0.0	0.95
June	24.63	7.26	8.54	9.7	7.3	4.8	0.00	9.68	7.26	4.84	0.0	0.13
July	29.23	8.61	9.20	11.5	8.6	5.7	0.00	11.48	8.61	5.74	0.0	0.45
August	32.76	9.65	8.22	12.9	9.7	6.4	0.00	12.87	9.65	6.43	0.0	1.68
September	27.47	8.09	4.39	10.8	8.1	5.4	0.00	10.79	8.09	5.40	5.4	3.70
October	5.92	1.74	3.76	2.3	1.7	1.2	3.52	5.85	5.26	4.68	4.7	1.50
November	5.24	1.54	2.37	2.1	1.5	1.0	0.44	2.50	1.98	1.47	0.0	0.01
December	6.60	1.94	1.95	2.6	1.9	1.3	3.34	5.93	5.28	4.64	4.6	3.34
		60.40	63.23				10.13					13.47

Pivot 5	Winter Forage/Alfalfa	125 Acres										
	IRRIGATION WATER							IRRIGATION + RAINFALL				
			0.75									
Month	Flow (MG)	Flow (in)	ET 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Precip 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Over/Unde	Deep Perc (in)
January	8.60	2.53	2.29	3.4	2.5	1.7	0.01	3.39	2.54	1.70	0.0	0.36
February	3.00	0.88	2.70	1.2	0.9	0.6	2.63	3.81	3.51	3.22	3.2	0.82
March	19.03	5.61	6.95	7.5	5.6	3.7	0.19	7.67	5.80	3.93	0.0	0.07
April	21.09	6.21	6.81	8.3	6.2	4.1	0.00	8.28	6.21	4.14	0.0	0.26
May	1.62	0.48	2.78	0.6	0.5	0.3	0.00	0.64	0.48	0.32	0.0	0.00
June	1.10	0.32	0.00	0.4	0.3	0.2	0.00	0.43	0.32	0.22	0.2	0.32
July	3.26	0.96	0.00	1.3	1.0	0.6	0.00	1.28	0.96	0.64	0.6	0.96
August	5.61	1.65	0.00	2.2	1.7	1.1	0.00	2.20	1.65	1.10	1.1	1.65
September	22.79	6.71	1.33	9.0	6.7	4.5	0.00	8.95	6.71	4.48	4.5	5.39
October	10.51	3.10	1.99	4.1	3.1	2.1	3.52	7.65	6.62	5.58	5.6	4.63
November	4.88	1.44	1.73	1.9	1.4	1.0	0.44	2.36	1.88	1.40	0.0	0.21
December	5.32	1.57	1.86	2.1	1.6	1.0	3.34	5.43	4.91	4.38	4.4	3.05
		31.47	28.43				10.13					17.71

Pivot 6	Winter Forage/Sudan Grass	21 Acres										
	IRRIGATION WATER							IRRIGATION + RAINFALL				
			0.75									
Month	Flow (MG)	Flow (in)	ET 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Precip 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Over/Unde	Deep Perc (in)
January	0.92	1.61	2.29	2.2	1.6	1.1	0.01	2.16	1.62	1.09	0.0	0.00
February	1.02	1.79	2.70	2.4	1.8	1.2	2.63	5.01	4.42	3.82	3.8	1.72
March	3.76	6.59	6.95	8.8	6.6	4.4	0.19	8.98	6.78	4.59	0.0	0.47
April	5.35	9.38	6.61	12.5	9.4	6.3	0.00	12.51	9.38	6.25	0.0	2.59
May	3.04	5.33	2.78	7.1	5.3	3.6	0.00	7.11	5.33	3.55	3.6	2.55
June	4.67	8.19	1.03	10.9	8.2	5.5	0.00	10.92	8.19	5.46	5.5	7.16
July	4.50	7.89	9.44	10.5	7.9	5.3	0.00	10.52	7.89	5.26	0.0	0.11
August	7.39	12.96	8.69	17.3	13.0	8.6	0.00	17.28	12.96	8.64	0.0	4.27
September	7.25	12.71	6.05	17.0	12.7	8.5	0.00	16.95	12.71	8.48	8.5	6.67
October	7.40	12.98	3.64	17.3	13.0	8.7	3.52	20.82	16.50	12.17	12.2	12.86
November	0.64	1.12	1.12	1.5	1.1	0.7	0.00	1.50	1.12	0.75	0.0	0.10
December	0.00	0.00	1.75	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
		80.56	53.24				6.35					38.50

Attachment C

Deep Percolation Calculations

Pivot 7 Sudan Grass/Winter Forage 125 Acres

IRRIGATION WATER | IRRIGATION + RAINFALL

Month	Flow (MG)	Flow (in)	ET 2004 (in) [0.75]	0% of Field (in)	50% Field (in)	100% Field (in)	Precip 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Over/Unde	Deep Perc (in)
January	29.01	8.55	2.29	11.4	8.5	5.7	0.01	11.41	8.56	5.71	5.7	6.26
February	12.42	3.66	2.70	4.9	3.7	2.4	2.63	7.51	6.29	5.07	5.1	3.59
March	29.12	8.58	6.95	11.4	8.6	5.7	0.19	11.63	8.77	5.91	0.0	1.92
April	25.09	7.39	6.61	9.9	7.4	4.9	0.00	9.86	7.39	4.93	0.0	0.94
May	21.82	6.43	2.78	8.6	6.4	4.3	0.00	8.57	6.43	4.29	4.3	3.65
June	11.94	3.52	1.03	4.7	3.5	2.3	0.00	4.69	3.52	2.35	2.3	2.48
July	34.48	10.16	9.44	13.5	10.2	6.8	0.00	13.54	10.16	6.77	0.0	1.25
August	20.12	5.93	8.69	7.9	5.9	4.0	0.00	7.90	5.93	3.95	0.0	0.00
September	14.77	4.35	6.05	5.8	4.4	2.9	0.00	5.80	4.35	2.90	0.0	0.00
October	18.69	5.51	3.64	7.3	5.5	3.7	3.52	10.86	9.03	7.19	7.2	5.38
November	0.00	0.00	1.12	0.0	0.0	0.0	0.44	0.44	0.44	0.44	0.0	0.00
December	4.74	1.40	1.75	1.9	1.4	0.9	3.34	5.20	4.74	4.27	4.3	2.99
		65.46	53.24				10.13					28.46

Pivot 8 Winter Forage/Sudan Grass 32 Acres

IRRIGATION WATER | IRRIGATION + RAINFALL

Month	Flow (MG)	Flow (in)	ET 2004 (in) [0.75]	0% of Field (in)	50% Field (in)	100% Field (in)	Precip 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Over/Unde	Deep Perc (in)
January	18.53	21.32	2.29	28.4	21.3	14.2	0.01	28.44	21.33	14.23	14.2	19.04
February	5.18	5.96	2.70	7.9	6.0	4.0	2.63	10.58	8.59	6.60	6.6	5.89
March	11.17	12.85	6.95	17.1	12.9	8.6	0.19	17.33	13.04	8.76	8.8	6.10
April	14.10	16.23	6.81	21.6	16.2	10.8	0.00	21.64	16.23	10.82	10.8	9.41
May	4.44	5.11	2.78	6.8	5.1	3.4	0.00	6.81	5.11	3.41	3.4	2.33
June	6.60	7.60	1.03	10.1	7.6	5.1	0.00	10.13	7.60	5.06	5.1	6.56
July	15.48	17.81	9.44	23.8	17.8	11.9	0.00	23.75	17.81	11.88	11.9	8.38
August	13.62	15.67	8.89	20.9	15.7	10.4	0.00	20.90	15.67	10.45	10.4	6.99
September	10.02	11.53	6.05	15.4	11.5	7.7	0.00	15.38	11.53	7.69	7.7	5.49
October	10.34	11.90	3.64	15.9	11.9	7.9	3.52	19.39	15.42	11.45	11.5	11.78
November	0.03	0.03	1.12	0.0	0.0	0.0	0.44	0.49	0.47	0.46	0.0	0.00
December	0.00	0.00	1.75	0.0	0.0	0.0	3.34	3.34	3.34	3.34	3.3	1.59
		126.03	53.24				10.13					83.56

Pivot 9 Open/Alfalfa/ BOW 125 Acres

IRRIGATION WATER | IRRIGATION + RAINFALL

Month	Flow (MG)	Flow (in)	ET 2004 (in) [0.75]	0% of Field (in)	50% Field (in)	100% Field (in)	Precip 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Over/Unde	Deep Perc (in)
January	0.00	0.00		0.0	0.0	0.0	0.01	0.01	0.01	0.01	0.0	0.00
February	0.00	0.00		0.0	0.0	0.0	2.63	2.63	2.63	2.63	2.6	0.00
March	0.00	0.00		0.0	0.0	0.0	0.19	0.19	0.19	0.19	0.2	0.00
April	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
May	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
June	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
July	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
August	4.53	1.33	0.84	1.8	1.3	0.9	0.00	1.78	1.33	0.89	0.9	0.69
September	4.18	1.23	0.79	1.6	1.2	0.8	0.00	1.64	1.23	0.82	0.8	0.44
October	18.96	5.59	0.60	7.4	5.6	3.7	3.52	10.97	9.11	7.24	7.2	8.42
November	11.72	3.45	0.24	4.6	3.5	2.3	0.44	5.04	3.89	2.74	2.7	3.65
December	7.49	2.21	0.30	2.9	2.2	1.5	3.34	6.28	5.55	4.81	4.8	5.16
		13.81	2.75				10.13					18.36

Attachment C
Deep Percolation Calculations

Pivot 10 Open/Oats 125 Acres

Month	Flow (MG)	Flow (in)	ET 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Precip 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Over/Unde	Deep Perc (in)
	IRRIGATION WATER		0.75					IRRIGATION + RAINFALL				
January	0.00	0.00		0.0	0.0	0.0	0.01	0.01	0.01	0.01	0.0	0.00
February	0.00	0.00		0.0	0.0	0.0	2.63	2.63	2.63	2.63	2.6	0.00
March	0.00	0.00		0.0	0.0	0.0	0.19	0.19	0.19	0.19	0.2	0.00
April	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
May	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
June	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
July	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
August	10.84	3.19	0.74	4.3	3.2	2.1	0.00	4.26	3.19	2.13	2.1	2.45
September	17.80	5.24	0.92	7.0	5.2	3.5	0.00	6.99	5.24	3.50	3.5	4.32
October	15.02	4.43	0.79	5.9	4.4	3.0	3.52	9.42	7.95	6.47	6.5	7.16
November	8.28	2.44	0.29	3.3	2.4	1.6	0.44	3.69	2.88	2.07	2.1	2.59
December	20.59	6.07	1.10	8.1	6.1	4.0	3.34	11.43	9.41	7.38	7.4	8.31
		21.37	3.84				10.13					24.83

Pivot 11 Open/BOW 125 Acres

Month	Flow (MG)	Flow (in)	ET 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Precip 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Over/Unde	Deep Perc (in)
	IRRIGATION WATER		0.75					IRRIGATION + RAINFALL				
January	0.00	0.00		0.0	0.0	0.0	0.01	0.01	0.01	0.01	0.0	0.00
February	0.00	0.00		0.0	0.0	0.0	2.63	2.63	2.63	2.63	2.6	0.00
March	0.00	0.00		0.0	0.0	0.0	0.19	0.19	0.19	0.19	0.2	0.00
April	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
May	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
June	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
July	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
August	14.18	4.18	[illegible]	5.6	4.2	2.8	0.00	5.57	4.18	2.79	2.8	3.60
September	15.98	4.71	[illegible]	6.3	4.7	3.1	0.00	6.28	4.71	3.14	3.1	3.78
October	21.89	6.45	[illegible]	8.6	6.4	4.3	3.52	12.12	9.97	7.82	7.8	9.28
November	7.76	2.29	[illegible]	3.0	2.3	1.5	0.44	3.49	2.73	1.96	2.0	2.38
December	30.00	8.84	[illegible]	11.8	8.8	5.9	3.34	15.12	12.18	9.23	9.2	10.68
		26.46	4.05				10.13					29.71

Pivot 12 Open/Oats 125 Acres

Month	Flow (MG)	Flow (in)	ET 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Precip 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Over/Unde	Deep Perc (in)
	IRRIGATION WATER		0.75					IRRIGATION + RAINFALL				
January	0.00	0.00		0.0	0.0	0.0	0.01	0.01	0.01	0.01	0.0	0.00
February	0.00	0.00		0.0	0.0	0.0	2.63	2.63	2.63	2.63	2.6	0.00
March	0.00	0.00		0.0	0.0	0.0	0.19	0.19	0.19	0.19	0.2	0.00
April	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
May	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
June	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
July	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
August	14.62	4.31	0.75	5.7	4.3	2.9	0.00	5.74	4.31	2.87	2.9	3.56
September	28.00	8.25	1.04	11.0	8.2	5.5	0.00	11.00	8.25	5.50	5.5	7.21
October	20.96	6.18	0.77	8.2	6.2	4.1	3.52	11.75	9.70	7.64	7.6	8.93
November	20.08	5.92	0.31	7.9	5.9	3.9	0.44	8.33	6.36	4.38	4.4	6.05
December	10.31	3.04	1.50	4.0	3.0	2.0	3.34	7.39	8.38	5.36	5.4	4.88
		27.68	4.37				10.13					30.61

Attachment C
Deep Percolation Calculations

Pivot 13	Open/BOW		21 Acres									
	IRRIGATION WATER							IRRIGATION + RAINFALL				
			0.75									
Month	Flow (MG)	Flow (in)	ET 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Precip 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Over/Unde	Deep Perc (in)
January	0.00	0.00		0.0	0.0	0.0	0.01	0.01	0.01	0.01	0.0	0.00
February	0.00	0.00		0.0	0.0	0.0	2.63	2.63	2.63	2.63	2.6	0.00
March	0.00	0.00		0.0	0.0	0.0	0.19	0.19	0.19	0.19	0.2	0.00
April	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
May	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
June	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
July	0.00	0.00		0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
August	4.53	7.94	0.08	10.6	7.9	5.3	0.00	10.59	7.94	5.30	5.3	7.86
September	4.18	7.33	0.92	9.8	7.3	4.9	0.00	9.77	7.33	4.89	4.9	6.41
October	2.59	4.54	0.69	6.1	4.5	3.0	3.52	9.58	8.06	6.55	6.5	7.37
November	2.78	4.88	1.31	6.5	4.9	3.3	0.44	6.94	5.32	3.69	3.7	4.01
December	0.53	0.93	1.50	1.2	0.9	0.6	3.34	4.58	4.27	3.96	4.0	2.77
		25.62	4.50				10.13					28.42

Pistachios	Pistachios		23 Acres									
	IRRIGATION WATER							IRRIGATION + RAINFALL				
			0.75									
Month	Flow (MG)	Flow (in)	ET 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Precip 2004 (in)	0% of Field (in)	50% Field (in)	100% Field (in)	Over/Unde	Deep Perc (in)
January	5.76	9.22	2.29	12.3	9.2	6.1	0.01	12.31	9.23	6.16	6.2	6.94
February	0.36	0.58	2.70	0.8	0.6	0.4	2.63	3.40	3.21	3.01	3.0	0.51
March	1.61	2.58	6.95	3.4	2.6	1.7	0.19	3.63	2.77	1.91	0.0	0.00
April	3.69	5.91	6.81	7.9	5.9	3.9	0.00	7.88	5.91	3.94	0.0	0.14
May	6.52	10.44	2.78	13.9	10.4	7.0	0.00	13.92	10.44	6.96	7.0	7.66
June	7.35	11.77	1.03	15.7	11.8	7.8	0.00	15.69	11.77	7.85	7.8	10.73
July	6.49	10.39	9.44	13.9	10.4	6.9	0.00	13.86	10.39	6.93	0.0	1.41
August	5.89	9.43	7.07	12.6	9.4	6.3	0.00	12.57	9.43	6.29	0.0	2.41
September	2.08	3.33	4.49	4.4	3.3	2.2	0.00	4.44	3.33	2.22	0.0	0.00
October	0.00	0.00		0.0	0.0	0.0	3.52	3.52	3.52	3.52	3.5	3.52
November	0.00	0.00		0.0	0.0	0.0	0.44	0.44	0.44	0.44	0.4	0.44
December	0.00	0.00		0.0	0.0	0.0	3.34	3.34	3.34	3.34	3.3	3.34
		63.65	43.56				10.13					37.11

PALMDALE WATER RECLAMATION PLANT

APPENDIX A

RECYCLED WATER TREATMENT AND USE REPORT

PALMDALE WATER RECLAMATION PLANT
RECYCLED WATER TREATMENT AND USE REPORT

INTRODUCTION

The following sections provide information regarding recycled water use and treatment in compliance with Amended Monitoring and Reporting Program No. 00-57-A03, Section I.G.3.

Public and Worker Notification of Reclaimed Water Use

Public and worker notification is provided through the use of signs posted around the perimeter of the site. The signs are posted every 500 feet around the periphery of the reuse site, in compliance with California Code of Regulations, Title 22, Section 60310 (g). The signs read, "RECLAIMED WATER – DO NOT DRINK" in both English and Spanish. Public access is not permitted on the site.

Worker Training of Reclaimed Water Use

Worker training is provided and documented through the use of the attached "Fact Sheet" and "Documentation of Training" Checklist. All District's employees and contractors who will be visiting the site where undisinfected secondary effluent is used for irrigation are required to complete the checklist.

Training shall consist of the following items:

1. Explanation of the potential health hazards of undisinfected secondary effluent using the Topic Review Sheet "Hazards of Wastewater", available on the Districts web site (attached).
2. Going over the information on the "Fact Sheet" provided (attached).
3. Completion of the checklist (attached).

Copies of the completed and signed checklists are kept on site at the Palmdale Water Reclamation Plant (WRP), as well as at the District's Joint Administration Office in Whittier, CA.

A log showing when the use of recycled water was stopped at each pivot is located onsite at the Palmdale WRP. In addition, records of harvest dates and maintenance activities at each pivot are located onsite at the Palmdale WRP.

Special Equipment for Reclaimed Water Use

Proper personal protective equipment is located onsite for use by District's employees and contractors. This equipment consists of latex gloves, eye protection and respirators.

Worker Hygiene for Reclaimed Water Use

A portable toilet and hand washing station has been installed on site for use by District's employees and contractors. In addition, food and drink consumption is prohibited in areas of the site where center pivot sprinklers are in operation.

Use Area Inspection.

The use area site is monitored on a daily basis to ensure compliance with California Code of Regulations, Title 22, Sections 60304(d) and 60310. Currently, the District has an agreement with Dellavalle Laboratories, Inc. (Dellavalle) to perform a daily visual inspection of the use area for compliance with the above mentioned regulations and to identify any potential problems such as ponding, runoff, or overspray. Dellavalle is required to submit all findings to District staff as well as maintain a logbook onsite. In addition, District staff will provide oversight for the inspection and monitoring program.

Compliance with Water Recycling Requirements

Operating records and reports are maintained onsite at the Palmdale WRP in compliance with California Code of Regulations, Title 22, Sections 60329 and 60304(d). In addition, the results of the laboratory analyses are included in each monthly report under the Operations Data and Plant Effluent Data sections.

WORKER SAFETY WHEN USING UNDISINFECTED SECONDARY EFFLUENT PALMDALE WRP EFFLUENT MANAGEMENT SITE FACT SHEET

Undisinfected secondary effluent produced by the Sanitation Districts' Palmdale Water Reclamation Plant is used for agricultural irrigation and/or land application by means of center-pivot sprinklers and other irrigation systems. Because this water contains microorganisms, some of which may be pathogenic, the following Best Management Practices consisting of multiple barriers should be followed to avoid acute health impacts on workers who may be exposed to the water. The three layers of protection are: Control, Avoidance and Personal Protective Equipment & Hygiene.

CONTROL:

Worker exposure to mists or sprays is mitigated by the use of drop-tubes on center-pivot sprinklers, and by use of additional types of irrigation (hand lines, solid set, and furrow) that cause the secondary effluent to be released close to the ground. In addition, wide-orifice sprinkler heads are used to produce larger droplets of water, which results in less chance of atomization.

AVOIDANCE:

Workers are to avoid contact with the undisinfected secondary effluent as it is being sprayed on the agricultural fields. If maintenance needs to be conducted on any irrigation equipment, the flow of undisinfected secondary effluent must be stopped prior to worker access to the equipment.

Flow of the undisinfected secondary effluent must be stopped prior to harvesting of the crop.

PERSONAL PROTECTIVE EQUIPMENT & HYGIENE:

When working with undisinfected secondary effluent, workers must have on proper Personal Protective Equipment, which consists of eye protection (to guard against splashing) and rubber gloves (latex, vinyl or nitrile). If there is potential for exposure to spray or mists, workers are to wear an N100 particulate respirator mask (disposable).

Workers must immediately wash their hands after completing tasks involving the handling of secondary effluent, and they must avoid all contact with their eyes, ears, nose or mouth until their hands have been thoroughly cleaned.

Food and drink must not be consumed in or brought unprotected into an area where undisinfected secondary effluent is in use.

Tools and equipment used in the maintenance of irrigation equipment using undisinfected secondary effluent must be thoroughly washed off at the end of the work day.

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EH&S Topic Review Sheets

Hazards of Wastewater

1. Prior to the Group Safety Meeting (GSM), the individual leading the discussion should take a few minutes and refamiliarize themselves with the health hazards of waste water.

2. Read the following:

> *The purpose of the GSM is to familiarize the Districts personnel with the potential health hazards associated with working in the field of wastewater collection, treatment and disposal. Studies have shown that the risk of acquiring diseases from the pathogens contained in wastewater is equal among wastewater professionals and non-wastewater professionals.*

3. Review the various types of waste water hazards (Pathogens) with employees including:

- Bacteria
- Viruses (Hepatitis A)
- Fungi
- Protozoan

4. Review the routes of infection with employees including:

- Ingestion; taken through the stomach and intestine and into the bloodstream.
- Inhalation; taken through the lungs and into the bloodstream.
- Direct contact.

5. Inform employees of the methods of reducing risk such as:

a. Personal Protective Measures:

- The first line of defense against wastewater-borne diseases is washing hands with soap and water and using latex gloves (light work) or reinforced gloves (heavy work).
- Leave work cloths, gloves and boots on site to prevent possible transmission to family or friends.
- Wear gloves whenever there is contact with wastewater or sludge.
- Never touch face, mouth, eyes, ears, or nose while working with wastewater or sludge.

b. Immunizations (Hepatitis A)

- The preventive effect of the vaccine immune serum globulin is short lived (3 weeks) therefore this vaccine is not recommended by physicians.

6. REMEMBER!!! WASH YOUR HANDS after handling potentially infectious substances.

7. Clean hands prior to eating, drinking, and smoking.

8. Eat only in designated areas.

9. Remind employees that appropriate personal protection must be used when coming to the aid of an injured person. Follow Universal Precautions.

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

Biological Hazards of Wastewater

Organism	Disease	Comments
BACTERIA		
Salmonella	Stomach and intestinal tract infections, Typhoid fever	Ingestion - Major cause of food poisoning. Symptoms are fever, abdominal cramps, and diarrhea.
Shigella	Bacillary dysentery	Ingestion - Primary cause of infectious diarrhea in the U.S. Symptoms are diarrhea, fever, nausea, vomiting, and cramps.
Vibrio Cholerae	Asiatic cholera	Ingestion - Bacteria produce toxin which causes vomiting, diarrhea, and loss of body fluids. Results from poor sanitation practices. Problem in developing countries.
Clostridium Tetani	Tetanus	Direct contact with open wound - Symptoms are muscle contraction of jaw, body muscle spasms, paralysis of throat muscle, which can lead to death from respiratory failure. Vaccines should be taken at least every 10 years.
Yersinia Entercolitica	Acute gastroenteritis	Ingestion - Symptoms are fever, diarrhea, and dehydration.
Leptospira	Affects, liver, kidneys, and CNS.	Contact with mucous membranes or open wound - Flu-like symptoms
VIRUS		
Norwalk Virus	Acute viral gastroenteritis	Ingestion - Symptoms are vomiting, diarrhea, low grade fever, and body aches. Also a problem in recreational water contact.
Rotavirus	Acute viral gastroenteritis	Ingestion - Found in raw wastewater and chlorinated effluents from activated sludge plants. Symptoms are vomiting, and diarrhea.
Adenovirus	Acute respiratory disease, conjunctivitis, and/or gastroenteritis	Inhalation - Symptoms are nausea, vomiting, diarrhea, abdominal pain, headache, and fever.
Coxsackievirus A & B	Upper respiratory tract infection, aseptic meningitis, conjunctivitis, common cold, myocarditis, Bornholm's disease	Ingestion and Inhalation - Symptoms are fever, congestion, sore throat, sores in mouth, cough, vomiting, diarrhea, abdominal pain, skin rash ("Hand, Foot & Mouth Disease").
Poliovirus	Poliomyelitis	Ingestion - Affects CNS. Symptoms are flu-like and lead to paralysis
Hepatitis A	Infectious Hepatitis	Ingestion - Affects liver. Symptoms are flu-like, cramps, vomiting, high fever, jaundice. New "2-series" vaccination lasts up to 30 years.
Hepatitis B	Blood-borne hepatitis	Infectious blood or body fluids must directly enter bloodstream - Symptoms are flu-like and lead to cirrhosis and/or liver cancer. Vaccination available upon potential exposure.
Human Immunodeficiency Virus (HIV)	Acquired Immune Deficiency Syndrome (AIDS)	Infectious blood or body fluids must directly enter bloodstream - The AIDS virus is a delicate virus that has a short survival outside of the human body.
PARASITE		
Giardia Lamblia	Giardiases	Ingestion - Symptom is diarrhea, lasting 2 weeks to numerous years.
Hookworms	Anemia, fatigue	Through cracks in bare skin and ingestion - Lay 50,000 eggs/day.
Tapeworms	Abdominal pains, weight loss	Ingestion - Adults lay eggs while in intestine, which are shed in stool.
Roundworms	Abdominal pains, weight loss	Ingestion - Lay 80,000 eggs/day.

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WORKER SAFETY WHEN USING
UNDISINFECTED SECONDARY EFFLUENT
PALMDALE WRP EFFLEUNT MANAGEMENT SITE
TRAINING CHECKLIST

Signature of trainee, below, indicates that trainee has been trained in the following elements of worker safety when using undisinfected secondary effluent:

DATE: ____________________

TRAINEE: ________________________________ / ____________________________
Print Name and affiliation Signature

TRAINER: ________________________________ / ____________________________
Print Name and affiliation Signature

Initial	Instruction Item
	The three layers of protection against exposure to undisinfected secondary effluent are: Control, Avoidance, and Personal Protective Equipment and Hygeine
	Flow of undisinfected secondary effluent must be stopped prior to worker access to the equipment for maintenance.
	Workers are to avoid contact with the undisinfected secondary effluent as it is being sprayed on the agricultural fields.
	Proper personal protective equipment consists of eye protection, rubber gloves, and, if there is potential for exposure to mists, an N100 particulate respirator mask (disposable).
	Workers must thoroughly wash their hands after completing tasks involving the handling of secondary effluent, and prior to consuming any food or drink.
	Food and drink must not be consumed in or brought unprotected into an area where undisinfected secondary effluent is in use.
	Tools and equipment used in the maintenance of irrigation equipment using undisinfected secondary effluent must be thoroughly washed off at the end of the work day.

Submit competed forms to Tim Linn at the Palmdale WRP, and send a copy to Frances Garrett at JAO, Water Quality and Soils Engineering Section.

PALMDALE WATER RECLAMATION PLANT

APPENDIX B

ANNUAL FEDERAL BIOSOLIDS REPORT FOR THE PALMDALE WRP

Con 1

WATER RECLAMATION

SOLID WASTE MANAGEMENT

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 699-5422
www.lacsd.org

JAMES F. STAHL
Chief Engineer and General Manager

February 19, 2005
File No. 20-04.01.00

Ms. Lauren Fondahl
U.S. EPA - Region 9
75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Ms. Fondahl:

Annual Biosolids Monitoring Report
Palmdale Water Reclamation Plant, WDID No. 6B190107069

Enclosed is the Annual Monitoring Report for 2004 as required under 40 CFR Part 503.

"I certify, under penalty of law, that the vector attraction reduction requirements in 503.33(b)(1) and the pathogen reduction requirements in 503.32(b)(3) were met for the entire year. These determinations have been made under my direction and supervision in accordance with the system designed to insure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements and vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

Should you have any questions or require additional information, please contact me (562) 699-7411, extension 2824.

Very truly yours,

James F. Stahl

Mike Sullivan
Supervising Engineer
Monitoring Section

MS:bb
Enclosures

cc: Singer, Lahontan RWQCB
Harlow, Central Valley RWQCB

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
PALMDALE WATER RECLAMATION PLANT

2004 ANNUAL BIOSOLIDS MONITORING REPORT

GENERAL INFORMATION

Operator:	County Sanitation District No. 20 of Los Angeles County
Mailing Address:	1955 Workman Mill Road, P.O. Box 4998, Whittier, CA 90607
Telephone:	(562) 699-7411
Contact:	Mike Sullivan, extension 2824
Ownership Status:	Publicly Owned Treatment Works

FACILITY INFORMATION

Name:	Palmdale Water Reclamation Plant (WRP)
Location:	39300 30th Street East, Palmdale, CA 93550
Telephone:	(661) 947-6053
WDID Number:	6B190107069
Capacity/Influent Flow:	15.0/9.43 MGD

BIOSOLIDS INFORMATION

Treatment:	Primary sludge is anaerobically digested. In 2004, digestion temperature averaged 98 degrees Fahrenheit, detention time 45 days, and volatile solids destruction 71%. Digested biosolids are dewatered to approximately 80% total solids in concrete beds and are then stockpiled on-site. The stockpiled material is typically in excess of 90% total solids.
Quantities Generated:	Approximately 310 dry tons in 2004 = 281 dry metric tons in 2004
Quantity Stockpiled:	Approximately 208 dry tons (188 dry metric tons) were sent to the stockpiles for the year. Approximately 872 dry tons (789 dry metric tons) were reused in composting operations. This includes approximately 664 dry tons (601 dry metric tons) that were stockpiled in 2002 and 2003. No biosolids remain in stockpiles as of 12/31/04.
Monitoring/Frequency:	Quarterly composite samples for Table 1/Table 3 metals. Monthly average digester performance for Class B time/temperature criteria and VSD (using daily temperatures and weekly volatile solids percentages).
Sample Type:	Digested biosolids prior to dewatering and dried stockpiled biosolids.
Quality:	Metals are within Table 1 concentrations; Biosolids are Class B per anaerobic digestion time/temperature criteria; Volatile solids destruction is > 38%. Results for the reporting period are shown on page 2; additional data are in Attachment A.

PALMDALE WATER RECLAMATION PLANT

2004 DIGESTER PERFORMANCE			
Month	Temperature (degrees F)	Detention Time (days)	VSD (%)
Jan	98	50	81
Feb	98	47	76
Mar	98	47	78
Apr	97	45	77
May	98	42	64
Jun	98	48	66
Jul	98	57	71
Aug	98	40	69
Sep	98	38	64
Oct	98	42	61
Nov	97	42	65
Dec	97	43	74
Mean	98	45	71
Min	97	38	61

Individual digester performance data are attached.

2004 BIOSOLIDS CAKE - TABLE 1/TABLE 3 METALS CONCENTRATIONS									
	Mg/Kg Dry Weight								
	As	Cd	Cu	Pb	Hg	Mo	Ni	Se	Zn
Mar	3.08	2.08	372	< 10.9	3.4	15.4	27.3	8.12	2,780
Jul*	2.74	1.18	421	8.58	3.8	9.15	33.9	7.94	2,800
Sep	2.62	1.36	429	< 8.66	5.2	18.2	23.2	7.71	2,720
Nov	2.68	1.83	443	9.53	4.4	16.0	24.5	7.67	3,110
Average	2.78	1.61	416	9.06	4.2	14.7	27.2	7.86	2,850
Maximum	3.08	2.08	443	9.53	5.2	18.2	33.9	8.12	3,110
Table 1	75	85	4,300	840	57	75	420	100	7,500
Table 3	41	39	1,500	300	17	\	420	100	2,800

* Make up sample for June.
\ = No Limit
Additional data are presented in Attachment A.

MANAGEMENT PRACTICES

Land Application

Contract Company:	**McCarthy Family Farms, Inc.**
Contact:	Pat McCarthy
Address:	10095 Utica Avenue, P.O. Box 577, Corcoran, CA 93212
Telephone:	(661) 992-5178
Site Location:	San Joaquin Composting, Inc.; Kern County, CA Section 4, T26S, R20E, MDM; (163 acres)
Site Contact:	Gary J. Bruggeman
Address:	12421 Holloway Road, Lost Hills, CA
Reuse Process:	Bulk Land Applications of Material Derived via Composting
CA Permits:	California Integrated Waste Management Board Solid Waste Facility Permit No. 15-AA-0287, January 31, 1996 (revised May 3, 1999) Kern County Conditional Use Permit No. 5, April 24, 1995 (revised July 9, 1998) Central Valley Regional Water Quality Control Board Waste Discharge Requirements, No. 96-018, January 26, 1996 San Joaquin Valley Unified Air Pollution Control District No. S-2162-1-0 Expired October 31, 1998; Nos. S-360-1-2 & S-360-1-3 & S-360-2-0 (renewed October 31, 2000)
Biosolids Quantity:	872 dry tons = 789 dry metric tons
Pathogen Reduction:	Class B Biosolids Achieved by PSRP (anaerobic digestion) [503.32(b)(3)] Class A Compost Product
Vector Attr. Reduction:	$\geq$ 38% volatile solids reduction [503.33(b)(1)]

ATTACHMENT A

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
PALMDALE WATER RECLAMATION PLANT

Metals
Nutrients
Digester Performance

2004 BIOSOLIDS ANALYSES
Palmdale Water Reclamation Plant
mg/kg Dry Weight (or as indicated)

Sample No.	Date	% TS	As	Cd	Cr	Cu	Pb	Hg	Mo	Ni	Se	Zn
SJ03311	3/2/2004	4.0	3.08	2.08	50.5	372	< 10.9	3.4	15.4	27.3	8.12	2,780
SJ10131	7/6/2004	6.6	2.74	1.18	58.7	421	8.58	3.8	9.15	33.9	7.94	2,800
SJ14800	9/28/2004	4.9	2.62	1.36	48.4	429	< 8.66	5.2	18.2	23.2	7.71	2,720
SJ16722	11/2/2004	6.6	2.68	1.83	52.6	443	9.53	4.4	16.0	24.5	7.67	3,110
MEAN			**2.78**	**1.61**	**52.6**	**416**	**9.06**	**4.2**	**14.7**	**27.2**	**7.86**	**2,850**
MAX			**3.08**	**2.08**	**58.7**	**443**	**9.53**	**5.2**	**18.2**	**33.9**	**8.12**	**3,110**
TABLE 1 LIMITS		\	**75**	**85**	\	**4,300**	**840**	**57**	**75**	**420**	**100**	**7,500**
TABLE 3 LIMITS		\	**41**	**39**	\	**1,500**	**300**	**17**	\	**420**	**100**	**2,800**

Sample No.	Date	% TS	Amm-N	Org-N	NO_3-N	NO_2-N	PO_4	K
SJ03311	3/2/2004	4.0	10,600	38,800	< 12.5	< 5.00	60,400	2,010
SJ10131	7/6/2004	6.6	7,560	35,300	< 7.58	< 3.03	171,000	1,710
SJ14800	9/28/2004	4.9	8,600	37,300	< 10.0	< 4.00	3,390	1,720
SJ16722	11/2/2004	6.6	10,500	32,600	< 7.00	< 0.30	52,300	1,830
MEAN			**9,300**	**36,000**	**ND**	**ND**	**71,800**	**1,820**
MAX			**10,600**	**38,800**	**ND**	**ND**	**171,000**	**2,010**

\ = No Limit
Statistics use detected values only.

12/22/2004
N: \BIOSOLID\JWPCP\LABDAT\2004PALMdata.xls

PALMDALE WATER RECLAMATION PLANT STOCKPILES
2004 ANALYSIS

TEST	CONSTITUENTS	1/13/2004	
		SJ00685	SJ00686
		total conc.	soluble* conc.
		mg/kg dry wt.	mg/l
101	pH	7.01 pH	-
153	TOTAL SOLIDS	89.3%	-
201	AMMONIA - N	3,810	-
202	ORGANIC - N	30,300	-
204	NITRATE - N	174	-
205	NITRITE - N	2.01	-
351	FECAL COLIFORM	< 0.2 MPN/g	-
705	ARSENIC	2.52	0.0775
706	BARIUM	-	4.40
708	CADMIUM	1.45	< 0.20
709	TOTAL CHROMIUM	-	1.0
710	HEXAVALENT CHROMIUM	< 20	-
711	COBALT	-	< 0.40
712	COPPER	416	3.53
714	LEAD	16.7	< 5.00
717	MERCURY	5.1	0.0064
718	NICKEL	30.3	2
720	SELENIUM	6.32	0.0527
722	SILVER	-	< 2.5
724	ZINC	2,630	105
725	ANTIMONY	-	0.0794
726	BERYLLIUM	-	< 0.025
732	MOLYBDENUM	10.8	< 1.00
734	THALLIUM	-	< 0.02
737	VANADIUM	-	2.09

* STLC by California Title 22 Waste Extraction Test (WET)

PALMDALE WATER RECLAMATION PLANT
2004 Digester Performance Summary

		HDT (days)	Temperature (degrees F)	VSD (%)			HDT (days)	Temperature (degrees F)	VSD (%)
Jan	Dig 3	49	98		July	Dig 3	65	98	
	Dig 4	50	98			Dig 4	57	98	
	Dig 5	o/s	o/s			Dig 5	o/s	o/s	
	Dig 6	50	98			Dig 6	48	98	
	Avg	**50**	**98**	**81**		**Avg**	**57**	**98**	**71**
Feb	Dig 3	46	98		Aug	Dig 3	40	98	
	Dig 4	46	98			Dig 4	40	98	
	Dig 5	o/s	o/s			Dig 5	o/s	o/s	
	Dig 6	47	98			Dig 6	39	98	
	Avg	**47**	**98**	**76**		**Avg**	**40**	**98**	**69**
Mar	Dig 3	38	98		Sep	Dig 3	41	98	
	Dig 4	39	98			Dig 4	36	98	
	Dig 5	o/s	o/s			Dig 5	o/s	o/s	
	Dig 6	64	98			Dig 6	37	98	
	Avg	**47**	**98**	**78**		**Avg**	**38**	**98**	**64**
Apr	Dig 3	46	97		Oct	Dig 3	41	98	
	Dig 4	42	97			Dig 4	46	98	
	Dig 5	o/s	o/s			Dig 5	o/s	o/s	
	Dig 6	46	97			Dig 6	40	98	
	Avg	**45**	**97**	**77**		**Avg**	**42**	**98**	**61**
May	Dig 3	43	98		Nov	Dig 3	43	97	
	Dig 4	43	98			Dig 4	42	97	
	Dig 5	o/s	o/s			Dig 5	o/s	o/s	
	Dig 6	42	98			Dig 6	41	97	
	Avg	**42**	**98**	**64**		**Avg**	**42**	**97**	**65**
Jun	Dig 3	45	98		Dec	Dig 3	43	97	
	Dig 4	54	98			Dig 4	44	98	
	Dig 5	o/s	o/s			Dig 5	o/s	o/s	
	Dig 6	43	99			Dig 6	43	97	
	Avg	**48**	**98**	**66**		**Avg**	**43**	**97**	**74**

o/s = out of service
HDT = Hydraulic Detention Time
VSD = Volatile Solids Destruction

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

PALMDALE WATER RECLAMATION PLANT

APPENDIX C

LABORATORY ANALYTICAL METHODS AND DETECTION LIMITS

Analytical Methods and Detection Limits for Final Effluent

Test Code	Name of Constituent	Approved Method Used	ML	MDL	MDL2	RL	RL2	Units
101	pH	SM 4500-HB	*	*		*		pH unit
102	Conductivity	SM 2510B	*	*		*		us/cm
103	Turbidity	SM 2130B	*	0.1		0.1		NTU
111	Temperature	SM 2550B	*	*		*		°F
115	Dissolved Oxygen	SM 4500-OG	*	*		1		mg/L
122	Tritium	EPA 906/900.0	*	*		*		pCi/L
124	Strontium-90	EPA 905/900.0	*	*		*		pCi/L
125	Uranium	EPA 908.1	*	*		*		pCi/L
126	Radium 226+228	EPA 903.1/904.0	*	*		0.48 / 1.0		pCi/L
151	Suspended Solids	SM 2540D	*	0.4		1		mg/L
155	Total Dissolved Solids	SM 2540C	*	7		7		mg/L
156	Settleable Solids	SM 2540F	*	*		0.1		mL/L
201	Ammonia Nitrogen	SM 4500-NH3E	*	0.1		0.1		mg/L
202	Organic Nitrogen	SM 4500-NORGB	*	0.2		0.2		mg/L
203	Total Kjeldahl Nitrogen (TKN)	SM 4500-NORGB	*	0.2		0.2		mg/L
204	Nitrate Nitrogen	SM 4500-NO3-E	*	0.01		0.04		mg/L
204	Nitrate Nitrogen	SM 4500-NO3-E	*	0.009		0.1		mg/L
205	Nitrite Nitrogen	SM 4500-NO2B	*	0.001		0.02		mg/L
206	Cyanide(CN)	SM 4500CDE	5	1		5		ug/L
208	Total Nitrogen	BY CALCULATION	*	0.2		0.2		mg/L
257	Sulfate	EPA 375.4	*	1.1		5		mg/L
301	Chloride	SM 4500-CLB	*	0.2		0.2		mg/L
302	Chlorine Residual	SM 4500-CLC	*	0.05		0.05		mg/L
309	Total Hardness	SM 2340C	*	0.66		5		mg/L
310	Total phosphate	SM 4500-PBE	*	0.038		0.5		mg/L
311	Orthophosphate-P	SM 4500-PE	*	0.028		0.5		mg/L
312	Phenols	EPA 420.1	*	0.0007		0.01		mg/L
313	Fluoride	SM 4500-FC	*	0.01		0.1		mg/L
314	Boron	SM 4500-BB	*	0.04		0.2		mg/L
315	Surfactants (MBAS)	SM 5540C	*	0.05		0.1		mg/L
315	Surfactants (MBAS)	SM 5540C	*	0.023		0.05		mg/L
316	Surfactants (CTAS)	SM 5540D	*	0.05		0.1		mg/L
349	Total Coliform	SM 9222B	*	*		1		CFU/100mL
356	Fecal Coliform	SM 9222D	*	*		1		CFU/100mL
364	Chlorophyll **A**	EPA 445.0	*	0.01		0.022 - 0.22		ug/L
370	Gross Alpha Radioactivity	EPA 900.0	*	3.8		*		pCi/L
371	Gross Beta Radioactivity	EPA 900.0	*	2.8		*		pCi/L
3B2	Perchlorate	EPA 314.0	2.0	0.63		2.0		ug/L
401	Total BOD	SM 5210B	*	3		3		mg/L
403	Total COD	SM 5220B	*	2.4		10		mg/L
405	Total Organic Carbon	SM5310C	0.5	0.07		0.5		mg/L
408	Oil and Grease	EPA 1664A	*	1.05		4		mg/L
412	Total Carboneous BOD	SM 5210B	*	3		3		mg/L
502	4,4'-DDE	EPA 608	0.005	0.0003	0.001	0.01	0.01	ug/L
504	4,4'-DDD	EPA 608	0.005	0.0009	0.002	0.01	0.01	ug/L
506	4,4'-DDT	EPA 608	0.005	0.003	0.001	0.01	0.01	ug/L
508	Alpha-BHC	EPA 608	0.005	0.002	0.0007	0.01	0.01	ug/L
509	gamma-BHC	EPA 608	0.005	0.001	0.001	0.01	0.01	ug/L
510	Heptachlor	EPA 608	0.005	0.002	0.0009	0.01	0.01	ug/L
511	Heptachlor Epoxide	EPA 608	0.005	0.001	0.002	0.01	0.01	ug/L
512	Aldrin	EPA 608	0.005	0.003	0.002	0.01	0.01	ug/L
513	Dieldrin	EPA 608	0.005	0.002	0.001	0.01	0.01	ug/L
514	Endrin	EPA 608	0.005	0.002	0.002	0.01	0.01	ug/L
515	Toxaphene	EPA 608	0.2	0.05	0.06	0.5	0.5	ug/L
516	Methoxichlor	EPA 608	0.005	0.001	0.004	0.01	0.01	ug/L
517	2,4-D	EPA 8151A	2	0.84		2		ug/L
518	2,4,5 -TP (Silvex)	EPA 8151A	0.5	0.34		0.5		ug/L
519	PCB 1242	EPA 608	0.08	0.02	0.02	0.1	0.1	ug/L
520	PCB 1254	EPA 608	0.05	0.009	0.02	0.05	0.05	ug/L
522	TICH	EPA 608	*	*	*	***	***	ug/L
523	beta-BHC	EPA 608	0.005	0.0008	0.005	0.01	0.01	ug/L
524	delta-BHC	EPA 608	0.005	0.002	0.002	0.01	0.01	ug/L
531	Alpha-Endosulfan	EPA 608	0.005	0.003	0.001	0.01	0.01	ug/L
532	Beta-Endosulfan	EPA 608	0.005	0.002	0.002	0.01	0.01	ug/L
533	Endosulfan Sulfate	EPA 608	0.005	0.01	0.003	0.1	0.01	ug/L
534	Endrin Aldehyde	EPA 608	0.005	0.0009	0.001	0.04**	0.04**	ug/L
535	PCB 1016	EPA 608	0.1	0.02	0.02	0.1	0.1	ug/L
536	PCB 1221	EPA 608	0.1	0.1	0.3	0.1	0.3	ug/L
537	PCB 1232	EPA 608	0.1	0.06	0.1	0.1	0.1	ug/L
538	PCB 1248	EPA 608	0.1	0.04	0.03	0.1	0.1	ug/L
539	PCB 1260	EPA 608	0.1	0.02	0.03	0.1	0.1	ug/L
540	Chlordane	EPA 608	0.04	0.007	0.02	0.05	0.05	ug/L
552	Mirex	EPA 608	0.01	0.001	0.002	0.01	0.05	ug/L

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

Analytical Methods and Detection Limits for Final Effluent

Test Code	Name of Constituent	Approved Method Used	ML	MDL	MDL2	RL	RL2	Units
5C1	2,4,5 -T	EPA 8151A	0.5	0.37		0.5		ug/L
5C9	Methyl Parathion	EPA 8141A	0.5	0.3		0.5		ug/L
5D1	Ethyl Parathion	EPA 8141A	0.2	0.15		0.2		ug/L
5D3	Demeton	EPA 8141A	0.5	0.32		0.5		ug/L
5D4	Guthion	EPA 8141A	2.0	1.1		2.0		ug/L
5D5	Malathion	EPA 8141A	0.2	0.15		0.2		ug/L
5D9	Diazinon	EPA 8141A	0.05	0.028		0.05		ug/L
601	Methylene Chloride	EPA 8260B	0.5	0.05		0.5		ug/L
602	Chloroform	EPA 8260B	0.5	0.05		0.5		ug/L
603	1,1,1 Trichloroethane	EPA 8260B	0.5	0.10		0.5		ug/L
604	Carbon Tetrachloride	EPA 8260B	0.5	0.13		0.5		ug/L
605	1,1 Dichloroethylene	EPA 8260B	0.5	0.07		0.5		ug/L
606	Trichloroethylene	EPA 8260B	0.5	0.10		0.5		ug/L
607	Tetrachloroethylene	EPA 8260B	0.5	0.15		0.5		ug/L
608	Dichlorobromomethane	EPA 8260B	0.5	0.06		0.5		ug/L
609	Chlorodibromomethane	EPA 8260B	0.5	0.09		0.5		ug/L
610	Bromoform	EPA 8260B	0.5	0.24		0.5		ug/L
611	Chlorobenzene	EPA 8260B	0.5	0.09		0.5		ug/L
612	Vinyl Chloride	EPA 8260B	0.5	0.05		0.5		ug/L
613	1,2 Dichlorobenzene	EPA 8260B	0.5	0.12		0.5		ug/L
614	1,3 Dichlorobenzene	EPA 8260B	0.5	0.19		0.5		ug/L
615	1,4 Dichlorobenzene	EPA 8260B	0.5	0.26		0.5		ug/L
616	1,1 Dichloroethane	EPA 8260B	0.5	0.07		0.5		ug/L
618	1,1,2 Trichloroethane	EPA 8260B	0.5	0.08		0.5		ug/L
619	1,2 Dichloroethane	EPA 8260B	0.5	0.08		0.5		ug/L
620	Benzene	EPA 8260B	0.5	0.06		0.5		ug/L
621	Toluene	EPA 8260B	0.5	0.06		0.5		ug/L
624	Ethylbenzene	EPA 8260B	0.5	0.06		0.5		ug/L
645	Trans 1,2-Dichloroethylene	EPA 8260B	0.5	0.07		0.5		ug/L
646	Methyl Bromide	EPA 8260B	0.5	0.07		0.5		ug/L
647	Chloroethane	EPA 8260B	0.5	0.13		0.5		ug/L
648	2-Chloroethyl vinyl ether	EPA 8260B	0.5	0.17		0.5		ug/L
649	Chloromethane	EPA 8260B	0.5	0.07		0.5		ug/L
650	1,2 Dichloropropane	EPA 8260B	0.5	0.08		0.5		ug/L
651	Cis-1,3 Dichloropropylene	EPA 8260B	0.5	0.06		0.5		ug/L
652	Trans-1,3-Dichloropropene	EPA 8260B	0.5	0.09		0.5		ug/L
653	1,1,2,2 Tetrachloroethane	EPA 8260B	0.5	0.14		0.5		ug/L
654	Acrolein	EPA 8260B	2	0.47		2		ug/L
655	Acrylonitrile	EPA 8260B	2	0.14		2		ug/L
662	Methyl-t-butyl ether	EPA 8260B	0.5	0.06		0.5		ug/L
696	1,4-Dioxane	EPA 8270 M	0.5	0.19		0.5		ug/L
6D6	1,2,3-Trichloropropane	EPA 524.2 M (SIM)	0.005	0.0015		0.005		ug/L
705	Total Arsenic	SM 3114B4d	1	0.4		1		ug/L
706	Barium	EPA 200.7	*	0.3		5		ug/L
708	Cadmium (Cd)	EPA 213.2	0.4	0.04		0.2		ug/L
709	Total Chromium	EPA 200.7	*	1.0		10		ug/L
710	Chromium VI (Cr-VI)	SM 3500 CrD	10	0.6		10		ug/L
710	Chromium VI (Cr-VI)	SM 3500 CrD	10	0.94		10		ug/L
710	Chromium VI (Cr-VI)	EPA 218.6	0.1	0.047		0.1		ug/L
712	Copper (Cu)	EPA 200.7	*	3.0		8		ug/L
713	Iron (Fe)	EPA 200.7	*	5.0		50		ug/L
714	Lead	EPA 239.2	2	0.16		2		ug/L
717	Mercury	EPA 245.1	0.025	0.03		0.04		ug/L
718	Nickel(Ni)	EPA 200.7	*	5.0		20		ug/L
720	Selenium(Se)	SM 3114B	1	0.1		1		ug/L
722	Silver(Ag)	EPA 200.8	*	0.059		0.2		ug/L
723	Sodium	EPA 200.7	*	0.27		0.8		mg/L
724	Zinc(Zn)	EPA 200.7	*	3.0		10		ug/L
725	Antimony (Sb)	EPA 7062	0.5	0.3		0.5		ug/L
726	Beryllium (Be)	EPA 210.2	0.5	0.06		0.25		ug/L
734	Thallium(Tl)	EPA 279.2	2	0.28		1		ug/L
800	Acenaphthene	EPA 625	1	0.56	0.37	1		ug/L
801	Acenaphthylene	EPA 625	10	0.74	0.39	10		ug/L
802	Anthracene	EPA 625	10	0.47	0.30	10		ug/L
803	Benzidine	EPA 625	5	4.06	4.28	5		ug/L
804	Benzo (a) Anthracene	EPA 625	5	0.55	0.30	5		ug/L
805	Benzo (a) Pyrene	EPA 610	0.02	0.0089		0.02		ug/L
806	Benzo (b) Fluoranthene	EPA 610	0.02	0.0082		0.02		ug/L
807	Benzo (g,h,i) Perylene	EPA 625	5	0.67	0.25	5		ug/L
808	Benzo (k) Fluoranthene	EPA 610	0.02	0.0084		0.02		ug/L
809	Bis (2-Chloroethoxyl) methane	EPA 625	5	0.80	0.40	5		ug/L
810	Bis(2-Chloroethyl) ether	EPA 625	1	0.74	0.41	1		ug/L
811	Bis(2-Chloroisopropyl) ether	EPA 625	2	0.54	0.42	2		ug/L
812	Bis(2-Ethylhexyl) phthalate	EPA 625	2	0.72	0.31	2		ug/L

Analytical Methods and Detection Limits for Final Effluent

Test Code	Name of Constituent	Approved Method Used	ML	MDL	MDL2	RL	RL2	Units
813	4-Bromophenyl phenyl ether	EPA 625	5	0.51	0.30	5		ug/L
814	Butyl benzyl phthalate	EPA 625	10	0.65	0.23	10		ug/L
815	2-Chloronaphthalene	EPA 625	10	0.53	0.42	10		ug/L
816	4-Chlorophenyl phenyl ether	EPA 625	5	0.52	0.34	5		ug/L
817	Chrysene	EPA 610	0.02	0.0093		0.02		ug/L
818	Dibenzo(a,h)-anthracene	EPA 610	0.02	0.0089		0.02		ug/L
819	1,2 Dichlorobenzene	EPA 625	2	0.71	0.42	2		ug/L
820	1,3 Dichlorobenzene	EPA 625	1	0.53	0.34	1		ug/L
821	1,4 Dichlorobenzene	EPA 625	1	0.63	0.40	1		ug/L
822	3,3' Dichlorobenzidine	EPA 625	5	1.07	2.78	5		ug/L
823	Diethyl phthalate	EPA 625	2	0.49	0.43	2		ug/L
824	Dimethyl phthalate	EPA 625	2	0.50	0.34	2		ug/L
825	di-n-Butyl phthalate	EPA 625	10	0.51	0.45	10		ug/L
826	2,4 Dinitrotoluene	EPA 625	5	0.37	0.20	5		ug/L
827	2,6 Dinitrotoluene	EPA 625	5	0.46	0.27	5		ug/L
828	di-n-Octyl phthalate	EPA 625	10	0.50	0.24	10		ug/L
829	1,2 Diphenylhydrazine	EPA 625	1	0.36	0.27	1		ug/L
830	Fluoranthene	EPA 625	1	0.53	0.37	1		ug/L
831	Fluorene	EPA 625	10	0.50	0.39	10		ug/L
832	Hexachlorobenzene	EPA 625	1	0.48	0.26	1		ug/L
833	Hexachlorobutadiene	EPA 625	1	0.54	0.31	1		ug/L
834	Hexachloro-cyclopentadiene	EPA 625	5	1.48	1.58	5		ug/L
835	Hexachloroethane	EPA 625	1	0.54	0.45	1		ug/L
836	Indeno(1,2,3,cd)-pyrene	EPA 610	0.02	0.0084		0.02		ug/L
837	Isophorone	EPA 625	1	0.67	0.35	1		ug/L
838	Naphthalene	EPA 625	1	0.55	0.34	1		ug/L
839	Nitrobenzene	EPA 625	1	0.64	0.68	1		ug/L
840	N-Nitrosodimethyl amine	EPA 625	5	0.70	0.29	5		ug/L
841	N-Nitroso-di-n-propyl amine	EPA 625	5	0.67	0.43	5		ug/L
842	Phenanthrene	EPA 625	5	0.49	0.29	5		ug/L
843	Pyrene	EPA 625	10	0.63	0.30	10		ug/L
845	2 Chlorophenol	EPA 625	5	0.55	0.42	5		ug/L
846	1,2,4 Trichlorobenzene	EPA 625	5	0.50	0.35	5		ug/L
847	2,4 Dichlorophenol	EPA 625	5	0.57	0.38	5		ug/L
848	2,4 Dimethylphenol	EPA 625	2	1.31	0.59	2		ug/L
849	2,4 Dinitrophenol	EPA 625	5	3.21	0.33	5		ug/L
850	2-Methyl-4,6-Dinitrophenol	EPA 625	5	2.74	0.32	5		ug/L
851	2-Nitrophenol	EPA 625	10	0.50	0.30	10		ug/L
852	4-Nitrophenol	EPA 625	10	0.56	0.48	10		ug/L
853	3-Methyl-4-Chlorophenol	EPA 625	1	0.53	0.40	1		ug/L
854	Pentachlorophenol	EPA 625	5	0.45	0.33	5		ug/L
854	Pentachlorophenol	EPA 8270- SIM	1	0.46		1		ug/L
855	Phenol	EPA 625	1	0.58	0.43	1		ug/L
856	2,4,6 Trichlorophenol	EPA 625	10	0.54	0.26	10		ug/L
857	N-Nitrosodiphenyl amine	EPA 625	1	0.45	0.47	1		ug/L
951	Nitrite-N + Nitrate-N	BY CALCULATION	*	0.01		0.04		mg/L
B50	Escherichia coli	SM 9221F	*	*		2.0		MPN/0.1L
C15	Hydrocarbons	EPA 418.1	*	0.3		1		mg/L
D08	octaCDD	EPA 8290	*	*		See Labdata		ng/L
D21	2,3,7,8-tetra CDD	EPA 8290	*	*		See Labdata		ng/L
D22	1,2,3,7,8-pentaCDD	EPA 8290	*	*		See Labdata		ng/L
D24	1,2,3,4,7,8-HexaCDD	EPA 8290	*	*		See Labdata		ng/L
D25	1,2,3,6,7,8-HexaCDD	EPA 8290	*	*		See Labdata		ng/L
D26	1,2,3,7,8,9-HexaCDD	EPA 8290	*	*		See Labdata		ng/L
D27	1,2,3,4,6,7,8-HeptaCDD	EPA 8290	*	*		See Labdata		ng/L
F08	octaCDF	EPA 8290	*	*		See Labdata		ng/L
F16	2,3,7,8-Tetra CDF	EPA 8290	*	*		See Labdata		ng/L
F17	1,2,3,7,8-PentaCDF	EPA 8290	*	*		See Labdata		ng/L
F18	2,3,4,7,8-PentaCDF	EPA 8290	*	*		See Labdata		ng/L
F19	1,2,3,4,7,8-HexaCDF	EPA 8290	*	*		See Labdata		ng/L
F20	1,2,3,6,7,8-HexaCDF	EPA 8290	*	*		See Labdata		ng/L
F21	2,3,4,6,7,8-HexaCDF	EPA 8290	*	*		See Labdata		ng/L
F22	1,2,3,7,8,9-HexaCDF	EPA 8290	*	*		See Labdata		ng/L
F23	1,2,3,4,6,7,8-HeptaCDF	EPA 8290	*	*		See Labdata		ng/L
F24	1,2,3,4,7,8,9-HeptaCDF	EPA 8290	*	*		See Labdata		ng/L

* Not applicable

** All final effluent samples are diluted 1 to 4

*** Determined by calculation

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

Analytical Methods and Detection Limits for Monitoring Well/Supply Well Samples

Test Code	Name of Constituent	Approved Method Used	ML	MDL	MDL2	RL	RL2	Units
101	pH	SM 4500-HB	*	0.02		1		pH unit
102	Conductivity	SM 2510B	*	0.08		1		us/cm
103	Turbidity	SM 2130B	*	0.1		0.1		NTU
111	Temperature	SM 2550B	*	*		*		°F
115	Dissolved Oxygen	SM 4500-OG	*	*		1		mg/L
122	Tritium	EPA 906/900.0	*	*		*		pCi/L
124	Strontium-90	EPA 905/900.0	*	*		*		pCi/L
125	Uranium	EPA 908.1	*	*		*		pCi/L
126	Radium 226+228	EPA 903.1/904.0	*	*		0.48 / 1.0		pCi/L
151	Suspended Solids	SM 2540D	*	0.52		1		mg/L
155	Total Dissolved Solids	SM 2540C	*	2.69		10		mg/L
156	Settleable Solids	SM 2540F	*	*		0.1		mL/L
201	Ammonia Nitrogen	SM 4500-NH3BE	*	0.04		0.1		mg/L
202	Organic Nitrogen	SM 4500-NORGB	*	0.05		0.1		mg/L
203	Total Kjeldahl Nitrogen (TKN)	SM 4500-NORGB	*	0.1		0.1		mg/L
204	Nitrate Nitrogen	EPA 300.0	*	0.027		0.05		mg/L
204	Nitrate Nitrogen	SM 4500-NO3-E	*	0.009		0.1		mg/L
205	Nitrite Nitrogen	SM 4500-NO2B	*	0.001		0.02		mg/L
206	Cyanide(CN)	SM 4500CDE	5	1		5		ug/L
208	Total Nitrogen	BY CALCULATION	*	0.1		0.1		mg/L
257	Sulfate	EPA 300.0	*	0.051		0.5		mg/L
301	Chloride	EPA 300.0	*	0.026		0.2		mg/L
302	Chlorine Residual	SM 4500-CLC	*	0.05		0.05		mg/L
309	Total Hardness	SM 2340C	*	0.66		5		mg/L
310	Total phosphate	SM 4500-PBE	*	0.038		0.5		mg/L
311	Orthophosphate-P	SM 4500-PE	*	0.028		0.5		mg/L
312	Phenols	EPA 420.1	*	0.0007		0.01		mg/L
313	Fluoride	SM 4500-FC	*	0.01		0.1		mg/L
314	Boron	SM 4500-BB	*	0.04		0.2		mg/L
315	Surfactants (MBAS)	SM 5540C	*	0.01		0.1		mg/L
315	Surfactants (MBAS)	SM 5540C	*	0.014		0.1		mg/L
315	Surfactants (MBAS)	SM 5540C	*	0.023		0.05		mg/L
316	Surfactants (CTAS)	SM 5540D	*	0.05		0.1		mg/L
350	Total Coliform	SM 9221B	*	*		2		MPN/100mL
351	Fecal Coliform	SM 9221E	*	*		2		MPN/100mL
364	Chlorophyll A	EPA 445.0	*	0.01		0.022 - 0.22		ug/L
370	Gross Alpha Radioactivity	EPA 900.0	*	1.4 - 3.8		*		pCi/L
371	Gross Beta Radioactivity	EPA 900.0	*	2.8		*		pCi/L
3B2	Perchlorate	EPA 314.0	2.0	0.63		2.0		ug/L
401	Total Bod	SM 5210B	*	0.61		2		mg/L
403	Total Cod	SM 5220B	*	1.87		10		mg/L
405	Total Organic Carbon	SM5310C	0.5	0.07		0.5		mg/L
408	Oil and Grease	EPA 1664A	*	1.05		4		mg/L
412	Total Carboneous BOD	SM 5210B	*	0.61		2		mg/L
502	4,4'-DDE	EPA 608	0.005	0.0003	0.001	0.01	0.01	ug/L
504	4,4'-DDD	EPA 608	0.005	0.0009	0.002	0.01	0.01	ug/L
506	4,4'-DDT	EPA 608	0.005	0.003	0.001	0.01	0.01	ug/L
508	Alpha-BHC	EPA 608	0.005	0.002	0.0007	0.01	0.01	ug/L
509	Lindane (Gamma-BHC)	EPA 608	0.005	0.001	0.001	0.01	0.01	ug/L
510	Heptachlor	EPA 608	0.005	0.002	0.0009	0.01	0.01	ug/L
511	Heptachlor Epoxide	EPA 608	0.005	0.001	0.002	0.01	0.01	ug/L
512	Aldrin	EPA 608	0.005	0.003	0.002	0.01	0.01	ug/L
513	Dieldrin	EPA 608	0.005	0.002	0.001	0.01	0.01	ug/L
514	Endrin	EPA 608	0.005	0.002	0.002	0.01	0.01	ug/L
515	Toxaphene	EPA 608	0.2	0.05	0.06	0.5	0.5	ug/L
516	Methoxychlor	EPA 608	0.005	0.001	0.004	0.01	0.01	ug/L
517	2,4-D	EPA 8151A	2	0.84		2		ug/L
518	2,4,5 -TP (Silvex)	EPA 8151A	0.5	0.34		0.5		ug/L
519	PCB 1242	EPA 608	0.08	0.02	0.02	0.1	0.1	ug/L
520	PCB 1254	EPA 608	0.05	0.009	0.02	0.05	0.05	ug/L
522	TICH	EPA 608	*	*	*	**	**	ug/L
523	beta-BHC	EPA 608	0.005	0.0008	0.005	0.01	0.01	ug/L
524	delta-BHC	EPA 608	0.005	0.002	0.002	0.01	0.01	ug/L
531	Alpha-Endosulfan	EPA 608	0.005	0.003	0.001	0.01	0.01	ug/L
532	Beta-Endosulfan	EPA 608	0.005	0.002	0.002	0.01	0.01	ug/L
533	Endosulfan Sulfate	EPA 608	0.005	0.01	0.003	0.1	0.01	ug/L
534	Endrin Aldehyde	EPA 608	0.005	0.0009	0.001	0.01	0.01	ug/L
535	PCB 1016	EPA 608	0.1	0.02	0.02	0.1	0.1	ug/L
536	PCB 1221	EPA 608	0.1	0.1	0.3	0.1	0.3	ug/L
537	PCB 1232	EPA 608	0.1	0.06	0.1	0.1	0.1	ug/L
538	PCB 1248	EPA 608	0.1	0.04	0.03	0.1	0.1	ug/L
539	PCB 1260	EPA 608	0.1	0.02	0.03	0.1	0.1	ug/L
540	Chlordane	EPA 608	0.04	0.007	0.02	0.05	0.05	ug/L
552	Mirex	EPA 608	0.01	0.001	0.002	0.01	0.05	ug/L
5C1	2,4,5 -T	EPA 8151A	0.5	0.37		0.5		ug/L
5C9	Methyl Parathion	EPA 8141A	0.5	0.3		0.5		ug/L

Analytical Methods and Detection Limits for Monitoring Well/Supply Well Samples

Test Code	Name of Constituent	Approved Method Used	ML	MDL	MDL2	RL	RL2	Units
5D1	Ethyl Parathion	EPA 8141A	0.2	0.15		0.2		ug/L
5D3	Demeton	EPA 8141A	0.5	0.32		0.5		ug/L
5D4	Guthion	EPA 8141A	2.0	1.1		2.0		ug/L
5D5	Malathion	EPA 8141A	0.2	0.15		0.2		ug/L
5D9	Diazinon	EPA 8141A	0.05	0.028		0.05		ug/L
601	Methylene Chloride	EPA 8260B	0.5	0.05		0.5		ug/L
602	Chloroform	EPA 8260B	0.5	0.05		0.5		ug/L
603	1,1,1 Trichloroethane	EPA 8260B	0.5	0.1		0.5		ug/L
604	Carbon Tetrachloride	EPA 8260B	0.5	0.13		0.5		ug/L
605	1,1 Dichloroethylene	EPA 8260B	0.5	0.07		0.5		ug/L
606	Trichloroethylene	EPA 8260B	0.5	0.1		0.5		ug/L
607	Tetrachloroethylene	EPA 8260B	0.5	0.15		0.5		ug/L
608	Dichlorobromomethane	EPA 8260B	0.5	0.06		0.5		ug/L
609	Chlorodibromomethane	EPA 8260B	0.5	0.09		0.5		ug/L
610	Bromoform	EPA 8260B	0.5	0.24		0.5		ug/L
611	Chlorobenzene	EPA 8260B	0.5	0.09		0.5		ug/L
612	Vinyl Chloride	EPA 8260B	0.5	0.05		0.5		ug/L
613	1,2 Dichlorobenzene	EPA 8260B	0.5	0.12		0.5		ug/L
614	1,3 Dichlorobenzene	EPA 8260B	0.5	0.19		0.5		ug/L
615	1,4 Dichlorobenzene	EPA 8260B	0.5	0.26		0.5		ug/L
616	1,1 Dichloroethane	EPA 8260B	0.5	0.07		0.5		ug/L
618	1,1,2 Trichloroethane	EPA 8260B	0.5	0.08		0.5		ug/L
619	1,2 Dichloroethane	EPA 8260B	0.5	0.08		0.5		ug/L
620	Benzene	EPA 8260B	0.5	0.06		0.5		ug/L
621	Toluene	EPA 8260B	0.5	0.06		0.5		ug/L
624	Ethylbenzene	EPA 8260B	0.5	0.06		0.5		ug/L
645	Trans 1,2- Dichloroethylene	EPA 8260B	0.5	0.07		0.5		ug/L
646	Methyl Bromide	EPA 8260B	0.5	0.07		0.5		ug/L
647	Chloroethane	EPA 8260B	0.5	0.13		0.5		ug/L
648	2-Chloroethyl vinyl ether	EPA 8260B	0.5	0.17		0.5		ug/L
649	Chloromethane	EPA 8260B	0.5	0.07		0.5		ug/L
650	1,2 Dichloropropane	EPA 8260B	0.5	0.08		0.5		ug/L
651	Cis-1,3 Dichloropropylene	EPA 8260B	0.5	0.06		0.5		ug/L
652	Trans-1,3-Dichloropropene	EPA 8260B	0.5	0.09		0.5		ug/L
653	1,1,2,2 Tetrachloroethane	EPA 8260B	0.5	0.14		0.5		ug/L
654	Acrolein	EPA 8260B	2	0.47		2		ug/L
655	Acrylonitrile	EPA 8260B	2	0.14		2		ug/L
662	Methyl-t-butyl ether (MTBE)	EPA 8260B	0.5	0.06		0.5		ug/L
696	1,4-Dioxane	EPA 8270 M	0.5	0.19		0.5		ug/L
6D6	1,2,3-Trichloropropane	EPA 524.2 M (SIM)	0.005	0.0015		0.005		ug/L
705	Total Arsenic	SM 3114B4d	1	0.4		1		ug/L
706	Barium	EPA 200.7	*	0.3		5		ug/L
708	Cadmium (Cd)	EPA 213.2	0.4	0.04		0.2		ug/L
709	Total Chromium	EPA 200.7	*	1.0		10		ug/L
710	Chromium VI (Cr-VI)	SM 3500 CrD	10	0.6		10		ug/L
710	Chromium VI (Cr-VI)	SM 3500 CrD	10	0.94		10		ug/L
710	Chromium VI (Cr-VI)	EPA 218.6	0.1	0.047		0.1		ug/L
712	Copper (Cu)	EPA 200.7	*	3.0		8		ug/L
713	Iron (Fe)	EPA 200.7	*	5.0		50		ug/L
714	Lead	EPA 239.2	2	0.16		2		ug/L
717	Mercury	EPA 245.1	0.025	0.03		0.04		ug/L
718	Nickel(Ni)	EPA 200.7	*	5.0		20		ug/L
720	Selenium(Se)	SM 3114B	1	0.1		1		ug/L
722	Silver(Ag)	EPA 200.8	*	0.059		0.2		ug/L
723	Sodium	EPA 200.7	*	0.27		0.8		mg/L
724	Zinc(Zn)	EPA 200.7	*	3.0		10		ug/L
725	Antimony (Sb)	EPA 7062	0.5	0.3		0.5		ug/L
726	Beryllium (Be)	EPA 210.2	0.5	0.06		0.25		ug/L
734	Thallium(Tl)	EPA 279.2	2	0.28		1		ug/L
800	Acenaphthene	EPA 625	1	0.56	0.37	1		ug/L
801	Acenaphthylene	EPA 625	10	0.74	0.39	10		ug/L
802	Anthracene	EPA 625	10	0.47	0.30	10		ug/L
803	Benzidine	EPA 625	5	4.06	4.28	5		ug/L
804	Benzo (a) Anthracene	EPA 625	5	0.55	0.30	5		ug/L
805	Benzo (a) Pyrene	EPA 610	0.02	0.0089		0.02		ug/L
806	Benzo (b) Fluoranthene	EPA 610	0.02	0.0082		0.02		ug/L
807	Benzo (g,h,i) Perylene	EPA 625	5	0.67	0.25	5		ug/L
808	Benzo (k) Fluoranthene	EPA 610	0.02	0.0084		0.02		ug/L
809	Bis (2-Chloroethoxyl) methane	EPA 625	5	0.80	0.40	5		ug/L
810	Bis(2-Chloroethyl) ether	EPA 625	1	0.74	0.41	1		ug/L
811	Bis(2-Chloroisopropyl) ether	EPA 625	2	0.54	0.42	2		ug/L
812	Bis(2-Ethylhexyl) phthalate	EPA 625	2	0.72	0.31	2		ug/L
813	4-Bromophenyl phenyl ether	EPA 625	5	0.51	0.30	5		ug/L
814	Butyl benzyl phthalate	EPA 625	10	0.65	0.23	10		ug/L
815	2-Chloronaphthalene	EPA 625	10	0.53	0.42	10		ug/L

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER

Analytical Methods and Detection Limits for Monitoring Well/Supply Well Samples

Test Code	Name of Constituent	Approved Method Used	ML	MDL	MDL2	RL	RL2	Units
816	4-Chlorophenyl phenyl ether	EPA 625	5	0.52	0.34	5		ug/L
817	Chrysene	EPA 610	0.02	0.0093		0.02		ug/L
818	Dibenzo(a,h)-anthracene	EPA 610	0.02	0.0089		0.02		ug/L
819	1,2 Dichlorobenzene	EPA 625	2	0.71	0.42	2		ug/L
820	1,3 Dichlorobenzene	EPA 625	1	0.53	0.34	1		ug/L
821	1,4 Dichlorobenzene	EPA 625	1	0.63	0.40	1		ug/L
822	3,3' Dichlorobenzidine	EPA 625	5	1.07	2.78	5		ug/L
823	Diethyl phthalate	EPA 625	2	0.49	0.43	2		ug/L
824	Dimethyl phthalate	EPA 625	2	0.50	0.34	2		ug/L
825	di-n-Butyl phthalate	EPA 625	10	0.51	0.45	10		ug/L
826	2,4 Dinitrotoluene	EPA 625	5	0.37	0.20	5		ug/L
827	2,6 Dinitrotoluene	EPA 625	5	0.46	0.27	5		ug/L
828	di-n-Octyl phthalate	EPA 625	10	0.50	0.24	10		ug/L
829	1,2 Diphenylhydrazine	EPA 625	1	0.36	0.27	1		ug/L
830	Fluoranthene	EPA 625	1	0.53	0.37	1		ug/L
831	Fluorene	EPA 625	10	0.50	0.39	10		ug/L
832	Hexachlorobenzene	EPA 625	1	0.48	0.26	1		ug/L
833	Hexachlorobutadiene	EPA 625	1	0.54	0.31	1		ug/L
834	Hexachloro-cyclopentadiene	EPA 625	5	1.48	1.58	5		ug/L
835	Hexachloroethane	EPA 625	1	0.54	0.45	1		ug/L
836	Indeno(1,2,3,cd)-pyrene	EPA 610	0.02	0.0084		0.02		ug/L
837	Isophorone	EPA 625	1	0.67	0.35	1		ug/L
838	Naphthalene	EPA 625	1	0.55	0.34	1		ug/L
839	Nitrobenzene	EPA 625	1	0.64	0.68	1		ug/L
840	N-Nitrosodimethyl amine	EPA 625	5	0.70	0.29	5		ug/L
841	N-Nitroso-di-n-propyl amine	EPA 625	5	0.67	0.43	5		ug/L
842	Phenanthrene	EPA 625	5	0.49	0.29	5		ug/L
843	Pyrene	EPA 625	10	0.63	0.30	10		ug/L
845	2 Chlorophenol	EPA 625	5	0.55	0.42	5		ug/L
846	1,2,4 Trichlorobenzene	EPA 625	5	0.50	0.35	5		ug/L
847	2,4 Dichlorophenol	EPA 625	5	0.57	0.38	5		ug/L
848	2,4 Dimethylphenol	EPA 625	2	1.31	0.59	2		ug/L
849	2,4 Dinitrophenol	EPA 625	5	3.21	0.33	5		ug/L
850	2-Methyl-4,6-Dinitrophenol	EPA 625	5	2.74	0.32	5		ug/L
851	2-Nitrophenol	EPA 625	10	0.50	0.30	10		ug/L
852	4-Nitrophenol	EPA 625	10	0.56	0.48	10		ug/L
853	3-Methyl-4-Chlorophenol	EPA 625	1	0.53	0.40	1		ug/L
854	Pentachlorophenol	EPA 625	5	0.45	0.33	5		ug/L
855	Phenol	EPA 625	1	0.58	0.43	1		ug/L
856	2,4,6 Trichlorophenol	EPA 625	10	0.54	0.26	10		ug/L
857	N-Nitrosodiphenyl amine	EPA 625	1	0.45	0.47	1		ug/L
951	Nitrite-N + Nitrate-N	BY CALCULATION	*	0.01		0.04		mg/L
B50	Escherichia coli	SM 9221F	*	*		2.0		MPN/0.1L
C15	Hydrocarbons	EPA 418.1	*	0.3		1		mg/L
D08	octaCDD	EPA 8290	*	*		See Labdata		ng/L
D21	2,3,7,8-tetra CDD	EPA 8290	*	*		See Labdata		ng/L
D22	1,2,3,7,8-pentaCDD	EPA 8290	*	*		See Labdata		ng/L
D24	1,2,3,4,7,8-HexaCDD	EPA 8290	*	*		See Labdata		ng/L
D25	1,2,3,6,7,8-HexaCDD	EPA 8290	*	*		See Labdata		ng/L
D26	1,2,3,7,8,9-HexaCDD	EPA 8290	*	*		See Labdata		ng/L
D27	1,2,3,4,6,7,8-HeptaCDD	EPA 8290	*	*		See Labdata		ng/L
F08	octaCDF	EPA 8290	*	*		See Labdata		ng/L
F16	2,3,7,8-Tetra CDF	EPA 8290	*	*		See Labdata		ng/L
F17	1,2,3,7,8-PentaCDF	EPA 8290	*	*		See Labdata		ng/L
F18	2,3,4,7,8-PentaCDF	EPA 8290	*	*		See Labdata		ng/L
F19	1,2,3,4,7,8-HexaCDF	EPA 8290	*	*		See Labdata		ng/L
F20	1,2,3,6,7,8-HexaCDF	EPA 8290	*	*		See Labdata		ng/L
F21	2,3,4,6,7,8-HexaCDF	EPA 8290	*	*		See Labdata		ng/L
F22	1,2,3,7,8,9-HexaCDF	EPA 8290	*	*		See Labdata		ng/L
F23	1,2,3,4,6,7,8-HeptaCDF	EPA 8290	*	*		See Labdata		ng/L
F24	1,2,3,4,7,8,9-HeptaCDF	EPA 8290	*	*		See Labdata		ng/L

** Not applicable

** Determined by calculation

EXHIBIT I-5 TO CITY OF LOS ANGELES' RESPONSE TO DISCOVERY ORDER