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# REPORTS

DATE:

2001 - 2000

CERTIFIED MAIL 7000 1670 0012 7260 9259

July 19, 2001

Mr. William E. Freeman  
Navajo Environmental Protection Agency  
P. O. Box 1999  
Shiprock, New Mexico 87420

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JUL 23 2001

ENVIRONMENTAL BUREAU  
OIL CONSERVATION DIVISION

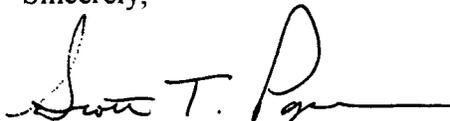
**RE: Bisti Flare Pit #1 Annual Report**

Dear Mr. Freeman:

El Paso Field Services (EPFS) hereby submits the annual report for the Bisti Flare Pit #1. The annual report includes all work in 2000 as well as the excavation and other site work completed during the first and second quarter of 2001. Volume 1 contains a summary of all work conducted at the site during 2000, and first and second quarter 2001. Volume 2 contains the PSC report, which details the excavation and backfilling work.

Should you have any questions or comments regarding the enclosed reports, please feel free to contact me at (505) 599-2124.

Sincerely,



Scott T. Pope, P.G.  
Senior Environmental Scientist

Attachments: as stated

c.c. Mr. James Walker; USEPA, Farmington - w / enclosures; Certified Mail # 7000 1670 0012 7260 9273  
Mr. Denny Foust; NMOCD, Aztec - w / enclosures; Certified Mail # 7000 1670 0012 7260 9242  
Mr. Bill Olson; NMOCD, Santa Fe - w / enclosures; Certified Mail # 7000 1670 0012 7260 9266  
NNEPA - File

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ENVIRONMENTAL BUREAU  
OIL CONSERVATION DIVISION

**ANNUAL REPORT  
BISTI FLARE PIT #1  
SAN JUAN COUNTY, NEW MEXICO**

**Prepared for  
El Paso Corporation  
GeoAnalysis Project # 01-900  
July 2001**

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## **1.0 INTRODUCTION**

### **1.1 PURPOSE OF REPORT**

At the request of El Paso Corporation (El Paso), GeoAnalysis, Inc. (GeoAnalysis) has prepared the following annual report for the Bisti Flare Pit #1 Meter Code LD-267 site. Hydrologic Consultants, Inc. of Colorado (HCI) produced an annual report in March 2000 for the site that summarized all of the previous work that had occurred and provided recommendations for remediation of the pit and ground water. This annual report will not duplicate the background discussion of the site, and the reader is directed to that report for a summary of all activities that occurred at the site up to the date of the report. The current annual report will describe activities that occurred at the site from March 2000 until May 31, 2001. For ease of reference, Figure 1 shows the location of the Bisti Flare Pit. Figure 2 shows the locations of the former flare pit and the monitoring wells.

### **1.2 SUMMARY OF ACTIVITIES SINCE THE LAST ANNUAL REPORT**

Since the production of the last annual report the following activities have occurred at the site:

- Water sampling of select wells in March 2000,
- Water sampling of select wells in October 2000,
- Installation and water sampling of three wells in December 2000,
- Measurement of water levels in all wells in March 2001,
- Excavation and removal of approximately 6,000 cubic yards of hydrocarbon impacted soil from the former flare pit and subsequent backfilling in March 2001,
- Water sampling of select wells in April 2001, and
- Installation and water sampling of two additional monitoring wells in May 2001.

A description and results of each of these activities will be provided in this report.

## **2.0 SITE INVESTIGATIONS**

### **2.1 WATER-QUALITY SAMPLING IN YEAR 2000**

Based upon the analysis of water-quality trends that was presented in the 2000 Annual Report (HCI, 2000) a number of monitoring wells were selected for sampling on a semi-annual basis. These wells are located north, east, southeast, and south of the pit for the purpose of monitoring water quality trends away from the pit. The goal was not to monitor wells that were known to have relatively high concentrations of benzene, toluene, ethylbenzene, and total xylenes (BTEX) close to the pit. The wells selected for monitoring included: PZ-8, PZ-9, PZ-16, PZ-21, PZ-22, PZ-23, PZ-26, and PZ-29 (Figure 2). Water samples were collected from these wells on March 20, 2000 and on October 25, 2000. These time periods were selected as they represent ground-water elevations at the end of winter prior to irrigation on adjacent agricultural land, and at the end of the summer coinciding with the end of irrigation. The samples are analyzed for BTEX, nitrates, and sulfates. The results of the analyses are tabulated in Table 1 and the data packages are contained in Appendix A.

### **2.2 DECEMBER 2000 SITE INVESTIGATION**

In order to assess the lateral extent of BTEX in perched ground water that is encountered at the site, two standard-type monitoring wells and one temporary well were installed to the south and east of the pit (Figure 2) in December 2000. The two standard-type monitoring wells are labeled PZ-32 and PZ-33; whereas, the temporary well is designated as PZ-34 on Figure 2. A temporary well had to be installed at the location of PZ-34 because it is located in an agricultural field that is owned by Navajo Agricultural Products Industry, and they did not want a permanent well in the field. Temporary well PZ-34 was constructed with 15 feet of screen and a riser pipe. The annulus around the screen was sandpacked and 2.5 feet of bentonite chips were placed above the sandpack. The remainder of the borehole was backfilled with soil. After collection of the water sample, the temporary well was abandoned in accordance with Navajo Agricultural

Products Industry construction guidelines. Geologic logs and well completion forms for these wells are contained in Appendix B. In all three borings, sandy silts or silty sands were encountered at depths of 22 to 29 feet below land surface. As discussed in the March 2000 Annual Report, the shallow ground water beneath the site is contained in a perched water-bearing zone. This zone was screened by the three new wells. The three new wells were sampled on either December 6 or December 7, 2000, and the water samples were submitted to Pinnacle Laboratory for analysis of BTEX constituents, nitrates and sulfates. The results of the analyses are listed in Table 1 and the laboratory report is contained in Appendix A. Water levels in select existing wells were also measured in December and the resulting potentiometric map for December 2000 is shown in Figure 3. Table 2 contains a tabulation of all water levels measured at the site.

### **2.3 MARCH 2001 SITE INVESTIGATION**

Three days prior to the excavation and subsequent backfilling of the flare pit, water levels were measured in all of the wells at the site. The purpose of these measurements were to collect one last round of water levels in some wells that would be destroyed during the excavation, and to establish a benchmark to measure changes in water levels that could be attributed to the closure of the pit. It was hypothesized that the pit enhanced recharge to ground water, and the measurements taken prior to closure of the pit were to establish flow conditions before closure. The water levels are tabulated in Table 2. Figure 4 is a water-level map for measurements made in March 2001.

### **2.4 APRIL/MAY 2001 SAMPLING AND INVESTIGATION**

After backfilling of the excavation (to be described below), two new monitoring wells were installed at the request of the Navajo Nation Environmental Protection Agency (NNEPA). These wells were installed to supplement wells that were removed as part of the soil excavation. The locations of the wells are shown on Figure 2. The geologic logs and well completion forms are contained in Appendix B. In the boreholes for the new wells (PZ-35 & PZ-36), the upper 15

feet of sediments consist primarily of silty sands and clays. A dense clay was encountered at a depth of approximately 15 to 16 feet. This clay continued to a depth of approximately 25 feet where very dense silty sand was encountered. A screen that is 15 feet long was placed in the bottom of each of the holes, and the wells were completed as acceptable (standard) monitoring wells. Water samples and water levels were collected from these wells. The data are tabulated in Tables 1 and 2 and the laboratory reports are contained in Appendix A.

### **3.0 SOIL REMOVAL ACTION**

The March 2000 Annual Report presented a calculation that the soil beneath the former flare pit contained at least 32,000 pounds of petroleum hydrocarbons. Based upon this analysis, El Paso determined that it would probably be more cost effect to remove the highly impacted soils that were on the sides and bottom of the former pit rather than continuing the in situ bioremediation. In October 2000, Mr. Scott Pope, El Paso's project manager, sent a letter to NNEPA stating that El Paso would remove the highly impacted soils that were adjacent to the former pit. A copy of this letter is contained in Appendix C.

A meeting was held on January 10, 2001 between representatives of El Paso, NNEPA, and the U.S. Environmental Protection Agency (USEPA) to discuss the overall project and the proposed excavation. The discussion centered on the fact that the primary purpose of the excavation was to remove the highly impacted soil (the source of hydrocarbons) so that the remaining hydrocarbons detected in perched ground water would naturally attenuate. The approach for natural attenuation that El Paso recommended followed USEPA protocols for natural attenuation of petroleum hydrocarbons. It was and still is El Paso's opinion that once the core of highly impacted soils was removed, the residual hydrocarbons in ground water would attenuate due to the elevated sulfates that have been detected in ground water. The sulfates would facilitate the degradation of hydrocarbons.

El Paso obtained approval of the proposal for soil excavation and off-site landfarming from NNEPA on January 12, 2001. Removal of the soil commenced on March 19, 2001. Prior to initiating the soil removal action, several treatment wells were abandoned by filling the casings with bentonite. Six monitoring wells were also abandoned by filling the casing with cement-

bentonite grout. The treatment wells and monitoring wells that were abandoned are listed in the report that was issued by Philip Services Corporation (PSC), the contractor who performed the soil removal. A copy of this report is contained in volume two of this annual report. The documentation provided in this section will supplement the information provided in PSC's report.

The excavation was conducted by using a 1.5 cubic yard track-mounted excavator. The soil was initially removed from beneath the former flare pit. The soil was stacked along the sides of the excavation where it was then moved by a four-cubic yard front-end loader to a stockpile. The loader then placed 18 cubic yards of impacted soils into trucks for off-site landfarming. The goal and criterion for removal of soil was to remove the highly impacted soil. The determination of highly impacted soil was based on visual as well as photoionization detector (PID) readings.

The depth of the excavation ceased at approximately 20 feet below land surface (plus or minus two feet). This depth was selected in that a claystone/siltstone unit was encountered at this depth. GeoAnalysis and representatives from the NNEPA and USEPA judged that the claystone was of sufficiently low permeability to restrict the downward movement of hydrocarbons. The representatives did not want this barrier removed. The sides of the excavation consisted primarily of silts and very fine sands.

During the excavation, no free water was encountered. The geologic evidence indicated that ground water was contained in perched zones at depths of approximately 15 to 20 feet below land surface. Seep zones in this depth range were noted only three or four days after the soil was removed. Prior to backfilling, water had pooled (less than a gallon of total volume) at the bottom of the excavation in the vicinity of former well PZ-4 (Figure 2) and near former well PZ-19. The lack of significant water indicated that the perched zone is of low transmissibility.

Visual inspection of the excavation indicated that the geologic materials on the southeast corner (Figure 1, Volume 2) of the excavation were sandier in nature than the rest of the materials contained within the excavation. Based upon visual staining of the soils, it appeared that the depth to stained soil increased away from the center of the former flare pit. This observation suggests that during its operation, the pit acted as a recharge source to the perched ground water.

Up until March 2001, significant thicknesses of free product were not noted in the monitoring wells at the site. In March 2001, when water levels were measured in all of the wells, approximately 1.5 feet of free product were noted in well PZ-19. This monitoring well was

purged of free product approximately four times between March 19 and March 22, 2001 (once each day). The initial measurement on March 19 revealed 1.5 feet of free product. Subsequent measurements on the following days were approximately 0.13 feet. On March 26, four days after the last purging, 0.5 feet of product had accumulated in the well. El Paso decided to remove the well and the soil surrounding the well by extending the excavation. The keyhole area noted on the eastern side of the excavation (Figure 1, Volume 2) is the former location of well PZ-19. Upon removal of this well, significant quantities of hydrocarbons were not noted. It is hypothesized that the thickness of free product noted in a monitoring well is not indicative of significant volumes of free product in the water-bearing zone.

Based upon the fact that the ground water was contained in a perched zone and that water resources and humans would not be exposed to the hydrocarbons remaining at the site, the USEPA and NNEPA determined that the site could be closed with residual hydrocarbon concentrations of 5,000 mg/kg. The agencies determined that the site was of low risk and that residual hydrocarbons would not present a significant threat to human health or the environment. Composite samples of the sides and bottom of the excavation were collected to determine if the hydrocarbon criterion had been achieved. As discussed in PSC's report, the residual concentrations in the composite soil samples did not exceed 5,000 mg/kg (2,072 mg/kg for bottom sample and 2,543 for the side sample); as such, the excavation was backfilled.

The excavation removed approximately 6,000 cubic yards of impacted soil. This figure is significantly greater than the 2,300 cubic yards estimated by El Paso because the thickness of impacted soil was greater than originally predicted.

#### **4.0 RESULTS OF DATA COLLECTION SINCE MARCH 2000 ANNUAL REPORT**

##### **4.1 WATER QUALITY ANALYSES**

As discussed earlier, select wells have been sampled since March 2000. Table 1 lists the wells and the analytical results for the various sampling events. Appendix D contains graphs of the BTEX concentrations measured in the wells. Based upon a visual observation of the trends of Total BTEX it appears that concentrations were increasing in PZ-8, generally decreasing in PZ-9,

an increase in PZ-21 and downward trends in PZ-22 and PZ-29. The waters from wells PZ-16 and PZ-23 were non-detectable. It is expected that concentrations will generally decline because the major source of BTEX, the former pit, has been removed. Table 1 also provides information on the analyses for nitrate and sulfate. In general, the perched water-bearing zone contains low to non-detectable concentrations of nitrate and elevated concentrations of sulfate. The nitrates that are found in several of the wells are probably due to the treatment fluids that were injected. The elevated concentrations of nitrates are generally detected in wells that contain low concentrations of hydrocarbons. Elevated concentrations (in the range of 4,000 to 5,000 mg/L) of sulfate are generally associated with low concentrations (a few parts per billion or non-detectable) of hydrocarbons. In areas where the sulfate concentrations are low (500 mg/L or less), the hydrocarbon concentrations are elevated. The sulfate will facilitate the degradation of the hydrocarbons, and the observations noted above support this hypothesis.

There is significant variability in the analysis for sulfates. This variability is attributed to differences in analytical procedures. Split samples were sent to different laboratories for analyses. One laboratory used co-precipitation and another laboratory used ion chromatography for the analysis of sulfate. Appendix E is a letter from the laboratory that explains these differences. Future analyses will probably employ ion chromatography.

#### **4.2 WATER LEVELS AND GROUND-WATER FLOW DIRECTIONS**

Table 2 is a listing of the water levels for the monitoring wells at the site. Appendix F contains the hydrographs for the various monitoring wells. As shown in Appendix F almost all of the water levels have declined significantly since the injection of the treatment fluids ceased in 1998. As discussed in the Annual Report for the year 2000 (HCI, 2000), the volume of fluid injected was approximately four times greater than the natural flow volume. Since the cessation of injection, the water levels have dropped significantly.

Figures 3 through 5 are water-level maps for December 2000, March 2001, and April/May 2001 respectively. As discussed in the previous Annual Report (HCI, 2000), the former flare pit exerted a significant influence on the ground-water flow conditions at the site as it acted as a source of recharge. Since cessation of injection and treatment in the pit, the influence of the pit

has diminished as indicated in the figures. The general ground-water flow direction is still to the south and southeast; however, in the middle of the study area there is a component of flow to the west suggesting recharge from the east. Continued monitoring of water levels over time will demonstrate the effectiveness of backfilling the former flare pit and what influence irrigation to the south of the site will have on ground-water flow directions.

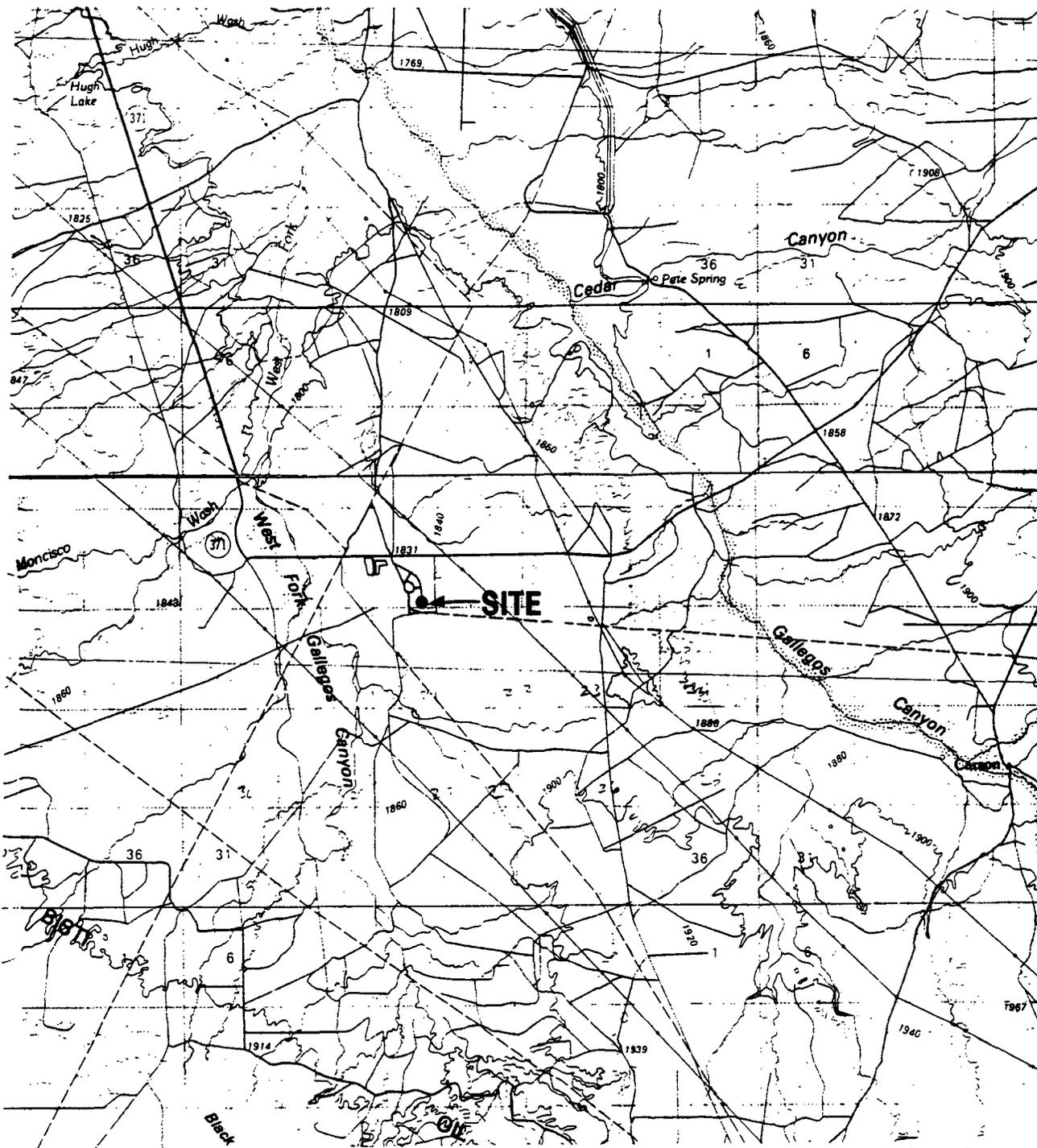
## **5.0 SUMMARY AND RECOMMENDATIONS**

The field investigations and observations made during the excavation of the former flare pit, demonstrate that the ground water encountered at the site is perched, and that soils beneath the perched zones are of low hydraulic conductivity and are relatively dry. Given the isolation of the site and the fact that the former flare pit has been removed, backfilled, and covered, the site presents a low risk to the quality of regional ground water and to humans and the environment. Water quality will continue to be monitored twice per year in the seven wells that have been monitored in the past (PZ-8 was abandoned due to the excavation of the pit) and in the four new wells (PZ-32, PZ-33, PZ-35, and PZ-36). It is expected that concentrations of BTEX will decline over time due to natural attenuation. Water levels are recommended to be measured in all wells when water samples are collected in the select wells.

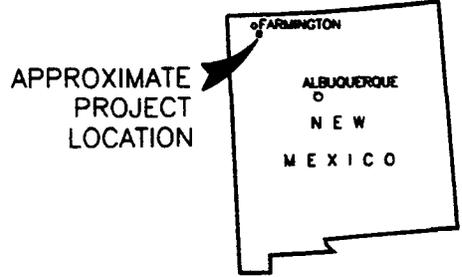
Because the site presents a low risk, negotiations with regulatory agencies are recommended to be initiated so that final closure criteria, based upon risk, can be determined.

## **6.0 REFERENCES**

Hydrologic Consultants, Inc. of Colorado, 2000, Annual Report Bisti Flares Pit #1, San Juan County, New Mexico, 15p.



VICINITY MAP

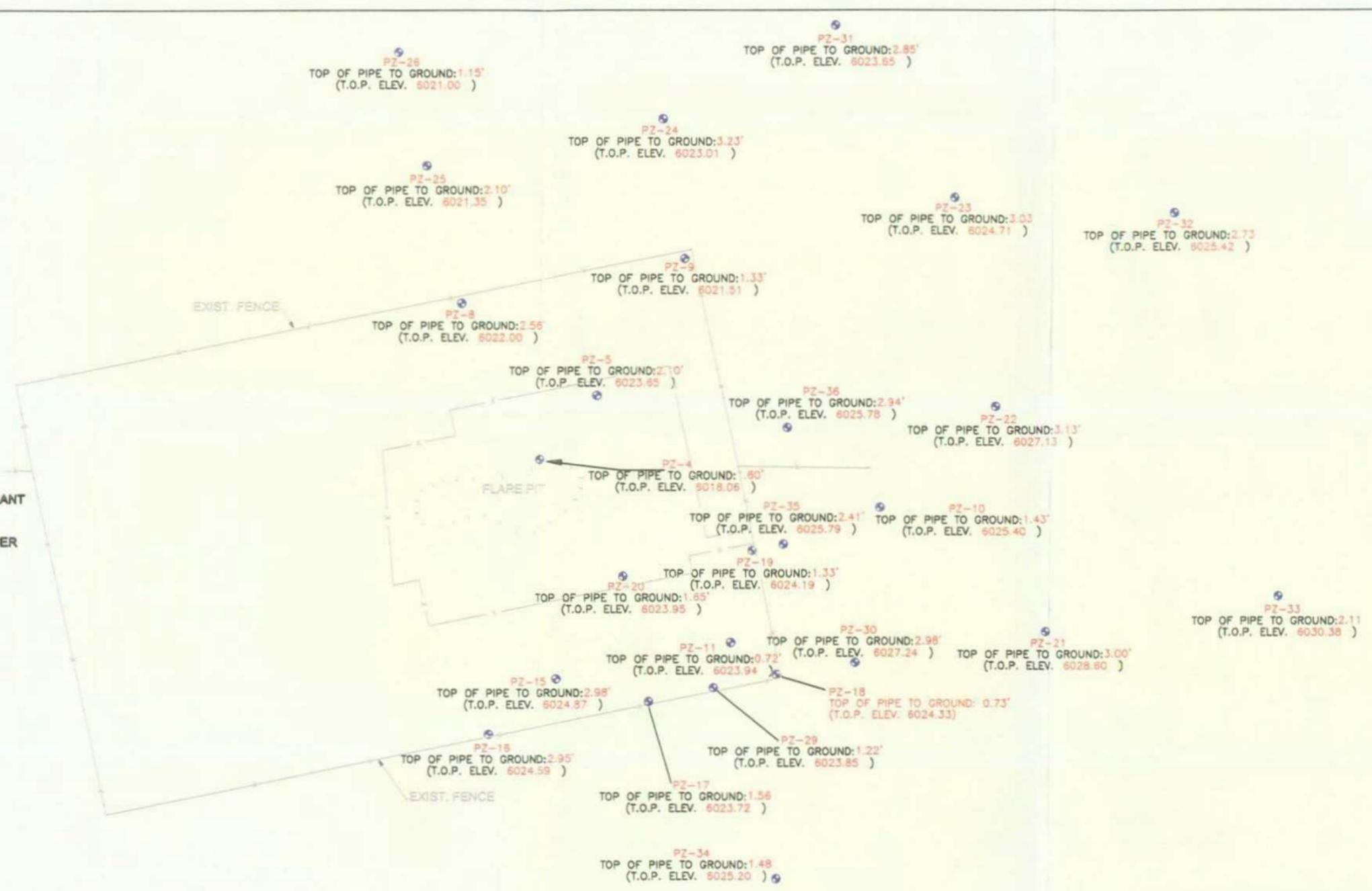
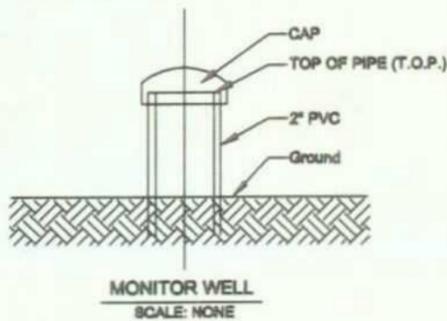


**EL PASO**  
**FIELD SERVICES**

Drawing: Fig1_site	Bisti Gathering System - San Juan County, New Mexico	Figure
Drawn By: RJS	<b>Site Location</b>	1
Date: 07-01		

**NOTE:**

- 1.) BASIS OF BEARING: SOUTH FENCE LINE OF CHACO PLANT ASSUMED WEST
- 2.) BASIS OF ELEVATION: BENCH MARK AT THE SW CORNER OF PLANT SITE  
ELEV. = 8013.9

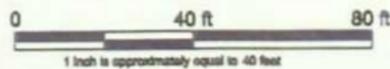


**EL PASO  
FIELD SERVICES**

**Legend**

Well Location  
PZ-34  
TOP OF PIPE TO GROUND: 1.48'  
(T.O.P. ELEV. 8025.20 )

Well Location



**Bisti Gathering System  
San Juan County, New Mexico**

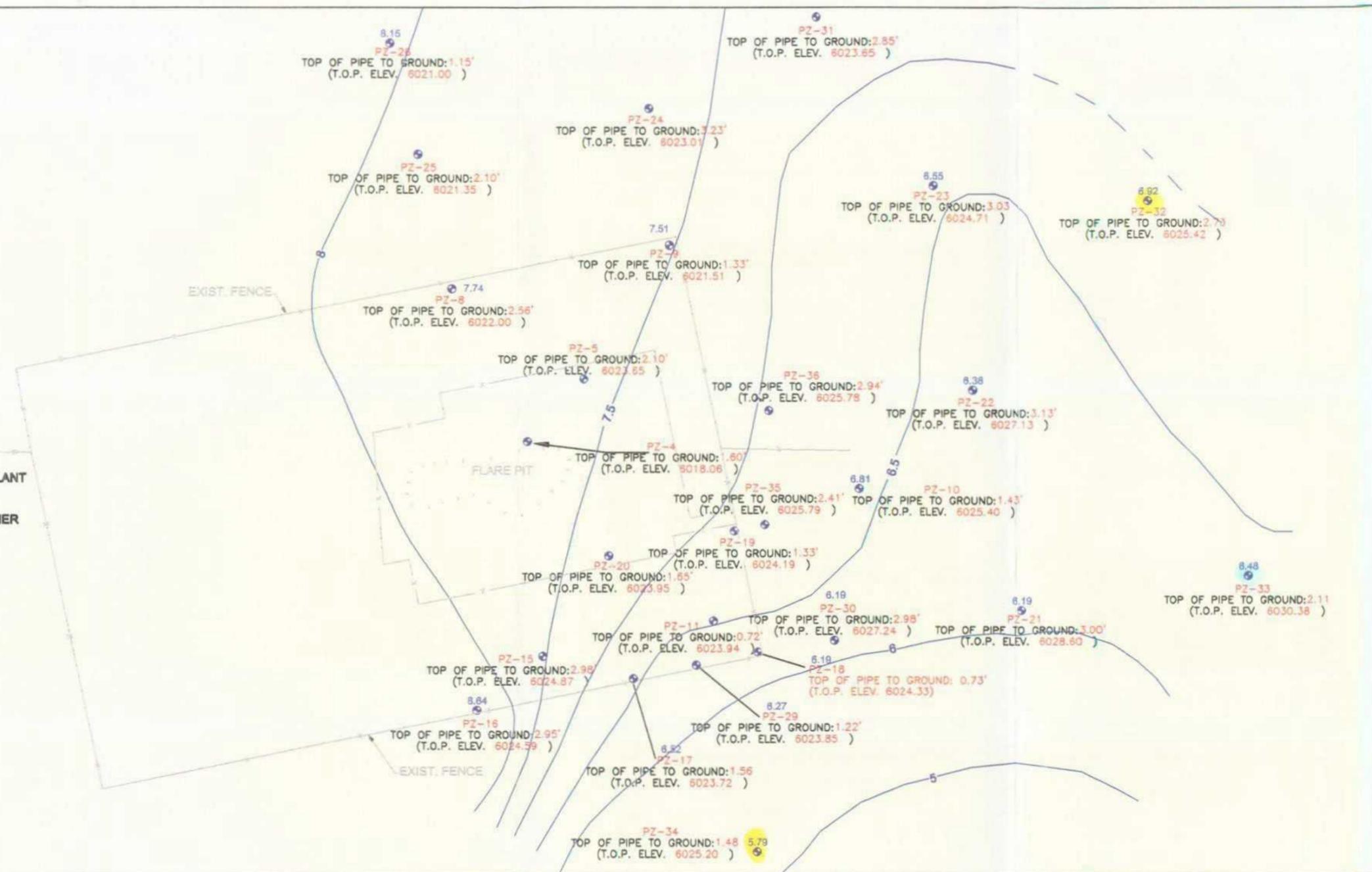
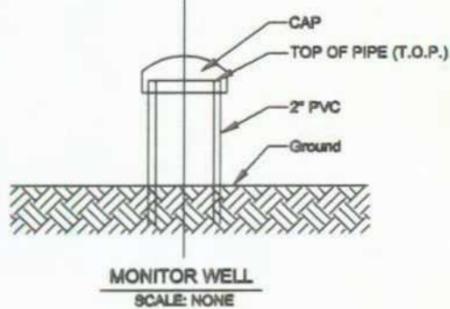
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RJS  
Date:  
06-01

Location of  
Monitoring Wells  
and  
Piezometers

Figure  
2

**NOTE:**

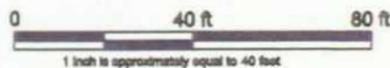
- 1.) BASIS OF BEARING: SOUTH FENCE LINE OF CHACO PLANT ASSUMED WEST
- 2.) BASIS OF ELEVATION: BENCH MARK AT THE SW CORNER OF PLANT SITE ELEV. = 8013.9



**EL PASO  
FIELD SERVICES**

**Legend**

- 5.79  
TOP OF PIPE TO GROUND: 1.48  
(T.O.P. ELEV. 8025.20 )  
Measured Water Level (ft above 6,000 ft-msl)  
Well Location
- Water Level Contour (ft above 6,000 ft-msl)  
(dashed where inferred)

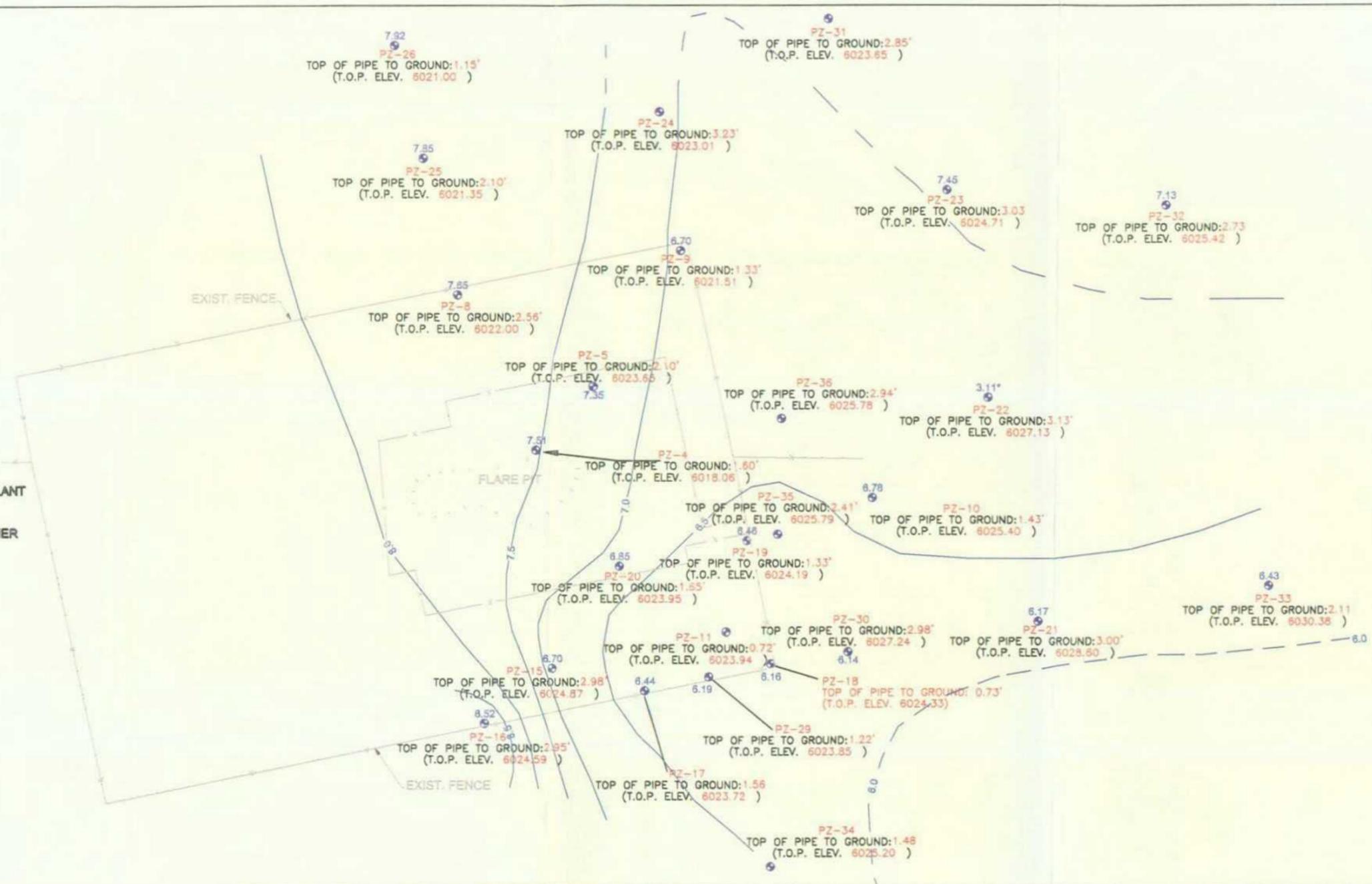
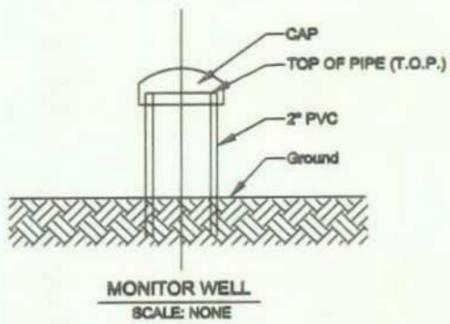


**Bisti Gathering Pit  
San Juan County, New Mexico**

Drawing Name: fig3_2000-12_watlev	<b>Measured Water Levels with Associated Contours from December 2000</b>	<b>Figure 3</b>
Drawn By: RJS		
Date: 08-01		

**NOTE:**

- 1.) BASIS OF BEARING: SOUTH FENCE LINE OF CHACO PLANT ASSUMED WEST
- 2.) BASIS OF ELEVATION: BENCH MARK AT THE SW CORNER OF PLANT SITE  
ELEV. = 8013.9



**EL PASO  
FIELD SERVICES**



**Legend**



Measured Water Level (ft above 6,000 ft-msl)  
(\* indicates an anomalous reading that was ignored for contouring)  
Well Location



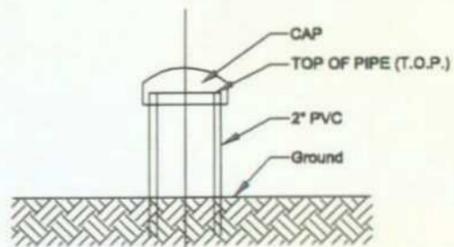
Water Level Contour (ft above 6,000 ft-msl)  
(dashed where inferred)

**Bisti Gathering System  
San Juan County, New Mexico**

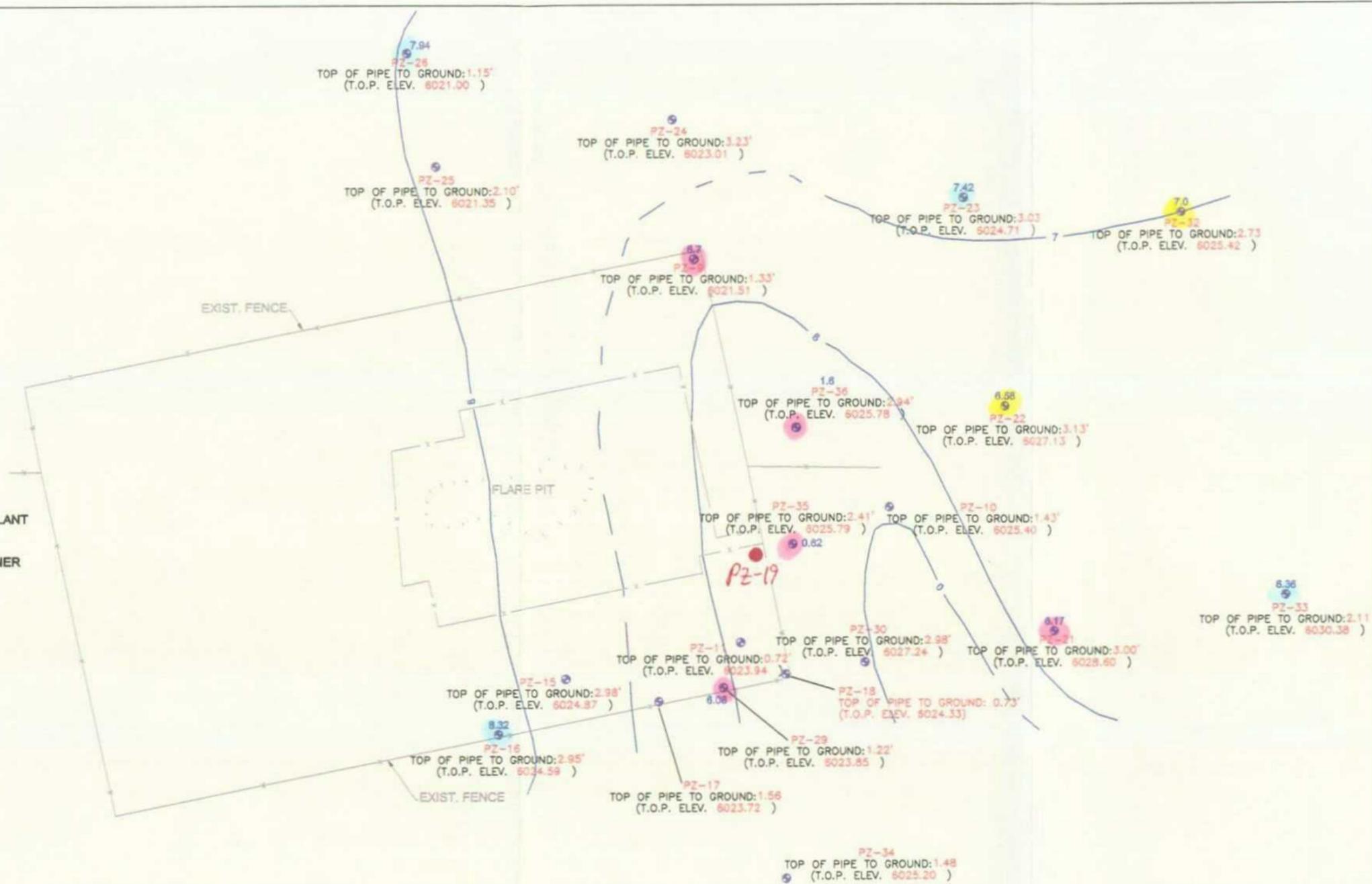
Drawing Name: fig4_2001-3_watlev	Measured Water Levels with Associated Contours from March 2001	Figure 4
Drawn By: RJS		
Date: 08-01		

**NOTE:**

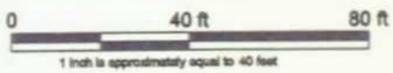
- 1.) BASIS OF BEARING: SOUTH FENCE LINE OF CHACO PLANT ASSUMED WEST
- 2.) BASIS OF ELEVATION: BENCH MARK AT THE SW CORNER OF PLANT SITE ELEV. = 8013.9



MONITOR WELL  
SCALE: NONE



**EL PASO  
FIELD SERVICES**



**Legend**

- Measured Water Level (ft above 6,000 ft-msl)
- Well Location
- Water Level Contour (ft above 6,000 ft-msl) (dashed where inferred)

**Bisti Gathering System  
San Juan County, New Mexico**

Drawing Name: fig5_2001-04_watlev	<b>Measured Water Levels with Associated Contours from April &amp; May 2001</b>	<b>Figure 5</b>
Drawn By: RJS		
Date: 08-01		

**Table 1. Water Quality Analyses**

Date Sampled	Well #	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	Total Nitrate	Sulfate
10/7/96	PZ-8	18000	10700	550	3600	32850	ND	20.6
6/16/97	PZ-8	20400	13000	462	4040	37902	NM	NM
7/16/97	PZ-8	20800	9660	536	3640	34636	ND	ND
8/18/97	PZ-8	20400	15300	502	4260	40462	NM	NM
9/19/97	PZ-8	20300	13700	546	4310	38856	ND	2.9
10/16/97	PZ-8	22300	15200	572	4700	42772	NM	NM
11/17/97	PZ-8	22100	15100	519	4280	41999	NM	NM
12/16/97	PZ-8	23000	16100	555	4680	44335	NM	NM
1/19/98	PZ-8	19100	14600	470	4140	38310	ND	1.1
3/3/98	PZ-8	21900	14600	563	4850	41913	NM	NM
4/1/98	PZ-8	21900	16100	550	4780	43330	NM	NM
5/7/98	PZ-8	23900	15900	561	5010	45371	NM	NM
6/2/98	PZ-8	22500	16000	548	4840	43888	NM	NM
7/6/98	PZ-8	22500	16200	493	4610	43803	ND	ND
10/9/98	PZ-8	20800	14300	402	3650	39152	NM	NM
3/23/99	PZ-8	21000	15000	470	4570	41040	NM	NM
10/19/99	PZ-8	23000	16000	380	4600	43980	NM	NM
3/15/00	PZ-8	27000	16000	520	5400	48920	ND	ND
10/25/00	PZ-8	15000	6900	650	17	22567	ND	41

Date Sampled	Well #	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	Total Nitrate	Sulfate
10/7/96	PZ-9	11900	15700	400	5500	33500	ND	32
6/16/97	PZ-9	8610	10500	193	5310	24613	NM	NM
7/16/97	PZ-9	8620	11000	250	5900	25770	ND	ND
8/18/97	PZ-9	9710	11000	183	4980	25873	NM	NM
9/19/97	PZ-9	8580	9420	1	5570	23571	ND	ND
10/16/97	PZ-9	9970	11700	156	6220	28046	NM	NM
11/17/97	PZ-9	8960	10100	41	3740	22841	NM	NM
12/16/97	PZ-9	7890	8100	33.6	2520	18544	NM	NM
1/19/98	PZ-9	4170	6490	22.1	2240	12922	ND	0.7
3/3/98	PZ-9	8200	8760	103	3020	20083	NM	NM
4/1/98	PZ-9	9860	11600	160	4150	25770	NM	NM
5/7/98	PZ-9	10800	13600	185	4340	28925	NM	NM
6/2/98	PZ-9	10200	12500	224	4290	27214	NM	NM
7/6/98	PZ-9	9710	11400	188	4080	25378	ND	ND
10/9/98	PZ-9	8980	9740	120	4170	23010	NM	NM
3/23/99	PZ-9	4530	4940	42.6	2340	11853	NM	NM
10/19/99	PZ-9	3200	4300	310	2900	10710	NM	NM
3/15/00	PZ-9	8300	7300	330	3400	19330	ND	ND
10/25/00	PZ-9	2500	3300	150	2000	7950	ND	17
4/9/01	PZ-9	6000	4700	150	1800	12650	0.34	ND

NM - Not Measured  
 ND - Not Detected

BTEX constituent concentrations reported in micrograms per liter (ppb)  
 Sulfate and nitrate concentrations reported in milligrams per liter (ppm)

**Table 1. Water Quality Analyses**

Date Sampled	Well #	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	Total Nitrate	Sulfate
6/18/97	PZ-16	1	1	1	3	6	52.7	450
7/16/97	PZ-16	1	1	1	3	6	37.6	437
8/18/97	PZ-16	1	1	1	3	6	NM	NM
9/19/97	PZ-16	1	1	1	3	6	42.6	456
10/16/97	PZ-16	1	1	1	3	6	NM	NM
11/17/97	PZ-16	1	1	1	3	6	NM	NM
12/16/97	PZ-16	1	1	1	3	6	NM	NM
1/19/98	PZ-16	1	1	1	3	6	52	440
3/3/98	PZ-16	1	1	1	3	6	NM	NM
4/1/98	PZ-16	1	1	1	3	6	NM	NM
5/7/98	PZ-16	1	1	1	3	6	NM	NM
6/2/98	PZ-16	1	1	1	3	6	NM	NM
7/6/98	PZ-16	1	1	1	3	6	52.9	449
10/9/98	PZ-16	1	1	1	3	6	NM	NM
3/23/99	PZ-16	1	1	1	3	6	NM	NM
10/19/99	PZ-16	0.5	0.5	0.5	0.5	2	NM	NM
3/15/00	PZ-16	ND	ND	ND	ND	ND	57	550
10/25/00	PZ-16	0.8	0.7	ND	0.7	ND	2	1960
4/9/01	PZ-16	ND	ND	ND	ND	ND	57	430

Date Sampled	Well #	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	Total Nitrate	Sulfate
4/21/97	PZ-21	1	1	1	3	6	22.3	3780
6/16/97	PZ-21	1	1	1	3	6	NM	NM
7/15/97	PZ-21	1	1	1	3	6	27.5	4420
8/18/97	PZ-21	1	1	1	3	6	NM	NM
9/19/97	PZ-21	1	1	1	3	6	25.3	4270
10/16/97	PZ-21	1	1	1	3	6	NM	NM
11/17/97	PZ-21	1.34	1	1	3	6	NM	NM
12/16/97	PZ-21	3.39	1	1	3	8	NM	NM
1/19/98	PZ-21	5.04	1	1	3	10	21.2	4332
3/3/98	PZ-21	9.06	1	1	3	14	NM	NM
4/1/98	PZ-21	11.3	1	1	3	16	NM	NM
5/7/98	PZ-21	15.4	1	1	3	20	NM	NM
6/2/98	PZ-21	21	1	1	3	26	NM	NM
7/6/98	PZ-21	20.7	1	1	3	26	15.9	4674
10/9/98	PZ-21	49.4	1	1	3	54	NM	NM
3/23/99	PZ-21	34.1	1	1	3	39	NM	NM
10/19/99	PZ-21	48	1.9	0.5	2.6	53	NM	NM
3/15/00	PZ-21	39	ND	ND	ND	39	0.6	5400
10/25/00	PZ-21	55	0.7	ND	0.6	56	0.2	76.7
4/9/01	PZ-21	49	ND	ND	1.4	50	0.68	5160

NM - Not Measured  
 ND - Not Detected

BTEX constituent concentrations reported in micrograms per liter (ppb)  
 Sulfate and nitrate concentrations reported in milligrams per liter (ppm)

**Table 1. Water Quality Analyses**

Date Sampled	Well #	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	Total Nitrate	Sulfate
4/23/97	PZ-22	361	1	4.11	28.4	408	ND	4040
5/20/97	PZ-22	156	1	1.12	13.1	171	NM	NM
5/30/97	PZ-22	180	1	3.05	27.7	212	NM	NM
6/15/97	PZ-22	374	1.34	4.25	26.1	406	NM	NM
7/15/97	PZ-22	299	2	3.24	33.9	338	ND	4570
8/18/97	PZ-22	152	1	1.82	30.9	186	NM	NM
9/19/97	PZ-22	105	1.19	2.66	56	165	ND	4780
10/16/97	PZ-22	80.3	0.62	6.03	54	141	NM	NM
11/17/97	PZ-22	120	1	1.88	12.5	135	NM	NM
12/16/97	PZ-22	168	1	1.71	10.6	181	NM	NM
1/19/98	PZ-22	79.7	1	1	7.96	90	ND	4410
3/3/98	PZ-22	65.8	1	1	3.9	72	NM	NM
4/1/98	PZ-22	56	1	1	3	61	NM	NM
5/7/98	PZ-22	35.4	1	1	3	40	NM	NM
6/2/98	PZ-22	24.1	1	1	3	29	NM	NM
7/6/98	PZ-22	61.5	1	1	3	67	2.4	4396
10/9/98	PZ-22	1	1	1	3	6	NM	NM
3/23/99	PZ-22	1	1	1	3	6	NM	NM
10/19/99	PZ-22	1.9	0.5	0.5	4.2	7	NM	NM
3/15/00	PZ-22	ND	ND	ND	ND	ND	20	3800
10/25/00	PZ-22	0.6	0.7	ND	0.5	1.8	1.2	67
4/9/01	PZ-22	0.7	ND	ND	ND	0.7	5.4	3840

Date Sampled	Well #	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	Total Nitrate	Sulfate
4/23/97	PZ-23	1	1	1	3	6	1.2	167
5/20/97	PZ-23	1	1	1	3	6	37.4	4740
6/15/97	PZ-23	1	1	1	3	6	NM	NM
7/15/97	PZ-23	1	1	1	3	6	37.3	4450
8/18/97	PZ-23	1	1	1	3	6	NM	NM
9/19/97	PZ-23	1	1	1	3	6	42.6	4080
10/16/97	PZ-23	1	1	1	3	6	NM	NM
11/17/97	PZ-23	1	1	1	3	6	NM	NM
12/16/97	PZ-23	1	1	1	3	6	NM	NM
1/19/98	PZ-23	1	1	1	3	6	41	3888
3/3/98	PZ-23	1	1	1	3	6	NM	NM
4/1/98	PZ-23	1	1	1	3	6	NM	NM
5/7/98	PZ-23	1	1	1	3	6	NM	NM
6/2/98	PZ-23	1	1	1	3.29	6	NM	NM
7/6/98	PZ-23	1	1	1	3	6	44.9	3640
10/9/98	PZ-23	1	1	1	3	6	NM	NM
3/23/99	PZ-23	1	1	1	3	6	NM	NM
10/19/99	PZ-23	0.9	0.5	0.5	2.6	5	NM	NM
3/15/00	PZ-23	ND	ND	ND	ND	ND	34	3700
10/25/00	PZ-23	ND	ND	ND	ND	ND	8.4	162
4/9/01	PZ-23	ND	ND	ND	ND	ND	38	3220

NM - Not Measured  
 ND - Not Detected

BTEX constituent concentrations reported in micrograms per liter (ppb)  
 Sulfate and nitrate concentrations reported in milligrams per liter (ppm)

**Table 1. Water Quality Analyses**

Date Sampled	Well #	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	Total Nitrate	Sulfate
4/21/97	PZ-26	1	1	1	3	6	55.8	5190
6/15/97	PZ-26	1	1	1	3	6	NM	NM
7/15/97	PZ-26	1	1	1	3	6	127	4690
8/18/97	PZ-26	1	1	1	3	6	NM	NM
9/19/97	PZ-26	1	1	1	3	6	137	4770
10/16/97	PZ-26	1	1	1	3	6	NM	NM
11/17/97	PZ-26	1	1	1	3	6	NM	NM
12/16/97	PZ-26	1	1	1	3	6	NM	NM
1/19/98	PZ-26	1	1	1	3	6	160	4804
3/3/98	PZ-26	1	1	1	3	6	NM	NM
4/1/98	PZ-26	1	1	1	3	6	NM	NM
5/7/98	PZ-26	1	1	1	3	6	NM	NM
6/2/98	PZ-26	1	1	1	3	6	NM	NM
7/6/98	PZ-26	1	1	1	3	6	228	4629
10/9/98	PZ-26	1	1	1	3	6	NM	NM
3/23/99	PZ-26	1	1	1	3	6	NM	NM
10/19/99	PZ-26	<0.5	<0.5	<0.5	<0.5	<2.0	NM	NM
3/15/00	PZ-26	1.6	2.8	ND	3.1	7.5	120	5200
10/25/00	PZ-26	ND	ND	ND	ND	ND	2.2	124
4/9/01	PZ-26	ND	ND	ND	ND	ND	62	4400

Date Sampled	Well #	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	Total Nitrate	Sulfate
5/20/97	PZ-29	8790	4600	318	2560	16268	ND	188
6/16/97	PZ-29	11900	6630	335	2820	21685	NM	NM
7/16/97	PZ-29	9630	7620	210	2940	20400	ND	34
8/18/97	PZ-29	15300	14600	429	4780	35109	NM	NM
9/19/97	PZ-29	13500	13100	396	4760	31756	ND	9.8
10/16/97	PZ-29	14800	14800	554	5040	35194	NM	NM
11/17/97	PZ-29	14700	14800	497	4680	34677	NM	NM
12/16/97	PZ-29	16100	15400	550	5170	37220	NM	NM
1/19/98	PZ-29	14700	13800	515	4670	33685	ND	ND
3/3/98	PZ-29	15200	14000	468	5020	34688	NM	NM
4/1/98	PZ-29	15100	13300	485	4930	33815	NM	NM
5/7/98	PZ-29	15600	13500	460	4820	34380	NM	NM
6/2/98	PZ-29	14900	14100	484	4780	34264	NM	NM
7/6/98	PZ-29	14900	12700	484	4830	32914	ND	ND
10/9/98	PZ-29	13300	10800	508	4530	29138	NM	NM
3/23/99	PZ-29	11000	6980	454	4000	22434	NM	NM
10/19/99	PZ-29	7500	2400	440	2600	12940	NM	NM
3/15/00	PZ-29	15000	9200	700	5700	30600	ND	15
10/25/00	PZ-29	5000	2300	350	1800	9450	0.05	322
4/9/01	PZ-29	8200	2300	330	2200	13030	ND	6.3

NM - Not Measured  
 ND - Not Detected

BTEX constituent concentrations reported in micrograms per liter (ppb)  
 Sulfate and nitrate concentrations reported in milligrams per liter (ppm)

**Table 1. Water Quality Analyses**

Date Sampled	Well #	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	Total Nitrate	Sulfate
12/7/00	PZ-32	2	1.1	1.4	3.5	8	10	4000
4/9/01	PZ-32	1.3	0.5	0.5	2.4	5	12	3020

Date Sampled	Well #	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	Total Nitrate	Sulfate
12/7/00	PZ-33	ND	ND	ND	ND	ND	18	4200
4/9/01	PZ-33	ND	ND	ND	ND	ND	13	5510

Date Sampled	Well #	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	Total Nitrate	Sulfate
12/7/00	PZ-34	7.6	ND	ND	ND	8	NM	NM

Date Sampled	Well #	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	Total Nitrate	Sulfate
5/1/01	PZ-35	19000	12000	800	6500	38300	0.34	100

Date Sampled	Well #	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	Total Nitrate	Sulfate
5/1/01	PZ-36	18000	16000	630	5300	39930	0.23	540

NM - Not Measured  
 ND - Not Detected

BTEX constituent concentrations reported in micrograms per liter (ppb)  
 Sulfate and nitrate concentrations reported in milligrams per liter (ppm)

Table 2. Ground-Water Elevation Data

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-04	06/15/97	1118	6018.06	7.16	7.16	0.00	6010.90
PZ-04	07/15/97	NM	6018.06	7.91	7.91	0.00	6010.15
PZ-04	08/18/97	NM	6018.06	7.23	7.23	0.00	6010.83
PZ-04	09/19/97	1734	6018.06	7.15	7.15	0.00	6010.91
PZ-04	10/16/97	1421	6018.06	7.58	7.58	0.00	6010.48
PZ-04	11/17/97	1450	6018.06	8.31	8.31	0.00	6009.75
PZ-04	12/16/97	1515	6018.06	8.60	8.60	0.00	6009.46
PZ-04	01/19/98	1715	6018.06	8.65	8.65	0.00	6009.41
PZ-04	03/03/98	1715	6018.06	8.89	8.89	0.00	6009.17
PZ-04	04/01/98	1456	6018.06	8.91	8.91	0.00	6009.15
PZ-04	05/07/98	1532	6018.06	8.92	8.92	0.00	6009.14
PZ-04	06/02/98	NM	6018.06	8.97	8.97	NM	6009.09
PZ-04	07/06/98	NM	6018.06	8.97	8.97	NM	6009.09
PZ-04	10/09/98	NM	6018.06	NM	NM	NM	NM
PZ-04	03/23/99	NM	6018.06	9.38	9.38	NM	6008.68
PZ-04	03/16/01	NM	6018.06	10.55	10.55	0.00	6007.51

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-05	05/03/97	NM	6023.65	15.65	15.65	0.00	6008.00
PZ-05	06/15/97	NM	6023.65	15.34	15.34	0.00	6008.31
PZ-05	07/15/97	1122	6023.65	15.32	15.32	0.00	6008.33
PZ-05	08/18/97	NM	6023.65	15.15	15.15	0.00	6008.50
PZ-05	09/19/97	1744	6023.65	14.97	14.97	0.00	6008.68
PZ-05	10/16/97	1430	6023.65	14.97	14.97	0.00	6008.68
PZ-05	11/17/97	1350	6023.65	15.11	15.11	0.00	6008.54
PZ-05	12/16/97	1417	6023.65	15.20	15.20	0.00	6008.45
PZ-05	01/19/98	1610	6023.65	15.18	15.18	0.00	6008.47
PZ-05	03/03/98	1600	6023.65	15.21	15.21	0.00	6008.44
PZ-05	04/01/98	1410	6023.65	15.18	15.18	0.00	6008.47
PZ-05	05/07/98	1440	6023.65	15.17	15.17	0.00	6008.48
PZ-05	06/02/98	1515	6023.65	15.30	15.30	0.00	6008.35
PZ-05	07/06/98	1222	6023.65	15.42	15.42	NM	6008.23
PZ-05	10/09/98	NM	6023.65	NM	NM	NM	NM
PZ-05	03/23/99	NM	6023.65	15.71	15.71	NM	6007.94
PZ-05	03/16/01	NM	6023.65	16.3	16.3	NM	6007.35

Table 2. Ground-Water Elevation Data

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-08	05/03/97	11:16	6022	14.15	14.15	0.00	6007.85
PZ-08	06/15/97	NM	6022	13.97	13.97	0.00	6008.03
PZ-08	07/15/97	1124	6022	13.86	13.86	0.00	6008.14
PZ-08	08/18/97	NM	6022	13.66	13.66	0.00	6008.34
PZ-08	09/19/97	1751	6022	13.47	13.47	0.00	6008.53
PZ-08	10/16/97	1438	6022	13.54	13.54	0.00	6008.46
PZ-08	11/17/97	1400	6022	13.53	13.53	0.00	6008.47
PZ-08	12/16/97	1422	6022	13.57	13.57	0.00	6008.43
PZ-08	01/19/98	1615	6022	13.39	13.39	0.00	6008.61
PZ-08	03/03/98	1604	6022	13.38	13.38	0.00	6008.62
PZ-08	04/01/98	1415	6022	13.37	13.37	0.00	6008.63
PZ-08	05/07/98	1447	6022	13.38	13.38	0.00	6008.62
PZ-08	06/02/98	1518	6022	13.44	13.44	NM	6008.56
PZ-08	07/06/98	1227	6022	13.50	13.50	NM	6008.50
PZ-08	10/09/98	NM	6022	NM	NM	NM	NM
PZ-08	03/23/99	NM	6022	13.85	13.85	NM	6008.15
PZ-08	10/19/99	NM	6022	13.99	13.99	NM	6008.01
PZ-08	03/14/00	NM	6022	14.15	14.15	NM	6007.85
PZ-08	10/25/00	NM	6022	14.06	14.16	NM	6007.84
PZ-08	12/07/00	NM	6022	14.26	14.26	NM	6007.74
PZ-08	03/16/01	NM	6022	14.35	14.35	NM	6007.65

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-09	05/03/97	11:13	6021.51	13.88	13.88	0.00	6007.63
PZ-09	06/15/97	NM	6021.51	13.66	13.66	0.00	6007.85
PZ-09	07/15/97	1126	6021.51	13.61	13.61	0.00	6007.90
PZ-09	08/18/97	NM	6021.51	13.43	13.43	0.00	6008.08
PZ-09	09/19/97	1802	6021.51	13.29	13.29	0.00	6008.22
PZ-09	10/16/97	1445	6021.51	13.38	13.38	0.00	6008.13
PZ-09	11/17/97	1405	6021.51	13.34	13.34	0.00	6008.17
PZ-09	12/16/97	1427	6021.51	13.37	13.37	0.00	6008.14
PZ-09	01/19/98	1625	6021.51	13.23	13.23	0.00	6008.28
PZ-09	03/03/98	1610	6021.51	13.25	13.25	0.00	6008.26
PZ-09	04/01/98	1420	6021.51	13.27	13.27	0.00	6008.24
PZ-09	05/07/98	1453	6021.51	13.37	13.37	0.00	6008.14
PZ-09	06/02/98	1521	6021.51	13.45	13.45	NM	6008.06
PZ-09	07/06/98	1232	6021.51	13.50	13.50	NM	6008.01
PZ-09	10/09/98	NM	6021.51	NM	NM	NM	NM
PZ-09	03/23/99	NM	6021.51	13.72	13.72	NM	6007.79
PZ-09	10/19/99	NM	6021.51	13.81	13.81	NM	6007.70
PZ-09	03/14/00	NM	6021.51	13.98	13.98	NM	6007.53
PZ-09	10/25/00	1311	6021.51	13.9	13.9	NM	6007.61
PZ-09	12/07/00	NM	6021.51	14	14	NM	6007.51
PZ-09	03/16/01	NM	6021.51	14.14	14.14	NM	6007.37

Table 2. Ground-Water Elevation Data

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-10	05/03/97	NM	NM	DRY	DRY	NM	DRY
PZ-10	06/15/97	NM	6025.40	18.19	18.19	0.00	6007.21
PZ-10	07/15/97	1049	6025.40	18.20	18.20	0.00	6007.20
PZ-10	08/18/97	NM	6025.40	18.02	18.02	0.00	6007.38
PZ-10	09/19/97	1657	6025.40	17.90	17.90	0.00	6007.50
PZ-10	10/16/97	1331	6025.40	18.50	18.50	0.00	6006.90
PZ-10	11/17/97	1245	6025.40	18.05	18.05	0.00	6007.35
PZ-10	12/16/97	1340	6025.40	18.07	18.07	0.00	6007.33
PZ-10	01/19/98	1520	6025.40	17.97	17.97	0.00	6007.43
PZ-10	03/03/98	1505	6025.40	17.98	17.98	0.00	6007.42
PZ-10	04/01/98	1330	6025.40	18.01	18.01	0.00	6007.39
PZ-10	05/07/98	1402	6025.40	18.16	18.16	0.00	6007.24
PZ-10	06/02/98	1445	6025.40	18.21	18.21	NM	6007.19
PZ-10	07/06/98	1125	6025.40	18.30	18.30	NM	6007.10
PZ-10	10/09/98	NM	6025.40	NM	NM	NM	NM
PZ-10	03/23/99	NM	6025.40	18.45	18.45	NM	6006.95
PZ-10	12/07/00	NM	6025.40	18.59	18.59	NM	6006.81
PZ-10	03/16/01	NM	6025.40	18.62	18.62	NM	6006.78

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-11	05/03/97	11:28	6023.94	16.84	16.84	0.00	6007.10
PZ-11	06/15/97	NM	6023.94	16.74	16.74	0.00	6007.20
PZ-11	07/15/97	1106	6023.94	16.69	16.69	0.00	6007.25
PZ-11	08/18/97	NM	6023.94	16.51	16.51	0.00	6007.43
PZ-11	09/19/97	1810	6023.94	16.39	16.39	0.00	6007.55
PZ-11	10/16/97	1455	6023.94	16.43	16.43	0.00	6007.51
PZ-11	11/17/97	1415	6023.94	16.48	16.48	0.00	6007.46
PZ-11	12/16/97	1435	6023.94	16.58	16.58	0.00	6007.36
PZ-11	01/19/98	1650	6023.94	16.53	16.53	0.00	6007.41
PZ-11	03/03/98	1615	6023.94	16.54	16.54	0.00	6007.40
PZ-11	04/01/98	1425	6023.94	16.51	16.51	#REF!	6007.43
PZ-11	05/07/98	1500	6023.94	16.57	16.57	0.00	6007.37
PZ-11	06/02/98	1525	6023.94	16.65	16.65	NM	6007.29
PZ-11	07/06/98	1255	6023.94	16.75	16.75	NM	6007.19
PZ-11	10/09/98	NM	6023.94	NM	NM	NM	NM
PZ-11	03/23/99	NM	6023.94	17.03	17.03	NM	6006.91
PZ-11	03/16/01	NM	6023.94	17.54	17.54	NM	6006.4

Table 2. Ground-Water Elevation Data

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO (feet)	WATER DEPTH TO (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF (feet)
PZ-15	05/03/97	11:40	6024.87	17.54	17.54	0.00	6007.33
PZ-15	06/15/97	NM	6024.87	17.27	17.27	0.00	6007.60
PZ-15	07/15/97	1058	6024.87	17.14	17.14	0.00	6007.73
PZ-15	08/18/97	NM	6024.87	16.82	16.82	0.00	6008.05
PZ-15	09/19/97	1817	6024.87	16.62	16.63	0.01	6008.24
PZ-15	10/16/97	1504	6024.87	16.70	16.71	0.01	6008.16
PZ-15	11/17/97	1454	6024.87	16.80	16.81	0.01	6008.06
PZ-15	12/16/97	1520	6024.87	16.92	16.92	0.00	6007.95
PZ-15	01/19/98	1720	6024.87	16.89	16.89	0.00	6007.98
PZ-15	03/03/98	1717	6024.87	16.89	16.89	0.00	6007.98
PZ-15	04/01/98	1502	6024.87	16.82	16.82	0.00	6008.05
PZ-15	05/07/98	1537	6024.87	16.83	16.83	0.00	6008.04
PZ-15	06/02/98	1548	6024.87	16.95	16.95	NM	6007.92
PZ-15	07/06/98	1310	6024.87	17.10	17.10	NM	6007.77
PZ-15	10/09/98	NM	6024.87	NM	NM	NM	NM
PZ-15	03/23/99	NM	6024.87	17.52	17.52	NM	6007.35
PZ-15	03/16/01	NM	6024.87	18.17	18.17	NM	6006.70

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-16	08/18/97	NM	6024.59	14.24	14.24	0.00	6010.35
PZ-16	09/19/97	1826	6024.59	14.22	14.22	0.00	6010.37
PZ-16	10/16/97	1257	6024.59	14.60	14.60	0.00	6009.99
PZ-16	11/17/97	1215	6024.59	14.84	14.84	0.00	6009.75
PZ-16	12/16/97	1315	6024.59	15.18	15.18	0.00	6009.41
PZ-16	01/19/98	1455	6024.59	15.43	15.43	0.00	6009.16
PZ-16	03/03/98	1435	6024.59	15.80	15.80	0.00	6008.79
PZ-16	04/01/98	1302	6024.59	15.90	15.90	0.00	6008.69
PZ-16	05/07/98	1335	6024.59	15.99	15.99	0.00	6008.60
PZ-16	06/02/98	1312	6024.59	16.01	16.01	0.00	6008.58
PZ-16	07/06/98	1055	6024.59	15.98	15.98	0.00	6008.61
PZ-16	10/09/98	NM	6024.59	NM	NM	NM	NM
PZ-16	03/23/99	NM	6024.59	15.46	15.46	NM	6009.13
PZ-16	10/19/99	NM	6024.59	14.85	14.85	NM	6009.74
PZ-16	3/14/2000	NM	6024.59	15.89	15.89	NM	6008.7
PZ-16	10/25/00	NM	6024.59	15.62	15.62	NM	6008.97
PZ-16	12/7/2000	NM	6024.59	15.95	15.95	NM	6008.64
PZ-16	3/16/2001	NM	6024.59	16.07	16.07	NM	6008.52

Table 2. Ground-Water Elevation Data

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-17	06/15/97	NM	6023.72	16.47	16.47	0.00	6007.25
PZ-17	07/15/97	1100	6023.72	16.37	16.37	0.00	6007.35
PZ-17	08/18/97	NM	6023.72	16.18	16.18	0.00	6007.54
PZ-17	09/19/97	1725	6023.72	16.08	16.08	0.00	6007.64
PZ-17	10/16/97	1512	6023.72	16.10	16.10	0.00	6007.62
PZ-17	11/17/97	1420	6023.72	16.15	16.15	0.00	6007.57
PZ-17	12/16/97	1440	6023.72	16.23	16.23	0.00	6007.49
PZ-17	01/19/98	1635	6023.72	16.32	16.32	0.00	6007.40
PZ-17	03/03/98	1620	6023.72	16.30	16.30	0.00	6007.42
PZ-17	04/01/98	1430	6023.72	16.25	16.25	0.00	6007.47
PZ-17	05/07/98	1505	6023.72	16.24	16.24	0.00	6007.48
PZ-17	06/02/98	1530	6023.72	16.34	16.34	NM	6007.38
PZ-17	07/06/98	1237	6023.72	16.43	16.43	NM	6007.29
PZ-17	10/09/98	NM	6023.72	NM	NM	NM	NM
PZ-17	03/23/99	NM	6023.72	16.74	16.74	NM	6006.98
PZ-17	12/07/00	NM	6023.72	17.20	17.20	NM	6006.52
PZ-17	03/16/01	NM	6023.72	17.28	17.28	NM	6006.44

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-18	06/15/97	NM	6024.33	17.29	17.29	0.00	6007.04
PZ-18	07/15/97	1104	6024.33	17.28	17.28	0.00	6007.05
PZ-18	08/18/97	NM	6024.33	17.14	17.14	0.00	6007.19
PZ-18	09/19/97	1832	6024.33	17.07	17.07	0.00	6007.26
PZ-18	10/16/97	1520	6024.33	17.13	17.13	0.00	6007.20
PZ-18	11/17/97	1425	6024.33	17.15	17.15	0.00	6007.18
PZ-18	12/16/97	1446	6024.33	17.22	17.22	0.00	6007.11
PZ-18	01/19/98	1645	6024.33	17.19	17.19	0.00	6007.14
PZ-18	03/03/98	1625	6024.33	17.19	17.19	0.00	6007.14
PZ-18	04/01/98	1437	6024.33	17.17	17.17	0.00	6007.16
PZ-18	05/07/98	1515	6024.33	17.27	17.27	0.00	6007.06
PZ-18	06/02/98	1540	6024.33	17.32	17.32	NM	6007.01
PZ-18	07/06/98	1250	6024.33	17.40	17.40	NM	6006.93
PZ-18	10/09/98	NM	6024.33	NM	NM	NM	NM
PZ-18	03/23/99	NM	6024.33	17.65	17.65	NM	6006.68
PZ-18	12/07/00	NM	6024.33	18.14	18.14	NM	6006.19
PZ-18	03/16/01	NM	6024.33	18.17	18.17	NM	6006.16

Table 2. Ground-Water Elevation Data

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-19	06/15/97	NM	6024.19	16.80	16.80	0.00	6007.39
PZ-19	07/15/97	1114	6024.19	16.74	16.74	0.00	6007.45
PZ-19	08/18/97	NM	6024.19	16.56	16.56	0.00	6007.63
PZ-19	09/19/97	1840	6024.19	16.44	16.44	0.00	6007.75
PZ-19	10/16/97	1530	6024.19	16.44	16.44	0.00	6007.75
PZ-19	11/17/97	1436	6024.19	16.48	16.48	0.00	6007.71
PZ-19	12/16/97	1453	6024.19	16.58	16.58	0.00	6007.61
PZ-19	01/19/98	1652	6024.19	16.58	16.58	0.00	6007.61
PZ-19	03/03/98	1632	6024.19	16.61	16.61	0.00	6007.58
PZ-19	04/01/98	1442	6024.19	16.55	16.55	0.00	6007.64
PZ-19	05/07/98	1522	6024.19	16.58	16.58	0.00	6007.61
PZ-19	06/02/98	1542	6024.19	16.67	16.67	NM	6007.52
PZ-19	07/06/98	1300	6024.19	16.78	16.78	NM	6007.41
PZ-19	10/09/98	NM	6024.19	NM	NM	NM	NM
PZ-19	03/23/99	NM	6024.19	17.09	17.09	NM	6007.1
PZ-19	03/16/01	NM	6024.19	17.34	17.73	1.24	6006.46

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-20	06/15/97	NM	6023.95	15.84	15.84	0.00	6008.11
PZ-20	07/15/97	1112	6023.95	15.79	15.79	0.00	6008.16
PZ-20	08/18/97	NM	6023.95	15.60	15.60	0.00	6008.35
PZ-20	09/19/97	1847	6023.95	15.49	15.49	0.00	6008.46
PZ-20	10/16/97	1535	6023.95	15.50	15.50	0.00	6008.45
PZ-20	11/17/97	1440	6023.95	15.67	15.67	0.00	6008.28
PZ-20	12/16/97	1500	6023.95	15.82	15.82	0.00	6008.13
PZ-20	01/19/98	1700	6023.95	15.85	15.85	0.00	6008.10
PZ-20	03/03/98	1638	6023.95	15.86	15.86	0.00	6008.09
PZ-20	04/01/98	1448	6023.95	15.78	15.78	0.00	6008.17
PZ-20	05/07/98	1527	6023.95	15.78	15.78	0.00	6008.17
PZ-20	06/02/98	1545	6023.95	15.93	15.93	0.00	6008.02
PZ-20	07/06/98	1305	6023.95	16.05	16.05	NM	6007.9
PZ-20	10/09/98	NM	6023.95	NM	NM	NM	NM
PZ-20	03/23/99	NM	6023.95	16.41	16.41	NM	6007.54
PZ-20	03/16/01	NM	6023.95	17.1	17.1	NM	6006.85

Table 2. Ground-Water Elevation Data

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL	WATER	PRODUCT	WATER LEVEL
				DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	DEPTH TO GROUND WATER (feet)	THICKNESS (feet)	ELEVATION OF GROUND WATER (feet)
PZ-21	06/15/97	NM	6028.60	21.55	21.55	0.00	6007.05
PZ-21	07/15/97	1043	6028.60	21.68	21.68	0.00	6006.92
PZ-21	08/18/97	NM	6028.60	21.55	21.55	0.00	6007.05
PZ-21	09/19/97	1652	6028.60	21.44	21.44	0.00	6007.16
PZ-21	10/16/97	1337	6028.60	21.59	21.59	0.00	6007.01
PZ-21	11/17/97	1250	6028.60	21.58	21.58	0.00	6007.02
PZ-21	12/16/97	1352	6028.60	21.60	21.60	0.00	6007.00
PZ-21	01/19/98	1553	6028.60	21.40	21.40	0.00	6007.20
PZ-21	03/03/98	1515	6028.60	21.50	21.50	0.00	6007.10
PZ-21	04/01/98	1342	6028.60	21.57	21.57	0.00	6007.03
PZ-21	05/07/98	1415	6028.60	21.71	21.71	0.00	6006.89
PZ-21	06/02/98	1455	6028.60	21.72	21.72	0.00	6006.88
PZ-21	07/06/98	1135	6028.60	21.82	21.82	0.00	6006.78
PZ-21	10/09/98	NM	6028.60	NM	NM	NM	NM
PZ-21	03/23/99	NM	6028.60	21.89	21.89	0.00	6006.71
PZ-21	10/19/99	NM	6028.60	22.09	22.09	0.00	6006.51
PZ-21	03/14/00	NM	6028.60	22.12	22.12	0.00	6006.48
PZ-21	10/25/00	1019	6028.60	22.31	22.31	0.00	6006.29
PZ-21	12/07/00	NM	6028.60	22.41	22.41	0.00	6006.19
PZ-21	03/16/01	NM	6028.60	22.37	22.37	0.00	6006.23

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL	WATER	PRODUCT	WATER LEVEL
				DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	DEPTH TO GROUND WATER (feet)	THICKNESS (feet)	ELEVATION OF GROUND WATER (feet)
PZ-22	07/15/97	1320	6027.13	19.78	19.78	0.00	6007.35
PZ-22	08/18/97	NM	6027.13	19.72	19.72	0.00	6007.41
PZ-22	09/19/97	1713	6027.13	19.57	19.57	0.00	6007.56
PZ-22	10/16/97	1355	6027.13	19.74	19.74	0.00	6007.39
PZ-22	11/17/97	1301	6027.13	19.71	19.71	0.00	6007.42
PZ-22	12/16/97	1358	6027.13	19.73	19.73	0.00	6007.40
PZ-22	01/19/98	1540	6027.13	19.48	19.48	0.00	6007.65
PZ-22	03/03/98	1544	6027.13	19.58	19.58	0.00	6007.55
PZ-22	04/01/98	1348	6027.13	19.68	19.68	0.00	6007.45
PZ-22	05/07/98	1420	6027.13	19.83	19.83	0.00	6007.30
PZ-22	06/02/98	1458	6027.13	19.84	19.84	0.00	6007.29
PZ-22	07/06/98	1140	6027.13	19.97	19.97	0.00	6007.16
PZ-22	10/09/98	NM	6027.13	NM	NM	NM	NM
PZ-22	03/23/99	NM	6027.13	19.98	19.98	0.00	6007.15
PZ-22	10/19/99	NM	6027.13	20.18	20.18	0.00	6006.95
PZ-22	03/14/00	NM	6027.13	20.22	20.22	0.00	6006.91
PZ-22	10/25/00	NM	6027.13	20.29	20.29	0.00	6006.84
PZ-22	12/07/00	NM	6027.13	20.75	20.75	0.00	6006.38
PZ-22	03/16/01	NM	6027.13	24.02	24.02	0.00	6003.11

Table 2. Ground-Water Elevation Data

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-23	07/15/97	1102	6024.71	16.74	16.74	0.00	6007.97
PZ-23	08/18/97	NM	6024.71	16.65	16.65	0.00	6008.06
PZ-23	09/19/97	1500	6024.71	16.58	16.58	0.00	6008.13
PZ-23	10/16/97	1324	6024.71	16.59	16.59	0.00	6008.12
PZ-23	11/17/97	1235	6024.71	16.55	16.55	0.00	6008.16
PZ-23	12/16/97	1332	6024.71	16.55	16.55	0.00	6008.16
PZ-23	01/19/98	1512	6024.71	16.54	16.54	0.00	6008.17
PZ-23	03/03/98	1500	6024.71	16.57	16.57	0.00	6008.14
PZ-23	04/01/98	1324	6024.71	16.58	16.58	0.00	6008.13
PZ-23	05/07/98	1355	6024.71	16.64	16.64	0.00	6008.07
PZ-23	06/02/98	1438	6024.71	16.70	16.70	0.00	6008.01
PZ-23	07/06/98	111	6024.71	16.75	16.75	0.00	6007.96
PZ-23	10/09/98	NM	6024.71	NM	NM	NM	NM
PZ-23	03/23/99	NM	6024.71	16.85	16.85	NM	6007.86
PZ-23	10/19/99	NM	6024.71	16.85	16.85	NM	6007.86
PZ-23	03/14/00	NM	6024.71	17.09	17.09	NM	6007.62
PZ-23	10/25/00	9:38	6024.71	17.03	17.03	NM	6007.68
PZ-23	12/07/00	NM	6024.71	17.10	17.10	NM	6007.61
PZ-23	03/16/01	NM	6024.71	17.26	17.26	NM	6007.45

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-24	08/18/97	NM	6023.01	14.75	14.75	0.00	6008.26
PZ-24	09/19/97	1541	6023.01	14.61	14.61	0.00	6008.40
PZ-24	10/16/97	1407	6023.01	14.68	14.68	0.00	6008.33
PZ-24	11/17/97	1335	6023.01	14.63	14.63	0.00	6008.38
PZ-24	12/16/97	1405	6023.01	14.71	14.71	0.00	6008.30
PZ-24	01/19/98	1550	6023.01	14.48	14.48	0.00	6008.53
PZ-24	03/03/98	1550	6023.01	14.59	14.59	0.00	6008.42
PZ-24	04/01/98	1355	6023.01	14.65	14.65	0.00	6008.36
PZ-24	05/07/98	1425	6023.01	14.75	14.75	0.00	6008.26
PZ-24	06/02/98	1500	6023.01	14.79	14.79	0.00	6008.22
PZ-24	07/06/98	1147	6023.01	14.89	14.89	0.00	6008.12
PZ-24	10/09/98	NM	6023.01	NM	NM	NM	NM
PZ-24	03/23/99	NM	6023.01	14.91	14.91	NM	6008.1

Table 2. Ground-Water Elevation Data

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-25	08/18/97	NM	6021.35	12.92	12.92	0.00	6008.43
PZ-25	09/19/97	1548	6021.35	12.79	12.79	0.00	6008.56
PZ-25	10/16/97	1411	6021.35	12.85	12.85	0.00	6008.50
PZ-25	11/17/97	1345	6021.35	12.82	12.82	0.00	6008.53
PZ-25	12/16/97	1410	6021.35	12.86	12.86	0.00	6008.49
PZ-25	01/19/98	1557	6021.35	12.70	12.70	0.00	6008.65
PZ-25	03/03/98	1554	6021.35	12.73	12.73	0.00	6008.62
PZ-25	04/01/98	1400	6021.35	12.76	12.76	0.00	6008.59
PZ-25	05/07/98	1431	6021.35	12.86	12.86	0.00	6008.49
PZ-25	06/02/98	1505	6021.35	12.91	12.91	NM	6008.44
PZ-25	07/06/98	1152	6021.35	13.02	13.02	NM	6008.33
PZ-25	10/09/98	NM	6021.35	NM	NM	NM	NM
PZ-25	03/23/99	NM	6021.35	13.11	13.11	NM	6008.24
PZ-25	03/16/01	NM	6021.35	13.5	13.5	NM	6007.85

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-26	06/15/97	NM	6021.00	12.57	12.57	0.00	6008.43
PZ-26	07/15/97	1028	6021.00	12.56	12.56	0.00	6008.44
PZ-26	08/18/97	NM	6021.00	12.48	12.48	0.00	6008.52
PZ-26	09/19/97	1535	6021.00	12.38	12.38	0.00	6008.62
PZ-26	10/16/97	1311	6021.00	12.40	12.40	0.00	6008.60
PZ-26	11/17/97	1225	6021.00	12.36	12.36	0.00	6008.64
PZ-26	12/16/97	1322	6021.00	12.37	12.37	0.00	6008.63
PZ-26	01/19/98	1500	6021.00	12.33	12.33	0.00	6008.67
PZ-26	03/03/98	1442	6021.00	12.40	12.40	0.00	6008.60
PZ-26	04/01/98	1310	6021.00	12.42	12.42	0.00	6008.58
PZ-26	05/07/98	1342	6021.00	12.50	12.50	0.00	6008.50
PZ-26	6/2/1998	1315	6021.00	12.55	12.55	0.00	6008.45
PZ-26	07/06/98	1104	6021.00	12.62	12.62	0.00	6008.38
PZ-26	10/09/98	NM	6021.00	NM	NM	NM	NM
PZ-26	03/23/99	NM	6021.00	12.67	12.67	0.00	6008.33
PZ-26	10/19/99	NM	6021.00	12.71	12.71	0.00	6008.29
PZ-26	10/25/00	10:53	6021.00	12.8	12.8	0.00	6008.20
PZ-26	12/07/00	NM	6021.00	12.85	12.85	0.00	6008.15
PZ-26	03/16/01	NM	6021.00	13.08	13.08	0.00	6007.92

Table 2. Ground-Water Elevation Data

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-29	08/18/97	NM	6023.85	16.54	16.54	0.00	6007.31
PZ-29	09/19/97	1852	6023.85	16.45	16.45	0.00	6007.40
PZ-29	10/16/97	1544	6023.85	16.49	16.49	0.00	6007.36
PZ-29	11/17/97	1444	6023.85	16.53	16.53	0.00	6007.32
PZ-29	12/16/97	1509	6023.85	16.60	16.60	0.00	6007.25
PZ-29	01/19/98	1705	6023.85	16.64	16.64	0.00	6007.21
PZ-29	03/03/98	1643	6023.85	16.62	16.62	0.00	6007.23
PZ-29	04/01/98	1453	6023.85	16.58	16.58	0.00	6007.27
PZ-29	05/07/98	1510	6023.85	16.62	16.62	0.00	6007.23
PZ-29	06/02/98	1535	6023.85	16.70	16.70	0.00	6007.15
PZ-29	07/06/98	1244	6023.85	16.79	16.79	0.00	6007.06
PZ-29	10/09/98	NM	6023.85	NM	NM	NM	NM
PZ-29	03/23/99	NM	6023.85	17.09	17.09	0.00	6006.76
PZ-29	10/19/99	NM	6023.85	17.24	17.24	0.00	6006.61
PZ-29	03/14/00	NM	6023.85	17.37	17.37	0.00	6006.48
PZ-29	10/25/00	12:40	6023.85	17.54	17.54	0.00	6006.31
PZ-29	12/07/00	NM	6023.85	17.58	17.58	0.00	6006.27
PZ-29	03/16/01	NM	6023.85	17.66	17.66	0.00	6006.19

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-30	08/18/97	NM	6027.24	20.11	20.11	0.00	6007.13
PZ-30	09/19/97	1707	6027.24	20.03	20.03	0.00	6007.21
PZ-30	10/16/97	1344	6027.24	20.12	20.12	0.00	6007.12
PZ-30	11/17/97	1255	6027.24	20.13	20.13	0.00	6007.11
PZ-30	12/16/97	1345	6027.24	20.18	20.18	0.00	6007.06
PZ-30	01/19/98	1527	6027.24	20.15	20.15	0.00	6007.09
PZ-30	03/03/98	1510	6027.24	20.15	20.15	0.00	6007.09
PZ-30	04/01/98	1335	6027.24	20.13	20.13	0.00	6007.11
PZ-30	05/07/98	1407	6027.24	20.27	20.27	0.00	6006.97
PZ-30	06/02/98	1450	6027.24	20.31	20.31	0.00	6006.93
PZ-30	07/06/98	1130	6027.24	20.37	20.37	0.00	6006.87
PZ-30	10/09/98	NM	6027.24	NM	NM	NM	NM
PZ-30	03/23/99	NM	6027.24	20.58	20.58	0.00	6006.66
PZ-30	12/07/00	NM	6027.24	21.05	21.05	0.00	6006.19
PZ-30	03/16/01	NM	6027.24	21.1	21.1	0.00	6006.14

Table 2. Ground-Water Elevation Data

WELL #	DATE	TIME	TOP OF PIPE ELEVATION	AIR/OIL DEPTH TO TOP OF GW OR FREE PRODUCT (feet)	WATER DEPTH TO GROUND WATER (feet)	PRODUCT THICKNESS (feet)	WATER LEVEL ELEVATION OF GROUND WATER (feet)
PZ-31	08/18/97	NM	6023.65	15.30	15.30	0.00	6008.35
PZ-31	09/19/97	1524	6023.65	15.22	15.22	0.00	6008.43
PZ-31	10/16/97	1355	6023.65	15.22	15.22	0.00	6008.43
PZ-31	11/17/97	1230	6023.65	15.16	15.16	0.00	6008.49
PZ-31	12/16/97	1327	6023.65	15.18	15.18	0.00	6008.47
PZ-31	01/19/98	1505	6023.65	15.13	15.13	0.00	6008.52
PZ-31	03/03/98	1450	6023.65	15.23	15.23	0.00	6008.42
PZ-31	04/01/98	1316	6023.65	15.26	15.26	0.00	6008.39
PZ-31	05/07/98	1350	6023.65	15.33	15.33	0.00	6008.32
PZ-31	06/02/98	1435	6023.65	15.37	15.37	0.00	6008.28
PZ-31	07/06/98	1111	6023.65	15.42	15.42	0.00	6008.23
PZ-31	10/09/98	NM	6023.65	NM	NM	NM	NM
PZ-31	03/23/99	NM	6023.65	15.45	15.45	0.00	6008.20
PZ-31	10/19/99	NM	6023.65	15.45	15.45	0.00	6008.20
PZ-31	03/16/01	Broken					
PZ-32	12/07/00	NM	6025.42	18.5	18.5	NM	6006.92
PZ-32	03/16/01	NM	6025.42	18.29	18.29	NM	6007.13
PZ-33	12/07/00	NM	6030.38	23.9	23.9	NM	6006.48
PZ-33	03/16/01	NM	6030.38	23.95	23.95	NM	6006.43
PZ-34	12/07/00	NM	6025.19	19.4	19.4	NM	6005.79
PZ-35	05/01/01	9:55	6025.79	25.17	25.17	NM	6000.62
PZ-36	5/1/2001	9:20	6025.78	24.71	24.71	NM	6001.07
MW-6	05/03/97	10:41	6020.67	9.88	9.88	0.00	6010.79
MW-6	08/18/97	NM	6020.67	9.62	9.62	0.00	6011.05
MW-6	09/19/97	NM	6020.67	9.49	9.49	0.00	6011.18
MW-6	10/16/97	NM	6020.67	9.35	9.35	0.00	6011.32
MW-6	11/17/97	NM	6020.67	9.76	9.76	0.00	6010.91
MW-6	12/16/97	NM	6020.67	10.20	10.20	0.00	6010.47
MW-6	01/19/98	NM	6020.67	10.38	10.38	0.00	6010.29
MW-6	03/03/98	NM	6020.67	10.80	10.80	0.00	6009.87
MW-6	04/01/98		6020.67	11.02	11.02	0.00	6009.65
MW-6	05/07/98		6020.67	11.23	11.23	0.00	6009.44

Project Name EPFS QUARTERLY SAMPLING Project Manager R. THOMPSON Project No. 62800107  
Client Company EL PASO FIELD SERVICES Site Address RURAL SAN JUAN CO. Phase Task No. \_\_\_\_\_  
Site Name BISTO FLARE PIT #1 (LD267)

Development Criteria  
 0 to 5 Casing Volumes of Water Removal  
 Stabilization of Indicator Parameters  
 Other \_\_\_\_\_

Water Volume Calculation  
 Initial Depth of Well (feet) 20.52' TOR  
 Initial Depth to Water (feet) 14.15' TOR  
 Height of Water Column in Well (feet) 6.38'  
 Diameter (inches): Well 2" Gravel Pack \_\_\_\_\_

Item	Water Volume in Well		Gallons to be Removed
	Cubic feet	Gallons	
Well Casing	<u>1.04</u>		<u>1.04 x 3</u>
Gravel Pack			
Drilling Fluids			
Total			<u>3.12</u>

Methods of Development  
 Pump \_\_\_\_\_  
 Bailer \_\_\_\_\_  
 Centrifugal  Bottom Valve  
 Submersible  Double Check Valve  
 Peristaltic  Stainless-steel Kemmerer  
 Other \_\_\_\_\_

Instruments  
 pH Meter  
 DO Monitor  
 Conductivity Meter  
 Temperature Meter  
 Other \_\_\_\_\_

Serial No. (if applicable)  
HYDAC  
CHEMETS  
HYDAC  
HYPAC

Water Disposal  
KUTZ SEPARATOR

**Water Removal Data**

Date	Time	Development Method	Removal Rate (gal/min)	Inflow Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (umhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Increment	Cumulative					
<u>3/14/00</u>	<u>1352</u>	<u>X</u>				<u>.25</u>	<u>.25</u>	<u>17.9</u>	<u>6.95</u>	<u>13460</u>	<u>2</u>	<u>CLEAR</u>

Circle the date and time that the development criteria are met.

Comments BAILED APPROX. 3 GAL. WELL BAILED DRY. WILL LET RECOVER AND SAMPLE. SAMPLED ON

3/15/00 AT 10.10. Coc # C2505

Developer's Signature(s) Robert Thompson Date 3/14/00 Reviewer RT Date 3/14/00

Project Name EPFS QUARTERLY SAMPLING  
Client Company EL PASO FIELD SERVICES  
Site Name BISTN FLARE PIT #1 (LD267)

Project Manager R. THOMPSON  
Project No. 62800107  
Phase/Task No. \_\_\_\_\_  
Site Address RURAL SAN JUAN Co.

Instruments  
 pH Meter  
 DO Monitor  
 Conductivity Meter  
 Temperature Meter  
 Other \_\_\_\_\_  
 Serial No. (if applicable)  
HYDAC  
CHEMETS  
HYDAC  
HYDAC

Water Volume Calculation  
 Initial Depth of Well (feet) 15.44' TOR  
 Initial Depth to Water (feet) 13.98' TOR  
 Height of Water Column in Well (feet) \_\_\_\_\_  
 Diameter (inches): Well 2" Gravel Pack \_\_\_\_\_

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>.24</u>		<u>.24 * 3</u>
Gravel Pack			
Drilling Fluids			
Total			<u>.72</u>

Development Criteria  
 0 to 5 Casing Volumes of Water Removal  
 Stabilization of Indicator Parameters  
 Other \_\_\_\_\_

Methods of Development  
 Pump  
 Bailor  
 Centrifugal  
 Bottom Valve  
 Submersible  
 Double Check Valve  
 Peristaltic  
 Stainless-steel Kemmerer  
 Other \_\_\_\_\_

Water Disposal  
KUTZ SEPARATOR

**Water Removal Data**

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (micro/mho/cm)	Dissolved Oxygen (mg/l)	Comments
		Pump	Bailor				Incremental	Cumulative					
<u>3/14/00</u>	<u>1320</u>		<u>X</u>				<u>.10</u>	<u>.10</u>	<u>18.4</u>	<u>7.25</u>	<u>4120</u>	<u>1.5</u>	<u>Cloudy</u>

*Circle the date and time that the development criteria are met.*

Comments BAILED APPROX. 10 GAL. WELL BAILED DRY. WILL LET RECOVER AND SAMPLE. SAMPLED ON 3/15/00 AT 0950. COC # 62504

Developer's Signature(s) Robert Thompson Date 3/14/00 Reviewer RT Date 3/16/00

Project Name EPFS QUARTERLY SAMPLING Project Manager R. THOMPSON Project No. 62800107  
 Client Company EL PASO FIELD SERVICES Site Address RURAL SAN JUAN CO. Phase/Task No. \_\_\_\_\_  
 Site Name BISTY FLARE PIT #1 (LOZGT)

**Development Criteria**  
 No 5 Casing Volumes of Water Removal  
 Stabilization of Indicator Parameters  
 Other \_\_\_\_\_

**Water Volume Calculation**  
 Initial Depth of Well (feet) 23.03' TOR  
 Initial Depth to Water (feet) 15.89' TOR  
 Height of Water Column in Well (feet) \_\_\_\_\_  
 Diameter (inches): Well 2" Gravel Pack \_\_\_\_\_

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>1.17</u>		<u>1.17 x 3</u>
Gravel Pack			
Drilling Fluids			
Total			<u>3.51</u>

**Methods of Development**  
 Pump  Bailor  Bottom Valve  Double Check Valve  Stainless-steel Kemmerer  Other \_\_\_\_\_

**Instruments**  
 pH Meter  
 DO Monitor  
 Conductivity Meter  
 Temperature Meter  
 Other \_\_\_\_\_

Serial No. (if applicable)  
HYDAC  
CHEMETS  
HYDAC  
HYDAC

Water Disposal  
KUTZ SEPARATOR

**Water Removal Data**

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pit	Conductivity (umhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Increment	Cumulative					
<u>3/14/00</u>	<u>1455</u>	<u>X</u>				<u>.25</u>	<u>.25</u>	<u>16.1</u>	<u>8.31</u>	<u>3/50</u>	<u>2</u>	<u>YELLOWISH/CLEAR</u>

Circle the date and time that the development criteria are met.

Comments BAILED APPROX. 2.5 GAL. WELL BAILED DRY. WILL LET RECOVER AND SAMPLE. SAMPLED ON 3/15/00 AT 1050. COC # C.2507

Developer's Signature(s) [Signature] Date 3/14/00 Reviewer ET Date 3/16/00



Project Name EPFS QUARTERLY SAMPLING Project Manager R. THOMPSON Project No. 62800107

Client Company EL PASO FIELD SERVICES Phase/Task No. \_\_\_\_\_

Site Name BISTO FLARE PIT #1 (LD267) Site Address RURAL SAN JUAN Co.

Development Criteria  
 3 to 5 Casing Volumes of Water Removal  
 Stabilization of Indicator Parameters  
 Other \_\_\_\_\_

Water Volume Calculation  
 Initial Depth of Well (feet) 23-03' TOR  
 Initial Depth to Water (feet) 20-22' TOR  
 Height of Water Column in Well (feet) \_\_\_\_\_  
 Diameter (inches): Well 2" Gravel Pack \_\_\_\_\_

Instruments  
 pH Meter  
 DO Monitor  
 Conductivity Meter  
 Temperature Meter  
 Other \_\_\_\_\_  
 Serial No. (if applicable)  
HYDAC  
CHEMETS  
HYDAC  
HYDAC

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>.46</u>		<u>.46 x 3</u>
Gravel Pack			
Drilling Fluids			
Total			<u>1.38</u>

Methods of Development  
 Pump \_\_\_\_\_  
 Bailor \_\_\_\_\_  
 Centrifugal  
 Bottom Valve  
 Submersible  
 Double Check Valve  
 Peristaltic  
 Stainless-steel Kemmerer  
 Other \_\_\_\_\_

Water Disposal  
KUTZ SEPERATOR

Water Removal Data

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Incremental	Cumulative					
<u>3/12/00</u>	<u>1530</u>	<u>X</u>				<u>.25</u>	<u>.25</u>	<u>17.6</u>	<u>7.36</u>	<u>14570</u>	<u>1</u>	<u>LIGHT BROWN</u>

Circle the date and time that the development criteria are met.

Comments BAILED APPROX. 1.5 GAL. WELL BAILED DRY. WILL LET BROWNE AND SAMPLE. SAMPLED ON

3/15/00 AT 115. COC# C2508

Developer's Signature(s) Robert Thompson Date 3/14/00 Reviewer RT Date 3/16/00



Project Name EPES QUARTERLY SAMPLING

Project Manager R. THOMPSON

Project No. 62800107

Client Company EL PASO FIELD SERVICES

Phase/Task No. \_\_\_\_\_

Site Name BISTN FLARE PIT #1 (10267)

Site Address RURAL SAN JUAN Co.

**Development Criteria**

- 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other \_\_\_\_\_

**Water Volume Calculation**

Initial Depth of Well (feet) 18.01' TOR  
 Initial Depth to Water (feet) 12.97' TOR  
 Height of Water Column in Well (feet) 5.04'  
 Diameter (inches): Well 2" Gravel Pack \_\_\_\_\_

Item	Water Volume in Well Cubic Feet	Gallons	Gallons to be Removed
Well Casing	<u>.82</u>		<u>82 x 3</u>
Gravel Pack			
Drilling Fluids			
Total			<u>2.46</u>

**Methods of Development**

- Pump
- Centrifugal
- Submersible
- Peristaltic
- Other \_\_\_\_\_
- Bailor
- Bottom Valve
- Double Check Valve
- Stainless-steel Kemmerer
- Other \_\_\_\_\_

**Instruments**

- pH Meter HYDAC
- DO Monitor CHEMETS
- Conductivity Meter HYDAC
- Temperature Meter HYDAC
- Other \_\_\_\_\_

Water Disposal KUTZ SEPARATOR

**Water Removal Data**

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Incremental	Cumulative					
<u>3/14/00</u>	<u>1236</u>	<u>X</u>				<u>.5</u>	<u>.5</u>	<u>17.3</u>	<u>8.26</u>	<u>9270</u>	<u>6</u>	<u>SLIGHTLY CLOUDY</u>

Circle the date and time that the development criteria are met.

Comments BAILED APPROX. 3 GAL. SAMPLED ON 3/15/00 AT 0930. CAC # C2503

Developer's Signature(s) Robert Thompson

Date 3/14/00

Reviewer RT Date 3/16/00

Project Name EPFS QUARTERLY SAMPLING Project Manager R. THOMPSON Project No. 62800/07  
Client Company EL PASO FIELD SERVICES Site Address RURAL SAN JUAN CO. Phase/Task No. \_\_\_\_\_  
Site Name BISH FLARE PIT #1 (LD267)

Development Criteria  
 0 to 5 Casing Volumes of Water Removal  
 Stabilization of Indicator Parameters  
 Other \_\_\_\_\_

Water Volume Calculation  
 Initial Depth of Well (feet) 20.55' TOR  
 Initial Depth to Water (feet) 17.37' TOR  
 Height of Water Column in Well (feet) \_\_\_\_\_  
 Diameter (inches): Well 2" Gravel Pack \_\_\_\_\_

Item	Water Volume in Well (gallons)	Gallons to be Removed
Well Casing		
Gravel Pack	<u>.52</u>	<u>.52 x 3</u>
Drilling Fluids		
Total		<u>1.54</u>

Methods of Development  
 Pump  Bailer  
 Centrifugal  Bottom Valve  
 Submersible  Double Check Valve  
 Peristaltic  Stainless-steel Kemmerer  
 Other \_\_\_\_\_

Instruments  
 pH Meter  
 DO Monitor  
 Conductivity Meter  
 Temperature Meter  
 Other \_\_\_\_\_

Serial No. (if applicable)  
HYDAC  
CHEMETS  
HYDAC  
HYDAC

Water Disposal KUTZ SEPARATOR

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Incremental	Cumulative					
<u>3/14/00</u>	<u>1430</u>	<u>X</u>				<u>.25</u>	<u>.25</u>	<u>17.7</u>	<u>6.97</u>	<u>9320</u>	<u>1</u>	<u>GREYISH/BLACK</u>

Circle the date and time that the development criteria are met.

Comments BAILED APPROX. .50 GAL. WELL BAILED DRY. WILL LET RECOVER AND SAMPLE. SAMPLED ON  
3/15/00 AT 1030. COC # C 2506  
 Developer's Signature(s) Robert Thompson Date 3/14/00 Reviewer RT Date 3/14/00

LD 267 PZ 08

BISTI FLARE

PIT #1





2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

### GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
CLIENT : PHILIP ENVIRONMENTAL  
PROJECT # : 62800107  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 003059

SAMPLE	DATE	DATE	DATE	DIL.		
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	BIS-0003-PZ08	AQUEOUS	03/15/00	NA	03/20/00	500

PARAMETER	DET. LIMIT	UNITS	BIS-0003-PZ08
BENZENE	0.5	UG/L	27000
TOLUENE	0.5	UG/L	16000
ETHYLBENZENE	0.5	UG/L	520
TOTAL XYLENES	0.5	UG/L	5400

SURROGATE:  
BROMOFLUOROBENZENE (%) 112  
SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
N/A



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST : EPA 8021 MODIFIED PINNACLE I.D. : 003059  
BLANK I. D. : 032000 DATE EXTRACTED : NA  
CLIENT : PHILIP ENVIRONMENTAL DATE ANALYZED : 03/20/00  
PROJECT # : 62800107 SAMPLE MATRIX : AQUEOUS  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:  
BROMOFLUOROBENZENE (%) 97  
SURROGATE LIMITS: ( 80 - 120 )  
CHEMIST NOTES:  
N/A



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Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL  
MSMSD

TEST : EPA 8021 MODIFIED  
MSMSD # : 003055-01  
CLIENT : PHILIP ENVIRONMENTAL  
PROJECT # : 62800107  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 003059  
DATE EXTRACTED : NA  
DATE ANALYZED : 03/20/00  
SAMPLE MATRIX : AQUEOUS  
UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	21.3	107	20.4	102	4	( 80 - 120 )	20
TOLUENE	<0.5	20.0	20.7	104	19.3	97	7	( 80 - 120 )	20
ETHYLBENZENE	<0.5	20.0	21.2	106	21.7	109	2	( 80 - 120 )	20
TOTAL XYLENES	<0.5	60.0	61.4	102	62.6	104	2	( 80 - 120 )	20

CHEMIST NOTES:  
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



LOG NO: C0-03613  
Received: 18 MAR 00  
Reported: 24 MAR 00

Ms. Kim McNeill  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 003059, EPFS  
Sampled By: Client  
Code: 151000324  
Page 1

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
03613-1	003059-01	03-15-00/10:10
PARAMETER	03613-1	
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)		
Nitrate + Nitrite-N, mg/l		<0.1
Nitrate-N, mg/l		<0.1
Nitrite-N, mg/l		<0.1
Analyst		WH
Prep Date		03.18.00
Analysis Date		03.20.00
Batch ID		N3W20B
Prep Method		353.2
Dilution Factor		1
Sulfate as SO4 (375.4), mg/l		
Analyst		BE
Prep Date		03.20.00
Analysis Date		03.20.00
Batch ID		SEW031
Prep Method		375.4
Dilution Factor		1



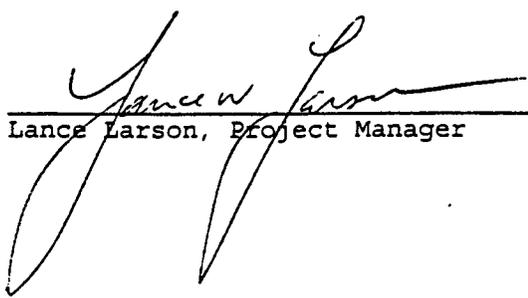
LOG NO: C0-03613  
Received: 18 MAR 00  
Reported: 24 MAR 00

Ms. Kim McNeill  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 003059, EPFS  
Sampled By: Client  
Code: 151000324  
Page 2

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED			
03613-2	Method Blank				
03613-3	Lab Control Standard % Recovery				
03613-4	Matrix Spike % Recovery				
03613-5	Matrix Spike Duplicate % Recovery				
PARAMETER	03613-2	03613-3	03613-4	03613-5	
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)					
Nitrate + Nitrite-N, mg/l	<0.1	104 %	102 %	103 %	
Nitrate-N, mg/l	<0.1	104 %	102 %	103 %	
Nitrite-N, mg/l	<0.1	110 %	110 %	110 %	
Analyst	WH	WH	WH	WH	
Prep Date	03.18.00	03.18.00	03.18.00	03.18.00	
Analysis Date	03.20.00	03.20.00	03.20.00	03.20.00	
Batch ID	N3W20B	N3W20B	N3W20B	N3W20B	
Prep Method	353.2	353.2	353.2	353.2	
Dilution Factor	1	1	1	1	
Sulfate as SO4 (375.4), mg/l					
Analyst	BE	BE	BE	BE	
Prep Date	03.20.00	03.20.00	03.20.00	03.20.00	
Analysis Date	03.20.00	03.20.00	03.20.00	03.20.00	
Batch ID	SEW031	SEW031	SEW031	SEW031	
Prep Method	375.4	375.4	375.4	375.4	
Dilution Factor	1	1	1	1	

  
Lance Larson, Project Manager

Final Page Of Report



# PROJECT SAMPLE INSPECTIC FORM

Lab Accession #: C003613

Date Received: 18-March-00

- |  |                                      |                                     |                                      |
|--|--------------------------------------|-------------------------------------|--------------------------------------|
| 1. Was there a Chain of Custody?   | <input checked="" type="radio"/> Yes | No*                                 |                                      |
| 2. Was Chain of Custody properly filled out and relinquished?  | <input checked="" type="radio"/> Yes | No*                                 |                                      |
| 3. Were samples received cold? (Criteria: 2° - 6°C: STL-SOP 1055)  | <input checked="" type="radio"/> Yes | No*                                 | N/A                                  |
| 4. Were all samples properly labeled and identified?   | <input checked="" type="radio"/> Yes | No*                                 |                                      |
| 5. Did samples require splitting? Req By: PM Client Other*   | Yes*                                 | <input checked="" type="radio"/> No |                                      |
| 6. Were samples received in proper containers for analysis requested?  | <input checked="" type="radio"/> Yes | No*                                 |                                      |
| 7. Were all sample containers received intact?   | <input checked="" type="radio"/> Yes | No*                                 |                                      |
| 8. Were samples checked for preservative? (Check pH of all H <sub>2</sub> O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)* | <input checked="" type="radio"/> Yes | No*                                 | N/A                                  |
| 9. Is there sufficient volume for analysis requested?  | <input checked="" type="radio"/> Yes | No*                                 | N/A (Can)                            |
| 10. Were samples received within Holding Time? (REFER TO STL-SOP 1040)   | <input checked="" type="radio"/> Yes | No*                                 |                                      |
| 11. Is Headspace visible > 1/4" in diameter in VOA vials?* If any headspace is evident, comment in out-of-control section.   | Yes*                                 | No                                  | <input checked="" type="radio"/> N/A |
| 12. If sent, were matrix spike bottles returned?   | Yes                                  | No*                                 | <input checked="" type="radio"/> N/A |
| 13. Was Project Manager notified of problems? (initials: _____)  | Yes                                  | No*                                 | <input checked="" type="radio"/> N/A |

Airbill Number(s): 128781684444070786

Shipped By: UPS

Cooler Number(s): Client Cooler

Shipping Charges: N/A

Cooler Weight(s): 31 lbs.

Cooler Temp(s) (°C): 3°C

CCK9  
(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

### Out of Control Events and Inspection Comments:

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(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: Lnbc Date: 3/18/00 Logged By: PL Date: 3/18/00

- \* Note all Out-of-Control and/or questionable events on Comment Section of this form.
- \* Note who requested the splitting of samples on the Comment Section of this form.
- \* All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938).
- \* According to EPA, 1/4" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938).



LD 267 PZ 09

BISTI FLARE

PIT #1



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

Pinnacle Lab ID number 003060  
March 28, 2000

PHILIP ENVIRONMENTAL  
4000 MONROE ROAD  
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING  
Project Number 62800107

Attention: ROBERT THOMPSON

On 03/17/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze aqueous samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 was performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

All other parameters were performed by Severn Trent (FL) Inc., Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill  
Project Manager

H. Mitchell Rubenstein, Ph. D.  
General Manager

MR: jt

Enclosure



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 003060
PROJECT #	: 62800107	DATE RECEIVED	: 03/17/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 03/28/00
PIN		DATE	
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	BIS-0003-PZ09	AQUEOUS	03/15/00



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
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Fax (505) 344-4413

### GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
CLIENT : PHILIP ENVIRONMENTAL  
PROJECT # : 62800107  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 003060

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	BIS-0003-PZ09	AQUEOUS	03/15/00	NA	03/20/00	50

PARAMETER	DET. LIMIT	UNITS	BIS-0003-PZ09
BENZENE	0.5	UG/L	8300
TOLUENE	0.5	UG/L	7300
ETHYLBENZENE	0.5	UG/L	330
TOTAL XYLENES	0.5	UG/L	3400

SURROGATE:  
BROMOFLUOROBENZENE (%) 103  
SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
N/A



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Albuquerque, New Mexico 87107  
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Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST : EPA 8021 MODIFIED                      PINNACLE I.D. : 003060  
BLANK I. D. : 032000                              DATE EXTRACTED : NA  
CLIENT : PHILIP ENVIRONMENTAL              DATE ANALYZED : 03/20/00  
PROJECT # : 62800107                            SAMPLE MATRIX : AQUEOUS  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
SURROGATE:		
BROMOFLUOROBENZENE (%)		97
SURROGATE LIMITS:	( 80 - 120 )	
CHEMIST NOTES:		
N/A		



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 Albuquerque, New Mexico 87107  
 Phone (505) 344-3777  
 Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL  
 MSMSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 003060
MSMSD #	: 003055-01	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 03/20/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	21.3	107	20.4	102	4	( 80 - 120 )	20
TOLUENE	<0.5	20.0	20.7	104	19.3	97	7	( 80 - 120 )	20
ETHYLBENZENE	<0.5	20.0	21.2	106	21.7	109	2	( 80 - 120 )	20
TOTAL XYLENES	<0.5	60.0	61.4	102	62.6	104	2	( 80 - 120 )	20

CHEMIST NOTES:  
 N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Ms. Kim McNeill  
 Pinnacle Laboratories  
 2709-D Pan American Freeway Northeast  
 Albuquerque, NM 87107

Project: 003060, EPFS  
 Sampled By: Client  
 Code: 151000324  
 Page 1

REPORT OF RESULTS

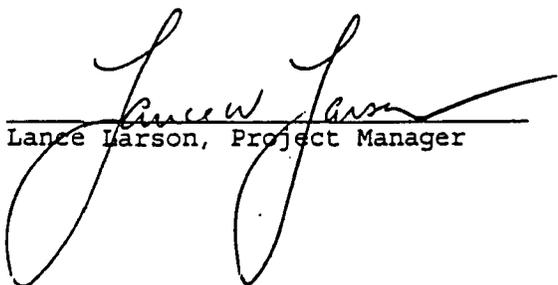
LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
03614-1	003060-01	03-15-00/09:50
PARAMETER	03614-1	
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)		
Nitrate + Nitrite-N, mg/l		<0.1
Nitrate-N, mg/l		<0.1
Nitrite-N, mg/l		<0.1
Analyst		WH
Prep Date		03.18.00
Analysis Date		03.20.00
Batch ID		N3W20B
Prep Method		353.2
Dilution Factor		1
Sulfate as SO4 (375.4), mg/l		
Analyst		BE
Prep Date		03.20.00
Analysis Date		03.20.00
Batch ID		SEW031
Prep Method		375.4
Dilution Factor		1

Ms. Kim McNeill  
 Pinnacle Laboratories  
 2709-D Pan American Freeway Northeast  
 Albuquerque, NM 87107

Project: 003060, EPFS  
 Sampled By: Client  
 Code: 151000324  
 Page 2

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED			
03614-2	Method Blank				
03614-3	Lab Control Standard % Recovery				
03614-4	Matrix Spike % Recovery				
03614-5	Matrix Spike Duplicate % Recovery				
PARAMETER		03614-2	03614-3	03614-4	03614-5
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)					
Nitrate + Nitrite-N, mg/l		<0.1	104 %	102 %	103 %
Nitrate-N, mg/l		<0.1	104 %	102 %	103 %
Nitrite-N, mg/l		<0.1	110 %	110 %	110 %
Analyst		WH	WH	WH	WH
Prep Date		03.18.00	03.18.00	03.18.00	03.18.00
Analysis Date		03.20.00	03.20.00	03.20.00	03.20.00
Batch ID		N3W20B	N3W20B	N3W20B	N3W20B
Prep Method		353.2	353.2	353.2	353.2
Dilution Factor		1	1	1	1
Sulfate as SO4 (375.4), mg/l					
Analyst		BE	BE	BE	BE
Prep Date		03.20.00	03.20.00	03.20.00	03.20.00
Analysis Date		03.20.00	03.20.00	03.20.00	03.20.00
Batch ID		SEW031	SEW031	SEW031	SEW031
Prep Method		375.4	375.4	375.4	375.4
Dilution Factor		1	1	1	1



Lance Larson, Project Manager

Final Page Of Report

Pinnacle Laboratories, Inc.  
 2709-D Pan American Freeway, NE  
 Albuquerque, New Mexico 87107  
 (505) 344-3777 Fax (505) 344-4413

003614 **RUSH**

PRODUCTION DUE DATE: 3.21.00

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL	X SULFATE	TOX	X INORGANIC (TOTAL)	Gen Chemistry	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8080)	8270 BY GC/MS	PNA (8310)	8240 (TCLP 1311) ZHE	Herbicides (615/8150)	Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS	
003614-01	3/15/00		AK																									

**PROJECT INFORMATION**

PROJECT #: 0030  
 PROJ. NAME: EPRS  
 QC LEVEL: STD IV  
 QC REQUIRED: M9 MSD BLANK  
 IAT: STANDARD RUSH!!  
 LAB NUMBER:

**SAMPLE RECEIPT**

Total Number of Containers  
 Chain of Custody Seals  
 Received Intact?  
 Received Good Cond/Cold

**SAMPLES SENT TO:**

PENSACOLA - STL-FL	X
PORTLAND - ESL-OR	
STL - CT	
STL - NEW JERSEY	
N. CREEK	
BARRINGER	
SEQUOIA	

**RELINQUISHED BY:**

Signature: [Signature] Time: 15:05  
 Date: 3/17  
 Company: Pinnacle Laboratories, Inc.

**RECEIVED BY:**

Signature: [Signature] Time: 09:55  
 Date: 3.19.00  
 Company: STL-PNS

**COMMENTS:** Versals on 3/24

DUE DATE:  
 RUSH SURCHARGE:  
 CLIENT DISCOUNT:  
 SPECIAL CERTIFICATION REQUIRED: YES NO

PROJECT SAMPLE INSPECTION FORM

Lab Accession #: C003614

Date Received: 18-March-00

- 1. Was there a Chain of Custody?  Yes No<sup>+</sup>
- 2. Was Chain of Custody properly filled out and relinquished?  Yes No<sup>+</sup>
- 3. Were samples received cold?  Yes No<sup>+</sup> N/A  
(Criteria: 2° - 6°C: STL-SOP 1055)
- 4. Were all samples properly labeled and identified?  Yes No<sup>+</sup>
- 5. Did samples require splitting? Yes<sup>+</sup>  No  
Req By: PM Client Other<sup>+</sup>
- 6. Were samples received in proper containers for analysis requested?  Yes No<sup>+</sup>
- 7. Were all sample containers received intact?  Yes No<sup>+</sup>
- 8. Were samples checked for preservative?  Yes No<sup>+</sup> N/A  
*(Check pH of all H<sub>2</sub>O requiring preservative (STL-PH SOP 917) except VOA vials that require zero headspace)\**
- 9. Is there sufficient volume for analysis requested?  Yes No<sup>+</sup> N/A  
(Can)
- 10. Were samples received within Holding Time?  Yes No<sup>+</sup>  
*(REFER TO STL-SOP 1040)*
- 11. Is Headspace visible > 1/4" in diameter in VOA vials? If any headspace is evident, comment in out-of-control section. Yes<sup>+</sup> No  N/A
- 12. If sent, were matrix spike bottles returned? Yes No<sup>+</sup>  N/A
- 13. Was Project Manager notified of problems? (initials: \_\_\_\_\_) Yes No<sup>+</sup>  N/A

Airbill Number(s): 128781168444070786

Shipped By: UPS

Cooler Number(s): Client Cooler

Shipping Charges: N/A

Cooler Weight(s): 31 lbs.

Cooler Temp(s) (°C): 3<sup>o</sup>  
CCK9  
(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

Out of Control Events and Inspection Comments:

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(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: Lnsc Date: 3/18/00 Logged By: Pec Date: 3/18/00

\* Note all Out-of-Control and/or questionable events on Comment Section of this form.  
 \* Note who requested the splitting of samples on the Comment Section of this form.  
 \* All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938).  
 \* According to EPA, 1/4" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938).



LD 267 PZ 16

BISTI FLARE

PIT #1



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

Pinnacle Lab ID number 003061  
March 28, 2000

PHILIP ENVIRONMENTAL  
4000 MONROE ROAD  
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING  
Project Number 62800107

Attention: ROBERT THOMPSON

On 03/17/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze aqueous samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 was performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

All other parameters were performed by Severn Trent (FL) Inc., Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill  
Project Manager

H. Mitchell Rubenstein, Ph. D.  
General Manager

MR: jt

Enclosure



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 003061
PROJECT #	: 62800107	DATE RECEIVED	: 03/17/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 03/28/00
PIN		DATE	
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	BIS-0003-PZ16	AQUEOUS	03/15/00



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

### GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
CLIENT : PHILIP ENVIRONMENTAL  
PROJECT # : 62800107  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 003061

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	BIS-0003-PZ16	AQUEOUS	03/15/00	NA	03/20/00	1

PARAMETER	DET. LIMIT	UNITS	BIS-0003-PZ16
BENZENE	0.5	UG/L	< 0.5
TOLUENE	0.5	UG/L	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5

SURROGATE:  
BROMOFLUOROBENZENE (%) 96  
SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
N/A



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST : EPA 8021 MODIFIED PINNACLE I.D. : 003061  
BLANK I. D. : 032000 DATE EXTRACTED : NA  
CLIENT : PHILIP ENVIRONMENTAL DATE ANALYZED : 03/20/00  
PROJECT # : 62800107 SAMPLE MATRIX : AQUEOUS  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
SURROGATE: BROMOFLUOROBENZENE (%)		97
SURROGATE LIMITS:	( 80 - 120 )	
CHEMIST NOTES:		
N/A		



2709-D Pan American Freeway NE  
 Albuquerque, New Mexico 87107  
 Phone (505) 344-3777  
 Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL  
 MSMSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 003061
MSMSD #	: 003055-01	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 03/20/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	21.3	107	20.4	102	4	( 80 - 120 )	20
TOLUENE	<0.5	20.0	20.7	104	19.3	97	7	( 80 - 120 )	20
ETHYLBENZENE	<0.5	20.0	21.2	106	21.7	109	2	( 80 - 120 )	20
TOTAL XYLENES	<0.5	60.0	61.4	102	62.6	104	2	( 80 - 120 )	20

CHEMIST NOTES:  
 N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Ms. Kim McNeill  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 003061, EPFS  
Sampled By: Client  
Code: 151000324  
Page 1

REPORT OF RESULTS

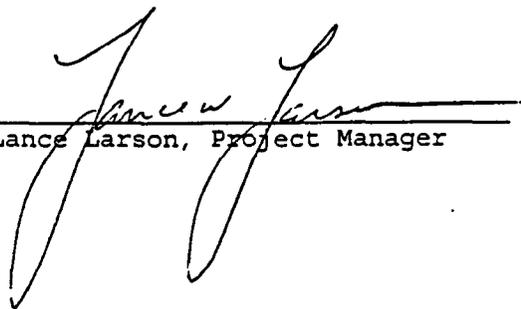
LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
03615-1	003061-01	03-15-00/10:50
PARAMETER	03615-1	
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)		
Nitrate + Nitrite-N, mg/l		57
Nitrate-N, mg/l		57
Nitrite-N, mg/l		<0.1 R4
Analyst		WH
Prep Date		03.18.00
Analysis Date		03.22.00
Batch ID		N3W21A
Prep Method		353.2
Dilution Factor		20
Sulfate as SO4 (375.4), mg/l		
Analyst		BE
Prep Date		03.20.00
Analysis Date		03.20.00
Batch ID		SEW031
Prep Method		375.4
Dilution Factor		20

Ms. Kim McNeill  
 Pinnacle Laboratories  
 2709-D Pan American Freeway Northeast  
 Albuquerque, NM 87107

Project: 003061, EPFS  
 Sampled By: Client  
 Code: 151000324  
 Page 2

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED			
03615-2	Method Blank				
03615-3	Lab Control Standard % Recovery				
03615-4	Matrix Spike % Recovery				
03615-5	Matrix Spike Duplicate % Recovery				
PARAMETER	03615-2	03615-3	03615-4	03615-5	
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)					
Nitrate + Nitrite-N, mg/l	<0.1	100 %	78 %	78 %	
Nitrate-N, mg/l	<0.1	100 %	78 %	78 %	
Nitrite-N, mg/l	<0.1	110 %	110 %	110 %	
Analyst	WH	WH	WH	WH	
Prep Date	03.18.00	03.18.00	03.18.00	03.18.00	
Analysis Date	03.22.00	03.22.00	03.22.00	03.22.00	
Batch ID	N3W21A	N3W21A	N3W21A	N3W21A	
Prep Method	353.2	353.2	353.2	353.2	
Dilution Factor	1	1	1	1	
Sulfate as SO4 (375.4), mg/l					
Analyst	BE	BE	BE	BE	
Prep Date	03.20.00	03.20.00	03.20.00	03.20.00	
Analysis Date	03.20.00	03.20.00	03.20.00	03.20.00	
Batch ID	SEW031	SEW031	SEW031	SEW031	
Prep Method	375.4	375.4	375.4	375.4	
Dilution Factor	1	1	1	1	



Lance Larson, Project Manager

Final Page Of Report

Pinnacle Laboratories, Inc.  
 2709-D Pan American Freeway, NE  
 Albuquerque, New Mexico 87107  
 (505) 344-3777 Fax (505) 344-4413

**RUSH**

003615  
 PRINTING TIME DATE: 3:24:00

Network Project Manager: Kimberly D. McNeill

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL	TOX	Gen Chemistry	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8080)	8270 BY GC/MS	PNA (8310)	8240 (TCLP 1311) ZHE	Herbicides (615/8150)	Base/Neural Acid Compounds GC/MS (625/8270)	URANIUM	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
003061-01	3/15	10:50	AR						X SULFATS	X GEN CHEMISTRY (TTR)															

<b>PROJECT INFORMATION</b>		<b>SAMPLE RECEIPT</b>		<b>SAMPLES SENT TO:</b>		<b>RELINQUISHED BY:</b>		<b>RELINQUISHED BY:</b>			
PROJECT #: 0030	Total Number of Containers	PENSACOLA - STL-FL	Signature: [Signature]	Time: [Time]	PENSACOLA - STL-FL		Signature: [Signature]	Time: [Time]			
PROJ. NAME: EPPS	Chain of Custody Seals	PORTLAND - ESL-OR	Received Intact?	Date: [Date]	PORTLAND - ESL-OR		Printed Name: [Name]	Date: [Date]			
QC LEVEL: STD. IV	Received Good Cond./Cold	STL - CT	LAB NUMBER:	Printed Name: [Name]	STL - CT		Signature: [Signature]	Date: [Date]			
QC REQUIRED: (M9 MSD BLANK)		STL-NEW JERSEY		Printed Name: [Name]	STL-NEW JERSEY		Signature: [Signature]	Date: [Date]			
TAT: STANDARD (RUSH)		N. CREEK		Printed Name: [Name]	N. CREEK		Signature: [Signature]	Date: [Date]			
		BARRINGER		Printed Name: [Name]	BARRINGER		Signature: [Signature]	Date: [Date]			
		SEQUOIA		Printed Name: [Name]	SEQUOIA		Signature: [Signature]	Date: [Date]			
DUE DATE:			COMMENTS: Verbal on 3/24			RECEIVED BY: [Signature]			RECEIVED BY: [Signature]		
RUSH SURCHARGE:						RECEIVED BY: [Signature]			RECEIVED BY: [Signature]		
CLIENT DISCOUNT:						RECEIVED BY: [Signature]			RECEIVED BY: [Signature]		
SPECIAL CERTIFICATION REQUIRED: YES NO						RECEIVED BY: [Signature]			RECEIVED BY: [Signature]		

Lab Accession #: C0036.5

Date Received: 18-March-00

- |  |                                      |                                     |                                      |
|--|--------------------------------------|-------------------------------------|--------------------------------------|
| 1. Was there a Chain of Custody?   | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           |                                      |
| 2. Was Chain of Custody properly filled out and relinquished?  | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           |                                      |
| 3. Were samples received cold? (Criteria: 2° - 6°C: STL-SOP 1055)  | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           | N/A                                  |
| 4. Were all samples properly labeled and identified?   | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           |                                      |
| 5. Did samples require splitting? Req By: PM Client Other*   | Yes*                                 | <input checked="" type="radio"/> No |                                      |
| 6. Were samples received in proper containers for analysis requested?  | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           |                                      |
| 7. Were all sample containers received intact?   | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           |                                      |
| 8. Were samples checked for preservative? (Check pH of all H <sub>2</sub> O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)* | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           | N/A                                  |
| 9. Is there sufficient volume for analysis requested?  | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           | N/A (Can)                            |
| 10. Were samples received within Holding Time? (REFER TO STL-SOP 1040)   | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           |                                      |
| 11. Is Headspace visible > 1/4" in diameter in VOA vials? If any headspace is evident, comment in out-of-control section.  | Yes*                                 | <input type="radio"/> No            | <input checked="" type="radio"/> N/A |
| 12. If sent, were matrix spike bottles returned?   | Yes                                  | <input type="radio"/> No*           | <input checked="" type="radio"/> N/A |
| 13. Was Project Manager notified of problems? (initials: _____)  | Yes                                  | <input type="radio"/> No*           | <input checked="" type="radio"/> N/A |

Airbill Number(s): 128781684444070786

Shipped By: UPS

Cooler Number(s): China Cooler

Shipping Charges: N/A

Cooler Weight(s): 31 lbs.

Cooler Temp(s) (°C): 3°C  
CCK9  
(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

**Out of Control Events and Inspection Comments:**

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(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: UNE Date: 3/18/00 Logged By: PRC Date: 3/18/00

- \* Note all Out-of-Control and/or questionable events on Comment Section of this form.
- \* Note who requested the splitting of samples on the Comment Section of this form.
- \* All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938).
- \* According to EPA, 1/2" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938).



LD 267 PZ 21

BISTI FLARE

PIT #1

Pinnacle Lab ID number 003066  
March 28, 2000

PHILIP ENVIRONMENTAL  
4000 MONROE ROAD  
FARMINGTON, NM 87101

Project Name EPFS QUARTERLY SAMPLING  
Project Number 62800107

Attention: ROBERT THOMPSON

On 03/17/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze aqueous samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 was performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

All other parameters were performed by Severn Trent (FL) Inc., Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.



Kimberly D. McNeill  
Project Manager



H. Mitchell Rubenstein, Ph. D.  
General Manager

MR: jt

Enclosure

CLIENT : PHILIP ENVIRONMENTAL PINNACLE ID : 003066  
PROJECT # : 62800107 DATE RECEIVED : 03/17/00  
PROJECT NAME : EPFS QUARTERLY SAMPLING REPORT DATE : 03/28/00

PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	BIS-0003-PZ21	AQUEOUS	03/15/00

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
 CLIENT : PHILIP ENVIRONMENTAL  
 PROJECT # : 02800107  
 PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 003066

SAMPLE	DATE	DATE	DATE	DIL.		
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	BIS-0003-PZ21	AQUEOUS	03/15/00	NA	03/20/00	1

PARAMETER	DET. LIMIT	UNITS	91S-U003-PZ21
BENZENE	0.5	UG/L	39
TOLUENE	0.5	UG/L	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5

SURROGATE:  
 BROMOFLUOROBENZENE (%) 104  
 SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
 N/A

GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST : EPA 8021 MODIFIED PINNACLE I.D. : 003066  
BLANK I. D. : 032000 DATE EXTRACTED : NA  
CLIENT : PHILIP ENVIRONMENTAL DATE ANALYZED : 03/20/00  
PROJECT # : 62800107 SAMPLE MATRIX : AQUEOUS  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:  
BROMOFLUOROBENZENE (%) 97  
SURROGATE LIMITS: ( 80 - 120 )  
CHEMIST NOTES:  
N/A

GAS CHROMATOGRAPHY QUALITY CONTROL  
MSMSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 003066
MSMSD #	: 003055-01	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 03/20/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
RFN7FNF	<0.5	20.0	21.3	107	20.4	102	4	( 80 - 120 )	20
TOLUENE	<0.5	20.0	20.7	104	19.3	97	7	( 80 - 120 )	20
ETHYLBENZENE	<0.5	20.0	21.2	106	21.7	100	2	( 80 - 120 )	20
TOTAL XYLENES	<0.5	60.0	61.4	102	62.6	104	2	( 80 - 120 )	20

CHEMIST NOTES:  
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



LOG NO: CO-03620  
Received: 19 MAR 00  
Reported: 24 MAR 00

Ms. Kim McNeill  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 003066, EPFS  
Sampled By: Client  
Code: 151200324  
Page 1

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION . LIQUID SAMPLES	DATE/ TIME SAMPLED
03620-1	003066-01	03-15-00/11:30
PARAMETER	03620-1	
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)		
Nitrate + Nitrite-N, mg/l		0.6
Nitrate-N, mg/l		0.6
Nitrite-N, mg/l		<0.1 R4
Analyst		WH
Prep Date		03.18.00
Analysis Date		03.22.00
Batch ID		N3W21A
Prep Method		353.2
Dilution Factor		1
Sulfate as SO4 (375.4), mg/l		
Analyst		BE
Prep Date		03.21.00
Analysis Date		03.21.00
Batch ID		SEW032
Prep Method		375.4
Dilution Factor		200



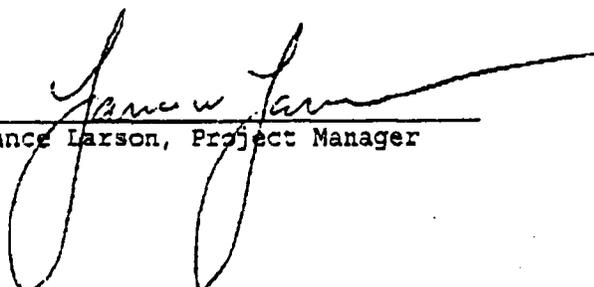
LOG NO: CO-03620  
 Received: 18 MAR 00  
 Reported: 24 MAR 00

Ms. Kim McNeill  
 Pinnacle Laboratories  
 2709-D Pan American Freeway Northeast  
 Albuquerque, NM 87107

Project: 003066, EPFS  
 Sampled By: Client  
 Code: 151200324  
 Page 2

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED			
03620-2	Method Blank				
03620-3	Lab Control Standard % Recovery				
03620-4	Matrix Spike % Recovery				
03620-5	Matrix Spike Duplicate % Recovery				
PARAMETER		03620-2	03620-3	03620-4	03620-5
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)					
Nitrate + Nitrite-N, mg/l		<0.1	100 %	78 %	78 %
Nitrate N, mg/l		<0.1	100 %	78 %	78 %
Nitrite-N, mg/l		<0.1	110 %	110 %	110 %
Analyst		WH	WH	WH	WH
Prep Date		03.18.00	03.18.00	03.18.00	03.18.00
Analysis Date		03.22.00	03.22.00	03.22.00	03.22.00
Batch ID		N3W21A	N3W21A	N3W21A	N3W21A
Prep Method		353.2	353.2	353.2	353.2
Dilution Factor		1	1	1	1
Sulfate as SO4 (375.4), mg/l					
Sulfate as SO4 (375.4), mg/l		<5	95 %	114 %	112 %
Analyst		BE	BE	BE	BE
Prep Date		03.21.00	03.21.00	03.21.00	03.21.00
Analysis Date		03.21.00	03.21.00	03.21.00	03.21.00
Batch ID		SEW032	SEW032	SEW032	SEW032
Prep Method		375.4	375.4	375.4	375.4
Dilution Factor		1	1	400	400

  
 Lance Larson, Project Manager

Final Page Of Report

Network Project Manager: Kimberly D. McNeill

Pinnacle Laboratories, Inc.  
 2709-D Pan American Freeway, NE  
 Albuquerque, New Mexico 87107  
 (505) 344-3177 Fax (505) 344-4413

003620  
**RUSH**  
 PRODUCTION USE DATE: 3.24.00

SAMPLE ID	DATE	TIME	MATRIX	ABIC	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL	X SULFATES	TOX	X IBC ANIMATE (TOTAL)	Gen Chemistry	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8080)	8270 BY GC/MS	PNA (8310)	8240 (TCLP 1311) ZHE	Herbicides (615/8150)	Basic/Neutral Acid Compounds GC/MS (825/8270)	URANIUM	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS	
003620-01	3/15	1130	AQ																									

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY:		RELINQUISHED BY:	
PROJECT #:	0030	Total Number of Containers		PENSACOLA-STLFL		Signature:		Signature:	
PROJ. NAME:	EPFS	Chain of Custody Seals		PORTLAND-ESL-CR		Printed Name:		Printed Name:	
AC LEVEL:	8TD IV	Received intact?		STL-CT		Date:	3/17	Date:	
AC REQUIRED:	MS MSD	Received Good Cond./Cold		STL-NEW JERSEY		Time:		Time:	
LAB. STANDARD:	RUSHID	LAB NUMBER:		N. CREEK		Company:	Pinnacle Laboratories, Inc.	Company:	
DUE DATE:		COMMENTS:	Verbal on 3/22	BARRINGER		RECEIVED BY:		RECEIVED BY:	
RUSH/SURCHARGE:				SEOUCA		Signature:		Signature:	
CLIENT DISCOUNT:						Printed Name:		Printed Name:	
SPECIAL CERTIFICATION						Date:	3-18-00	Date:	
REQUIRED: YES NO						Company:	ST-INS	Company:	

# PROJECT SAMPLE INSPECTION FORM

Lab Accession #: C003620

Date Received: 19-March-00

- |   |                                      |                                     |  |  |                                      |                                      |
|---|--------------------------------------|-------------------------------------|--|--|--------------------------------------|--------------------------------------|
| 1. Was there a Chain of Custody?                                      | <input checked="" type="radio"/> Yes | No*                                 | 8. Were samples checked for preservative? (Check pH of all H <sub>2</sub> O requiring preservative (STL-PN SOP 911) except VOA vials that require zero headspace)* | <input checked="" type="radio"/> Yes                                   | No*                                  | N/A                                  |
| 2. Was Chain of Custody properly filled out and relinquished?         | <input checked="" type="radio"/> Yes | No*                                 | 9. Is there sufficient volume for analysis requested?  | <input checked="" type="radio"/> Yes                                   | No*                                  | N/A (Can)                            |
| 3. Were samples received cold? (Criteria: 2° - 6°C: STL-SOP 1055)     | <input checked="" type="radio"/> Yes | No*                                 | N/A.   | 10. Were samples received within Holding Time? (Refer to STL SOP 1049) | <input checked="" type="radio"/> Yes | No*                                  |
| 4. Were all samples properly labeled and identified?                  | <input checked="" type="radio"/> Yes | No*                                 | 11. Is Headspace visible > 1/4" in diameter in VOA vials? If any headspace is evident, comment in out-of-control section.  | Yes*   | No                                   | <input checked="" type="radio"/> N/A |
| 5. Did samples require splitting? Req By: PM Client Other*            | Yes*                                 | <input checked="" type="radio"/> No | 12. If sent, were matrix spike bottles returned?   | Yes  | No*                                  | <input checked="" type="radio"/> N/A |
| 6. Were samples received in proper containers for analysis requested? | <input checked="" type="radio"/> Yes | No*                                 | 13. Was Project Manager notified of problems? (initials: _____)  | Yes  | No*                                  | <input checked="" type="radio"/> N/A |
| 7. Were all sample containers received intact?                        | <input checked="" type="radio"/> Yes | No*                                 |  |  |                                      |                                      |

Airbill Number(s): 1287811684444070786

Shipped By: UPS

Cooler Number(s): China Cooler

Shipping Charges: N/A

Cooler Weight(s): 31 lbs.

Cooler Temp(s) (°C): 3°C

CCK9  
(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

## Out of Control Events and Inspection Comments:

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(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: Lnbc Date: 3/18/00 Logged By: PL Date: 3/18/00

- \* Note all Out-of-Control and/or questionable events on Comment Section of this form.
- \* Note who requested the splitting of samples on the Comment Section of this form.
- \* All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938).
- \* According to EPA, 1/4" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938).



LD 267 PZ 22

BISTI FLARE

PIT #1



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

Pinnacle Lab ID number 003062  
March 28, 2000

PHILIP ENVIRONMENTAL  
4000 MONROE ROAD  
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING  
Project Number 62800107

Attention: ROBERT THOMPSON

On 03/17/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze aqueous samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 was performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

All other parameters were performed by Severn Trent (FL) Inc., Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill  
Project Manager

H. Mitchell Rubenstein, Ph. D.  
General Manager

MR: jt

Enclosure



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

CLIENT : PHILIP ENVIRONMENTAL PINNACLE ID : 003062  
PROJECT # : 62800107 DATE RECEIVED : 03/17/00  
PROJECT NAME : EPFS QUARTERLY SAMPLING REPORT DATE : 03/28/00

PIN		DATE	
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	BIS-0003-PZ22	AQUEOUS	03/15/00



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

### GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
CLIENT : PHILIP ENVIRONMENTAL  
PROJECT # : 62800107  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 003062

SAMPLE	DATE	DATE	DATE	DIL.		
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	BIS-0003-PZ22	AQUEOUS	03/15/00	NA	03/20/00	1

PARAMETER	DET. LIMIT	UNITS	BIS-0003-PZ22
BENZENE	0.5	UG/L	< 0.5
TOLUENE	0.5	UG/L	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5

SURROGATE:  
BROMOFLUOROBENZENE (%) 109  
SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
N/A



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST : EPA 8021 MODIFIED                      PINNACLE I.D. : 003062  
BLANK I. D. : 032000                              DATE EXTRACTED : NA  
CLIENT : PHILIP ENVIRONMENTAL              DATE ANALYZED : 03/20/00  
PROJECT # : 62800107                            SAMPLE MATRIX : AQUEOUS  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
SURROGATE: BROMOFLUOROBENZENE (%)		97
SURROGATE LIMITS:	( 80 - 120 )	
CHEMIST NOTES:		
N/A		



2709-D Pan American Freeway NE  
 Albuquerque, New Mexico 87107  
 Phone (505) 344-3777  
 Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL  
 MSMSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 003062
MSMSD #	: 003055-01	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 03/20/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	21.3	107	20.4	102	4	( 80 - 120 )	20
TOLUENE	<0.5	20.0	20.7	104	19.3	97	7	( 80 - 120 )	20
ETHYLBENZENE	<0.5	20.0	21.2	106	21.7	109	2	( 80 - 120 )	20
TOTAL XYLENES	<0.5	60.0	61.4	102	62.6	104	2	( 80 - 120 )	20

CHEMIST NOTES:  
 N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



LOG NO: C0-03615  
Received: 18 MAR 00  
Reported: 24 MAR 00

Ms. Kim McNeill  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 003062, EPFS  
Sampled By: Client  
Code: 151100324  
Page 1

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
03616-1	003062-01	03-15-00/11:15
PARAMETER		03616-1
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)		
Nitrate + Nitrite-N, mg/l		20
Nitrate-N, mg/l		19.7
Nitrite-N, mg/l		0.3 R4
Analyst		WH
Prep Date		03.18.00
Analysis Date		03.22.00
Batch ID		N3W21A
Prep Method		353.2
Dilution Factor		10
Sulfate as SO4 (375.4), mg/l		
Analyst		BE
Prep Date		03.21.00
Analysis Date		03.21.00
Batch ID		SEW032
Prep Method		375.4
Dilution Factor		200



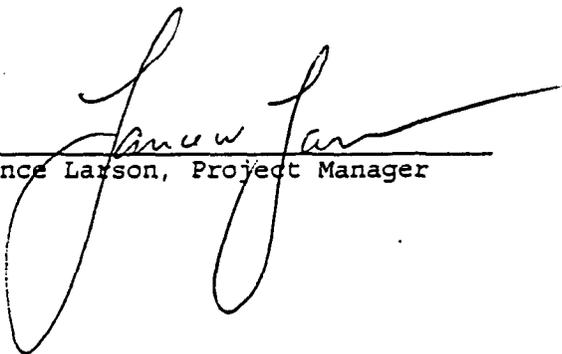
LOG NO: C0-03616  
Received: 18 MAR 00  
Reported: 24 MAR 00

Ms. Kim McNeill  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 003062, EPFS  
Sampled By: Client  
Code: 151100324  
Page 2

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES				DATE/ TIME SAMPLED
03616-2	Method Blank				
03616-3	Lab Control Standard % Recovery				
03616-4	Matrix Spike % Recovery				
03616-5	Matrix Spike Duplicate % Recovery				
PARAMETER	03616-2	03616-3	03616-4	03616-5	
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)					
Nitrate + Nitrite-N, mg/l	<0.1	100 %	78 %	78 %	
Nitrate-N, mg/l	<0.1	100 %	78 %	78 %	
Nitrite-N, mg/l	<0.1	110 %	110 %	110 %	
Analyst	WH	WH	WH	WH	
Prep Date	03.18.00	03.18.00	03.18.00	03.18.00	
Analysis Date	03.22.00	03.22.00	03.22.00	03.22.00	
Batch ID	N3W21A	N3W21A	N3W21A	N3W21A	
Prep Method	353.2	353.2	353.2	353.2	
Dilution Factor	1	1	1	1	
Sulfate as SO4 (375.4), mg/l					
Analyst	BE	BE	BE	BE	
Prep Date	03.21.00	03.21.00	03.21.00	03.21.00	
Analysis Date	03.21.00	03.21.00	03.21.00	03.21.00	
Batch ID	SEW032	SEW032	SEW032	SEW032	
Prep Method	375.4	375.4	375.4	375.4	
Dilution Factor	1	1	400	400	

  
Lance Larson, Project Manager

Final Page Of Report

**Intellegible Chain of Custody**  
 Network Project Manager: Kimberly D. McNeill  
 Pinnacle Laboratories, Inc.  
 2709-D Pan American Freeway, NE  
 Albuquerque, New Mexico 87107  
 (505) 344-3777 Fax (505) 344-4413

**RUSH**

003062-01

PRODUCTION DUE DATE: 3-24-00

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
003062-01	3/15	11:15	AK	1

ANALYSIS REQUEST	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL	TOX	Gen Chemistry	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8080)	8270 BY GC/MS	PNA (8310)	8240 (TCLP 1311) ZHE	Herbicides (615/8150)	Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
					X SULFATES	X FOR NITRATE (TRIT)															

PROJECT INFORMATION	SAMPLE RECEIPT	SAMPLES SENT TO:	RELINQUISHED BY:	RELINQUISHED BY:
PROJECT #: 0030	Total Number of Containers	PENSACOLA - STL-FL	Signature: [Signature]	Signature: [Signature]
PROJ. NAME: EPPS	Chain of Custody Seals	PORTLAND - ESL-OR	Printed Name: [Name]	Printed Name: [Name]
QC LEVEL: STD. IV	Received Intact?	STL - CT	Date: [Date]	Date: [Date]
QC REQUIRED: (MS) MSD (BLANK)	Received Good Cond./Cold	STL-NEW JERSEY	Company: Pinnacle Laboratories, Inc.	Company: [Company]
TAT: STANDARD (RUSH!!)	LAB NUMBER:	N. CREEK	RECEIVED BY: [Signature]	RECEIVED BY: [Signature]
DUE DATE:	COMMENTS: Verbal on 3/24	BARRINGER	Signature: [Signature]	Signature: [Signature]
RUSH SURCHARGE:		SEQUOIA	Printed Name: ALLEN PARKS	Printed Name: [Name]
CLIENT DISCOUNT:			Date: 3-18-00	Date: [Date]
SPECIAL CERTIFICATION REQUIRED: YES NO			Company: STL-PNS	Company: [Company]

# PROJECT SAMPLE INSPECTIC FORM

Lab Accession #: C003616

Date Received: 18-March-00

- |   |  |
|---|--|
| 1. Was there a Chain of Custody? <input checked="" type="radio"/> Yes No <sup>+</sup>                                       | 8. Were samples checked for preservative? (Check pH of all H <sub>2</sub> O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)* <input checked="" type="radio"/> Yes No <sup>+</sup> N. |
| 2. Was Chain of Custody properly filled out and relinquished? <input checked="" type="radio"/> Yes No <sup>+</sup>          | 9. Is there sufficient volume for analysis requested? <input checked="" type="radio"/> Yes No <sup>+</sup> N/A (Can)   |
| 3. Were samples received cold? (Criteria: 2° - 6°C: STL-SOP 1055) <input checked="" type="radio"/> Yes No <sup>+</sup> N/A  | 10. Were samples received within Holding Time? (REFER TO STL-SOP 1040) <input checked="" type="radio"/> Yes No <sup>+</sup>  |
| 4. Were all samples properly labeled and identified? <input checked="" type="radio"/> Yes No <sup>+</sup>                   | 11. Is Headspace visible > ¼" in diameter in VOA vials?* If any headspace is evident, comment in out-of-control section. Yes <sup>+</sup> No <input checked="" type="radio"/> N/A  |
| 5. Did samples require splitting? Yes <sup>+</sup> <input checked="" type="radio"/> No Req By: PM Client Other <sup>+</sup> | 12. If sent, were matrix spike bottles returned? Yes No <sup>+</sup> <input checked="" type="radio"/> N/A  |
| 6. Were samples received in proper containers for analysis requested? <input checked="" type="radio"/> Yes No <sup>+</sup>  | 13. Was Project Manager notified of problems? (initials: _____) Yes No <sup>+</sup> <input checked="" type="radio"/> N/A   |
| 7. Were all sample containers received intact? <input checked="" type="radio"/> Yes No <sup>+</sup>                         |  |

Airbill Number(s): 128781684444070786

Shipped By: UPS

Cooler Number(s): Client Cooler

Shipping Charges: N/A

Cooler Weight(s): 31 lbs.

Cooler Temp(s) (°C): 3°C  
CCK9  
(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

### Out of Control Events and Inspection Comments:

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(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: lnc Date: 3/18/00 Logged By: PRZ Date: 3/18/00

+ Note all Out-of-Control and/or questionable events on Comment Section of this form.  
+ Note who requested the splitting of samples on the Comment Section of this form.  
+ All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938).  
\* According to EPA, ¼" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938).

# PHILIP

## Chain of Custody Record

REVISION 11/13/99

4000 Monroe Road  
Farmington, NM 87401

(505) 326-2262 Phone  
(505) 326-2388 FAX

COC Serial No. C 2508

UV 506 L

Project Name <b>EPES QUARTERLY SAMPLING</b>		Project Number <b>622800107 Phase . Task</b>		Total Number of Bottles		Type of Analysis and Bottle	
Samplers <b>R. THOMPSON</b>		Laboratory Name <b>Pinnacle Labs</b>		Location <b>Albuquerque, NM</b>		BTX 802 NITRATES SULFATES	
Sample Number (and depth)	Date	Time	Matrix	Comments BISTI PARE PT # 10267			
<b>BIS-0003-PZ22</b>	<b>3/15/00</b>	<b>1115</b>	<b>H2O</b>	<b>4</b>	<b>X</b>	<b>X</b>	<b>X</b>
Relinquished by: _____ Signature _____ Date _____ Time _____ Received By: _____ Signature _____ Date _____ Time _____							
Samples Iced: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Preservatives (ONLY for Water Samples) <input type="checkbox"/> Cyanide ..... Sodium hydroxide (NaOH) <input checked="" type="checkbox"/> Volatile Organic Analyis ..... Hydrochloric acid (HCl) <input type="checkbox"/> Metals ..... Nitric acid (HNO3) <input checked="" type="checkbox"/> TPH (418.1) ..... <b>NITRATES</b> ..... Sulfuric acid (H2SO4) <input type="checkbox"/> Other (Specify) _____		Carrier: <b>GREYHOUND</b>		Shipping and Lab Notes: <b>NEED RESULTS BY 3/24/00! RCVB DRIVE 3:30C</b>		Airbill No. <b>AL1606650161</b>	

LD 267 PZ 23

BISTI FLARE

PIT #1



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

Pinnacle Lab ID number 003063  
March 28, 2000

PHILIP ENVIRONMENTAL  
4000 MONROE ROAD  
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING  
Project Number 62800107

Attention: ROBERT THOMPSON

On 03/17/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze aqueous samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 was performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

All other parameters were performed by Severn Trent (FL) Inc., Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill  
Project Manager

H. Mitchell Rubenstein, Ph. D.  
General Manager

MR: jt

Enclosure





2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

### GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
CLIENT : PHILIP ENVIRONMENTAL  
PROJECT # : 62800107  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 003063

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	BIS-0003-PZ23	AQUEOUS	03/14/00	NA	03/20/00	1

PARAMETER	DET. LIMIT	UNITS	BIS-0003-PZ23
BENZENE	0.5	UG/L	< 0.5
TOLUENE	0.5	UG/L	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5

SURROGATE:  
BROMOFLUOROBENZENE (%) 108  
SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
N/A





2709-D Pan American Freeway NE  
 Albuquerque, New Mexico 87107  
 Phone (505) 344-3777  
 Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL  
 MSMSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 003063
MSMSD #	: 003055-01	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 03/20/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	21.3	107	20.4	102	4	( 80 - 120 )	20
TOLUENE	<0.5	20.0	20.7	104	19.3	97	7	( 80 - 120 )	20
ETHYLBENZENE	<0.5	20.0	21.2	106	21.7	109	2	( 80 - 120 )	20
TOTAL XYLENES	<0.5	60.0	61.4	102	62.6	104	2	( 80 - 120 )	20

CHEMIST NOTES:  
 N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



LOG NO: C0-03617  
Received: 18 MAR 00  
Reported: 24 MAR 00

Ms. Kim McNeill  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 003063, EPFS  
Sampled By: Client  
Code: 151100324  
Page 1

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
03617-1	003063-01	03-14-00/16:45
PARAMETER		03617-1
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)		
Nitrate + Nitrite-N, mg/l		34
Nitrate-N, mg/l		33.8
Nitrite-N, mg/l		0.2 R4
Analyst		WH
Prep Date		03.18.00
Analysis Date		03.22.00
Batch ID		N3W21A
Prep Method		353.2
Dilution Factor		10
Sulfate as SO4 (375.4), mg/l		
Analyst		BE
Prep Date		03.21.00
Analysis Date		03.21.00
Batch ID		SEW032
Prep Method		375.4
Dilution Factor		100



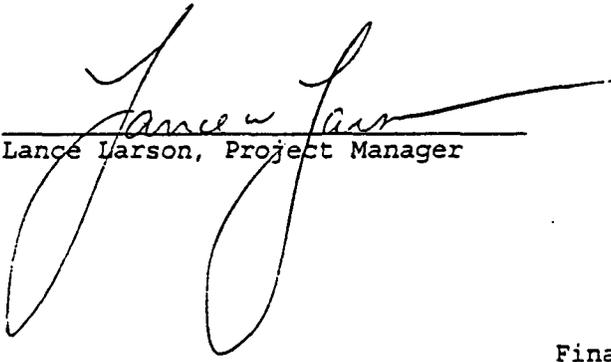
LOG NO: C0-03617  
Received: 18 MAR 00  
Reported: 24 MAR 00

Ms. Kim McNeill  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 003063, EPFS  
Sampled By: Client  
Code: 151100324  
Page 2

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED			
03617-2	Method Blank				
03617-3	Lab Control Standard % Recovery				
03617-4	Matrix Spike % Recovery				
03617-5	Matrix Spike Duplicate % Recovery				
PARAMETER		03617-2	03617-3	03617-4	03617-5
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)					
Nitrate + Nitrite-N, mg/l		<0.1	100 %	78 %	78 %
Nitrate-N, mg/l		<0.1	100 %	78 %	78 %
Nitrite-N, mg/l		<0.1	110 %	110 %	110 %
Analyst		WH	WH	WH	WH
Prep Date		03.18.00	03.18.00	03.18.00	03.18.00
Analysis Date		03.22.00	03.22.00	03.22.00	03.22.00
Batch ID		N3W21A	N3W21A	N3W21A	N3W21A
Prep Method		353.2	353.2	353.2	353.2
Dilution Factor		1	1	1	1
Sulfate as SO4 (375.4), mg/l					
Analyst		BE	BE	BE	BE
Prep Date		03.21.00	03.21.00	03.21.00	03.21.00
Analysis Date		03.21.00	03.21.00	03.21.00	03.21.00
Batch ID		SEW032	SEW032	SEW032	SEW032
Prep Method		375.4	375.4	375.4	375.4
Dilution Factor		1	1	400	400

  
Lance Larson, Project Manager

Final Page Of Report

Network Project Manager: Kimberly D. McNeill

Pinnacle Laboratories, Inc.  
 2709-D Pan American Freeway, NE  
 Albuquerque, New Mexico 87107  
 (505) 344-3777 Fax (505) 344-4413

**RUSH**  
 C003617  
 PRODUCTION DATE: 3-24-00

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL	SULFATE	TOX	GEN CHEMISTRY (TOTAL)	Gen Chemistry	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8080)	8270 BY GC/MS	PNA (8310)	8240 (TCLP 1311) ZHE	Herbicides (615/8150)	Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS	
003663-01	3/14/05		AK						X		X																	

PROJECT INFORMATION

SAMPLE RECEIPT

SAMPLES SENT TO:

RELINQUISHED BY:

RELINQUISHED BY:

PROJECT #: 0030  
 PROJ. NAME: EPFS  
 OCC LEVEL: STD. IV  
 OCC REQUIRED: MS MSD  
 TAT: STANDARD (RUSH)  
 DUE DATE:  
 RUSH SURCHARGE:  
 CLIENT DISCOUNT:  
 SPECIAL CERTIFICATION REQUIRED: YES NO

Total Number of Containers  
 Chain of Custody Seals  
 Received In tact?  
 Received Good Cond./Cold  
 LAB NUMBER:

RECEIVED BY: [Signature] Date: 3/17  
 Pinnacle Laboratories, Inc.

RECEIVED BY: [Signature] Date: 3/18/00  
 Company: ST-PNS

COMMENTS: Verbal on 3/24

# PROJECT SAMPLE INSPECTIC I FORM

Lab Accession #: C003617

Date Received: 18-March-00

- |  |                                      |                                     |                                      |
|--|--------------------------------------|-------------------------------------|--------------------------------------|
| 1. Was there a Chain of Custody?   | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           |                                      |
| 2. Was Chain of Custody properly filled out and relinquished?  | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           |                                      |
| 3. Were samples received cold? (Criteria: 2° - 6°C: STL-SOP 1055)  | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           | N/A                                  |
| 4. Were all samples properly labeled and identified?   | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           |                                      |
| 5. Did samples require splitting? Req By: PM Client Other*   | Yes*                                 | <input checked="" type="radio"/> No |                                      |
| 6. Were samples received in proper containers for analysis requested?  | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           |                                      |
| 7. Were all sample containers received intact?   | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           |                                      |
| 8. Were samples checked for preservative? (Check pH of all H <sub>2</sub> O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)* | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           | N/A                                  |
| 9. Is there sufficient volume for analysis requested?  | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           | N/A (Can)                            |
| 10. Were samples received within Holding Time? (REFER TO STL-SOP 1040)   | <input checked="" type="radio"/> Yes | <input type="radio"/> No*           |                                      |
| 11. Is Headspace visible > 1/4" in diameter in VOA vials?* If any headspace is evident, comment in out-of-control section.   | Yes*                                 | <input type="radio"/> No            | <input checked="" type="radio"/> N/A |
| 12. If sent, were matrix spike bottles returned?   | Yes                                  | <input type="radio"/> No*           | <input checked="" type="radio"/> N/A |
| 13. Was Project Manager notified of problems? (initials: _____)  | Yes                                  | <input type="radio"/> No*           | <input checked="" type="radio"/> N/A |

Airbill Number(s): 1287811694444070786

Shipped By: UPS

Cooler Number(s): Client Cooler

Shipping Charges: N/A

Cooler Weight(s): 31 lbs.

Cooler Temp(s) (°C): 3°C

CCK9

(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

## Out of Control Events and Inspection Comments:

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(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: Lnsc Date: 3/18/00 Logged By: pkc Date: 3/18/00

- + Note all Out-of-Control and/or questionable events on Comment Section of this form.
- + Note who requested the splitting of samples on the Comment Section of this form.
- + All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938).
- \* According to EPA, 1/4" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938).



LD 267 PZ 26

BISTI FLARE

PIT #1



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

Pinnacle Lab ID number 003064  
March 28, 2000

PHILIP ENVIRONMENTAL  
4000 MONROE ROAD  
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING  
Project Number 62800107

Attention: ROBERT THOMPSON

On 03/17/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze aqueous samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 was performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

All other parameters were performed by Severn Trent (FL) Inc., Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill  
Project Manager

H. Mitchell Rubenstein, Ph. D.  
General Manager

MR: jt

Enclosure





2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

### GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
CLIENT : PHILIP ENVIRONMENTAL  
PROJECT # : 62800107  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 003064

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	BIS-0003-PZ26	AQUEOUS	03/15/00	NA	03/20/00	1

PARAMETER	DET. LIMIT	UNITS	BIS-0003-PZ26
BENZENE	0.5	UG/L	1.6
TOLUENE	0.5	UG/L	2.8
ETHYLBENZENE	0.5	UG/L	< 0.5
TOTAL XYLENES	0.5	UG/L	3.1

SURROGATE:  
BROMOFLUOROBENZENE (%) 112  
SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
N/A



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST : EPA 8021 MODIFIED                      PINNACLE I.D. : 003064  
BLANK I. D. : 032000                              DATE EXTRACTED : NA  
CLIENT : PHILIP ENVIRONMENTAL              DATE ANALYZED : 03/20/00  
PROJECT # : 62800107                            SAMPLE MATRIX : AQUEOUS  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
SURROGATE: BROMOFLUOROBENZENE (%)		97
SURROGATE LIMITS:	( 80 - 120 )	
CHEMIST NOTES:		
N/A		



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GAS CHROMATOGRAPHY QUALITY CONTROL  
 MSMSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 003064
MSMSD #	: 003055-01	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 03/20/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	21.3	107	20.4	102	4	( 80 - 120 )	20
TOLUENE	<0.5	20.0	20.7	104	19.3	97	7	( 80 - 120 )	20
ETHYLBENZENE	<0.5	20.0	21.2	106	21.7	109	2	( 80 - 120 )	20
TOTAL XYLENES	<0.5	60.0	61.4	102	62.6	104	2	( 80 - 120 )	20

CHEMIST NOTES:  
 N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



LOG NO: C0-03618  
Received: 18 MAR 00  
Reported: 24 MAR 00

Ms. Kim McNeill  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 003064, EPFS  
Sampled By: Client  
Code: 151200324  
Page 1

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
03618-1	003064-01	03-15-00/09:30
PARAMETER		03618-1
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)		
Nitrate + Nitrite-N, mg/l		120
Nitrate-N, mg/l		120
Nitrite-N, mg/l		<0.1 R4
Analyst		WH
Prep Date		03.18.00
Analysis Date		03.22.00
Batch ID		N3W21A
Prep Method		353.2
Dilution Factor		50
Sulfate as SO4 (375.4), mg/l		
Analyst		BE
Prep Date		03.21.00
Analysis Date		03.21.00
Batch ID		SEW032
Prep Method		375.4
Dilution Factor		200



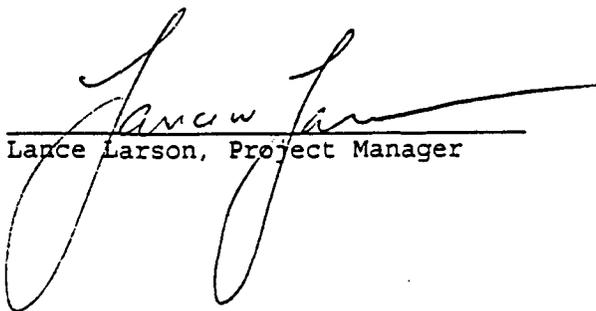
LOG NO: C0-03618  
Received: 18 MAR 00  
Reported: 24 MAR 00

Ms. Kim McNeill  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 003064, EPFS  
Sampled By: Client  
Code: 151200324  
Page 2

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED			
03618-2	Method Blank				
03618-3	Lab Control Standard % Recovery				
03618-4	Matrix Spike % Recovery				
03618-5	Matrix Spike Duplicate % Recovery				
PARAMETER		03618-2	03618-3	03618-4	03618-5
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)					
Nitrate + Nitrite-N, mg/l		<0.1	100 5	78 %	78 %
Nitrate-N, mg/l		<0.1	100 %	78 %	78 %
Nitrite-N, mg/l		<0.1	110 %	110 %	110 %
Analyst		WH	WH	WH	WH
Prep Date		03.18.00	03.18.00	03.18.00	03.18.00
Analysis Date		03.22.00	03.22.00	03.22.00	03.22.00
Batch ID		N3W21A	N3W21A	N3W21A	N3W21A
Prep Method		353.2	353.2	353.2	353.2
Dilution Factor		1	1	1	1
Sulfate as SO4 (375.4), mg/l					
Analyst		BE	BE	BE	BE
Prep Date		03.21.00	03.21.00	03.21.00	03.21.00
Analysis Date		03.21.00	03.21.00	03.21.00	03.21.00
Batch ID		SEW032	SEW032	SEW032	SEW032
Prep Method		375.4	375.4	375.4	375.4
Dilution Factor		1	1	400	400

  
Lance Larson, Project Manager

Final Page Of Report



# PROJECT SAMPLE INSPECTIC FORM

Lab Accession #: C003618

Date Received: 18-March-00

- 1. Was there a Chain of Custody?  Yes No<sup>+</sup>
- 2. Was Chain of Custody properly filled out and relinquished?  Yes No<sup>+</sup>
- 3. Were samples received cold?  Yes No<sup>+</sup> N/A  
(Criteria: 2° - 6°C: STL-SOP 1055)
- 4. Were all samples properly labeled and identified?  Yes No<sup>+</sup>
- 5. Did samples require splitting? Yes<sup>+</sup>  No  
Req By: PM Client Other<sup>+</sup>
- 6. Were samples received in proper containers for analysis requested?  Yes No<sup>+</sup>
- 7. Were all sample containers received intact?  Yes No<sup>+</sup>

- 8. Were samples checked for preservative?  Yes No<sup>+</sup> N/A  
*(Check pH of all H<sub>2</sub>O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)*
- 9. Is there sufficient volume for analysis requested?  Yes No<sup>+</sup> N/A (Can)
- 10. Were samples received within Holding Time?  Yes No<sup>+</sup> (REFER TO STL-SOP 1040)
- 11. Is Headspace visible > 1/4" in diameter in VOA vials? If any headspace is evident, comment in out-of-control section. Yes<sup>+</sup> No  N/A
- 12. If sent, were matrix spike bottles returned? Yes No<sup>+</sup>  N/A
- 13. Was Project Manager notified of problems? (initials: \_\_\_\_\_) Yes No<sup>+</sup>  N/A

Airbill Number(s): 128781684444070786

Shipped By: UPS

Cooler Number(s): Client Cooler

Shipping Charges: N/A

Cooler Weight(s): 31 lbs.

Cooler Temp(s) (°C): 3<sup>o</sup>  
CCK9  
(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

### Out of Control Events and Inspection Comments:

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(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: Lnbc Date: 3/18/00 Logged By: per Date: 3/18/00

- \* Note all Out-of-Control and/or questionable events on Comment Section of this form.
- \* Note who requested the splitting of samples on the Comment Section of this form.
- \* All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938).
- \* According to EPA, 1/2" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938).



LD 267 PZ 29

BISTI FLARE

PIT #1



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

Pinnacle Lab ID number 003065  
March 28, 2000

PHILIP ENVIRONMENTAL  
4000 MONROE ROAD  
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING  
Project Number 62800107

Attention: ROBERT THOMPSON

On 03/17/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze aqueous samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 was performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

All other parameters were performed by Severn Trent (FL) Inc., Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill  
Project Manager

H. Mitchell Rubenstein, Ph. D.  
General Manager

MR: jt

Enclosure





2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

### GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
CLIENT : PHILIP ENVIRONMENTAL  
PROJECT # : 62800107  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 003065

SAMPLE	DATE	DATE	DATE	DIL.		
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	BIS-0003-PZ29	AQUEOUS	03/15/00	NA	03/20/00	50

PARAMETER	DET. LIMIT	UNITS	BIS-0003-PZ29
BENZENE	0.5	UG/L	15000
TOLUENE	0.5	UG/L	9200
ETHYLBENZENE	0.5	UG/L	700
TOTAL XYLENES	0.5	UG/L	5700

SURROGATE:  
BROMOFLUOROBENZENE (%) 115  
SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
N/A



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Albuquerque, New Mexico 87107  
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Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 003065
BLANK I. D.	: 032000	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 03/20/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
SURROGATE:		
BROMOFLUOROBENZENE (%)		97
SURROGATE LIMITS:	( 80 - 120 )	
CHEMIST NOTES:		
N/A		



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 Albuquerque, New Mexico 87107  
 Phone (505) 344-3777  
 Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL  
 MSMSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 003065
MSMSD #	: 003055-01	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 03/20/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	21.3	107	20.4	102	4	( 80 - 120 )	20
TOLUENE	<0.5	20.0	20.7	104	19.3	97	7	( 80 - 120 )	20
ETHYLBENZENE	<0.5	20.0	21.2	106	21.7	109	2	( 80 - 120 )	20
TOTAL XYLENES	<0.5	60.0	61.4	102	62.6	104	2	( 80 - 120 )	20

CHEMIST NOTES:  
 N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



LOG NO: C0-03619  
Received: 18 MAR 00  
Reported: 24 MAR 00

Ms. Kim McNeill  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 003065, EPFS  
Sampled By: Client  
Code: 151200324  
Page 1

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
03619-1	003065-01	03-15-00/10:30
PARAMETER	03619-1	
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)		
Nitrate + Nitrite-N, mg/l		<0.1
Nitrate-N, mg/l		<0.1
Nitrite-N, mg/l		<0.1 R4
Analyst		WH
Prep Date		03.18.00
Analysis Date		03.22.00
Batch ID		N3W21A
Prep Method		353.2
Dilution Factor		1
Sulfate as SO4 (375.4), mg/l		
Analyst		BE
Prep Date		03.21.00
Analysis Date		03.21.00
Batch ID		SEW032
Prep Method		375.4
Dilution Factor		1



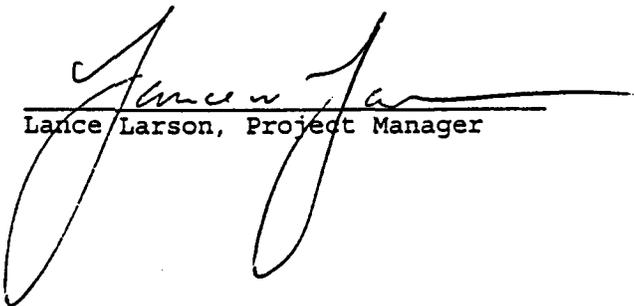
LOG NO: C0-03619  
Received: 18 MAR 00  
Reported: 24 MAR 00

Ms. Kim McNeill  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 003065, EPFS  
Sampled By: Client  
Code: 151200324  
Page 2

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED			
03619-2	Method Blank				
03619-3	Lab Control Standard % Recovery				
03619-4	Matrix Spike % Recovery				
03619-5	Matrix Spike Duplicate % Recovery				
PARAMETER		03619-2	03619-3	03619-4	03619-5
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)					
Nitrate + Nitrite-N, mg/l		<0.1	100 %	78 %	78 %
Nitrate-N, mg/l		<0.1	100 %	78 %	78 %
Nitrite-N, mg/l		<0.1	110 %	110 %	110 %
Analyst		WH	WH	WH	WH
Prep Date		03.18.00	03.18.00	03.18.00	03.18.00
Analysis Date		03.22.00	03.22.00	03.22.00	03.22.00
Batch ID		N3W21A	N3W21A	N3W21A	N3W21A
Prep Method		353.2	353.2	353.2	353.2
Dilution Factor		1	1	1	1
Sulfate as SO4 (375.4), mg/l					
Analyst		BE	BE	BE	BE
Prep Date		03.21.00	03.21.00	03.21.00	03.21.00
Analysis Date		03.21.00	03.21.00	03.21.00	03.21.00
Batch ID		SEW032	SEW032	SEW032	SEW032
Prep Method		375.4	375.4	375.4	375.4
Dilution Factor		1	1	400	400

  
Lance Larson, Project Manager

Final Page Of Report

Pinnacle Laboratories, Inc.  
 2709-D Pan American Freeway, NE  
 Albuquerque, New Mexico 87107  
 (505) 344-3777 Fax (505) 344-4413

**RUSH**  
 PRODUCTION DATE: 3-24-00

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
003065 -01	3/5	1030	AR	

Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL	SULFATE	TOX	GEN CHEMISTRY	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8080)	8270 BY GC/MS	PNA (8310)	8240 (TCLP 1311) ZHE	Herbicides (615/8150)	Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS	
				X																		

**PROJECT INFORMATION**

PROJECT #: 0030

PROJ NAME: EPTS

OC LEVEL: STD. IV

OC REQUIRED: (M3) MSD (BLANK)

TAT: STANDARD (RUSH)

DUE DATE:

RUSH SURCHARGE:

CLIENT DISCOUNT:

SPECIAL CERTIFICATION REQUIRED: YES NO

**SAMPLE RECEIPT**

Total Number of Containers

Chain of Custody Seals

Received Intact?

Received Good Cond./Cold

LAB NUMBER:

**SAMPLES SENT TO:**

PENSACOLA - STL-FL

PORTLAND - ESL-OR

STL - CT

STL - NEW JERSEY

N. CREEK

BARRINGER

SEQUOIA

**RELINQUISHED BY:** 1

Signature: [Signature]

Printed Name: [Name]

Date: 3/17

Company: Pinnacle Laboratories, Inc.

**RECEIVED BY:** 1

Signature: [Signature]

Printed Name: [Name]

Date: [Date]

Company: [Company]

**RELINQUISHED BY:** 2

Signature: [Signature]

Printed Name: [Name]

Date: [Date]

Company: [Company]

COMMENTS: Verbs on 3/24

# PROJECT SAMPLE INSPECTION FORM

Lab Accession #: C003619

Date Received: 18-March-00

- |  |   |
|--|---|
| 1. Was there a Chain of Custody? <input checked="" type="radio"/> Yes No <sup>+</sup>                                      | 8. Were samples checked for preservative? (Check pH of all H <sub>2</sub> O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)* <input checked="" type="radio"/> Yes No <sup>+</sup> N/A |
| 2. Was Chain of Custody properly filled out and relinquished? <input checked="" type="radio"/> Yes No <sup>+</sup>         | 9. Is there sufficient volume for analysis requested? <input checked="" type="radio"/> Yes No <sup>+</sup> N/A (Can)  |
| 3. Were samples received cold? (Criteria: 2° - 6°C: STL-SOP 1055) <input checked="" type="radio"/> Yes No <sup>+</sup> N/A | 10. Were samples received within Holding Time? (REFER TO STL-SOP 1040) <input checked="" type="radio"/> Yes No <sup>+</sup>   |
| 4. Were all samples properly labeled and identified? <input checked="" type="radio"/> Yes No <sup>+</sup>                  | 11. Is Headspace visible > 1/4" in diameter in VOA vials? If any headspace is evident, comment in out-of-control section. Yes <sup>+</sup> No <input checked="" type="radio"/> N/A  |
| 5. Did samples require splitting? Req By: PM Client Other* Yes <sup>+</sup> <input checked="" type="radio"/> No            | 12. If sent, were matrix spike bottles returned? Yes No <sup>+</sup> <input checked="" type="radio"/> N/A   |
| 6. Were samples received in proper containers for analysis requested? <input checked="" type="radio"/> Yes No <sup>+</sup> | 13. Was Project Manager notified of problems? (initials: _____) Yes No <sup>+</sup> <input checked="" type="radio"/> N/A  |
| 7. Were all sample containers received intact? <input checked="" type="radio"/> Yes No <sup>+</sup>                        |   |

Airbill Number(s): 128791684444070786

Shipped By: UPS

Cooler Number(s): Client Cooler

Shipping Charges: N/A

Cooler Weight(s): 31 lbs.

Cooler Temp(s) (°C): 3°C

CCK9  
(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

## Out of Control Events and Inspection Comments:

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(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: Lnbc Date: 3/18/00 Logged By: PKC Date: 3/18/00

- \* Note all Out-of-Control and/or questionable events on Comment Section of this form.
- \* Note who requested the splitting of samples on the Comment Section of this form.
- \* All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938).
- \* According to EPA, 1/4" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938).



# Chain of Custody Record

4000 Monroe Road Farmington, NM 87401  
(505) 326-2262 Phone  
(505) 326-2388 FAX

COC Serial No. C 2506

Project Name <u>EPFS QUARTERLY SAMPLING</u>		Type of Analysis and Bottle		Comments
Project Number <u>62800107 Phase 1 Task</u>		Total Number of Bottles		
Samplers <u>R. THOMPSON</u>		Type of Analysis and Bottle		Comments
Laboratory		Total Number of Bottles		
Name <u>PINNACLE LABS</u>		Type of Analysis and Bottle		Comments
Location <u>ALBUQUERQUE, NM</u>		Total Number of Bottles		
Sample Number (and depth)	Date	Time	Matrix	Comments
<u>BIS-0003-P229</u>	<u>3/15/00</u>	<u>1030</u>	<u>H2O</u>	
Type of Analysis and Bottle		Total Number of Bottles		Comments
Type of Analysis and Bottle		Total Number of Bottles		

NITRATES  
SULFATES  
BTEX (BZL)

BIST FLAREPIT #1  
LD267

-01

Relinquished by:

Robert Thompson  
Signature

Date

3/16/00

Time

1640

Received By:

Signature

[Signature]

Date

3/17/00

Time

13:01

Samples Iced:  Yes  No

Preservatives (ONLY for Water Samples)

- Cyanide
- Volatile Organic Analysis
- Metals
- TPH (418.1)
- Other (Specify)

Carrier: GREYHOUND

Shipping and Lab Notes:

NEED RESULTS BY 3/24/00!  
RCUD mV ICE  
3.80C

Airbill No. GLI1606650661





Well Number P209

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD

Page 1 of 1

Project Name EpFS quarterly Samplings

Project Manager R. Thompson

Project No. 62800107

Client Company EPFS

Phase Task No. 0301

Site Name BIST; Flare pit #1 (10267)

Site Address Rural Sec 100 Co

Development Criteria

- 3 to 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other

Water Volume Calculation

Initial Depth of Well (feet) 1544  
 Initial Depth to Water (feet) 1390  
 Height of Water Column in Well (feet) 1.54  
 Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>1.54</u>	<u>0.2513</u>	<u>0.75</u>
Gravel Pack			
Drilling Fluids			
Total			<u>0.75</u>

Methods of Development

- Pump
- Bailor
- Centrifugal
- Bottom Valve
- Submersible
- Double Check Valve
- Peristaltic
- Stainless-steel Kemmerer
- Other

Instruments

- pH Meter Hydax
- DO Monitor
- Conductivity Meter Hydax
- Temperature Meter Hydax
- Other

Water Disposal  
L-17 Separator Bloomfield NM.

Water Removal Data

Date	Time	Development Method (Pump/Bailer)	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°F)	pH	Conductivity (umhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Increment	Cumulative					
<u>10/25/00</u>	<u>1311</u>		<u>25</u>		<u>125</u>		<u>19.3</u>	<u>7.07</u>	<u>5620</u>	<u>1.50</u>	<u>210.0</u>	<u>slightly yellow stringy particulate etc.</u>

Circle the date and time that the development criteria are met.

Comments Sampled for BTEX 1319 Bailed Approximately 25 Gallons well went Dry Let Recover Collected Samples

Developer's Signature(s) Alan A. M...

Printed 10-25-00

Reviewer RT Date 10/27/00



Well Number P2-21

Page 1 of 1

Serial No. WDPD

Project Name EPFS quarterly Samplings

Project Manager R Thompson

Project No. 62800102

Client Company EPFS

Phase/Task No. 0301

Site Name Bisti Flare pit #1 (L0267)

Site Address Rural San Juan Co

**Development Criteria**

- 10 to 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other

**Water Volume Calculation**

Initial Depth of Well (feet) 25.07  
 Initial Depth to Water (feet) 22.31  
 Height of Water Column in Well (feet) 3.26  
 Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well (Gallons)	Gallons to be Removed
Well Casing	3.26	1.59
Gravel Pack		
Drilling Fluids		
Total		1.59

**Methods of Development**

- Pump
  - Centrifugal
  - Bottom Valve
  - Submersible
  - Double Check Valve
  - Peristaltic
  - Stainless-steel Kemmerer
  - Other

**Instruments**

- pH Meter Hydax
- DO Monitor
- Conductivity Meter Hydax
- Temperature Meter Hydax
- Other

**Water Disposal**

Let 25 per cent Bloomfield NM.

**Water Removal Data**

Date	Time	Development Method Pump/Boiler	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed		Temperature (°C)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Increment	Cumulative					
0-25-00/2019		X				25	25	15.3	6.97	11080	1	Clear

Circle the date and time that the development criteria are met.

Comments Sampled for BTEX 10/22 Bailed well Dry Approximately 1.0 Gallon Let Recover collected sample

Developer's Signature(s) Alan A. May

Date 10-25-00

Reviewer RT

Date 10/27/00



Project Name EPFS quarterly Samplings

Project Manager R Thompson

Project No. 628 00102

Client Company EPFS

Site Address Recall San Juan CO

Phase/Task No. 0301

Site Name BISTI Flare pit #1 (02067)

**Development Criteria**

- 3 to 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other

**Water Volume Calculation**

Initial Depth of Well (feet) 18.00  
 Initial Depth to Water (feet) 12.00  
 Height of Water Column in Well (feet) 0.97  
 Diameter (inches): Well 2 Gravel Pack

Item	Water Volume in Well (Gallons)	Gallons to be Retrieved
Well Casing	<u>0.97</u>	<u>0.97</u>
Gravel Pack	<u>0.15 x 3</u>	<u>0.45</u>
Drilling Fluids		
Total		<u>0.52</u>

**Methods of Development**

- Pump:  Bagler
- Centrifugal  Bottom Valve
- Submersible  Double Check Valve
- Peristaltic  Stainless-steel Kemmerer
- Other

**Instruments**

- pH Meter Hydac
- DO Monitor
- Conductivity Meter Hydac
- Temperature Meter Hydac
- Other

Water Disposal K-12 Separator Bloomfield NM

**Water Removal Data**

Date	Time	Development Method Pump	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Retrieved (gallons)		pH	Conductivity µmhos/cm	Dissolved Oxygen (mg/l)	Comments
						Incremental	Cumulative				
<u>0 25 00</u>	<u>0939</u>	<u>X</u>				<u>.25</u>	<u>.25</u>	<u>7.06</u>	<u>8680</u>	<u>3</u>	<u>Clear yellowish</u>

Circle the date and time that the development criteria are met.

Comments Sampled for BTEX 0939 10/27/00 well Dry. Let well recover. Collected Sample  
Bailed approximately .25

Developer's Signature(s) Christa May

Date 10 25 00

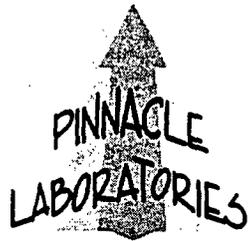
Reviewer RT Date 10/27/00











2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

Pinnacle Lab ID number      **010104**  
November 14, 2000

PHILIP ENVIRONMENTAL  
4000 MONROE ROAD  
FARMINGTON, NM 87401

EL PASO FIELD SERVICES  
614 RIELLY STREET  
FARMINGTON, NM 87401

Project Name                      EPFS QUARTERLY SAMPLING  
Project Number                    62800107

Attention:                         ROBERT THOMPSON/SCOTT POPE

On 10/26/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 analyses were performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

All other analyses were performed by Environmental Services Laboratory, Inc., Portland, OR.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.  
General Manager

MR: jt

Enclosure





2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

### GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
CLIENT : PHILIP ENVIRONMENTAL  
PROJECT # : 62800107  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 010104

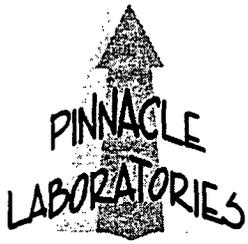
SAMPLE	DATE	DATE	DATE	DIL.		
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	BIS-0010-PZ 08	AQUEOUS	10/25/00	NA	10/30/00	250
02	BIS-0010-PZ 09	AQUEOUS	10/25/00	NA	10/30/00	200
03	BIS-0010-PZ 16	AQUEOUS	10/25/00	NA	10/30/00	1

PARAMETER	DET. LIMIT	UNITS	BIS-0010-PZ 08	BIS-0010-PZ 09	BIS-0010-PZ 16
BENZENE	0.5	UG/L	15000	2500	0.8
TOLUENE	0.5	UG/L	6900	3300	0.7
ETHYLBENZENE	0.5	UG/L	650	150	< 0.5
TOTAL XYLENES	0.5	UG/L	17	2000	0.7

SURROGATE:  
BROMOFLUOROBENZENE (%) 112 114 112  
SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:

PA



2709-D Pan American Freeway NE  
 Albuquerque, New Mexico 87107  
 Phone (505) 344-3777  
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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
 CLIENT : PHILIP ENVIRONMENTAL  
 PROJECT # : 62800107  
 PROJECT NAME : EPFS QUARTERLY SAMPLING

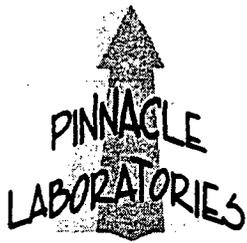
PINNACLE I.D.: 010104

SAMPLE	DATE	DATE	DATE	DIL.
ID. #	SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	10/25/00	NA	10/30/00	1
05	10/25/00	NA	10/30/00	1
06	10/25/00	NA	10/30/00	1

PARAMETER	DET. LIMIT	UNITS	BIS-0010-PZ 21	BIS-0010-PZ 22	BIS-0010-PZ 23
BENZENE	0.5	UG/L	55	0.6	< 0.5
TOLUENE	0.5	UG/L	0.7	0.7	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	0.6	0.5	< 0.5

SURROGATE:  
 BROMOFLUOROBENZENE (%) 116 92 114  
 SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
 NA



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 Albuquerque, New Mexico 87107  
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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
 CLIENT : PHILIP ENVIRONMENTAL  
 PROJECT # : 62800107  
 PROJECT NAME : EPFS QUARTERLY SAMPLING

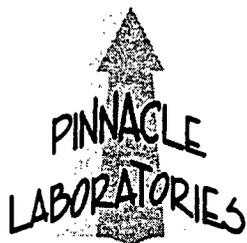
PINNACLE I.D.: 010104

SAMPLE	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
07	BIS-0010-PZ 26	AQUEOUS	10/25/00	NA	10/30/00	1
08	BIS-0010-PZ 29	AQUEOUS	10/25/00	NA	10/30/00	200
09	TRIP BLANK	AQUEOUS	10/23/00	NA	10/30/00	1

PARAMETER	DET. LIMIT	UNITS	BIS-0010-PZ 26	BIS-0010-PZ 29	TRIP BLANK
BENZENE	0.5	UG/L	< 0.5	5000	< 0.5
TOLUENE	0.5	UG/L	< 0.5	2300	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	350	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5	1800	< 0.5

SURROGATE:  
 BROMOFLUOROBENZENE (%) 109 117 110  
 SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
 N/A



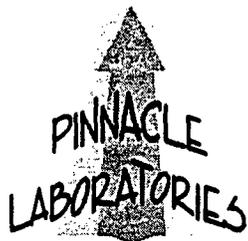
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Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST : EPA 8021 MODIFIED                      PINNACLE I.D. : 010104  
BLANK I. D. : 103000                              DATE EXTRACTED : NA  
CLIENT : PHILIP ENVIRONMENTAL              DATE ANALYZED : 10/30/00  
PROJECT # : 62800107                            SAMPLE MATRIX : AQUEOUS  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
SURROGATE:		
BROMOFLUOROBENZENE (%)		105
SURROGATE LIMITS:	( 80 - 120 )	
CHEMIST NOTES:		

N/A



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GAS CHROMATOGRAPHY QUALITY CONTROL  
 MSMSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 010104
MSMSD #	: 010100-01	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 10/30/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	19.9	100	17.6	88	12	( 80 - 120 )	20
TOLUENE	<0.5	20.0	19.9	100	19.9	100	0	( 80 - 120 )	20
ETHYLBENZENE	<0.5	20.0	21.3	107	21.5	108	1	( 80 - 120 )	20
TOTAL XYLENES	<0.5	60.0	62.4	104	62.6	104	0	( 80 - 120 )	20

CHEMIST NOTES:

A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

# *Environmental Services Laboratory, Inc.*



17400 SW Upper Boones Ferry Road • Suite 270 • Portland, OR 97224 • (503) 670-8520  
November 10, 2000

Jacinta A. Tenorio  
Pinnacle Laboratories  
2709-D Pan American Fwy NE  
Albuquerque, NM 87107  
TEL: 505-344-3777  
FAX (505) 344-4413

RE: 010104/PHIL

Order No.: 0010172

Dear Jacinta A. Tenorio,

Environmental Services Laboratory received 8 samples on 10/27/00 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

Nitrate (EPA 353.3)  
Nitrite in DW (EPA 353.3)  
Sulfate (EPA 375.4)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety, without the written approval from the Laboratory.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

*Nichole Karl*

Nichole Karl  
Project Manager

*Keith Hunter*

Keith Hunter  
Technical Review

**Environmental Services Laboratory**

Date: 10-Nov-00

CLIENT: Pinnacle Laboratories  
 Lab Order: 0010172  
 Project: 010104/PHIL  
 Lab ID: 0010172-01A

Client Sample ID: 010104-01  
 Tag Number:  
 Collection Date: 10/25/00  
 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NITRATE</b>		<b>EPA 353.3</b>				Analyst: gvs
Nitrogen, Nitrate	ND	0.0500		mg/L	1	11/9/00
<b>NITRITE IN DW</b>		<b>EPA 353.3</b>				Analyst: gvs
Nitrogen, Nitrite	ND	0.0500		mg/L	1	10/27/00
<b>SULFATE</b>		<b>EPA 375.4</b>				Analyst: gvs
Sulfate	41.1	25.0		mg/L	5	11/7/00

PZ-08

Qualifiers: ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank      E - Value above quantitation range  
 \* - Value exceeds Maximum Contaminant Level

**Environmental Services Laboratory**

Date: 10-Nov-00

CLIENT: Pinnacle Laboratories  
 Lab Order: 0010172  
 Project: 010104/PHIL  
 Lab ID: 0010172-02A

Client Sample ID: 010104-02  
 Tag Number:  
 Collection Date: 10/25/00  
 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NITRATE</b>		EPA 353.3				Analyst: gvs
Nitrogen, Nitrate	ND	0.0500		mg/L	1	11/9/00
<b>NITRITE IN DW</b>		EPA 353.3				Analyst: gvs
Nitrogen, Nitrite	ND	0.0500		mg/L	1	10/27/00
<b>SULFATE</b>		EPA 375.4				Analyst: gvs
Sulfate	17.0	12.5		mg/L	2.5	11/7/00

PZ - 09

Qualifiers: ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank      E - Value above quantitation range  
 \* - Value exceeds Maximum Contaminant Level

**Environmental Services Laboratory**

Date: 10-Nov-00

CLIENT: Pinnacle Laboratories  
 Lab Order: 0010172  
 Project: 010104/PHIL  
 Lab ID: 0010172-03A

Client Sample ID: 010104-03  
 Tag Number:  
 Collection Date: 10/25/00  
 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NITRATE</b>		<b>EPA 353.3</b>				Analyst: gvs
Nitrogen, Nitrate	1.93	0.500		mg/L	10	11/9/00
<b>NITRITE IN DW</b>		<b>EPA 353.3</b>				Analyst: gvs
Nitrogen, Nitrite	0.0900	0.0500		mg/L	1	10/27/00
<b>SULFATE</b>		<b>EPA 375.4</b>				Analyst: gvs
Sulfate	1,960	600		mg/L	120	11/7/00

PZ - 16

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank      E - Value above quantitation range  
 \* - Value exceeds Maximum Contaminant Level

**Environmental Services Laboratory**

Date: 10-Nov-00

CLIENT: Pinnacle Laboratories  
 Lab Order: 0010172  
 Project: 010104/PHIL  
 Lab ID: 0010172-04A

Client Sample ID: 010104-04  
 Tag Number:  
 Collection Date: 10/25/00  
 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NITRATE</b>		<b>EPA 353.3</b>				Analyst: gvs
Nitrogen, Nitrate	0.108	0.0500		mg/L	1	11/9/00
<b>NITRITE IN DW</b>		<b>EPA 353.3</b>				Analyst: gvs
Nitrogen, Nitrite	0.115	0.0500		mg/L	1	10/27/00
<b>SULFATE</b>		<b>EPA 375.4</b>				Analyst: gvs
Sulfate	76.7	50.0		mg/L	10	11/7/00

PZ -21

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank      E - Value above quantitation range  
 \* - Value exceeds Maximum Contaminant Level

**Environmental Services Laboratory**

Date: 10-Nov-00

**CLIENT:** Pinnacle Laboratories  
**Lab Order:** 0010172  
**Project:** 010104/PHIL  
**Lab ID:** 0010172-05A

**Client Sample ID:** 010104-05  
**Tag Number:**  
**Collection Date:** 10/25/00  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NITRATE</b>		<b>EPA 353.3</b>				Analyst: gvs
Nitrogen, Nitrate	1.20	0.400		mg/L	8	11/9/00
<b>NITRITE IN DW</b>		<b>EPA 353.3</b>				Analyst: gvs
Nitrogen, Nitrite	0.0700	0.0500		mg/L	1	10/27/00
<b>SULFATE</b>		<b>EPA 375.4</b>				Analyst: gvs
Sulfate	67.1	50.0		mg/L	10	11/7/00

PZ-22

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits  
B - Analyte detected in the associated Method Blank      E - Value above quantitation range  
\* - Value exceeds Maximum Contaminant Level

# Environmental Services Laboratory

Date: 10-Nov-00

CLIENT: Pinnacle Laboratories  
 Lab Order: 0010172  
 Project: 010104/PHIL  
 Lab ID: 0010172-06A

Client Sample ID: 010104-06  
 Tag Number:  
 Collection Date: 10/25/00  
 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NITRATE</b>		<b>EPA 353.3</b>				Analyst: gvs
Nitrogen, Nitrate	6.06	1.50		mg/L	30	11/9/00
<b>NITRITE IN DW</b>		<b>EPA 353.3</b>				Analyst: gvs
Nitrogen, Nitrite	2.38	1.00		mg/L	20	10/27/00
<b>SULFATE</b>		<b>EPA 375.4</b>				Analyst: gvs
Sulfate	162	50.0		mg/L	10	11/7/00

PZ-23

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank      E - Value above quantitation range  
 \* - Value exceeds Maximum Contaminant Level

**Environmental Services Laboratory**

Date: 10-Nov-00

**CLIENT:** Pinnacle Laboratories  
**Lab Order:** 0010172  
**Project:** 010104/PHIL  
**Lab ID:** 0010172-07A

**Client Sample ID:** 010104-07  
**Tag Number:**  
**Collection Date:** 10/25/00  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NITRATE</b> Nitrogen, Nitrate	2.22	EPA 353.3 1.00		mg/L	20	11/9/00 Analyst: gvs
<b>NITRITE IN DW</b> Nitrogen, Nitrite	ND	EPA 353.3 0.0500		mg/L	1	10/27/00 Analyst: gvs
<b>SULFATE</b> Sulfate	124	EPA 375.4 50.0		mg/L	10	11/7/00 Analyst: gvs

PZ-26

**Qualifiers:** ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits  
B - Analyte detected in the associated Method Blank  
\* - Value exceeds Maximum Contaminant Level  
S - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits  
E - Value above quantitation range

# Environmental Services Laboratory

Date: 10-Nov-00

CLIENT: Pinnacle Laboratories  
Lab Order: 0010172  
Project: 010104/PHIL  
Lab ID: 0010172-08A

Client Sample ID: 010104-08  
Tag Number:  
Collection Date: 10/25/00  
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NITRATE</b>		<b>EPA 353.3</b>				Analyst: gvs
Nitrogen, Nitrate	0.050	0.0500		mg/L	1	11/9/00
<b>NITRITE IN DW</b>		<b>EPA 353.3</b>				Analyst: gvs
Nitrogen, Nitrite	ND	0.0500		mg/L	1	10/27/00
<b>SULFATE</b>		<b>EPA 375.4</b>				Analyst: gvs
Sulfate	322	100		mg/L	20	11/7/00

Pz-29

Qualifiers: ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits  
J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits  
B - Analyte detected in the associated Method Blank      E - Value above quantitation range  
\* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 10-Nov-00

CLIENT: Pinnacle Laboratories  
 Work Order: 0010172  
 Project: 010104/PHIL

QC SUMMARY REPORT  
 Method Blank

Sample ID:	MBlank	Batch ID:	01 NITRATE-	Test Code:	EPA 353.3	Units:	mg/L	Analysis Date:	11/9/00	Prep Date:
Client ID:	0010172	Run ID:	HIT MAN_001109B	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val
Analyte	Result									
Nitrogen, Nitrate	ND			0.05						
Sample ID:	MBlank	Batch ID:	01 NITRITE-1	Test Code:	EPA 353.3	Units:	mg/L	Analysis Date:	10/27/00	Prep Date:
Client ID:	0010172	Run ID:	HIT MAN_001027B	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val
Analyte	Result									
Nitrogen, Nitrite	ND			0.05						
Sample ID:	MBlank	Batch ID:	01 SULFATE	Test Code:	EPA 375.4	Units:	mg/L	Analysis Date:	11/17/00	Prep Date:
Client ID:	0010172	Run ID:	HIT MAN_001107B	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val
Analyte	Result									
Sulfate	ND			5						

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank

Environmental Services Laboratory

Date: 10-Nov-00

CLIENT: Pinnacle Laboratories

Work Order: 0010172

Project: 010104/PHIL

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 0010176-09B DUP Batch ID: 01 SULFATE Test Code: EPA 375.4 Units: mg/L

Client ID: 0010172 Run ID: HIT MAN\_001107B

Analysis Date 11/7/00

SeqNo: 57641

Prep Date:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate, Diss	ND	5	0	0	0.0%	80	120	0	0.0%	20	

Qualifiers: ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Environmental Services Laboratory

Date: 10-Nov-00

CLIENT: Pinnacle Laboratories  
 Work Order: 0010172  
 Project: 010104/PHIL

QC SUMMARY REPORT  
 Sample Matrix Spike

Sample ID: 0010176-09B MS Batch ID: 01 SULFATE Test Code: EPA 375.4 Units: mg/L Analysis Date 11/7/00 Prep Date:  
 Client ID: 0010172 Run ID: HIT MAN\_001107B SeqNo: 57642

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate, Diss	7.23	5	8	0	90.4%	75	125	0			

Sample ID: 0010176-09B MSD Batch ID: 01 SULFATE Test Code: EPA 375.4 Units: mg/L Analysis Date 11/7/00 Prep Date:  
 Client ID: 0010172 Run ID: HIT MAN\_001107B SeqNo: 57643

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate, Diss	7.01	5	8	0	87.6%	75	125	7.23	3.1%	20	

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank

# Environmental Services Laboratory

Date: 10-Nov-00

**CLIENT:** Pinnacle Laboratories  
**Work Order:** 0010172  
**Project:** 010104/PHIL

## QC SUMMARY REPORT

Laboratory Control Spike - generic

**Sample ID:** LCS      **Batch ID:** 01 NITRATE-      **Test Code:** EPA 353.3      **Units:** mg/L      **Analysis Date:** 11/9/00      **Prep Date:**  
**Client ID:** 0010172      **Run ID:** HIT MAN\_001109B      **SeqNo:** 57883

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate	.304	0.05	0.3	0	101.3%	85	115	0			

**Sample ID:** LCS      **Batch ID:** 01 NITRATE-1      **Test Code:** EPA 353.3      **Units:** mg/L      **Analysis Date:** 11/9/00      **Prep Date:**  
**Client ID:** 0010172      **Run ID:** HIT MAN\_001109B      **SeqNo:** 57884

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate	.303	0.05	0.3	0	101.0%	85	115	0			

**Sample ID:** LCS      **Batch ID:** 01 NITRITE-1      **Test Code:** EPA 353.3      **Units:** mg/L      **Analysis Date:** 10/27/00      **Prep Date:**  
**Client ID:** 0010172      **Run ID:** HIT MAN\_001027B      **SeqNo:** 56742

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	.187	0.05	0.2	0	93.5%	85	115	0			

**Sample ID:** LCS      **Batch ID:** 01 NITRITE-1      **Test Code:** EPA 353.3      **Units:** mg/L      **Analysis Date:** 10/27/00      **Prep Date:**  
**Client ID:** 0010172      **Run ID:** HIT MAN\_001027B      **SeqNo:** 56743

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	.192	0.05	0.2	0	96.0%	85	115	0.187	2.6%	20	

**Sample ID:** LCS      **Batch ID:** 01 SULFATE      **Test Code:** EPA 375.4      **Units:** mg/L      **Analysis Date:** 11/7/00      **Prep Date:**  
**Client ID:** 0010172      **Run ID:** HIT MAN\_001107B      **SeqNo:** 57624

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	12.98	5	12	0	108.2%	85	115	0			

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

Network Project Manager: Jacinta A. Tenorio

Pinnacle Laboratories, Inc.  
 2709-D Pan American Freeway, NE  
 Albuquerque, New Mexico 87107  
 (505) 344-3777 Fax (505) 344-4413

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	RCRA TCLP METALS	Metals-TAL (23 METALS)	TOX	TOC	Gen Chemistry:	Oil and Grease	Volatile Organics GC/MS (8280)	BOD	COD	PESTICIDES/PCB (608/608Z)	Herbicides (615/8151)	PNA (6310/6270 SIMS)	8240 (TCLP 1311) ZHE	Base/Neutral Acid Compounds GC/MS (625/6270)	URANIUM (ICP-MS)	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
010104-01	10/25	1145	AQ	01						X														
-02		1319		02						X														
-03		1220		03						X														
-04		1032		04						X														
-05		1355		05						X														
-06		0959		06						X														
-07		1111		07						X														
-08		1245		08						X														

PROJECT INFORMATION:		SAMPLE RECEIPT		RECEIVED BY:		RECEIVED BY:	
PROJECT #: 010104	Total Number of Containers	PENSACOLA - STL-FL		Signature: <i>[Signature]</i>		Signature: <i>[Signature]</i>	
PROJ. NAME: PHIL	Chain of Custody Seals	ESL - OR		Printed Name: <i>[Name]</i>		Printed Name: <i>[Name]</i>	
QC LEVEL: STD IV	Received Inboat?	STL - CT		Date: <i>[Date]</i>		Date: <i>[Date]</i>	
QC REQUIRED: MS MSD BLANK	Received Good Cond./Cold	ATEL - AZ		Company: <i>[Company]</i>		Company: <i>[Company]</i>	
TAT: STANDARD RUSH!!	LAB NUMBER: 0010172	ATEL - MARION		RECEIVED BY: <i>[Signature]</i>		RECEIVED BY: <i>[Signature]</i>	
COMMENTS:		BARRINGER		Signature: <i>[Signature]</i>		Signature: <i>[Signature]</i>	
DUE DATE: 11/9		ENVIRO TEST LABS		Printed Name: <i>[Name]</i>		Printed Name: <i>[Name]</i>	
RUSH SURCHARGE: -		WCAS		Date: <i>[Date]</i>		Date: <i>[Date]</i>	
CLIENT DISCOUNT: -		WOHL		Company: <i>[Company]</i>		Company: <i>[Company]</i>	
SPECIAL CERTIFICATION							
REQUIRED: YES (NO)							

# PHILIP

ENVIRONMENTAL

## Chain of Custody Record

4000 Monroe Road  
Farmington, NM 87401

(505) 326-2262 Phone  
(505) 326-2388 FAX

010104

COC Serial No. C 2683

Project Name	Project Number	Phase	Task	Samplers	Laboratory	Name	Location	Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle	Comments
Epfs quarterly sampling	61800107		Phase 0301	C. Moez	RIMNACLE	ARBQ	N.M.							
								BIS-0010-pz 07	10-25-00	1145	H <sub>2</sub> O	4	X	
								BIS-0010-pz 09	10-25-00	1319	H <sub>2</sub> O	4	X	
								BIS-0010-pz 16	10-25-00	1220	H <sub>2</sub> O	4	X	
								BIS-0010-pz 21	10-25-00	1032	H <sub>2</sub> O	4	X	
								BIS-0010-pz 22	10-25-00	1355	H <sub>2</sub> O	4	X	
								BIS-0010-pz 23	10-25-00	0959	H <sub>2</sub> O	4	X	
								BIS-0010-pz 26	10-25-00	1111	H <sub>2</sub> O	4	X	
								BIS-0010-pz 29	10-25-00	1245	H <sub>2</sub> O	4	X	
								Trip Blank	10/23/00	1500	"	1	X	

NETRATES  
 5 LITRES  
 BTEX 602L  
 (697) ID#

Comments  
 BISFI FIVE P. 1  
 60 267

Relinquished by:

Signature: *Chia A May*

Received By:

Signature: *Shannon Amore*

Date: 10 25 00  
Time: 16 00

Date: 10/26/00  
Time: 1640

Samples Iced:  Yes  No

Preservatives (ONLY for Water Samples)

- Cyanide
- Volatile Organic Analysis
- Metals
- TPH (418.1)
- Other (Specify) *H<sub>2</sub>SO<sub>4</sub>*
- Other (Specify)
- Sodium hydroxide (NaOH)
- Hydrochloric acid (HCl)
- Nitric acid (HNO<sub>3</sub>)
- Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>)

Carrier: *Greyhound*

Shipping and Lab Notes:

*Rec'd @ 5:10*

Airbill No. *GLI 160 691 8731*

Project Name EpES BUSH Flare Pit Project Manager LISA WILNA Project No. 62800273  
 Client Company EL PESO Field Services Site Address Rural San Juan CO Phase/Task No. 0301  
 Site Name BISTI Flare pit # (LD 267)

Development Criteria  
 3 to 5 Casing Volumes of Water Removal  
 Stabilization of Indicator Parameters  
 Other

Water Volume to be added  
 Initial Depth of Well (feet) 22.97  
 Initial Depth to Water (feet) 18.29  
 Height of Water Column in Well (feet) 4.63  
 Diameter of Well (feet) 8.5 Casing Pipe

Methods of Development  
 Pump  Centrifugal  Bottom Valve  Submersible  Double Check Valve  Peristaltic  Stainless-steel Kemmerer  Other

Water Disposal  
WTZ Separator Bloomfield N.M.

Instruments  
 pH Meter  
 DO Monitor  
 Conductivity Meter Hydac  
 Temperature Meter Hydac  
 Other

Date	Time	Development		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Pumped (gallons)	Water Volume Recovered (gallons)	Temperature (°F)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/l)	Comments
		Pump	Boiler										
12-06-00	1326	X					5.5	5	12.0	6.55	13500		510-4 Brown
	1329	X					5.5	1.5	12.4	7.04	12980		"
	1331	X					5.5	1.5	12.5	7.48	13180		"
	1334	X					5.5	2.5	12.5	7.40	13270		"
	1337	X					5.5	2.5	12.6	7.37	13640	3.5	No Change
	1340												

Circle the date and time that the development criteria are met.

Comments AFTER Bailing Approximately 5 gallons LET well Recover 10 min Bailed 5 more Gal)  
Recover 10 min. AFTER Bailing Approximately 20 gallons well producing Clear water  
Started water 11:15 AM  
 Developer's Signature(s) [Signature] Date 12/6/00 Reviewer [Signature] Date 12/7/00  
Collected Samples 1407

Project Name Epps Drilling - Bisti/Horvit Project Location LISA Winn Project No. 62800373  
 Client Company EL Paso Field Services Phase/Task No. 0301  
 Site Name BISTI Flare pit #1 (LPD 267) Site Address Rural San Juan CO.

Development Criteria  
 3 to 5 Casing Volumes of Water Removal  
 Stabilization of Indicator Parameters  
 Other

Instruments  
 pH Meter  
 DO Monitor  
 Conductivity Meter  
 Temperature Meter  
 Other

Serial No. (if applicable)  
Hydac  
Hydac  
Hydac

Water Volume Calculation

Initial Depth of Well (feet) 32.61 F.O.R.  
 Initial Depth to Water Level (feet) 23.86 F.O.R.  
 Height of Water Column in Well (feet) 8.75  
 Diameter (inches): Well 2 Cased Pipe

Item	Water Volume in Well (Gallons)	Water to be Removed (Gallons)
Well Volume	<u>142 X 3</u>	<u>4.26</u>
Stand Pipe		
Drilling Check		
Total		<u>4.26</u>

Methods of Development

Pump  
 Centrifugal  
 Submersible  
 Peristaltic  
 Other

Rajler  
 Bottom Valve  
 Double Check Valve  
 Stainless-steel Kemmerer

Water Disposal  
K-12 Separator Bloomfield U/M

Water Removal Data

Date	Time	Development Method (Pump)	Recovery Rate (gal/min)	Initial Depth (feet)	Ending Water Depth (feet)	Water Column Pressure (PSI)	Temperature (°F)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/l)	Comments
12-07-00	1157	X				1	12.5	6.69	12700		6.0 mg/L No odor
	1200	X				2	13.0	6.97	12880		"
	1203	X				3	13.2	7.07	13050		"
	1206	X				4	13.0	7.17	13100		"
	1209	X				5	12.9	7.24	13170	6.5	No Change

Circle the date and time that the development criteria are met.

Comments AFTER Bailing Approximately 20 gal. Removed Silt from Bottom of well  
Water turning cloudy Let Recover Started water quality readings 1103  
Sampled 1232  
 Developer's Signature (s) Chris A. May Date 12-07-00 Reviewer Willie Date 12/7/00



Industrial Services Group  
Central Region  
4000 Monroe Road  
Albuquerque, NM 87401

# Well Observation Data

Serial No. WOD- \_\_\_\_\_

Page 1 of 1

Project Name EPFS Drilling

Project No. 62800373

Project Manager LISA Winn

Phase/Task No. 0301

Client Company EL Paso Field Services

Date Wednesday 12-06-00

Site Name BIST, Elev pit #1 LD 267

Depth Measurement Instrument Type oil/water interface probe

Well or Piezometer	Time	Reason Not Measured	Depth to Floating Product (feet)	Depth to Water (feet)	Depth to Sinking Product (feet)	Total Well Depth (feet)	Floating Product Thickness (feet)	Sinking Product Thickness (feet)	Comments	Ground To Water
P2	29 0946			17.58					1.20 T.O.R. To ground	16.38
P2	16 1003			15.95					2.89 T.O.R. To ground	13.06
P2	18 0953			18.14					.74 T.O.R. To ground	17.40
P2	17 0957			17.20					1.57 T.O.R. To ground	15.63
P2	30 1019			21.05					2.94 T.O.R. To ground	18.11
P2	21 1029			22.41					2.87 T.O.R. To ground	19.54
P2	10 1050			18.59					1.36 T.O.R. To ground	17.23
P2	22 1151			20.75						
P2	23 1158			17.10						
P2	08 1254			14.26						
P2	09 1302			14.00						
P2	26 1314			12.95						

Reason Not Measured: D = Dry; O = Obstructed; N = Not Accessible

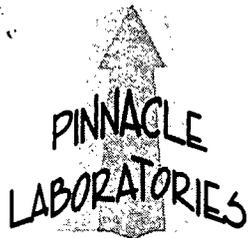
Comments Column titled "Depth to Water" - measurements include the well casing above ground surface. The "Comments" column is the measurement from

Signature Christa May Date 12-06-00 Reviewer JWinn Date 12/7/00

top of riser (TOR) to ground surface in feet. The "Ground to Water" next to comments column is the Depth to water from ground surface for piezometers specified by EPFS.







2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

Pinnacle Lab ID number      012037  
December 26, 2000

PHILIP ENVIRONMENTAL  
4000 MONROE ROAD  
FARMINGTON, NM 87401

EL PASO FIELD SERVICES  
614 RIELLY STREET  
FARMINGTON, NM 87401

Project Name                    EPFS DRILLING  
Project Number                62800373

Attention:                    ROBERT THOMPSON/SCOTT POPE

On 12/08/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

Benzene was confirmed at 8.2 ug/L by EPA method 8260 B.

EPA method 8021 analyses were performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

All other analyses were performed by Severn Trent Laboratories, Inc., Pensacola, FL.

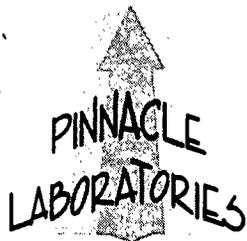
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.  
General Manager

MR: jt

Enclosure





2709-D Pan American Freeway NE  
 Albuquerque, New Mexico 87107  
 Phone (505) 344-3777  
 Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
 CLIENT : PHILIP ENVIRONMENTAL  
 PROJECT # : 62800373  
 PROJECT NAME : EPFS DRILLING

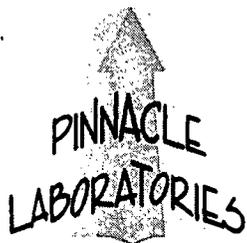
PINNACLE I.D.: 012037

SAMPLE #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	BIS-0012-MW01	AQUEOUS	12/06/00	NA	12/12/00	1
02	BIS-0012-MW02	AQUEOUS	12/07/00	NA	12/12/00	1
03	BIS-0012-TW	AQUEOUS	12/07/00	NA	12/12/00	1

PARAMETER	DET. LIMIT	UNITS	BIS-0012-MW01	BIS-0012-MW02	BIS-0012-TW
BENZENE	0.5	UG/L	2.0	< 0.5	7.6
TOLUENE	0.5	UG/L	1.1	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	1.4	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	3.5	< 0.5	< 0.5

SURROGATE:  
 BROMOFLUOROBENZENE (%) 155\* 100 96  
 SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:  
 High surrogate due to matrix interference.



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
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### GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
CLIENT : PHILIP ENVIRONMENTAL  
PROJECT # : 62800373  
PROJECT NAME : EPFS DRILLING

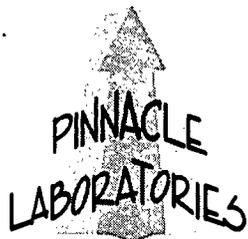
PINNACLE I.D.: 012037

SAMPLE	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	TRIP BLANK	AQUEOUS	12/07/00	NA	12/12/00	1

PARAMETER	DET. LIMIT	UNITS	TRIP BLANK
BENZENE	0.5	UG/L	< 0.5
TOLUENE	0.5	UG/L	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5

SURROGATE:  
BROMOFLUOROBENZENE (%) 95  
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:  
NA



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
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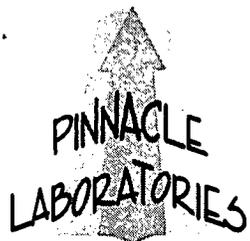
GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST : EPA 8021 MODIFIED                      PINNACLE I.D. : 012037  
BLANK I. D. : 121200                              DATE EXTRACTED : NA  
CLIENT : PHILIP ENVIRONMENTAL              DATE ANALYZED : 12/12/00  
PROJECT # : 62800373                            SAMPLE MATRIX : AQUEOUS  
PROJECT NAME : EPFS DRILLING

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:  
BROMOFLUOROBENZENE (%)                      96  
SURROGATE LIMITS:                              ( 80 - 120 )

CHEMIST NOTES:  
N/A



2709-D Pan American Freeway NE  
 Albuquerque, New Mexico 87107  
 Phone (505) 344-3777  
 Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL  
 MSMSD

TEST : EPA 8021 MODIFIED  
 MSMSD # : 012033-01  
 CLIENT : PHILIP ENVIRONMENTAL  
 PROJECT # : 62800373  
 PROJECT NAME : EPFS DRILLING

PINNACLE I.D. : 012037  
 DATE EXTRACTED : NA  
 DATE ANALYZED : 12/12/00  
 SAMPLE MATRIX : AQUEOUS  
 UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	19.7	99	19.9	100	1	( 80 - 120 )	20
TOLUENE	<0.5	20.0	19.2	96	19.4	97	1	( 80 - 120 )	20
ETHYLBENZENE	<0.5	20.0	20.7	104	20.9	105	1	( 80 - 120 )	20
TOTAL XYLENES	<0.5	60.0	60.5	101	61.1	102	1	( 80 - 120 )	20

CHEMIST NOTES:

NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

**STL Pensacola**  
 LOG NO: C0-12229  
 Received: 09 DEC 00  
 Reported: 18 DEC 00

Ms. JACINTA TENORIO  
 Pinnacle Laboratories  
 2709-D Pan American Freeway Northeast  
 Albuquerque, NM 87107

Project: 012037, PHIL-EPFS DRILLING  
 Sampled By: Client  
 Code: 134001218

REPORT OF RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED		
12229-1	012037-01 PZ-32	12-06-00/14:07		
12229-2	012037-02 PZ-33	12-07-00/12:32		
12229-3	012037-03 PZ-34	12-07-00/11:39		
PARAMETER		12229-1	12229-2	12229-3
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)				
Nitrate + Nitrite-N, mg/l		10	18	13
Nitrate-N, mg/l		5.4	18	9.2
Nitrite-N, mg/l		4.6 R4	<0.1 R4	3.8 R4
Dilution Factor		20	5	20
Prep Date		12.09.00	12.09.00	12.09.00
Analysis Date		12.13.00	12.13.00	12.13.00
Batch ID		N3W84A	N3W84A	N3W84A
Prep Method		4500-NO3	4500-NO3	4500-NO3
Analyst		CR	CR	CR
Sulfate as SO4 (375.4), mg/l				
Dilution Factor		4000	4200	2900
Prep Date		200	200	100
Analysis Date		12.13.00	12.13.00	12.13.00
Batch ID		12.13.00	12.13.00	12.13.00
Prep Method		SEW140	SEW140	SEW140
Analyst		375.4	375.4	375.4
		BE	BE	BE

STL Pensacola  
 LOG NO: C0-12229  
 Received: 09 DEC 00  
 Reported: 18 DEC 00

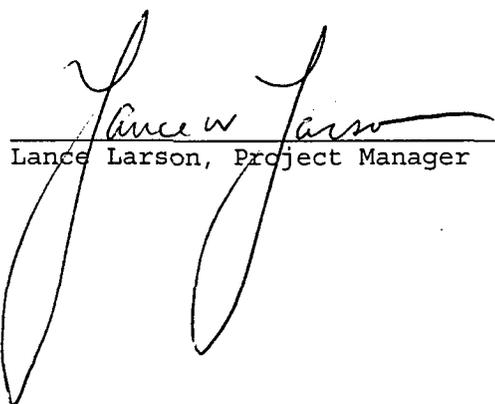
Ms. JACINTA TENORIO  
 Pinnacle Laboratories  
 2709-D Pan American Freeway Northeast  
 Albuquerque, NM 87107

Project: 012037, PHIL-EPFS DRILLING  
 Sampled By: Client  
 Code: 134001218  
 Page 2

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED			
12229-4	Method Blank				
12229-5	Lab Control Standard % Recovery				
12229-6	Matrix Spike % Recovery				
12229-7	Matrix Spike Duplicate % Recovery				
PARAMETER		12229-4	12229-5	12229-6	12229-7
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)					
Nitrate + Nitrite-N, mg/l		<0.1	95 %	96 %	94 %
Nitrite-N, mg/l		<0.1	105 %	110 %	110 %
Dilution Factor		1	1	1	1
Prep Date		12.09.00	12.09.00	12.09.00	12.09.00
Analysis Date		12.13.00	12.13.00	12.13.00	12.13.00
Batch ID		N3W84A	N3W84A	N3W84A	N3W84A
Prep Method		4500-NO3	4500-NO3	4500-NO3	4500-NO3
Analyst		CR	CR	CR	CR
Sulfate as SO4 (375.4), mg/l					
Dilution Factor		1	1	400	400
Prep Date		12.13.00	12.13.00	12.13.00	12.13.00
Analysis Date		12.13.00	12.13.00	12.13.00	12.13.00
Batch ID		SEW140	SEW140	SEW140	SEW140
Prep Method		375.4	375.4	375.4	375.4
Analyst		BE	BE	BE	BE

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

  
 Lance Larson, Project Manager

Final Page Of Report



# Chain of Custody Record

4000 Monroe Road  
Farmington, NM 87401

(505) 326-2262 Phone  
(505) 326-2388 FAX

COC Serial No. C 2806

012037

Project Name		Project Number		Phase / Task		
EpES Drilling		62800373		Phase 1 Task 0301		
Samplers		Laboratory		Name		
C-Ma&Z		PENNACKE		AKBQ N.M.		
Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle	Comments
BIS-0012-MW01	12-06-09	1407	H <sub>2</sub> O	4	X X X X	DISC. F/arc p.T. #1 (LD 252)
BIS-0012-MW02	12-07-09	1232	H <sub>2</sub> O	4	X X X X	" "
BIS-0012-T.W.	12-07-09	1139	H <sub>2</sub> O	4	X X X X	" "
Trip Blank	12-07-09	1345	H <sub>2</sub> O	1	X	" "
<p style="transform: rotate(-45deg); font-weight: bold;">BTEX 8021 NITRATES LAB ID</p>						

Relinquished by:

Signature	Date	Time	Signature	Date	Time
Chris A-Mary	12-07-00	1430	Juanme Jimmie	12/8/00	1005

Received By:

Samples Iced: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Carrier: Grex hand		Airbill No. GHI/60691 9985	
Preservatives (ONLY for Water Samples)					
<input type="checkbox"/> Cyanide	<input type="checkbox"/> Sodium hydroxide (NaOH)				
<input checked="" type="checkbox"/> Volatile Organic Analysis	<input type="checkbox"/> Hydrochloric acid (HCl)				
<input type="checkbox"/> Metals	<input type="checkbox"/> Nitric acid (HNO <sub>3</sub> )				
<input checked="" type="checkbox"/> TPH (418.1)	<input type="checkbox"/> Sulfuric acid (H <sub>2</sub> SO <sub>4</sub> )				
<input type="checkbox"/> Other (Specify)					
<input type="checkbox"/> Other (Specify)					
Rec'd @ 4.3°C					

## Data Qualifiers for Final Report

## STL-Pensacola Inorganic/Organic

## STL Pensacola

B1	The analyte was detected in the associated method blank (sample itself is flagged even though sample is ND).
B2	The analyte was detected in the sample(s) and in the associated method blank analyzed on the day samples were extruded; however, this analyte was not detected in the blank analyzed with the samples.
B3	The analyte was found in the associated blank as well as in the associated sample(s) (qualifier is applied to the sample, not to the blank).
B4	Sample results were corrected due to contaminants in Fractionation Blank
D	Diluted out (surrogate or spike due to sample dilution)
E	Compound concentration exceeds the upper calibration range of the instrument.
F	The reported value is < STL-Pensacola RL and > the STL-Pensacola MDL; therefore, the quantitation is estimation (The STL-PN RL is at or above lowest calibration standard in the initial calibration curve).
G	Sample and/or duplicate result is at or below 5 X (times) the STL Reporting Limit and the absolute difference between the sample and duplicate result is at or below the STL reporting limit; therefore, the results are "in control".
H1	Sample and/or duplicate is below 5 X (times) the STL Reporting Limit and the absolute difference between the results exceeds the STL Reporting Limit; therefore, the results are "out of control"
H2	Sample and duplicate (or MS and MSD) RPD is above control limit.
J (description)	The analyte was positively identified, the quantitation may be an estimation
J4	(For positive results) Temperature limits exceeded ( $\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$ ), non-reportable for NDPEs compliance monitoring.
J6	(For positive results) LCS or Surrogate %R is > upper control limit (UCL), results may be biased high
J7	The reported value is > the laboratory MDL and < lowest calibration standard; therefore, the quantitation is an estimation (this qualifier should only be used when the STL-PN RL is below the lowest calibration standard in the initial calibration).
J8	Matrix spike and post spike recoveries are outside control limits. See out of Control Events/Corrective Action Form.
J9	(For positive results) LCS or Surrogate %R is < lower control limit (LCL), results may be biased low
M1	A matrix effect was present ( <sup>1</sup> sample, MS or MSD was analyzed twice to confirm surrogate/spike failure, <sup>2</sup> sample and/or MS/MSD chromatogram(s) had interfering peaks, <sup>3</sup> sample result was > 4 X spike added, <sup>4</sup> metals serial dilution was performed, or <sup>5</sup> metals post spike is < 40% R)
M2	The MS and/or MSD %R or RPD was outside upper or lower control limits; not necessarily due to matrix effect.
N/C	Not Calculable; Sample spiked is > 4X spike concentration (may also use this flag in place of negative numbers)
NH	Sample and duplicate results are "out of control". The sample is nonhomogeneous.
NoMS	Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD)
Q	The analytical (post digestion) spike is reported due to the percent recovery being outside limits on the matrix (pre-digestion) spike.
R (description)	The data may be unusable due to deficiencies in the ability to analyze the sample and meet QC criteria
R1	(For nondetects) Temperature limits exceeded ( $\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$ ); non-reportable for NDPEs compliance monitoring
R2	Improper preservation, no preservative present or insufficient amounts of preservative in sample upon receipt, non-reportable for NDPEs compliance monitoring
R3	Improper preservation, incorrect preservative present in sample upon receipt, non-reportable for NDPEs compliance
R4	Holding time exceeded, non-reportable for NDPEs compliance monitoring.
R5	Collection requirements not met, improper container used for sample
R6	LCS or surrogate %R is < LCL and analyte is not detected or surrogate %R is < 10% for detects/nondetects.
R7	Internal standard area outside -50% to +100% of calibration verification standard.
R8	Initial calibration or any calibration verification exceeds acceptance criteria.
R9	Not filtered and preserved at time of collection.
R10	Headspace >1/4" in diameter in volatile vials, non-reportable for NDPEs compliance monitoring
R11	Samples were filtered and preserved within 4 hours of collection.
R12	Analysis performed outside the 12-hour tune or not within tune criteria.
S1	The Method of Standard Additions (MSA) has been performed on this sample.
S2	Incorrect sample amount was submitted to the laboratory for analysis
S3 (Flashpoint)	This method is not designed for solids and the results may not be accepted by any regulator for such purposes.
T	Second-column or detector confirmation exceeded the SW-846 criteria of 40% RPD for this compound.
TIC	The compound is not within the initial calibration curve. It is searched for qualitatively or as a Tentatively Identified Compound.
U	The reported value is $\leq$ Laboratory MDL (value for result will be the MDL, never below the MDL)
W	Post-digestion spike for Furnace AA is out of control limits (85-115%), while sample absorbance is less than 50% spike absorbance.
@	Adjusted reporting limit due to sample composition, not due to overcal (dilution prior to digestion and/or analysis).
#	Elevated reporting limit due to insufficient sample size
1 pt	The compound has been quantitated against a one point calibration.
* (Metals & Wet Chem)	Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)

SEVERN TRENT LABORATORIES, INC. - PENSACOLA, FLORIDA  
STATE CERTIFICATIONS

Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL)

Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater)

Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental)

State of California, Department of Health Services, Laboratory ID No. 2338 (Hazardous Waste and Wastewater)

State of Connecticut, Department of Health Services, Connecticut Lab Approval No. PH-0697 (Drinking Water, Hazardous Waste and Wastewater)

Delaware Health & Social Services, Division of Public Health, Laboratory ID No. FLO94 (Drinking Water by Reciprocity with FL)

Florida DOH Laboratory ID No. E81010 (Drinking Water, Hazardous Waste and Wastewater)

Florida, Radioactive Materials License No. G0733-1

Foreign Soil Permit, Permit No. S-37599

Kansas Department of Health & Environment, Laboratory ID No. E10253 (Wastewater and Hazardous Waste)

Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Laboratory ID No. 90043 (Drinking Water)

State of Louisiana, DHH, Office of Public Health Division of Laboratories, Laboratory ID No. LA000017 (Drinking Water)

Louisiana Department of Environmental Quality, Environmental Laboratory Accreditation Program, Agency Interest ID 30748 (Environmental - Accreditation Pending)

State of Maryland, DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida)

Commonwealth of Massachusetts, DEP, Laboratory ID No. M-FL094 (Hazardous Waste and Wastewater)

State of Michigan, Bureau of E&Occh, Laboratory ID No. 9912 (Drinking Water by Reciprocity with Florida)

New Hampshire DES ELAP, Laboratory ID No. 250599A (Wastewater)

State of New Jersey, Department of Environmental Protection & Energy, Laboratory ID No. 49006 (Wastewater and Hazardous Waster)

New York State, Department of Health, Laboratory ID No. 11503 (Wastewater and Solids/Hazardous Waste)

North Carolina Department of Environment & Natural Resources, Laboratory ID No. 314 (Hazardous Waste and Wastewater)

North Dakota DH&Consol Labs, Laboratory ID No. R-108 (Drinking Water, Wastewater and Hazardous Waste by Reciprocity with Florida)

State of Oklahoma, Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater)

Commonwealth of Pennsylvania, Department of Environmental Resources, Laboratory ID No. 68-467 (Drinking Water)

South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater by Reciprocity with FL and Solids/Hazardous Waste by Reciprocity with CA)

Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water)

Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL)

State of Washington, Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater)

West Virginia Division of Environmental Protection, Office of Water Resources, Laboratory ID No. 136 (Hazardous Waste and Wastewater Reciprocity with FL)

American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 100704

# STL Pensacola PROJECT SAMPLE INSPECTION FORM



Lab Order #: CO12 229 Date Received: 12-9-00

- |   |  |
|---|--|
| <p>1. Was there a Chain of Custody? <input checked="" type="radio"/> Yes <input type="radio"/> No*</p> <p>2. Was Chain of Custody properly filled out and relinquished? <input checked="" type="radio"/> Yes <input type="radio"/> No*</p> <p>3. Were samples received cold? (Criteria: 2° - 6°C: STL-SOP) <input checked="" type="radio"/> Yes <input type="radio"/> No* N/A</p> <p>4. Were all samples properly labeled and identified? <input checked="" type="radio"/> Yes <input type="radio"/> No*</p> <p>5. Did samples require splitting or compositing*? Yes* <input checked="" type="radio"/> No</p> <p>6. Were samples received in proper containers for analysis requested? <input checked="" type="radio"/> Yes <input type="radio"/> No*</p> <p>7. Were all sample containers received intact? <input checked="" type="radio"/> Yes <input type="radio"/> No*</p> | <p>8. Were samples checked for preservative? (Check pH of all H<sub>2</sub>O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)* Yes <input type="radio"/> No* <input checked="" type="radio"/> N/A</p> <p>9. Is there sufficient volume for analysis requested? <input checked="" type="radio"/> Yes <input type="radio"/> No* N/A (Can)</p> <p>10. Were samples received within Holding Time? (REFER TO STL-SOP 1040) <input checked="" type="radio"/> Yes <input checked="" type="radio"/> No* <u>12-9-00</u></p> <p>11. Is Headspace visible &gt; ¼" in diameter in VOA vials?* If any headspace is evident, comment in out-of-control section. Yes* <input type="radio"/> No <input checked="" type="radio"/> N/A</p> <p>12. If sent, were matrix spike bottles returned? Yes <input type="radio"/> No* <input checked="" type="radio"/> N/A</p> <p>13. Was Project Manager notified of problems? (initials: _____) Yes <input type="radio"/> No* <input checked="" type="radio"/> N/A</p> |
|---|--|

Airbill Number(s): 17878168443823483

Shipped By: UPS

Cooler Number(s): CLIENT

Shipping Charges: N/A

Cooler Weight(s): 28 lbs

Cooler Temp(s) (°C): 3°  
CCK4  
(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

**Out of Control Events and Inspection Comments:**

MULTIPLE PROJECT COOLER (4 PROJECTS) 12-9-00  
SAMPLE 012037-1 WAS RECEIVED OUT OF HOLD TIME.  
SAMPLES 012037-2 + -3 WERE RECEIVED WITH MINIMAL HOLD TIME. 12-9-00

(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: JJ Date: 12-9-00

Logged By: Pfe Date: 12/9/00

- \* Note all Out-of-Control and/or questionable events on Comment Section of this form. For holding times, the analytical department will flag immediate hold time samples (pH, Dissolved O<sub>2</sub>, Residual CL) as out of hold time, therefore, these samples will not be documented on this PSIF.
- ♦ If Other, note who requested the splitting or compositing of samples on the Comment Section of this form. All volatile samples requested to be split or composited must be done in the Volatile Lab. Document: "Volatile sample values may be compromised due to sample splitting (compositing)"
- + All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938, section 2.2.9).
- \* According to EPA, ¼" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938, section 2.2.12).







Project Name EpFS quarterly Samplings  
 Client Company EL Paso Field Services  
 Site Name BISTI Flare pit (LO 262)

R. Thompson

Project No. 62800107  
 Phase/Task No. 0301

Rural San Juan CO.

**Development Criteria**

- 3 to 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other

Serial No. (if applicable)

- Instruments
- pH Meter Hydax
  - DO Fluoritor
  - Conductivity Meter Hydax
  - Temperature Meter Hydax
  - Other

**Methods of Development**

- Pump
- Bagler
- Centrifugal
- Bottom Valve
- Submersible
- Double Check Valve
- Peristaltic
- Stainless-steel Kemmerer
- Other

Water Disposal  
L-72 Separator Blairfield NM.

3.14	0.51 X 3	1.53	1.53
25.57			
22.43			
3.14			

**Water Removal Data**

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Exhaust Water Temp (feet)	Temperature	pH	Conductivity (microsiemens/cm)	Dissolved Oxygen (mg/l)	Comments
4-9-01	1451	X				25	7.27	7480	76	Clorox added
	1453	X				28	7.14	7810		"
	1456	X				25	7.13	7680	3.5	NO. Change

Circle the date and time that the development criteria are met.

Comments Bailed Approximately 75 gal Bailed well Dry Sampled for NITRATES

Sulfates 1730

Developer's Signature(s) Chas A. M...

Revised 4-9-01

Revised RT Date 4/9/01













Serial No. 0000

Project Name EPES quarterly Samplings  
 Client Company EL Paso Field Services  
 Site Name BSTi Flase pit (LD 267)

R Thompson

Project No. 62802107

Phase, task No. 0301

Rural San Juan CO.

Development Criteria

- 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other

Serial No. (if applicable)

Instruments

32.61	Hydax
24.02	
8.59	
3"	
1.40X3	4.2
8.59	4.2

Methods of Development

- Pump
- Centrifugal
- Bottom Valve
- Submersible
- Double Check Valve
- Peristaltic
- Stainless-steel Kemmerer
- Other

Water Disposal

L-72 Separator Brownfield NM.

Water Removal Data

Date	line	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Water Level (feet)	pH	Conductivity (micro-mhos/cm)	Dissolved Oxygen (mg/l)	Comments
4-9-01	1405	X			15.3	7.02	7550		check meter
	1408	X			14	7.14	7520		"
	1412	X			13.4	7.17	7620		"
	1416	X			13.8	7.21	7760		"
	1419	X			12.9	7.22	7900	2.5	no change

Circle the date and line that the development criteria are met.

Comments Sampled for BTEX, NITRATES, SULFATES, 1430

Developer's Signature(s) Chris A. M...

Review Date 4-9-01 Reviewer RT Date 4/9/01

Project Manager R. THOMPSON

Project Name EPFS BIST FLARE PIT #1

Client Company EL PASO FIELD SERVICES

Site Name BIST FLARE PIT #1

Site Address BEHIND CRACO PLANT

**Development Criteria**

- 3 to 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other

**Water Volume Calculation**

Initial Depth of Well (feet) 27.82' TOR  
Initial Depth to Water (feet) 25.17' TOR  
Height of Water Column in Well (feet) 2.65'  
Diameter (inches): Well 2 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>2.65</u>	<u>.43</u>	<u>.43 x 3</u>
Gravel Pack			
Drilling fluids			
Total			<u>1.29</u>

**Methods of Development**

- Pump
- Centrifugal
- Submersible
- Peristaltic
- Other
- Bailor
- Bottom Valve
- Double Check Valve
- Stainless-steel Kemmerer

**Instruments**

- pH Meter
- DO Monitor
- Conductivity Meter
- Temperature Meter
- Other

Serial No. (if applicable) HYDAC

HYDAC

HYDAC

Water Disposal KUTZ SEPARATOR

**Water Removal Data**

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (umhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Increment	Cumulative					
<u>5/1/01</u>	<u>0855</u>	<u>X</u>				<u>0</u>	<u>0</u>	<u>20.7</u>	<u>7.24</u>	<u>3660</u>		<u>LIGHT BROWN - PRODUCT</u>
<u>5/1/01</u>	<u>1005</u>	<u>X</u>				<u>1</u>	<u>1</u>	<u>21.5</u>	<u>7.30</u>	<u>6830</u>		<u>LIGHT BROWN - SILTY</u>

*Circle the date and time that the development criteria are met.*

Comments PRODUCT READING - 25.15' TOE. BAILED DRY AT APPROX. 2.5 GAL. SAMPLED AT 1100

Developer's Signature(s) R. Thompson

Date 5/1/01

Reviewer

Date



Well Number P2-36

# WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

Serial No. WDPD

Project Name EL PASO FIELD SERVICES

Project Manager R. THOMPSON

Project No. 62800433

Client Company BISTN FLARE PIT #1

Phase/Task No. 35

Site Name BISTN FLARE PIT #1

Site Address BEHIND CHACO PLANT

### Development Criteria

- 3 to 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other

### Water Volume Calculation

Initial Depth of Well (feet) 28.14' TOR  
 Initial Depth to Water (feet) 24.71' TOR  
 Height of Water Column in Well (feet) 3.43  
 Diameter (inches): Well 2 Gravel Pack

Item	Water Volume in Well Cubic Feet	Gallons	Gallons to be Removed
Well Casing	<u>3.43</u>	<u>56</u>	<u>.56 x 3</u>
Gravel Pack			
Drilling Fluids			
Total			<u>1.68</u>

### Methods of Development

- Pump
- Baller
- Centrifugal
- Bottom Valve
- Submersible
- Double Check Valve
- Peristaltic
- Stainless-steel Kemmerer
- Other

Instruments

- pH Meter
- DO Monitor
- Conductivity Meter
- Temperature Meter
- Other

Serial No. (if applicable)

HYDAC  
HYDAC  
HYDAC

Water Disposal

KUTZ SEPARATOR

### Water Removal Data

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Increment	Cumulative					
<u>5/1/01</u>	<u>0920</u>	<u>X</u>				<u>0</u>	<u>0</u>	<u>18.7</u>	<u>6.83</u>	<u>5970</u>		<u>CLOUDY</u>
<u>5/1/01</u>	<u>0930</u>	<u>X</u>				<u>1</u>	<u>1</u>	<u>17.8</u>	<u>7.03</u>	<u>5940</u>		<u>LIGHT BROWN-SILTY</u>
<u>5/1/01</u>	<u>0940</u>	<u>X</u>				<u>1</u>	<u>2</u>	<u>19.1</u>	<u>7.25</u>	<u>6140</u>		<u>LIGHT BROWN-SILTY</u>

Circle the date and time that the development criteria are met.

Comments WELL BAILED DRY AT APPROX. 3 GAL. SAMPLED AT 10:55.

Developer's Signature(s) Robert Thompson

Date 5/1/01

Reviewer

Date



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

Pinnacle Lab ID number **104046**  
June 07, 2001

PHILIP SERVICE CORPORATION  
4000 MONROE ROAD  
FARMINGTON, NM 87401

EL PASO FIELD SERVICES  
614 RIELLY STREET  
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING  
Project Number 62800107

Attention: ROBERT THOMPSON/SCOTT POPE

On 04/10/01 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

Supporting analytical data is attached in Appendix A. For further discussion see attached letter dated June 7, 2001.

Primary Sulfate data was submitted by Environmental Services Laboratory, Inc. Portland, OR.

EPA method 8021 analyses were performed by Pinnacle Laboratories, Inc. Albuquerque, NM.

Nitrate analyses were performed by Severn Trent Laboratories, Inc. Pensacola, FL.

Additional supporting information is provided by ATEL, Tucson, AZ and Severn Trent Laboratories, Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.  
General Manager





2709-D Pan American Freeway NE  
 Albuquerque, New Mexico 87107  
 Phone (505) 344-3777  
 Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
 CLIENT : PHILIP SERVICE CORPORATION PINNACLE I.D.: 104046  
 PROJECT # : 62800107  
 PROJECT NAME : EPFS QUARTERLY SAMPLING

SAMPLE	DATE	DATE	DATE	DIL.		
ID #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	267-0104-MW 9	AQUEOUS	04/09/01	NA	04/12/01	5
02	267-0104-MW 16	AQUEOUS	04/09/01	NA	04/12/01	1
03	267-0104-MW 21	AQUEOUS	04/09/01	NA	04/12/01	1

PARAMETER	DET. LIMIT	UNITS	267-0104-MW 9	267-0104-MW 16	267-0104-MW 21
BENZENE	0.5	UG/L	6000(D100)	< 0.5	49
TOLUENE	0.5	UG/L	4700(D100)	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	150	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	1800	< 0.5	1.4

SURROGATE:  
 BROMOFLUOROBENZENE (%) 109 98 141\*  
 SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
 (D100) = 100x dilution analyzed on 4/12/01.  
 \* = High surrogate recovery due to matrix interference.



2709-D Pan American Freeway NE  
 Albuquerque, New Mexico 87107  
 Phone (505) 344-3777  
 Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
 CLIENT : PHILIP SERVICE CORPORATION  
 PROJECT # : 62800107  
 PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 104046

SAMPLE	DATE	DATE	DATE	DIL.		
ID #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	267-0104-MW 22	AQUEOUS	04/09/01	NA	04/12/01	1
05	267-0104-MW 23	AQUEOUS	04/09/01	NA	04/12/01	1
06	267-0104-MW 26	AQUEOUS	04/09/01	NA	04/12/01	1

PARAMETER	DET. LIMIT	UNITS	267-0104-MW 22	267-0104-MW 23	267-0104-MW 26
BENZENE	0.5	UG/L	0.7	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5	< 0.5	< 0.5

SURROGATE:  
 BROMOFLUOROBENZENE (%) 99 97 97  
 SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
 NA

2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413



GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST : EPA 8021 MODIFIED                      PINNACLE I.D. : 104046  
BLANK I. D. : 041201                              DATE EXTRACTED : NA  
CLIENT : PHILIP SERVICE CORPORATION      DATE ANALYZED : 04/12/01  
PROJECT # : 62800107                            SAMPLE MATRIX : AQUEOUS  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

surrogate:  
BROMOFLUOROBENZENE (%)                      102  
 surrogate LIMITS:                      ( 80 - 120 )  
CHEMIST NOTES:

N/A



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 Albuquerque, New Mexico 87107  
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 Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL  
 MSMSD

TEST : EPA 8021 MODIFIED  
 MSMSD # : 104046-06  
 CLIENT : PHILIP SERVICE CORPORATION  
 PROJECT # : 62800107  
 PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 104046  
 DATE EXTRACTED : NA  
 DATE ANALYZED : 04/06/01  
 SAMPLE MATRIX : AQUEOUS  
 UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	19.5	98	18.9	95	3	( 80 - 120 )	20
TOLUENE	<0.5	20.0	19.7	99	19.3	97	2	( 80 - 120 )	20
ETHYLBENZENE	<0.5	20.0	20.6	103	20.2	101	2	( 80 - 120 )	20
TOTAL XYLENES	<0.5	60.0	56.0	93	55.1	92	2	( 80 - 120 )	20

CHEMIST NOTES:

NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

STL Pensacola  
LOG NO: C1-04280  
Received: 11 APR 01  
Reported: 24 APR 01

Ms. Jacinta Tenorio  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 104046, PHIL-EPFS QUARTERLY SAMPLING  
Sampled By: Client  
Code: 100910424

REPORT OF RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED				
04280-1	267-0104-MW9/104046-01	04-09-01/16:43				
04280-2	267-0104-MW16/104046-02	04-09-01/16:13				
04280-3	267-0104-MW21/104046-03	04-09-01/17:30				
04280-4	267-0104-MW22/104046-04	04-09-01/17:20				
04280-5	267-0104-MW23/104046-05	04-09-01/17:03				
PARAMETER		04280-1	04280-2	04280-3	04280-4	04280-5
<b>Nitrate-Nitrite, Nitrogen</b> (353.2/354.1/4500-NO3)						
Nitrate + Nitrite-N, mg/l		0.34	57	0.68	5.4	38
Nitrate-N, mg/l		0.34	57	0.68	5.4	38
Nitrite-N, mg/l		<0.1	<0.1	<0.1	<0.1	<0.1
Dilution Factor		1	20	1	5	10
Prep Date		04.11.01	04.11.01	04.11.01	04.11.01	04.11.01
Analysis Date		04.17.01	04.17.01	04.17.01	04.17.01	04.17.01
Batch ID		N3W22A	N3W22A	N3W22A	N3W22A	N3W22A
Prep Method		N/A	N/A	N/A	N/A	N/A
Analyst		CR	CR	CR	CR	CR
<b>Sulfate as SO4 (375.4), mg/l</b>						
Sulfate as SO4 (375.4), mg/l		<5.0	430	960	2900	2800
Dilution Factor		1	20	25	100	100
Prep Date		04.20.01	04.20.01	04.20.01	04.20.01	04.20.01
Analysis Date		04.20.01	04.20.01	04.20.01	04.20.01	04.20.01
Batch ID		SEW044	SEW044	SEW044	SEW044	SEW044
Prep Method		N/A	N/A	N/A	N/A	N/A
Analyst		BE	BE	BE	BE	BE

STL Pensacola  
LOG NO: C1-04280  
Received: 11 APR 01  
Reported: 24 APR 01

Ms. Jacinta Tenorio  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 104046, PHIL-EPFS QUARTERLY SAMPLING  
Sampled By: Client  
Code: 100910424

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
04280-6	267-0104-MW26/104046-06	04-09-01/11:47
04280-7	267-0104-MW29/104046-07	04-09-01/15:50
04280-8	267-0104-MW32/104046-08	04-09-01/13:34
04280-9	267-0104-MW33/104046-09	04-09-01/14:30

PARAMETER	04280-6	04280-7	04280-8	04280-9
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)				
Nitrate + Nitrite-N, mg/l	62	<0.1	12	13
Nitrate-N, mg/l	62	<0.1	10	13
Nitrite-N, mg/l	<0.1	<0.1	1.8	<0.1
Dilution Factor	20	1	5	5
Prep Date	04.11.01	04.11.01	04.11.01	04.11.01
Analysis Date	04.17.01	04.17.01	04.17.01	04.17.01
Batch ID	N3W22A	N3W22A	N3W22A	N3W22A
Prep Method	N/A	N/A	N/A	N/A
Analyst	CR	CR	CR	CR
Sulfate as SO4 (375.4), mg/l				
Dilution Factor	3700	31	2600	3800
Prep Date	100	1	100	100
Analysis Date	04.20.01	04.20.01	04.20.01	04.20.01
Batch ID	04.20.01	04.20.01	04.20.01	04.20.01
Prep Method	SEW044	SEW044	SEW044	SEW044
Analyst	N/A	N/A	N/A	N/A
	BE	BE	BE	BE

STL Pensacola

LOG NO: C1-04280

Received: 11 APR 01

Reported: 24 APR 01

Ms. Jacinta Tenorio  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 104046, PHIL-EPFS QUARTERLY SAMPLING

Sampled By: Client

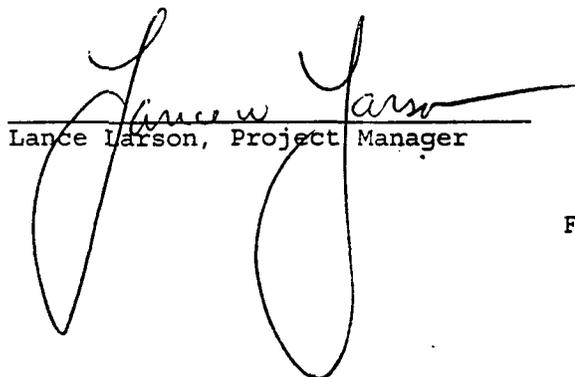
Code: 100910424

Page 3

## REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED			
04280-10	Method Blank				
04280-11	Lab Control Standard % Recovery				
04280-12	Matrix Spike % Recovery				
04280-13	Matrix Spike Duplicate % Recovery				
PARAMETER		04280-10	04280-11	04280-12	04280-13
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)					
Nitrate + Nitrite-N, mg/l		<0.1	103 %	91 %	92 %
Nitrate-N, mg/l		N/A	N/A	N/A	N/A
Nitrite-N, mg/l		<0.1	100 %	95 %	100 %
Dilution Factor		1	1	1	1
Prep Date		04.11.01	04.11.01	04.11.01	04.11.01
Analysis Date		04.17.01	04.17.01	04.17.01	04.17.01
Batch ID		N3W22A	N3W22A	N3W22A	N3W22A
Prep Method		N/A	N/A	N/A	N/A
Analyst		CR	CR	CR	CR
Sulfate as SO4 (375.4), mg/l					
Dilution Factor		<5.0	91 %	58 %	71 %
Prep Date		1	1	25	25
Analysis Date		04.20.01	04.20.01	04.20.01	04.20.01
Batch ID		04.20.01	04.20.01	04.20.01	04.20.01
Prep Method		SEW044	SEW044	SEW044	SEW044
Analyst		N/A	N/A	N/A	N/A
		BE	BE	BE	BE

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

  
Lance Larson, Project Manager

Final Page Of Report

## Data Qualifiers for Final Report

### STL-Pensacola Inorganic/Organic

B1	The analyte was detected in the associated method blank (sample itself is flagged even though sample is ND).
B2	The analyte was detected in the sample(s) and in the associated method blank analyzed on the day samples were extruded; however, this analyte was not detected in the blank analyzed with the samples.
B3	The analyte was found in the associated blank as well as in the associated sample(s) (qualifier is applied to the sample, not to the blank).
B4	Sample results were corrected due to contaminants in Fractionation Blank
D	Diluted out (surrogate or spike due to sample dilution)
E	Compound concentration exceeds the upper calibration range of the instrument.
F	The reported value is < STL-Pensacola RL and > the STL-Pensacola MDL; therefore, the quantitation is estimation (The STL-PN RL is at or above lowest calibration standard in the initial calibration curve).
G	Sample and/or duplicate result is at or below 5 X (times) the STL Reporting Limit and the absolute difference between the sample and duplicate result is at or below the STL reporting limit; therefore, the results are "in control".
H1	Sample and/or duplicate is below 5 X (times) the STL Reporting Limit and the absolute difference between the results exceeds the STL Reporting Limit; therefore, the results are "out of control"
H2	Sample and duplicate (or MS and MSD) RPD is above control limit.
J (description)	The analyte was positively identified, the quantitation may be an estimation
J4	(For positive results) Temperature limits exceeded ( $\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$ ), non-reportable for NPDES compliance monitoring.
J6	(For positive results) LCS or Surrogate %R is > upper control limit (UCL), results may be biased high
J7	The reported value is > the laboratory MDL and < lowest calibration standard; therefore, the quantitation is an estimation (this qualifier should only be used when the STL-PN RL is below the lowest calibration standard in the initial calibration).
J8	Matrix spike and post spike recoveries are outside control limits. See out of Control Events/Corrective Action Form.
J9	(For positive results) LCS or Surrogate %R is < lower control limit (LCL), results may be biased low
M1	A matrix effect was present ( <sup>1</sup> sample, MS or MSD was analyzed twice to confirm surrogate/spike failure, <sup>2</sup> sample and/or MS/MSD chromatogram(s) had interfering peaks, <sup>3</sup> sample result was > 4 X spike added, <sup>4</sup> metals serial dilution was performed, or <sup>5</sup> metals post spike is < 40% R)
M2	The MS and/or MSD %R or RPD was outside upper or lower control limits; not necessarily due to matrix effect.
N/C	Not Calculable; Sample spiked is > 4X spike concentration (may also use this flag in place of negative numbers)
NH	Sample and duplicate results are "out of control". The sample is nonhomogeneous.
NoMS	Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD)
Q	The analytical (post digestion) spike is reported due to the percent recovery being outside limits on the matrix (pre-digestion) spike.
R (description)	The data may be unusable due to deficiencies in the ability to analyze the sample and meet QC criteria
R1	(For nondetects) Temperature limits exceeded ( $\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$ ); non-reportable for NPDES compliance monitoring
R2	Improper preservation, no preservative present or insufficient amounts of preservative in sample upon receipt, non-reportable for NPDES compliance monitoring
R3	Improper preservation, incorrect preservative present in sample upon receipt, non-reportable for NPDES compliance
R4	Holding time exceeded, non-reportable for NPDES compliance monitoring.
R5	Sample collection requirements not met, see case narrative.
R6	LCS or surrogate %R is < LCL and analyte is not detected or surrogate %R is < 10% for detects/nondetects.
R7	Internal standard area outside -50% to +100% of calibration verification standard.
R8	Initial calibration or any calibration verification exceeds acceptance criteria.
R9	Not filtered and preserved at time of collection.
R10	Headspace >1/4" in diameter in volatile vials, non-reportable for NPDES compliance monitoring
R11	Samples were filtered and preserved within 4 hours of collection.
R12	Analysis performed outside the 12-hour tune or not within tune criteria.
S1	The Method of Standard Additions (MSA) has been performed on this sample.
S2	Incorrect sample amount was submitted to the laboratory for analysis
S3 (Flashpoint)	This method is not designed for solids and the results may not be accepted by any regulator for such purposes.
T	Second-column or detector confirmation exceeded the SW-846 criteria of 40% RPD for this compound.
TIC	The compound is not within the initial calibration curve. It is searched for qualitatively or as a Tentatively Identified Compound.
U	The reported value is $\leq$ Laboratory MDL (value for result will be the MDL, never below the MDL)
W	Post-digestion spike for Furnace AA is out of control limits (85-115%), while sample absorbance is less than 50% spike absorbance.
@	Adjusted reporting limit due to sample composition, not due to overcal (dilution prior to digestion and/or analysis).
#	Elevated reporting limit due to insufficient sample size
1 pt	The compound has been quantitated against a one point calibration.
* (Metals & Wet Chem)	Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)

STL PENSACOLA  
STATE CERTIFICATIONS

Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL)

Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater)

Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental)

State of California, Department of Health Services, Laboratory ID No. 2338 (Hazardous Waste and Wastewater)

State of Connecticut, Department of Health Services, Connecticut Lab Approval No. PH-0697 (Drinking Water, Hazardous Waste and Wastewater)

Delaware Health & Social Services, Division of Public Health, Laboratory ID No. FL094 (Drinking Water by Reciprocity with FL)

Florida DOH Laboratory ID No. E81010 (Drinking Water, Hazardous Waste and Wastewater)

Florida, Radioactive Materials License No. G0733-1

Foreign Soil Permit, Permit No. S-37599

Kansas Department of Health & Environment, Laboratory ID No. E10253 (Wastewater and Hazardous Waste)

Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Laboratory ID No. 90043 (Drinking Water)

State of Louisiana, DHH, Office of Public Health Division of Laboratories, Laboratory ID No. LA000017 (Drinking Water)

Louisiana Department of Environmental Quality, Environmental Laboratory Accreditation Program, Agency Interest ID 30748 (Environmental - Accreditation Pending)

State of Maryland, DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida)

Commonwealth of Massachusetts, DEP, Laboratory ID No. M-FL094 (Hazardous Waste and Wastewater)

State of Michigan, Bureau of E&Occh, Laboratory ID No.9912 (Drinking Water by Reciprocity with Florida)

New Hampshire DES ELAP, Laboratory ID No. 250599A (Wastewater)

State of New Jersey, Department of Environmental Protection & Energy, Laboratory ID No. 49006 (Wastewater and Hazardous Waster)

New York State, Department of Health, Laboratory ID No. 11503 (Wastewater and Solids/Hazardous Waste)

North Carolina Department of Environment & Natural Resources, Laboratory ID No. 314 (Hazardous Waste and Wastewater)

North Dakota DH&Consol Labs, Laboratory ID No. R-108 (Drinking Water, Wastewater and Hazardous Waste by Reciprocity with Florida)

State of Oklahoma, Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater)

Commonwealth of Pennsylvania, Department of Environmental Resources, Laboratory ID No. 68-467 (Drinking Water)

South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater by Reciprocity with FL and Solids/Hazardous Waste by Reciprocity with CA)

Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water)

Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL)

State of Washington, Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater)

West Virginia Division of Environmental Protection, Office of Water Resources, Laboratory ID No. 136 (Hazardous Waste and Wastewater b Reciprocity with FL)

American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 100704

# STL Pensacola PROJECT SAMPLE INSPECTION FORM



Lab Order #: C104 280 Date Received: 4.11.01

- |  |   |
|--|---|
| <p>1. Was there a Chain of Custody? <input checked="" type="radio"/> Yes No<sup>+</sup></p> <p>2. Was Chain of Custody properly filled out and relinquished? <input checked="" type="radio"/> Yes No<sup>+</sup></p> <p>3. Were samples received cold? <input checked="" type="radio"/> Yes No<sup>+</sup> N/A<br/>(Criteria: 2° - 6°C: STL-SOP)</p> <p>4. Were all samples properly labeled and identified? <input checked="" type="radio"/> Yes No<sup>+</sup></p> <p>5. Did samples require splitting or compositing*? Yes<sup>+</sup> <input checked="" type="radio"/> No<br/>Req By: PM Client Other<sup>+</sup></p> <p>6. Were samples received in proper containers for analysis requested? <input checked="" type="radio"/> Yes No<sup>+</sup></p> <p>7. Were all sample containers received intact? <input checked="" type="radio"/> Yes No<sup>+</sup></p> | <p>8. Were samples checked for preservative? <input checked="" type="radio"/> Yes No<sup>+</sup> N/A<br/><i>(Check pH of all H<sub>2</sub>O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)*</i></p> <p>9. Is there sufficient volume for analysis requested? <input checked="" type="radio"/> Yes No<sup>+</sup> N/A<br/><i>(Can)</i></p> <p>10. Were samples received within Holding Time? <input checked="" type="radio"/> Yes No<sup>+</sup><br/><i>(REFER TO STL-SOP 1040)</i></p> <p>11. Is Headspace visible &gt; ¼" in diameter in VOA vials?* If any headspace is evident, comment in out-of-control section. Yes<sup>+</sup> No <input checked="" type="radio"/> N/A</p> <p>12. If sent, were matrix spike bottles returned? Yes No<sup>+</sup> <input checked="" type="radio"/> N/A</p> <p>13. Was Project Manager notified of problems? (initials: _____) Yes No<sup>+</sup> <input checked="" type="radio"/> N/A</p> |
|--|---|

Airbill Number(s): 17 878 168 01  
435 8 9971

Shipped By: CPS

Cooler Number(s): client

Shipping Charges: N/A

Cooler Weight(s): 19#

Cooler Temp(s) (°C): 2°  
(CCK1)  
(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)  
no temperature blank

**Out of Control Events and Inspection Comments:**

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(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: DMA Date: 4.11.01

Logged By: PK Date: 4/11/01

\* Note all Out-of-Control and/or questionable events on Comment Section of this form. For holding times, the analytical department will flag immediate hold time samples (pH, Dissolved O<sub>2</sub>, Residual CL) as out of hold time, therefore, these samples will not be documented on this PSIF.

♦ If Other, note who requested the splitting or compositing of samples on the Comment Section of this form. All volatile samples requested to be split or composited must be done in the Volatile Lab. Document: "Volatile sample values may be compromised due to sample splitting (compositing)"

+ All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938, section 2.2.9).

\* According to EPA, ¼" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938, section 2.2.12).

Network Project Manager: Jacinta A. Tenorio

Pinnacle Laboratories, Inc.  
 2709-D Pan American Freeway, NE  
 Albuquerque, New Mexico 87107  
 (505) 344-3777 Fax (505) 344-4413

WATCH HOLD TIMES!

C104280

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL (23 METALS)	TOX	TOC	Gen Chemistry: <i>MNO3, SO4</i>	Oil and Grease	Volatle Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8082)	Hericides (615/8151)	PNA (8310)/8270 SIMS	8240 (TCLP 1311) ZHE	Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM (ICP-MS)	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS	
267-0104-MW9/104046-01	4/9	1643	AQ	1							X															
- MW16/104046-02		1613		2							X															
- MW21/104046-03		1730		3							X															
- MW22/104046-04		1720		4							X															
- MW23/104046-05		1703		5							X															
- MW26/104046-06		1147		6							X															
- MW29/104046-07		1550		7							X															
- MW32/104046-08		1334		8							X															
- MW33/104046-09		1430		9							X															

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY:		RELINQUISHED BY:	
PROJECT #:	104046	Total Number of Containers		PENSACOLA - STL-FL		Signature:	<i>Jacinta Tenorio</i>	Time:	4/10 1745
PROJ. NAME:	PHIL	Chain of Custody Seals		ESL - OR		Printed Name:	Jacinta Tenorio	Date:	4/10
QC LEVEL:	STD IV	Received Intact?		STL - CT		Signature:	<i>Jacinta Tenorio</i>	Time:	
QC REQUIRED:	MS MSD BLANK	Received Good Cond./Cold		ATEL - AZ		Printed Name:	Jacinta Tenorio	Date:	
TAT:	STANDARD RUSH!!	LAB NUMBER:		ATEL - MARION		Signature:	<i>Jacinta Tenorio</i>	Time:	
DUE DATE:			4/24	ATEL - MELMORE		Printed Name:	Jacinta Tenorio	Date:	
RUSH SURCHARGE:			-	BARRINGER		Signature:	<i>Jacinta Tenorio</i>	Time:	
CLIENT DISCOUNT:			-	ENVIRO TEST LABS		Printed Name:	Jacinta Tenorio	Date:	
SPECIAL CERTIFICATION				WCAS		Signature:	<i>Jacinta Tenorio</i>	Time:	
REQUIRED: YES (NO)				WOHL		Printed Name:	Jacinta Tenorio	Date:	
COMMENTS:						Signature:	<i>Jacinta Tenorio</i>	Time:	
RECEIVED BY:						Printed Name:	Jacinta Tenorio	Date:	
RECEIVED BY:						Signature:	<i>Jacinta Tenorio</i>	Time:	



# *Environmental Services Laboratory, Inc.*

17400 SW Upper Boones Ferry Road, Suite 270 • Portland, OR 97224 • (503) 670-8520

May 02, 2001

Jacinta A. Tenorio  
Pinnacle Laboratories  
2709-D Pan American Fwy NE  
Albuquerque, NM 87107  
TEL: 505-344-3777  
FAX (505) 344-4413

RE: 104046/PHIL

Order No.: 0104046

Dear Jacinta A. Tenorio,

Environmental Services Laboratory received 8 samples on 4/12/01 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

Sulfate (EPA 375.4)

There were no analytical problems encountered, and all data met laboratory QC criteria, unless noted in a Case Narrative. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety, without the written approval of the Laboratory.

The following checked data sections are included in this report, and numbered to indicate total pages within each report section.

Base Sample Report     Method Blank Report     Sample Duplicate Report  
 Matrix Spike/Matrix Spike Duplicate Report     Laboratory Control Spike/Spike Duplicate Report  
 Continuing Calibration Verification Report     Initial Calibration Verification Report

If you have any questions regarding these test results, please feel free to call.

Sincerely,

*Nichole Karl*

Nichole Karl  
Project Manager

Technical Review

**Environmental Services Laboratory**

Date: 02-May-01

CLIENT: Pinnacle Laboratories  
Lab Order: 0104046  
Project: 104046/PHIL  
Lab ID: 0104046-01A

Client Sample ID: 267-0104-MW16/104046-02  
Tag Number:  
Collection Date: 4/9/01  
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
SULFATE		EPA 375.4				Analyst: gvs
Sulfate	536	125		mg/L	25	4/16/01

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits  
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits  
B - Analyte detected in the associated Method Blank E - Value above quantitation range  
\* - Value exceeds Maximum Contaminant Level

# Environmental Services Laboratory

Date: 02-May-01

CLIENT: Pinnacle Laboratories  
Lab Order: 0104046  
Project: 104046/PHIL  
Lab ID: 0104046-02A

Client Sample ID: 267-0104-MW21/104046-03  
Tag Number:  
Collection Date: 4/9/01  
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
SULFATE		EPA 375.4				Analyst: gvs
Sulfate	5,160	1,250		mg/L	250	4/16/01

Qualifiers: ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits  
B - Analyte detected in the associated Method Blank  
\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits  
E - Value above quantitation range

# Environmental Services Laboratory

Date: 02-May-01

CLIENT: Pinnacle Laboratories

Client Sample ID: 267-0104-MW22/104046-04

Lab Order: 0104046

Tag Number:

Project: 104046/PHIL

Collection Date: 4/9/01

Lab ID: 0104046-03A

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
SULFATE		EPA 375.4				Analyst: gvs
Sulfate	3,840	1,250		mg/L	250	4/16/01

Qualifiers: ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits  
B - Analyte detected in the associated Method Blank  
\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits  
E - Value above quantitation range

# Environmental Services Laboratory

Date: 02-May-01

CLIENT: Pinnacle Laboratories  
Lab Order: 0104046  
Project: 104046/PHIL  
Lab ID: 0104046-05A

Client Sample ID: 267-0104-MW24/104046-06  
Tag Number:  
Collection Date: 4/9/01  
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
SULFATE		EPA 375.4				Analyst: gvs
Sulfate	4,400	1,250		mg/L	250	4/16/01

Qualifiers: ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits  
B - Analyte detected in the associated Method Blank  
\* - Value exceeds Maximum Contaminant Level  
S - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits  
E - Value above quantitation range

**mental Services Laboratory**

Date: 02-May-01

Pinnacle Laboratories  
0104046  
104046/PHIL  
0104046-06A

Client Sample ID: 267-0104-MW29/104046-07  
Tag Number:  
Collection Date: 4/9/01  
Matrix: AQUEOUS

8

Result	Limit	Qual	Units	DF	Date Analyzed
6.30	EPA 375.4 5.00		mg/L	1	4/16/01

Analyst: gvs

's

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range



# Chain of Custody Record

4000 Monroe Road  
Farmington, NM 87401  
(505) 326-2262 Phone  
(505) 326-2388 FAX

COC Serial No. C 2590

104046

Project Name		Project Number		Phase		Task		Total Number of Bottles		Type of Analysis and Bottle		Comments	
Sample Number (and depth)	Date	Time	Matrix	LAB ID#									
Project Name <i>EpFS quarterly Samplings</i>													
Project Number <i>62800107</i> Phase <i>Task 0301</i>													
Samplers <i>C. Maerz</i>													
Laboratory Name <i>Pinnacle</i>													
Location <i>ALBQ NM</i>													
Sample Number (and depth)	Date	Time	Matrix	LAB ID#									
267-0104-MW 9	4-9-01	1643	H <sub>2</sub> O	01	X	X	X	X	X	X	X	X	Bisti Floor #1 (LD 267)
267-0104-MW 16	4-9-01	1613	H <sub>2</sub> O	02	X	X	X	X	X	X	X	X	"
267-0104-MW 21	4-9-01	1730	H <sub>2</sub> O	03	X	X	X	X	X	X	X	X	"
267-0104-MW 22	4-9-01	1720	H <sub>2</sub> O	04	X	X	X	X	X	X	X	X	"
267-0104-MW 23	4-9-01	1703	H <sub>2</sub> O	05	X	X	X	X	X	X	X	X	"
267-0104-MW 26	4-9-01	1147	H <sub>2</sub> O	06	X	X	X	X	X	X	X	X	"
267-0104-MW 29	4-9-01	1550	H <sub>2</sub> O	07	X	X	X	X	X	X	X	X	"
267-0104-MW 32	4-9-01	1334	H <sub>2</sub> O	08	X	X	X	X	X	X	X	X	"
267-0104-MW 33	4-9-01	1430	H <sub>2</sub> O	09	X	X	X	X	X	X	X	X	"
TRIP Blank	3-12-01	1510	H <sub>2</sub> O	10	X								"

**Relinquished by:** Signature *Cha T. Maerz* Date *4-10-01* Time *0930*

**Received By:** Signature *Shannon Janni* Date *4/10/01* Time *530*

**Samples Iced:**  Yes  No

**Preservatives (ONLY for Water Samples)**

Cyanide ..... Sodium hydroxide (NaOH)

Volatile Organic Analysis ..... Hydrochloric acid (HCl)

Metals ..... Nitric acid (HNO<sub>3</sub>)

TPH (418.1) ..... Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>)

Other (Specify) *Hg, Cd, Pb*

Other (Specify)

Carrier: *Greyhound*

Shipping and Lab Notes:  
*Could NOT GET Duplicate 267-0104-16 in well - please send more Trip Blanks*  
*Rec'd @ 4.4c*

Airbill No. *GLI/606919920*

APPENDIX A

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C1-05092  
Received: 03 MAY 01  
Reported: 14 MAY 01

Ms. Jacinta Tenorio  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 104046, PHIL/EPFS QUARTERLY SAMPLING  
Sampled By: Client  
Code: 145210514  
Page 1

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	
05092-1	267-0104-MW21-A/104046-03	04-09-01/17:30	
05092-2	267-0104-MW21-B/104046-03	04-09-01/17:30	
PARAMETER		05092-1	05092-2
Sulfate as SO4 (375.4), mg/l		1100	1200
Dilution Factor		50	50
Prep Date		05.04.01	05.04.01
Analysis Date		05.04.01	05.04.01
Batch ID		SEW051	SEW051
Analyst		BE	BE

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C1-05092  
Received: 03 MAY 01  
Reported: 14 MAY 01

Ms. Jacinta Tenorio  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 104046, PHIL/EPFS QUARTERLY SAMPLING  
Sampled By: Client  
Code: 145210514

REPORT OF RESULTS

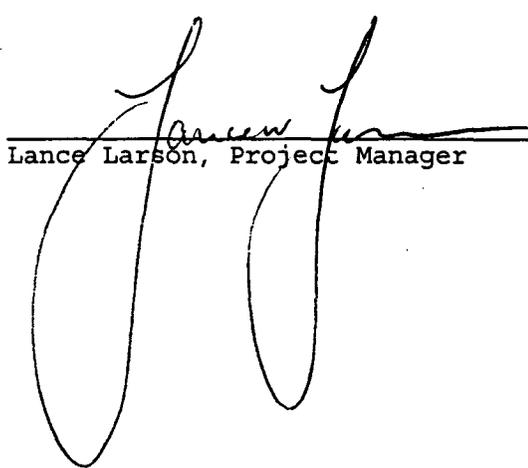
Page 2

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED
05092-3	Method Blank	
05092-4	Lab Control Standard % Recovery	
05092-5	Matrix Spike % Recovery	
05092-6	Matrix Spike Duplicate % Recovery	

PARAMETER	05092-3	05092-4	05092-5	05092-6
Sulfate as SO4 (375.4), mg/l	<5.0	99 %	113 %	115 %
Dilution Factor	1	---	---	---
Prep Date	05.04.01	---	---	---
Analysis Date	05.04.01	---	---	---
Batch ID	SEW051	---	---	---
Analyst	BE	---	---	---

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.



Lance Larson, Project Manager

Final Page Of Report

## Data Qualifiers for Final Report

### STL-Pensacola Inorganic/Organic

B1	The analyte was detected in the associated method blank (sample itself is flagged even though sample is ND).
B2	The analyte was detected in the sample(s) and in the associated method blank analyzed on the day samples were extruded; however, this analyte was not detected in the blank analyzed with the samples.
B3	The analyte was found in the associated blank as well as in the associated sample(s) (qualifier is applied to the sample, not to the blank).
B4	Sample results were corrected due to contaminants in Fractionation Blank
D	Diluted out (surrogate or spike due to sample dilution)
E	Compound concentration exceeds the upper calibration range of the instrument.
F	The reported value is < STL-Pensacola RL and > the STL-Pensacola MDL; therefore, the quantitation is estimation (The STL-PN RL is at or above lowest calibration standard in the initial calibration curve).
G	Sample and/or duplicate result is at or below 5 X (times) the STL Reporting Limit and the absolute difference between the sample and duplicate result is at or below the STL reporting limit; therefore, the results are "in control".
H1	Sample and/or duplicate is below 5 X (times) the STL Reporting Limit and the absolute difference between the results exceeds the STL Reporting Limit; therefore, the results are "out of control"
H2	Sample and duplicate (or MS and MSD) RPD is above control limit.
J (description)	The analyte was positively identified, the quantitation may be an estimation
J4	(For positive results) Temperature limits exceeded ( $\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$ ); non-reportable for NPDES compliance monitoring.
J6	(For positive results) LCS or Surrogate %R is > upper control limit (UCL), results may be biased high
J7	The reported value is > the laboratory MDL and < lowest calibration standard; therefore, the quantitation is an estimation (this qualifier should only be used when the STL-PN RL is below the lowest calibration standard in the initial calibration).
J8	Matrix spike and post spike recoveries are outside control limits. See out of Control Events/Corrective Action Form.
J9	(For positive results) LCS or Surrogate %R is < lower control limit (LCL), results may be biased low
M1	A matrix effect was present (1 sample, MS or MSD was analyzed twice to confirm surrogate/spike failure, 2 sample and/or MS/MSD chromatogram(s) had interfering peaks, 3 sample result was > 4 X spike added, 4 metals serial dilution was performed, or 5 metals post spike is < 40% R)
M2	The MS and/or MSD %R or RPD was outside upper or lower control limits; not necessarily due to matrix effect.
N/C	Not Calculable; Sample spiked is > 4X spike concentration (may also use this flag in place of negative numbers)
NH	Sample and duplicate results are "out of control". The sample is nonhomogeneous.
NoMS	Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD)
Q	The analytical (post digestion) spike is reported due to the percent recovery being outside limits on the matrix (pre-digestion) spike.
R (description)	The data may be unusable due to deficiencies in the ability to analyze the sample and meet QC criteria
R1	(For nondetects) Temperature limits exceeded ( $\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$ ); non-reportable for NPDES compliance monitoring
R2	Improper preservation, no preservative present or insufficient amounts of preservative in sample upon receipt, non-reportable for NPDES compliance monitoring
R3	Improper preservation, incorrect preservative present in sample upon receipt, non-reportable for NPDES compliance
R4	Holding time exceeded, non-reportable for NPDES compliance monitoring.
R5	Sample collection requirements not met, see case narrative.
R6	LCS or surrogate %R is < LCL and analyte is not detected or surrogate %R is < 10% for detects/nondetects.
R7	Internal standard area outside -50% to +100% of calibration verification standard.
R8	Initial calibration or any calibration verification exceeds acceptance criteria.
R9	Not filtered and preserved at time of collection.
R10	Headspace >1/4" in diameter in volatile vials, non-reportable for NPDES compliance monitoring
R11	Samples were filtered and preserved within 4 hours of collection.
R12	Analysis performed outside the 12-hour tune or not within tune criteria.
S1	The Method of Standard Additions (MSA) has been performed on this sample.
S2	Incorrect sample amount was submitted to the laboratory for analysis
S3 (Flashpoint)	This method is not designed for solids and the results may not be accepted by any regulator for such purposes.
T	Second-column or detector confirmation exceeded the SW-846 criteria of 40% RPD for this compound.
TIC	The compound is not within the initial calibration curve. It is searched for qualitatively or as a Tentatively Identified Compound.
U	The reported value is $\leq$ Laboratory MDL (value for result will be the MDL, never below the MDL)
W	Post-digestion spike for Furnace AA is out of control limits (85-115%), while sample absorbance is less than 50% spike absorbance.
@	Adjusted reporting limit due to sample composition, not due to overcal (dilution prior to digestion and/or analysis).
#	Elevated reporting limit due to insufficient sample size
1 pt	The compound has been quantitated against a one point calibration.
* (Metals & Wet Chem)	Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)

**STL PENSACOLA**  
**STATE CERTIFICATIONS**

- Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL)*
- Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater)*
- Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental)*
- State of California, Department of Health Services, Laboratory ID No. 01128CA (Hazardous Waste and Wastewater)*
- State of Connecticut, Department of Health Services, Connecticut Lab Approval No. PH-0697 (Drinking Water, Hazardous Waste and Wastewater)*
- Delaware Health & Social Services, Division of Public Health, Laboratory ID No. FL094 (Drinking Water by Reciprocity with FL)*
- Florida DOH Laboratory ID No. E81010 (Drinking Water, Hazardous Waste and Wastewater)*
- Florida, Radioactive Materials License No. G0733-1*
- Foreign Soil Permit, Permit No. S-37599 /*
- Kansas Department of Health & Environment, Laboratory ID No. E10253 (Wastewater and Hazardous Waste)*
- Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Laboratory ID No. 90043 (Drinking Water)*
- State of Louisiana, DHH, Office of Public Health Division of Laboratories, Laboratory ID No. LA000017 (Drinking Water)*
- Louisiana Department of Environmental Quality, Environmental Laboratory Accreditation Program, Agency Interest ID 30748 (Environmental - Accreditation Pending)*
- State of Maryland, DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida)*
- Commonwealth of Massachusetts, DEP, Laboratory ID No. M-FL094 (Hazardous Waste and Wastewater)*
- State of Michigan, Bureau of E&OccH, Laboratory ID No.9912 (Drinking Water by Reciprocity with Florida)*
- New Hampshire DES ELAP, Laboratory ID No. 250599A (Wastewater)*
- State of New Jersey, Department of Environmental Protection & Energy, Laboratory ID No. 49006 (Wastewater and Hazardous Waster)*
- New York State, Department of Health, Laboratory ID No. 11503 (Wastewater and Solids/Hazardous Waste)*
- North Carolina Department of Environment & Natural Resources, Laboratory ID No. 314 (Hazardous Waste and Wastewater)*
- North Dakota DH&Consol Labs, Laboratory ID No. R-108 (Drinking Water, Wastewater and Hazardous Waste by Reciprocity with Florida)*
- State of Oklahoma, Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater)*
- Commonwealth of Pennsylvania, Department of Environmental Resources, Laboratory ID No. 68-467 (Drinking Water)*
- South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater by Reciprocity with FL and Solids/Hazardous Waste by Reciprocity with CA)*
- Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water)*
- Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL)*
- State of Washington, Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater)*
- West Virginia Division of Environmental Protection, Office of Water Resources, Laboratory ID No. 136 (Hazardous Waste and Wastewater by Reciprocity with FL)*
- American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 100704*

# STL Pensacola PROJECT SAMPLE INSPECTION FORM



Lab Order #: C105092 Date Received: 5/3/01

- |   |  |
|---|--|
| <p>1. Was there a Chain of Custody? <input checked="" type="radio"/> Yes <input type="radio"/> No*</p> <p>2. Was Chain of Custody properly filled out and relinquished? <input checked="" type="radio"/> Yes <input type="radio"/> No*</p> <p>3. Were samples received cold? <input checked="" type="radio"/> Yes <input type="radio"/> No* N/A<br/>(Criteria: 2° - 6°C: STL-SOP)</p> <p>4. Were all samples properly labeled and identified? <input checked="" type="radio"/> Yes <input type="radio"/> No*</p> <p>5. Did samples require splitting or compositing*? Yes* <input type="radio"/> No <input checked="" type="radio"/></p> <p>Req By: PM Client Other*</p> <p>6. Were samples received in proper containers for analysis requested? <input checked="" type="radio"/> Yes <input type="radio"/> No*</p> <p>7. Were all sample containers received intact? <input checked="" type="radio"/> Yes <input type="radio"/> No*</p> | <p>8. Were samples checked for preservative? (Check pH of all H<sub>2</sub>O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)* Yes <input type="radio"/> No* <input checked="" type="radio"/> N/A</p> <p>9. Is there sufficient volume for analysis requested? <input checked="" type="radio"/> Yes <input type="radio"/> No* N/A (Can)</p> <p>10. Were samples received within Holding Time? (REFER TO STL-SOP 1040) <input checked="" type="radio"/> Yes <input type="radio"/> No*</p> <p>11. Is Headspace visible &gt; 1/4" in diameter in VOA vials?* If any headspace is evident, comment in out-of-control section. Yes* <input type="radio"/> No <input checked="" type="radio"/> N/A</p> <p>12. If sent, were matrix spike bottles returned? Yes <input type="radio"/> No* <input checked="" type="radio"/> N/A</p> <p>13. Was Project Manager notified of problems? (initials: _____) Yes <input type="radio"/> No* <input checked="" type="radio"/> N/A</p> |
|---|--|

Airbill Number(s): 128781680143355382  
1287816801439440996

Shipped By: UPS

Cooler Number(s): Client Chart  
5°C 4°C

Shipping Charges: N/A

Cooler Weight(s): 67# 29#

Cooler Temp(s) (°C): 5°C, 4°C  
CCR4

(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

**Out of Control Events and Inspection Comments:**

Multiple project/cooler shipment  
Watch Hold Times!

(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: MHS Date: 5/3/01

Logged By: LLK Date: 03-MAY-01

- \* Note all Out-of-Control and/or questionable events on Comment Section of this form. For holding times, the analytical department will flag immediate hold time samples (pH, Dissolved O<sub>2</sub>, Residual Cl) as out of hold time, therefore, these samples will not be documented on this PSIF.
- \* If Other, note who requested the splitting or compositing of samples on the Comment Section of this form. All volatile samples requested to be split or composited must be done in the Volatile Lab. Document: "Volatile sample values may be compromised due to sample splitting (compositing)"
- + All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938, section 2.2.9).
- \* According to EPA, 1/4" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938, section 2.2.12).

Network Project Manager: Jacinta A. Tenorio

Pinnacle Laboratories, Inc.  
 2709-D Pan American Freeway, NE  
 Albuquerque, New Mexico 87107  
 (505) 344-3777 Fax (505) 344-4413

Need verbals ASAP!!

C105092

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
207-0104-MWZ1-A/ 104046-03	4/9	1730	AQ	
211-0104-MWZ1-B/ 104046-03	4/9	1730	AQ	

ANALYSIS REQUEST

Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL (23 METALS)	TOX	TOC	Gen Chemistry: <i>SOT</i>	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8082)	Herbicides (615/8151)	PNA (8310)/8270 SIMS	8240 (TCLP 1311) ZHE	Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM (ICP-MS)	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS	
						X															
						X															

PROJECT INFORMATION	SAMPLE RECEIPT	SAMPLES SENT TO:	RELINQUISHED BY:	RELINQUISHED BY:
PROJECT #: 104046	Total Number of Containers	PENSACOLA - STL-FL	Signature: <i>[Signature]</i>	Signature:
PROJECT NAME: PHIL	Chain of Custody Seals	ESL - OR	Time: <i>1700</i>	Time:
QC LEVEL: STD IV	Received intact?	STL - CT	Printed Name: <i>Pinnacle Labs</i>	Printed Name:
QC REQUIRED: MS MSD BLANK	Received Good Cond./Cold	ATEL - AZ	Date: <i>5/2/01</i>	Date:
TAT: STANDARD RUSH!!	LAB NUMBER:	ATEL - MARION	Company: <i>Pinnacle Laboratories, Inc.</i>	Company:
DUE DATE: <i>5/16 or ASAP</i>	COMMENTS:	ATEL - MELMORE	RECEIVED BY: 1.	RECEIVED BY: 2.
RUSH SURCHARGE:		BARRINGER	Signature: <i>[Signature]</i>	Signature:
CLIENT DISCOUNT:		ENVIRO TEST LABS	Time: <i>0945</i>	Time:
SPECIAL CERTIFICATION REQUIRED: YES NO		WCAS	Printed Name: <i>Mark Sweetford</i>	Printed Name:
		WOHL	Date: <i>5/3/01</i>	Date:
			Company: <i>STZ BINS</i>	Company:

# ATEL

Aqua Tech Environmental Laboratories, Inc.

## - CERTIFICATE OF ANALYSIS -

Client #: T0608

Report Date: 17-May-01

Pinnacle Laboratories, Inc.  
2709-D Pan American Freeway, NE  
Albuquerque, NM 87107-

Phone: (505) 344-3777 Ext:

Attn: Mitch Rubenstein

FAX: (505) 344-4413

Our Lab #: 050401012 /

Your Sample ID: 267-0104-MW9/104046-01

Date Logged-In: 5/4/01

Sample Source: Other/Undefined

Matrix: Water

Client Project #:

PO#: 104046

Project #: PHIL

Date Submitted to Lab: 5/4/2001

## - COLLECTION INFORMATION -

Date/Time/By: 4/9/01 4:43 PM

Test Group	EPA Method	Test	Result	Units	Analysis Date	Analyst	WS#
SO4-IC	300.0	Sulfate, SO4	7	mg/L	5/15/01	JMN	2972

End of Report

Report Approved By: R Mosher

Arizona Lab License No. AZ0009

Lab Number 050401012:Page 1

# ATEL

Aqua Tech Environmental Laboratories, Inc.

## - CERTIFICATE OF ANALYSIS -

Client #: T0608

Report Date: 29-May-01

Pinnacle Laboratories, Inc.  
2709-D Pan American Freeway, NE  
Albuquerque, NM 87107-

Phone: (505) 344-3777 Ext:

Attn: Mitch Rubenstein

FAX: (505) 344-4413

Our Lab #: 050401013 /

Your Sample ID: 267-0104-MW16/104046-02

Date Logged-In: 5/4/01

Sample Source: Other/Undefined

Matrix: Water

Client Project #:

PO#: 104046

Project #: PHIL

Date Submitted to Lab: 5/4/2001

## - COLLECTION INFORMATION -

Date/Time/By: 4/9/01 4:13 PM

Test Group	EPA Method	Test	Result	Units	Analysis Date	Analyst	WS#
SO4-IC	300.0	Sulfate, SO4	464	mg/L	5/15/01	JMN	2972

End of Report

Report Approved By: R Mosher

Arizona Lab License No. AZ0009

Lab Number 050401013:Page 1

# ATEL

Aqua Tech Environmental Laboratories, Inc.

## - CERTIFICATE OF ANALYSIS -

Client #: T0608  
Pinnacle Laboratories, Inc.  
2709-D Pan American Freeway, NE  
Albuquerque, NM 87107-

Report Date: 17-May-01

Attn: Mitch Rubenstein

Phone: (505) 344-3777 Ext:  
FAX: (505) 344-4413

Our Lab #: 050401014      Your Sample ID: 267-0104-MW21/104046-03  
Date Logged-In: 5/4/01      Sample Source: Other/Undefined  
Matrix: Water      Client Project #:      PO#: 104046  
Project #: PHIL      Date Submitted to Lab: 5/4/2001

## - COLLECTION INFORMATION -

Date/Time/By: 4/9/01 5:30 PM

Test Group	EPA Method	Test	Result	Units	Analysis Date	Analyst	WS#
SO4-IC	300.0	Sulfate, SO4	5100	mg/L	5/15/01	JMN	2972

End of Report

Report Approved By: R Mosher

Arizona Lab License No. AZ0009

Lab Number 050401014:Page 1

# ATEL

Aqua Tech Environmental Laboratories, Inc.

## - CERTIFICATE OF ANALYSIS -

Client #: T0608

Report Date: 17-May-01

Pinnacle Laboratories, Inc.

2709-D Pan American Freeway, NE

Albuquerque, NM 87107-

Phone: (505) 344-3777 Ext:

Attn: Mitch Rubenstein

FAX: (505) 344-4413

Our Lab #: 050401015 /

Your Sample ID: 267-0104-MW21DUP/104046-03

Date Logged-In: 5/4/01

Sample Source: Other/Undefined

Matrix: Water

Client Project #:

PO#: 104046

Project #: PHIL

Date Submitted to Lab: 5/4/2001

## - COLLECTION INFORMATION -

Date/Time/By: 4/9/01 5:30 PM

Test Group	EPA Method	Test	Result	Units	Analysis Date	Analyst	WS#
SO4-IC	300.0	Sulfate, SO4	5350	mg/L	5/16/01	JMN	2973

End of Report

Report Approved By: R Mosher

Arizona Lab License No. AZ0009

Lab Number 050401015:Page 1

# ATEL

Aqua Tech Environmental Laboratories, Inc.

## - CERTIFICATE OF ANALYSIS -

Client #: T0608  
Pinnacle Laboratories, Inc.  
2709-D Pan American Freeway, NE  
Albuquerque, NM 87107-

Report Date: 17-May-01

Attn: Mitch Rubenstein

Phone: (505) 344-3777 Ext:  
FAX: (505) 344-4413

Our Lab #: 050401016 / Your Sample ID: 267-0104-MW22/104046-04  
Date Logged-In: 5/4/01 Sample Source: Other/Undefined  
Matrix: Water Client Project #: PO#: 104046  
Project #: PHIL Date Submitted to Lab: 5/4/2001

## - COLLECTION INFORMATION -

Date/Time/By: 4/9/01 5:20 PM

Test Group	EPA Method	Test	Result	Units	Analysis Date	Analyst	WS#
SO4-IC	300.0	Sulfate, SO4	4790	mg/L	5/15/01	JMN	2972

*End of Report*

Report Approved By: R Mosher

Arizona Lab License No. AZ0009

Lab Number 050401016:Page 1

# ATEL

Aqua Tech Environmental Laboratories, Inc.

## - CERTIFICATE OF ANALYSIS -

Client #: T0608  
Pinnacle Laboratories, Inc.  
2709-D Pan American Freeway, NE  
Albuquerque, NM 87107-

Report Date: 17-May-01

Attn: Mitch Rubenstein

Phone: (505) 344-3777 Ext:  
FAX: (505) 344-4413

Our Lab #: 050401017 / Your Sample ID: 267-0104-MW23/104046-05  
Date Logged-In: 5/4/01 Sample Source: Other/Undefined  
Matrix: Water Client Project #: PO#: 104046  
Project #: PHIL Date Submitted to Lab: 5/4/2001

## - COLLECTION INFORMATION -

Date/Time/By: 4/9/01 5:03 PM

Test Group	EPA Method	Test	Result	Units	Analysis Date	Analyst	WS#
SO4-IC	300.0	Sulfate, SO4	3790	mg/L	5/15/01	JMN	2972

End of Report

Report Approved By: R. M. Mester

Arizona Lab License No. AZ0009

Lab Number 050401017:Page 1

# ATEL

Aqua Tech Environmental Laboratories, Inc.

## - CERTIFICATE OF ANALYSIS -

Client #: T0608

Report Date: 17-May-01

Pinnacle Laboratories, Inc.  
2709-D Pan American Freeway, NE  
Albuquerque, NM 87107-

Phone: (505) 344-3777 Ext:  
FAX: (505) 344-4413

Attn: Mitch Rubenstein

Our Lab #: 050401018

Your Sample ID: 267-0104-MW26/104046-06

Date Logged-In: 5/4/01

Sample Source: Other/Undefined

Matrix: Water

Client Project #:

PO#: 104046

Project #: PHIL

Date Submitted to Lab: 5/4/2001

## - COLLECTION INFORMATION -

Date/Time/By: 4/9/01 11:47 AM

Test Group	EPA Method	Test	Result	Units	Analysis Date	Analyst	WS#
SO4-IC	300.0	Sulfate, SO4	4560	mg/L	5/15/01	JMN	2972

End of Report

Report Approved By: R Mosher

Arizona Lab License No. AZ0009

Lab Number 050401018:Page 1

# ATEL

Aqua Tech Environmental Laboratories, Inc.

## - CERTIFICATE OF ANALYSIS -

Client #: T0608

Report Date: 17-May-01

Pinnacle Laboratories, Inc.  
2709-D Pan American Freeway, NE  
Albuquerque, NM 87107-

Phone: (505) 344-3777 Ext:  
FAX: (505) 344-4413

Attn: Mitch Rubenstein

Our Lab #: 050401019

Your Sample ID: 267-0104-MW29/104046-07

Date Logged-In: 5/4/01

Sample Source: Other/Undefined

Matrix: Water

Client Project #:

PO#: 104046

Project #: PHIL

Date Submitted to Lab: 5/4/2001

## - COLLECTION INFORMATION -

Date/Time/By: 4/9/01 3:50 PM

Test Group	EPA Method	Test	Result	Units	Analysis Date	Analyst	WS#
SO4-IC	300.0	Sulfate, SO4	43	mg/L	5/16/01	JMN	2973

End of Report

Report Approved By: R Mosher

Arizona Lab License No. AZ0009

Lab Number 050401019:Page 1

2700 E. BILBY ROAD • BUILDING A • TUCSON, AZ 85706  
PHONE 520-573-6565 • 1-800-879-2835 • FAX 520-573-6550

# ATEL

Aqua Tech Environmental Laboratories, Inc.

## - CERTIFICATE OF ANALYSIS -

Client #: T0608

Report Date: 17-May-01

Pinnacle Laboratories, Inc.  
2709-D Pan American Freeway, NE  
Albuquerque, NM 87107-

Phone: (505) 344-3777 Ext:  
FAX: (505) 344-4413

Attn: Mitch Rubenstein

Our Lab #: 050401020

Your Sample ID: 267-0104-MW32/104046-08

Date Logged-In: 5/4/01

Sample Source: Other/Undefined

Matrix: Water

Client Project #:

PO#: 104046

Project #: PHIL

Date Submitted to Lab: 5/4/2001

## - COLLECTION INFORMATION -

Date/Time/By: 4/9/01 1:34 PM

Test Group	EPA Method	Test	Result	Units	Analysis Date	Analyst	WS#
SO4-IC	300.0	Sulfate, SO4	3630	mg/L	5/16/01	JMN	2973

*End of Report*

Report Approved By: R Mosher

Arizona Lab License No. AZ0009

Lab Number 050401020:Page 1

# ATEL

Aqua Tech Environmental Laboratories, Inc.

## - CERTIFICATE OF ANALYSIS -

Client #: T0608

Report Date: 29-May-01

Pinnacle Laboratories, Inc.

2709-D Pan American Freeway, NE

Albuquerque, NM 87107-

Phone: (505) 344-3777 Ext:

FAX: (505) 344-4413

Attn: Mitch Rubenstein

Our Lab #: 050401021

Your Sample ID: 267-0104-MW33/104046-09

Date Logged-In: 5/4/01

Sample Source: Other/Undefined

Matrix: Water

Client Project #:

PO#: 104046

Project #: PHIL

Date Submitted to Lab: 5/4/2001

## - COLLECTION INFORMATION -

Date/Time/By: 4/9/01 2:30 PM

Test Group	EPA Method	Test	Result	Units	Analysis Date	Analyst	WS#
SO4-IC	300.0	Sulfate, SO4	4460	mg/L	5/18/01	JMN	2973

End of Report

Report Approved By: R Mosher

Arizona Lab License No. AZ0009

Lab Number 050401021:Page 1

# ATEL

Aqua Tech Environmental Laboratories, Inc.

## - CERTIFICATE OF ANALYSIS -

Client #: T0608  
Pinnacle Laboratories, Inc.  
2709-D Pan American Freeway, NE  
Albuquerque, NM 87107-

Report Date: 29-May-01

Attn: Mitch Rubenstein

Phone: (505) 344-3777 Ext:  
FAX: (505) 344-4413

Our Lab #: 050401022      Your Sample ID: 267-0104-MW33DUP/104046-09  
Date Logged-In: 5/4/01      Sample Source: Other/Undefined  
Matrix: Water      Client Project #:      PO#: 104046  
Project #: PHIL      Date Submitted to Lab: 5/4/2001

## - COLLECTION INFORMATION -

Date/Time/By: 4/9/01 2:30 PM

Test Group	EPA Method	Test	Result	Units	Analysis Date	Analyst	WS#
SO4-IC	300.0	Sulfate, SO4	4610	mg/L	5/18/01	JMN	2973

End of Report

Report Approved By: R Mosher

Arizona Lab License No. AZ0009

Lab Number 050401022:Page 1

# ATEL

Aqua Tech Environmental Laboratories, Inc.

## - QUALITY CONTROL REPORT -

Printed: 5/29/2001

WS#	Lab#	Test ID	QC Code	Result	Units	True Added	-- QC Calculations -- QC1	-- QC Calculations -- QC2	Lower Limit	Upper Limit
2972	050301022D	SO4	D	68	mg/L	0	2 %D			20
2972	050301022S	SO4	S	96	mg/L	25	106 %R: *		0	
2973	050401019D	SO4	D	43	mg/L	0	1 %D			20
2973	050401019S	SO4	S	97	mg/L	50	107 %R: *		0	
2972	Blank	SO4	B	0	mg/L	0				
2973	Blank	SO4	B	0	mg/L	0				
2972	Calib Check	SO4	K	2	mg/L	2.5	97 %R: *		0	
2972	Calib Check	SO4	K	2	mg/L	2.5	98 %R: *		0	
2973	Calib Check	SO4	K	2	mg/L	2.5	98 %R: *		0	
2973	Calib Check	SO4	K	2	mg/L	2.5	98 %R: *		0	
2972	Calib Check	SO4	K	3	mg/L	2.5	100 %R: *		0	
2973	Calib Check	SO4	K	3	mg/L	2.5	100 %R: *		0	

### QC Code Legend

B	Blanks	K	Calibration Checks	S	Spikes
C	Control Samples	M	Matrix Spike Duplicates		
D	Duplicates	R	Surrogates		

Network Project Manager: Jacinta A. Tenorio

Pinnacle Laboratories, Inc.  
 2709-D Pan American Freeway, NE  
 Albuquerque, New Mexico 87107  
 (505) 344-3777 Fax: (505) 344-4413

WATCH HOLD TIMES!  
 NEED QC!!

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA		Metals-13 PP List		Metals-TAL (23 METALS)		TOX	TOC	Gen Chemistry:	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8082)	Herbicides (615/8151)	PNA (8310)/8270 SIMS	8240 (TCLP 1311) ZHE	Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM (ICP-MS)	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
					RCRA TCLP METALS	Metals (8) RCRA																					
267-0104-MW9/04046-01	4/9	1043	AQ	09046-1	-12								504 by IC														
- MW16/04046-02		1613			-13								X														
- MW21/04046-03		1730			-14								X														
- MW21 DUP/04046-03		1730			-15								X														
- MW22/04046-04		1720			-16								X														
- MW23/04046-05		1703			-17								X														
- MW26/04046-06		1147			-18								X														
- MW29/04046-07		1550			-19								X														
- MW32/04046-08		1334			-20								X														
✓ - MW33/04046-09		1430			-21								X														

DUE DATE  
 MAY 17 2001  
 MAY 15 2001

PROJECT INFORMATION	SAMPLE RECEIPT	SAMPLES SENT TO:	RELINQUISHED BY:	RELINQUISHED BY:
PROJECT #: 104046	Total Number of Containers	PENSACOLA - STL-FL	Signature: <i>Lani V. Lockett</i>	Signature: <i>Lani V. Lockett</i>
PROJ. NAME: PHIL	Chain of Custody Seals	ESL - OR	Time: 12:00	Time: 12:00
QC LEVEL: SID IV	Received Intact?	STL - CT	Printed Name: LANI V. LOCKETT	Date: 5/4
QC REQUIRED: MS MSD BLANK	Received Good Cond./Cold	ATEL - AZ	Company: ATEL	Company: ATEL
TAT: STANDARD RUSH!!	LAB NUMBER:	ATEL - MARION	RECEIVED BY:	RECEIVED BY:
COMMENTS:		ATEL - MELMORE	Signature: <i>Lani V. Lockett</i>	Signature: <i>Lani V. Lockett</i>
DUE DATE: 5/15 OR ASAP	RUSH SURCHARGE: -	BARRINGER	Time: 10:00	Time: 10:00
CLIENT DISCOUNT: -	SPECIAL CERTIFICATION	ENVIRO TEST LABS	Printed Name: LANI V. LOCKETT	Printed Name: LANI V. LOCKETT
REQUIRED: YES (NO)		WCAS	Date: 5/4/01	Date: 5/4/01
		WOHL	Company: ATEL	Company: ATEL

Network Project Manager: Jacinta A. Tenorio

Pinnacle Laboratories, Inc.  
 2709-D Pan American Freeway, NE  
 Albuquerque, New Mexico 87107  
 (505) 344-3777 Fax (505) 344-4413

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL (23 METALS)	TOX	TOC	Gen Chemistry:	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8082)	Herbicides (615/8151)	PNA (8310)/8270 SIMS	8240 (TCLP 1311) ZHE	Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM (ICP-MS)	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS	
267-0101-MW33DUP/104046	09 4/9	1430	AO	250401-22							X 504 by IC															

**DUE DATE**  
 MAY 17 2001  
 MAY 15 2001

PROJECT INFORMATION	SAMPLE RECEIPT	SAMPLES SENT TO:	RELINQUISHED BY:	RELINQUISHED BY:
PROJECT #: 104046	Total Number of Containers	PENSACOLA - STL-FL	Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>
PROJ. NAME: PHIL	Chain of Custody Seals	ESL - OR	Title: <i>[Title]</i>	Title: <i>[Title]</i>
QC LEVEL: STD IV	Received Intact?	STL - CT	Date: <i>[Date]</i>	Date: <i>[Date]</i>
QC REQUIRED: MS MSD BLANK	Received Good Cond./Cold	ATEL - AZ	Printed Name: <i>[Name]</i>	Printed Name: <i>[Name]</i>
TAT: STANDARD RUSH!!	LAB NUMBER:	ATEL - MARION	Company: <i>[Company]</i>	Company: <i>[Company]</i>
		ATEL - MELMORE	RECEIVED BY:	RECEIVED BY:
		BARRINGER	Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>
		ENVIRO TEST LABS	Title: <i>[Title]</i>	Title: <i>[Title]</i>
		WCAS	Date: <i>[Date]</i>	Date: <i>[Date]</i>
		WOHL	Printed Name: <i>[Name]</i>	Printed Name: <i>[Name]</i>
			Company: <i>[Company]</i>	Company: <i>[Company]</i>
DUE DATE: 5/15/01	COMMENTS:			
RUSH SURCHARGE: <i>[Mark]</i>				
CLIENT DISCOUNT: <i>[Mark]</i>				
SPECIAL CERTIFICATION REQUIRED: YES/NO				



Well Number PZ-36

Serial No. WDPD

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

Project Name EPFS BISTN FLARE PIT #1

Project Manager R. THOMPSON

Project No. 62800433

Client Company EL PASO FIELD SERVICES

Phase/Task No. 35

Site Name BISTN FLARE PIT #1

Site Address BEHIND CHACO PLANT

Development Criteria

- 3 to 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other

Water Volume Calculation

Initial Depth of Well (feet) 28.14' TOR  
 Initial Depth to Water (feet) 24.71' TOR  
 Height of Water Column in Well (feet) 3.43  
 Diameter (inches): Well 2 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>3.43</u>	<u>56</u>	<u>56 x 3</u>
Gravel Pack			
Drilling Fluids			
Total			<u>1.68</u>

Methods of Development

- Pump
- Baller
- Centrifugal
- Bottom Valve
- Submersible
- Double Check Valve
- Peristaltic
- Stainless-steel Kemmerer
- Other

Instruments

- pH Meter
- DO Monitor
- Conductivity Meter
- Temperature Meter
- Other

Serial No. (if applicable) HYDAC

HYDAC

HYDAC

HYDAC

Water Disposal KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (umhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Incremental	Cumulative					
<u>5/1/01</u>	<u>0920</u>	<u>X</u>				<u>0</u>	<u>0</u>	<u>18.7</u>	<u>6.83</u>	<u>5970</u>		<u>CLOUDY</u>
<u>5/1/01</u>	<u>0930</u>	<u>X</u>				<u>1</u>	<u>1</u>	<u>17.8</u>	<u>7.03</u>	<u>5940</u>		<u>LIGHT BROWN-SILT</u>
<u>5/1/01</u>	<u>0940</u>	<u>X</u>				<u>1</u>	<u>2</u>	<u>19.1</u>	<u>7.25</u>	<u>6140</u>		<u>LIGHT BROWN-SILT</u>

Circle the date and time that the development criteria are met.

Comments WELL BAILED DRY AT APPROX. 3 GAL. SAMPLED AT 10:35.

Developer's Signature(s) Robert Thompson

Date 5/1/01

Reviewer

Date



Well Number P2-35  
 Serial No. WDPD-

WELL DEVELOPMENT AND PURGING DATA  
 Page 1 of 1

Project Name EPES BISTN FLARE PIT #1  
 Client Company EL PASO FIELD SERVICES  
 Site Name BISTN FLARE PIT #1

Project Manager R. THOMPSON  
 Phase/Task No. 35

Site Address BEHIND CHAGO PLANT

**Development Criteria**

- 3 to 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other

**Water Volume Calculation**

Initial Depth of Well (feet) 27.82' TOR  
 Initial Depth to Water (feet) 25.17' TOR  
 Height of Water Column in Well (feet) 2.65'  
 Diameter (inches): Well 2 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>2.65</u>	<u>.43</u>	<u>.43 x 3</u>
Gravel Pack			
Drilling Fluids			
Total			<u>1.29</u>

**Methods of Development**

- Pump
- Centrifugal
- Submersible
- Peristaltic
- Other
- Boiler
- Bottom Valve
- Double Check Valve
- Stainless-steel Kemmerer

**Instruments**

- pH Meter
- DO Monitor
- Conductivity Meter
- Temperature Meter
- Other

Serial No. (if applicable) HYDAC

HYDAC

HYDAC

Water Disposal KUTZ SEPARATOR

**Water Removal Data**

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Increment	Cumulative					
<u>5/1/01</u>	<u>955</u>	<input checked="" type="checkbox"/> X				<u>0</u>	<u>0</u>	<u>20.7</u>	<u>7.24</u>	<u>3660</u>		<u>LIGHT BROWN - PRODUCT</u>
<u>5/1/01</u>	<u>1005</u>	<input checked="" type="checkbox"/> X				<u>1</u>	<u>1</u>	<u>21.5</u>	<u>7.30</u>	<u>6830</u>		<u>LIGHT BROWN - SILTY</u>

Circle the date and time that the development criteria are met.

Comments PRODUCT READING - 25.15' TOE, BAILED DRY AT APPROX. 2.5 GAL. SAMPLED AT 1100

Developer's Signature(s) Robert Thompson

Date 5/1/01

Reviewer \_\_\_\_\_

Date \_\_\_\_\_



Project Name: EpES Quarterly Samplings  
 Client Company: EL Paso Field Services  
 Site Name: BIST: Flare Pit (LP 267)  
 R Thompson  
 Project No. 62500107  
 Phase/Task No. 0301  
 Rival Jan Jan 00

Serial No. (if applicable): Hydac  
 Instruments:  
 pH Meter  
 DO Monitor  
 Conductivity Meter Hydac  
 Temperature Meter Hydac  
 Other

Water Disposal: Blountfield N.M.

4.5	0.73X3	2.19	22.92
			18.40
			4.5

Development Criteria:  
 5 Casing Volumes of Water Removal  
 Stabilization of Indicator Parameters  
 Other

Methods of Development:  
 Pump:  Centrifugal  Bottom Valve  
 Submersible  Double Check Valve  
 Peristaltic  Stainless-steel Kemmerer  
 Other

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Casing Water Log in (feet)	pH	Conductivity (microhm/cm)	Dissolved Oxygen (ppm)	Comments
		Pump	Boiler							
4-9-01	1311	X		.5			7.12	5860		CK-0-Dr No odor
	1313	X		1			6.96	5700		"
	1315	X		1.5			6.96	5670		"
	1317	X		2.5			6.96	5690		"
	1319	X					6.93	5920	1.5	No Change

Circle the date and time that the development criteria are met.

Comments: Sampled 1334 for NITRATES, FULFATES, BTEX

Developer's Signature: [Signature] Date: 4-9-01 Reviewer: RT Date: 4/9/01

Project Name: EPTS quarterly Sampling  
 Client Company: Ek Paso Field Services  
 Site Name: Dist. Flare pit #1 (LD267)  
 Contractor: R. Thompson  
 Project No: 62800107  
 Phase/Task No: 0301  
 Instrumentation: Renal Sen Jawn Co.

Development Criteria  
 3 to 5 Casing Volumes of Water Removal  
 Stabilization of Indicator Parameters  
 Other

Methods of Development  
 Pump:  Slinger  
 Centrifugal  Bottom Valve  
 Submersible  Double Check Valve  
 Peristaltic  Stainless-steel Kemmerer  
 Other

Water Disposal: Blountfield N.M.  
K-TR Separator

Instruments: Hydac  
 pH Meter  
 DO Monitor  
 Conductivity Meter Hydac  
 Temperature Meter Hydac  
 Other

Date	Time	Development Method (Pump/Boiler)	Removal Rate (gal/min)	Intake Depth (feet)	Existing Water Depth (feet)	Flow Rate (gpm)	Temp (F)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Comments
4-9-01	10:19	X					10.8	7.68	6430		Clear yellow tint
	10:22	X					11.2	7.57	6570	5.5	No Change

Circle the date and time that the development criteria are met.  
 Comments: AFTER Bailing Approx imately .5 gal Bailed well Drx LET Recover Sampled for NITRATES Sulfates BTEX 1550  
 Developer's Signature: R. Thompson  
 Date: 4-9-01  
 Reviewer: RT  
 Date: 4/9/01

Project Name EPFS quarterly samplings  
 Client Company Ek Paso Field Services  
 Site Name BIST; Flare p.T (LD 267)  
 Instruments Rural San Juan Co  
 Serial No. (if applicable) Hydrex

Development Criteria  
 3 to 5 Casing Volumes of Water Removal  
 Stabilization of Indicator Parameters  
 Other

Methods of Development  
 Pump  Bottom Valve  
 Centrifugal  Double Check Valve  
 Submersible  Stainless-steel Kemmerer  
 Peristaltic  Other

Water Disposal K-72 Separator Bloomfield U/M  
 Instruments  
 pH Meter  
 HHO Monitor  
 Conductivity Meter Hydrex  
 Temperature Meter Hydrex  
 Other

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Leaking Water Capacity (feet)	Flow (gpm)	pH	Conductivity (microhm/cm)	Dissolved Oxygen (ppm)	Comments
4-9-01	1120	X				5	6.85	7800		Clou-d odor
	1124	X				1.5	7.12	7920		"
	1126	X				2.5	7.23	7960		"
	1129	X				2.5	7.26	7930		"
	1131	X				2.5	7.28	7820	SS	no change

Water Removal Data  
 Circle the date and time that the development criteria are met.  
 Comments Collected Samples 1197 NITRATES, 5-NITATES, BTEX  
 Developer's Signature(s) Chris A. M... Date 4-9-01 Reviewer RT Date 4/9/01



Project Name: GPFS quarterly sampling  
 Client Company: Ek Paso F.R.D. Services  
 Site Name: Bisti Flare pit (LO 267)  
 Instruments: 23-03  
20.55  
2.48  
 UDO Monitor  
 Conductivity Meter Hydax  
 Temperature Meter Hydax  
 Other

Development Criteria  
 No 5 Casing Volumes of Water Removal  
 Stabilization of Indicator Parameters  
 Other

Methods of Development  
 Pump:  Centrifugal  Bottom Valve  
 Submersible  Double Check Valve  
 Peristaltic  Stainless-steel Kemmerer  
 Other

Water Disposal: ERT Separator Bloomfield NM.

Water Removal Data

Date	Time	Development Method	Pump	Reinforcement Rate (gal/min)	Intake Depth (feet)	Capacity Water Level (feet)	Flow Rate (gpm)	Temperature	pH	Conductivity (microsiemens/cm)	Dissolved Oxygen (mg/l)	Comments
4-9-01	12:48		X	25			14.2	7.09	7230			Cl-6r odor
	12:49		X	25			13.5	7.15	7250			"
	12:52		X	25			13.2	7.26	7270	2.5		NO. Change

*Circle the date and time that the development criteria are met.*

Comments: Bailed Approximately 87.5 gal Bailed well Dry Let Recollect Sampled for BTEX NITRATES SULFATES 1720

Developer's Signature: [Signature] Date: 4/9/01 Reviewer: RT Date: 4/9/01

Serial No. WDPD: [REDACTED] Project Name: R. Thompson Project No. 62800107  
 Client Company: EpES quarterly Samplings Phase/Task No. 0301  
 Site Name: BISTI Flare pit (LD262) Rural San Juan Co.

Development Criteria:  
 3 to 5 Casing Volumes of Water Removal  
 Stabilization of Indicator Parameters  
 Other

Methods of Development:  
 Pump:  Bagler  
 Centrifugal  Bottom Valve  
 Submersible  Double Check Valve  
 Peristaltic  Stainless-steel Kemmerer  
 Other

Instruments:  
 pH Meter  
 DO Monitor  
 Conductivity Meter  
 Temperature Meter  
 Other

Serial No. (if applicable): Hxds  
Hxds  
Hxds

Water Disposal: L-12 Separator Bloomfield N.M.

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Conductivity (µmhos/cm)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/l)	Comments
		Pump	Boiler							
4-9-01	1451		X				7.27	7480	7	Cloudy no odor "
	1453		X				7.14	7810		
	1456		X				7.13	7680	3.5	no. Change

Circle the date and time that the development criteria are met.

Comments: Bailed Approximately 75 gal Bailed well Dry Sampled for NITRATES  
Sulfates 1730

Developer's Signature(s): Chris A. M... Date: 4-9-01 Reviewer: RT Date: 4/9/01

Project Name EpFS Quarterly Samplings  
 Client Company Epaso Field Services  
 Site Name BISTI Flare pit (LP#67)

R. Thompson

Project No. 62900107  
 Phase/Task No. 0301

Rural San Juan Co

**Development Criteria**

- 3 to 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other

**Methods of Development**

- Pump
- Centrifugal
- Submersible
- Peristaltic
- Other
- Bagler
- Bottom Valve
- Double Check Valve
- Stainless-steel Kemmerer

Instrument	Serial No. (if applicable)
<input checked="" type="checkbox"/> pH Meter	<u>Hydrex</u>
<input type="checkbox"/> DO Monitor	
<input checked="" type="checkbox"/> Conductivity Meter	<u>Hydrex</u>
<input checked="" type="checkbox"/> Temperature Meter	<u>Hydrex</u>
<input type="checkbox"/> Other	

Water Disposal  
Kutz Separator Brownfield N.M.

**Water Removal Data**

Date	Time	Development Method	Pump	Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Sample Depth	pH	Conductivity (microsiemens/cm)	Dissolved Oxygen (mg/L)	Comments
<u>4-9-01</u>	<u>1100</u>		<input checked="" type="checkbox"/>					<u>7.29</u>	<u>2430</u>		<u>clear no odor</u>
	<u>1103</u>		<input checked="" type="checkbox"/>					<u>6.80</u>	<u>2970</u>	<u>3.5</u>	<u>no change</u>

*Circle the date and time that the development criteria are met.*

Comments AFTER Bailing Approximately 1.75 gal Bailed well Day LET Recover Collected  
Samples BTEX, NITRATES, SULFATES 1613

Developer's Signature | [Signature]

Total 4-9-01

Reviewer RT Date 4/9/01

Project Name: EPES Quarterly Samplings  
 Client Company: Ek Pass Field Services  
 Site Name: BISTI Flare pit (LD 267)  
 Project No.: 62300107  
 Phase/Task No.: 0301  
 Contractor: R. Thompson  
 Client: Royal Sun Jan Co.

Serial No. (if applicable): Hydec

Instruments:  
 pH Meter  
 DO Monitor  
 Conductivity Meter  
 Temperature Meter  
 Other

Water Disposal: Kutz Separator Bloomfield N.M.

Development Criteria:  
 3 to 5 Casing Volumes of Water Removal  
 Stabilization of Indicator Parameters  
 Other

Methods of Development:  
 Pump:  Siphon  
 Centrifugal  Bottom Valve  
 Submersible  Double Check Valve  
 Peristaltic  Stainless-steel Kemmerer  
 Other

Development Data:

Well ID	15-44
Well Depth (ft)	14.81
Height of Fluid (ft)	0.63
Fluid Type	2"
Flow Rate (gpm)	0.10X3, 30
Pressure (psi)	-30

Water Removal Data

Date	Time	Development Method	Pump	Removal Rate (gal/min)	Indicates Displ. (feet)	Current Water Depth (feet)	Flow Rate (gpm)	pH	Conductivity (umhos/cm)	Dissolved Oxygen (mg/l)	Comments
4-9-01	0957					10	10	7.17	3.680		10-01, YEMR Sulfate 0.59

Circle the date and time that the development criteria are met.

Comments: Bailed approximately 10 gal Bailed well Dry Could NOT get water level  
Bailer in Bottom of well obstructions probe LET Recover got water level Sampled for METAL  
Sulfates BTEX 16/9/01  
 Developer's Signature(s): [Signature] Date: 4-9-01 Reviewer: PT Date: 4/9/01



2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

Pinnacle Lab ID number      **105013**  
May 22, 2001

PHILIP SERVICE CORPORATION  
4000 MONROE ROAD  
FARMINGTON, NM 87401

EL PASO FIELD SERVICES  
614 RIELLY STREET  
FARMINGTON, NM 87401

Project Name                      EPFS BISTI FLARE PIT #1  
Project Number                    62800433

Attention:                      ROBERT THOMPSON/SCOTT POPE

On 05/02/01 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 analyses were performed by Pinnacle Laboratories, Inc. Albuquerque, NM.

All other analyses were performed by Severn Trent Laboratories, Inc. Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.  
General Manager

MR: jt

Enclosure



PINNACLE  
LABORATORIES

2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
CLIENT : PHILIP SERVICE CORPORATION  
PROJECT # : 62800433  
PROJECT NAME : EPFS BISTI FLARE PIT #1

PINNACLE I.D.: 105013

SAMPLE	DATE	DATE	DATE	DIL.
ID #	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	05/01/01	NA	05/03/01	20
02	05/01/01	NA	05/03/01	50
03	04/16/01	NA	05/03/01	1

PARAMETER	DET. LIMIT	UNITS	BIS-0501-P236	BIS-0501-P235	TRIP BLANK
BENZENE	0.5	UG/L	18000(D200)	19000(D200)	< 0.5
TOLUENE	0.5	UG/L	16000(D200)	12000(D200)	< 0.5
ETHYLBENZENE	0.5	UG/L	630	800	< 0.5
TOTAL XYLENES	0.5	UG/L	5300	6500	< 0.5

SURROGATE:  
BROMOFLUOROBENZENE (%) 101 115 95  
SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:  
(D200) = 200X dilution analyzed on 5/3/01.

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Albuquerque, New Mexico 87107  
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Fax (505) 344-4413



GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST : EPA 8021 MODIFIED                      PINNACLE I.D. : 105013  
BLANK I. D. : 050301                              DATE EXTRACTED : NA  
CLIENT : PHILIP SERVICE CORPORATION        DATE ANALYZED : 05/03/01  
PROJECT # : 62800433                            SAMPLE MATRIX : AQUEOUS  
PROJECT NAME : EPFS BISTI FLARE PIT #1

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:  
BROMOFLUOROBENZENE (%)                      98  
SURROGATE LIMITS: ( 80 - 120 )

CHEMIST NOTES:  
N/A



2709-D Pan American Freeway NE  
 Albuquerque, New Mexico 87107  
 Phone (505) 344-3777  
 Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL  
 MSMSD

TEST : EPA 8021 MODIFIED  
 MSMSD # : 050301  
 CLIENT : PHILIP SERVICE CORPORATION  
 PROJECT # : 62800433  
 PROJECT NAME : EPFS BISTI FLARE PIT #1

PINNACLE I.D. : 105013  
 DATE EXTRACTED : NA  
 DATE ANALYZED : 05/03/01  
 SAMPLE MATRIX : AQUEOUS  
 UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	19.5	98	17.8	89	9	( 80 - 120 )	20
TOLUENE	<0.5	20.0	20.0	100	18.3	92	9	( 80 - 120 )	20
ETHYLBENZENE	<0.5	20.0	20.8	104	19.0	95	9	( 80 - 120 )	20
TOTAL XYLENES	<0.5	60.0	61.8	103	56.8	95	8	( 80 - 120 )	20

CHEMIST NOTES:

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

**SEVERN****TRENT****SERVICES**

STL Pensacola

LOG NO: C1-05094

Received: 03 MAY 01

Reported: 15 MAY 01

Ms. Jacinta Tenorio  
Pinnacle Laboratories  
2709-D Pan American Freeway Northeast  
Albuquerque, NM 87107

Project: 105013, PHIL-EPFS BISTI FLARE PIT #1

Sampled By: Client

Code: 075610515

Page 1

## REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	
05094-1	BIS-05010-P236/105013-01	05-01-01/10:35	
05094-2	BIS-05010-P235/105013-02	05-01-01/11:00	
PARAMETER		05094-1	05094-2
Sulfate as SO4 (375.4), mg/l		540	100
Dilution Factor		25	5
Prep Date		05.04.01	05.04.01
Analysis Date		05.04.01	05.04.01
Batch ID		SEW051	SEW051
Analyst		BE	BE
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)			
Nitrate + Nitrite-N, mg/l		0.23	0.34
Nitrate-N, mg/l		0.23R4	0.34R4
Nitrite-N, mg/l		<0.1R4	<0.1R4
Dilution Factor		1	1
Prep Date		05.03.01	05.03.01
Analysis Date		05.04.01	05.04.01
Batch ID		N3W25A	N3W25A
Analyst		CR	CR

STL Pensacola

LOG NO: C1-05094

Received: 03 MAY 01

Reported: 15 MAY 01

Ms. Jacinta Tenorio  
 Pinnacle Laboratories  
 2709-D Pan American Freeway Northeast  
 Albuquerque, NM 87107

Project: 105013, PHIL-EPFS BISTI FLARE PIT #1

Sampled By: Client

Code: 075610515

Page 2

## REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED
05094-3	Method Blank	
05094-4	Lab Control Standard % Recovery	
PARAMETER	05094-3	05094-4
Sulfate as SO <sub>4</sub> (375.4), mg/l	<5.0	99 %
Dilution Factor	1	---
Prep Date	05.04.01	---
Analysis Date	05.04.01	---
Batch ID	SEW051	---
Analyst	BE	---
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO <sub>3</sub> )		
Nitrate + Nitrite-N, mg/l	<0.1	100 %
Nitrite-N, mg/l	<0.1	100 %
Dilution Factor	1	---
Prep Date	05.03.01	---
Analysis Date	05.04.01	---
Batch ID	N3W25A	---
Analyst	CR	---

STL Pensacola  
 LOG NO: C1-05094  
 Received: 03 MAY 01  
 Reported: 15 MAY 01

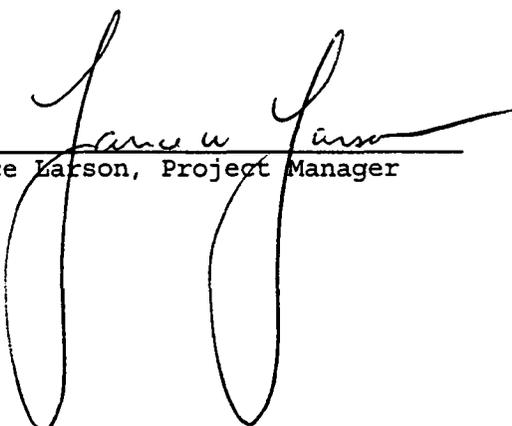
Ms. Jacinta Tenorio  
 Pinnacle Laboratories  
 2709-D Pan American Freeway Northeast  
 Albuquerque, NM 87107

Project: 105013, PHIL-EPFS BISTI FLARE PIT #1  
 Sampled By: Client  
 Code: 075610515  
 Page 3

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED	
05094-5	Matrix Spike % Recovery		
05094-6	Matrix Spike Duplicate % Recovery		
PARAMETER		05094-5	05094-6
Sulfate as SO4 (375.4), mg/l		113 %	115 %
Nitrate-Nitrite, Nitrogen (353.2/354.1/4500-NO3)			
Nitrate + Nitrite-N, mg/l		89 %	92 %
Nitrite-N, mg/l		105 %	105 %

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

  
 Lance Larson, Project Manager

Final Page Of Report

## Data Qualifiers for Final Report

### STL-Pensacola Inorganic/Organic

B1	The analyte was detected in the associated method blank (sample itself is flagged even though sample is ND).
B2	The analyte was detected in the sample(s) and in the associated method blank analyzed on the day samples were extruded; however, this analyte was not detected in the blank analyzed with the samples.
B3	The analyte was found in the associated blank as well as in the associated sample(s) (qualifier is applied to the sample, not to the blank).
B4	Sample results were corrected due to contaminants in Fractionation Blank
D	Diluted out (surrogate or spike due to sample dilution)
E	Compound concentration exceeds the upper calibration range of the instrument.
F	The reported value is < STL-Pensacola RL and > the STL-Pensacola MDL; therefore, the quantitation is estimation (The STL-PN RL is at or above lowest calibration standard in the initial calibration curve).
G	Sample and/or duplicate result is at or below 5 X (times) the STL Reporting Limit and the absolute difference between the sample and duplicate result is at or below the STL reporting limit; therefore, the results are "in control".
H1	Sample and/or duplicate is below 5 X (times) the STL Reporting Limit and the absolute difference between the results exceeds the STL Reporting Limit; therefore, the results are "out of control"
H2	Sample and duplicate (or MS and MSD) RPD is above control limit.
J (description)	The analyte was positively identified, the quantitation may be an estimation
J4	(For positive results) Temperature limits exceeded ( $\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$ ), non-reportable for NPDES compliance monitoring.
J6	(For positive results) LCS or Surrogate %R is > upper control limit (UCL), results may be biased high
J7	The reported value is > the laboratory MDL and < lowest calibration standard; therefore, the quantitation is an estimation (this qualifier should only be used when the STL-PN RL is below the lowest calibration standard in the initial calibration).
J8	Matrix spike and post spike recoveries are outside control limits. See out of Control Events/Corrective Action Form.
J9	(For positive results) LCS or Surrogate %R is < lower control limit (LCL), results may be biased low
M1	A matrix effect was present ( <sup>1</sup> sample, MS or MSD was analyzed twice to confirm surrogate/spike failure, <sup>2</sup> sample and/or MS/MSD chromatogram(s) had interfering peaks, <sup>3</sup> sample result was > 4 X spike added, <sup>4</sup> metals serial dilution was performed, or <sup>5</sup> metals post spike is < 40% R)
M2	The MS and/or MSD %R or RPD was outside upper or lower control limits; not necessarily due to matrix effect.
N/C	Not Calculable; Sample spiked is > 4X spike concentration (may also use this flag in place of negative numbers)
NH	Sample and duplicate results are "out of control". The sample is nonhomogeneous.
NoMS	Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD)
Q	The analytical (post digestion) spike is reported due to the percent recovery being outside limits on the matrix (pre-digestion) spike.
R (description)	The data may be unusable due to deficiencies in the ability to analyze the sample and meet QC criteria
R1	(For nondetects) Temperature limits exceeded ( $\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$ ); non-reportable for NPDES compliance monitoring
R2	Improper preservation, no preservative present or insufficient amounts of preservative in sample upon receipt, non-reportable for NPDES compliance monitoring
R3	Improper preservation, incorrect preservative present in sample upon receipt, non-reportable for NPDES compliance
R4	Holding time exceeded, non-reportable for NPDES compliance monitoring.
R5	Sample collection requirements not met, see case narrative.
R6	LCS or surrogate %R is < LCL and analyte is not detected or surrogate %R is < 10% for detects/nondetects.
R7	Internal standard area outside -50% to +100% of calibration verification standard.
R8	Initial calibration or any calibration verification exceeds acceptance criteria.
R9	Not filtered and preserved at time of collection.
R10	Headspace > 1/4" in diameter in volatile vials, non-reportable for NPDES compliance monitoring
R11	Samples were filtered and preserved within 4 hours of collection.
R12	Analysis performed outside the 12-hour tune or not within tune criteria.
S1	The Method of Standard Additions (MSA) has been performed on this sample.
S2	Incorrect sample amount was submitted to the laboratory for analysis
S3 (Flashpoint)	This method is not designed for solids and the results may not be accepted by any regulator for such purposes.
T	Second-column or detector confirmation exceeded the SW-846 criteria of 40% RPD for this compound.
TIC	The compound is not within the initial calibration curve. It is searched for qualitatively or as a Tentatively Identified Compound.
U	The reported value is $\leq$ Laboratory MDL (value for result will be the MDL, never below the MDL)
W	Post-digestion spike for Furnace AA is out of control limits (85-115%), while sample absorbance is less than 50% spike absorbance.
@	Adjusted reporting limit due to sample composition, not due to overcal (dilution prior to digestion and/or analysis).
#	Elevated reporting limit due to insufficient sample size
1 pt	The compound has been quantitated against a one point calibration.
* (Metals & Wet Chem)	Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)

STL PENSACOLA  
STATE CERTIFICATIONS

Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL)

Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater)

Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental)

State of California, Department of Health Services, Laboratory ID No. 01128CA (Hazardous Waste and Wastewater)

State of Connecticut, Department of Health Services, Connecticut Lab Approval No. PH-0697 (Drinking Water, Hazardous Waste and Wastewater)

Delaware Health & Social Services, Division of Public Health, Laboratory ID No. FL094 (Drinking Water by Reciprocity with FL)

Florida DOH Laboratory ID No. E81010 (Drinking Water, Hazardous Waste and Wastewater)

Florida, Radioactive Materials License No. G0733-1

Foreign Soil Permit, Permit No. S-37599

Kansas Department of Health & Environment, Laboratory ID No. E10253 (Wastewater and Hazardous Waste)

Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Laboratory ID No. 90043 (Drinking Water)

State of Louisiana, DHH, Office of Public Health Division of Laboratories, Laboratory ID No. LA000017 (Drinking Water)

Louisiana Department of Environmental Quality, Environmental Laboratory Accreditation Program, Agency Interest ID 30748 (Environmental - Accreditation Pending)

State of Maryland, DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida)

Commonwealth of Massachusetts, DEP, Laboratory ID No. M-FL094 (Hazardous Waste and Wastewater)

State of Michigan, Bureau of E&OccH, Laboratory ID No.9912 (Drinking Water by Reciprocity with Florida)

New Hampshire DES ELAP, Laboratory ID No. 250599A (Wastewater)

State of New Jersey, Department of Environmental Protection & Energy, Laboratory ID No. 49006 (Wastewater and Hazardous Waste)

New York State, Department of Health, Laboratory ID No. 11503 (Wastewater and Solids/Hazardous Waste)

North Carolina Department of Environment & Natural Resources, Laboratory ID No. 314 (Hazardous Waste and Wastewater)

North Dakota DH&Consol Labs, Laboratory ID No. R-108 (Drinking Water, Wastewater and Hazardous Waste by Reciprocity with Florida)

State of Oklahoma, Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater)

Commonwealth of Pennsylvania, Department of Environmental Resources, Laboratory ID No. 68-467 (Drinking Water)

South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater by Reciprocity with FL and Solids/Hazardous Waste by Reciprocity with CA)

Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water)

Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL)

State of Washington, Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater)

West Virginia Division of Environmental Protection, Office of Water Resources, Laboratory ID No. 136 (Hazardous Waste and Wastewater by Reciprocity with FL)

American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 100704

# STL Pensacola PROJECT SAMPLE INSPECTION FORM



Lab Order #: C105094 Date Received: 5/3/01

- |   |  |
|---|--|
| <p>1. Was there a Chain of Custody? <input checked="" type="radio"/> Yes No<sup>+</sup></p> <p>2. Was Chain of Custody properly filled out and relinquished? <input checked="" type="radio"/> Yes No<sup>+</sup></p> <p>3. Were samples received cold? (Criteria: 2° - 6°C: STL-SOP) <input checked="" type="radio"/> Yes No<sup>+</sup> N/A</p> <p>4. Were all samples properly labeled and identified? <input checked="" type="radio"/> Yes No<sup>+</sup></p> <p>5. Did samples require splitting or compositing*? Yes<sup>+</sup> <input checked="" type="radio"/> No<br/>Req By: PM Client Other*</p> <p>6. Were samples received in proper containers for analysis requested? <input checked="" type="radio"/> Yes No<sup>+</sup></p> <p>7. Were all sample containers received intact? <input checked="" type="radio"/> Yes No<sup>+</sup></p> | <p>8. Were samples checked for preservative? (Check pH of all H<sub>2</sub>O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)* <input checked="" type="radio"/> Yes No<sup>+</sup> N/A</p> <p>9. Is there sufficient volume for analysis requested? <input checked="" type="radio"/> Yes No<sup>+</sup> N/A (Can)</p> <p>10. Were samples received within Holding Time? (REFER TO STL-SOP 1040) <input checked="" type="radio"/> Yes No<sup>+</sup></p> <p>11. Is Headspace visible &gt; 1/4" in diameter in VOA vials?* If any headspace is evident, comment in out-of-control section. Yes<sup>+</sup> No <input checked="" type="radio"/> N/A</p> <p>12. If sent, were matrix spike bottles returned? Yes No<sup>+</sup> <input checked="" type="radio"/> N/A</p> <p>13. Was Project Manager notified of problems? (initials: _____) Yes No<sup>+</sup> <input checked="" type="radio"/> N/A</p> |
|---|--|

Airbill Number(s): 1287816801 4335 5382  
12878168 01 4394 4096

Shipped By: UPS

Cooler Number(s): Client Client  
5°C 4°C

Cooler Weight(s): 67# 29#

Shipping Charges: N/A

Cooler Temp(s) (°C): 5°C, 4°C  
CCK4  
(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

Out of Control Events and Inspection Comments:  
Multiple project/cooler shipment

(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: MHS Date: 5/3/01 Logged By: LLK Date: 03-MAY-01

\* Note all Out-of-Control and/or questionable events on Comment Section of this form. For holding times, the analytical department will flag immediate hold time samples (pH, Dissolved O<sub>2</sub>, Residual Cl) as out of hold time, therefore, these samples will not be documented on this PSIF.

\* If Other, note who requested the splitting or compositing of samples on the Comment Section of this form. All volatile samples requested to be split or composited must be done in the Volatile Lab. Document: "Volatile sample values may be compromised due to sample splitting (compositing)"

\* All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938, section 2.2.9).

\* According to EPA, 1/4" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938, section 2.2.12).

Network Project Manager: Jacinta A. Tenorio				ANALYSIS REQUEST																											
Pinnacle Laboratories, Inc. 2709-D Pan American Freeway, NE Albuquerque, New Mexico 87107 (505) 344-3777 Fax (505) 344-4413				SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL (23 METALS)	TOX	TOC	Gen Chemistry:	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8082)	Herbicides (615/8151)	PNA (8310)/8270 SIMS	8240 (TCLP 1311) ZHE	Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM (ICP-MS)	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS		
C105094				BIS-0501-P236/105013-01	5/1	1035	AQ																								
				BIS-0501-P235/105013-02	↓	1100	↓																								

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY:		RELINQUISHED BY:	
PROJECT #:	105013	Total Number of Containers		PENSACOLA - STL-FL	<input checked="" type="checkbox"/>	Signature:	Marcene Jando	Signature:	
PROJ. NAME:	PHIL	Chain of Custody Seals		ESL - OR		Printed Name:	Marcene Jando	Printed Name:	
QC LEVEL:	MSD IV	Received Intact?		STL - CT		Date:	5/2/01	Date:	
QC REQUIRED:	MS MSD BLANK	Received Good Cond./Cold		ATEL - AZ		Company:	Pinnacle Laboratories, Inc.	Company:	
TAT:	STANDARD RUSH!!	LAB NUMBER:		ATEL - MARION		RECEIVED BY:		RECEIVED BY:	
DUE DATE:	5/16	COMMENTS:		ATEL - MELMORE		Signature:	Mark Swafford	Signature:	
RUSH SURCHARGE:	-			BARRINGER		Printed Name:	Mark Swafford	Printed Name:	
CLIENT DISCOUNT:				ENVIRO TEST LABS		Date:	5/13/01	Date:	
SPECIAL CERTIFICATION REQUIRED:	YES (NO)			WCAS		Company:	STAPUS	Company:	
				WOHL					

# PHILIP

ENVIRONMENTAL

## Chain of Custody Record

4000 Monroe Road  
Farmingington, NM 87401

(505) 326-2262 Phone  
(505) 326-2388 FAX

105013

COC Serial No. C 2527

Project Name <u>EPFS B1577 FLARE PIT #1</u>		Type of Analysis and Bottle		Comments	
Project Number <u>62800433</u> Phase . Task <u>35</u>		Total Number of Bottles			
Samplers <u>R. THOMPSON</u>		NMPRES (TOTAL) <u>BRX B021</u>		SULFATES (TOTAL) <u>106 TDF#</u>	
Laboratory Name <u>FINNACLE LABS.</u>		Location <u>ALBUQUERQUE, NM</u>			
Sample Number (and depth)	Date	Time	Matrix		
<u>BIS-0501-P236</u>	<u>5/1/01</u>	<u>1035</u>	<u>H2O</u>	X	X
<u>BIS-0501-P235</u>	<u>5/1/01</u>	<u>1100</u>	<u>H2O</u>	X	X
<u>TRIP BLANK</u>	<u>4/16/01</u>	<u>1650</u>	<u>H2O</u>	X	
<u>RT 5/1/01</u>					

Relinquished by: <u>Robert Thompson</u>		Received By: <u>FINNACLE JAMES</u>	
Signature	Date	Signature	Date
	<u>5/1/01</u>		<u>5/2/01</u>
			<u>0905</u>

<b>Samples Iced:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Preservatives (ONLY for Water Samples) <input type="checkbox"/> Cyanide ..... Sodium hydroxide (NaOH) <input type="checkbox"/> Volatile Organic Analysis ..... Hydrochloric acid (HCl) <input type="checkbox"/> Metals ..... Nitric acid (HNO3) <input checked="" type="checkbox"/> TPH (418.1) ..... Sulfuric acid (H2SO4) <input checked="" type="checkbox"/> Other (Specify) <u>H2O2</u> <input type="checkbox"/> Other (Specify) _____		Carrier: <u>GREYHOUND LINES</u> Shipping and Lab Notes: <u>BILL SCOTT POPE w/EPFS DIRECTLY. SEND LAB RESULTS TO SCOTT POPE w/EPFS AND ROBERT THOMPSON w/PLC.</u>  <u>Rec'd @ 4:22</u>
Airbill No. <u>GLI1606919590</u>		



Industrial Services Group  
Central Region

December 18, 2000

Project 62800373

Mr. Scott Pope  
El Paso Field Services Company  
614 Reilly Avenue  
Farmington, NM 87499

**RE: Transmittal of Bisti Flare Pit Monitoring Well Installation/  
Soil Boring Records**

Dear Mr. Pope:

PSC is pleased to submit to El Paso Field Services Company (EPFS) the following documents for monitoring well installations and a soil boring at the Bisti Flare Pit on December 5, 2000 through December 8, 2000:

- Records of Subsurface Exploration and Monitor Well Installation Records for PZ-32, PZ-33, and PZ-34.
- Monitor Well Abandonment Form for the temporary well numbered PZ-34. This well was abandoned in accordance with Navajo Agricultural Products Industry construction release guidelines.
- Record of Subsurface Exploration for a soil boring to 29 feet below ground surface.
- Well Development and Purging Data form for PZ-32, PZ-33, and PZ-34.
- Water level measurements for PZ-29, PZ-16, PZ-18, PZ-17, PZ-30, PZ-21, PZ-10, PZ-22, PZ-23, PZ-08, PZ-09, PZ-26.
- Chain of Custody record for samples taken from PZ-32, PZ-33, and PZ-34.

*Combining the Strengths of Philip Services Corp., Allwaste and Serv-Tech*



PSC appreciates the opportunity to provide EPFS with the above referenced work. If you have any questions, please feel free to contact me at 326-2262.

Sincerely,

PSC



Lisa Winn  
Project Manager

Cc: file

Enclosures

12/8/00

WATER Level TW-

26.7 TD 19.4 TOR

PZ-33

TOR - 23.9

TD - 33.5

RECORD OF SUBSURFACE EXPLORATION

Borehole # 3-1  
 Well # PZ-32  
 Page 1 of 1

PSC

4000 Monroe Road  
 Farmington, New Mexico 87401  
 (505) 326-2262 FAX (505) 326-2388

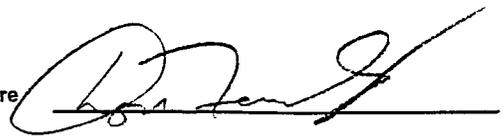
Project Name EPFS Bisti  
 Project Number 62800373 Cost Code \_\_\_\_\_  
 Project Location S. of Chaco Plant

Elevation \_\_\_\_\_  
 Borehole Location PZ-32  
 GWL Depth ~12' BGS  
 Logged By Don Fernald  
 Drilled By Danny Padilla  
 Date/Time Started 12-5-00 / 12:30  
 Date/Time Completed 12-5-00 / 1:05

Well Logged By Don Fernald  
 Personnel On-Site Danny Padilla  
 Contractors On-Site NONE  
 Client Personnel On-Site Gilbert Huntsman  
Bill Freeman - Navajo EPA  
 Drilling Method Hollow Stem Auger  
 Air Monitoring Method PID

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PID			Drilling Conditions & Blow Counts
							BZ	BH	S	
0										
5				- Thin ss layer @ ~ 3.5'						
		X	15"	Fine grained orange-yellow silty sand			3.2			
10										
		X	16"	Very fine grained orange-yellow silty sand. (moist)			2.3			
15										
		X		Medium to dark brown clay (moist)			1.8			
20										
				Boring terminated @ 20' BGS.						
25										
30										
35										
40										

Comments: Water @ approx 12' bgs

Geologist Signature 

**MONITORING WELL INSTALLATION RECORD**

**Philip Services Corporation**  
 4000 Monroe Road  
 Farmington, New Mexico 87401  
 (505) 326-2262 FAX (505) 326-2388

PZ-32  
 Borehole # B-1  
 Well # PZ-32 (MLU-1)  
 Page 1 of 1

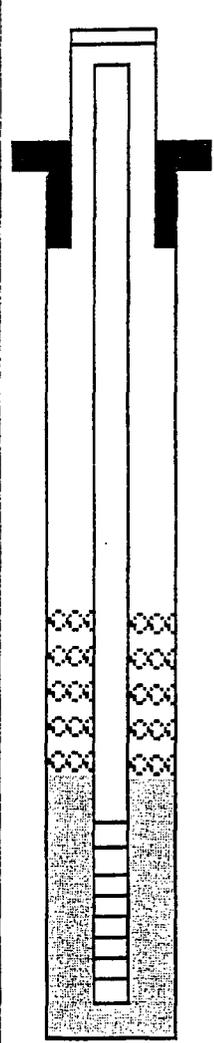
Project Name EPFS T3isti  
 Project Number 62800373 Cost Code \_\_\_\_\_  
 Project Location S. of Chaco Plant

Elevation \_\_\_\_\_  
 Well Location L: \_\_\_\_\_ S: \_\_\_\_\_ T: \_\_\_\_\_ R: \_\_\_\_\_  
 GWL Depth ~ 12-14' bgs  
 Installed By D. Padilla

On-Site Geologist Don Fernald  
 Personnel On-Site D. Padilla, R. Lefebvre  
 Contractors On-Site NONE  
 Client Personnel On-Site Gilbert Huntsman-EPFS  
Bill Freeman-Navajo EPA

Date/Time Started 12-5-00 / 1:05  
 Date/Time Completed 12-5-00 / 2:00

Depths in Reference to Ground Surface			
Item	Material	Depth (feet)	
Top of Protective Casing			Top of Protective Casing <u>3.1'</u>
Bottom of Protective Casing			Top of Riser <u>3.1'</u>
Top of Permanent Borehole Casing			Ground Surface <u>0</u>
Bottom of Permanent Borehole Casing			
Top of Concrete			
Bottom of Concrete			
Top of Grout			
Bottom of Grout			
Top of Well Riser			
Bottom of Well Riser			
Top of Well Screen	<u>0.010 screen</u>		Top of Seal <u>5.3'</u>
Bottom of Well Screen	<u>0.010 screen</u>		
Top of Peltonite Seal	<u>3/8" bent chips</u>	<u>5.3'</u>	Top of Gravel Pack <u>7.5'</u>
Bottom of Peltonite Seal	"	<u>5.3'</u>	Top of Screen <u>10'</u>
Top of Gravel Pack	<u>10-20 sand</u>	<u>7.5'</u>	
Bottom of Gravel Pack	"		
Top of Natural Cave-In			
Bottom of Natural Cave-In			
Top of Groundwater			Bottom of Screen _____
Total Depth of Borehole		<u>20.5</u>	Bottom of Borehole <u>20.5'</u>



Comments: \_\_\_\_\_

Geologist Signature Don Fernald

RECORD OF SUBSURFACE EXPLORATION

Borehole # B-2B  
 Well # PZ-33  
 Page 1 of 1

PSC

4000 Monroe Road  
 Farmington, New Mexico 87401  
 (505) 326-2262 FAX (505) 326-2388

Project Name EPFS Bisti  
 Project Number 62800373 Cost Code \_\_\_\_\_  
 Project Location S. of Chaco Plant

Elevation \_\_\_\_\_  
 Borehole Location PZ-33  
 GWL Depth ~22' bgs  
 Logged By Don Fernald  
 Drilled By Danny Padilla  
 Date/Time Started 12-6-00  
 Date/Time Completed 12-6-00

Well Logged By Don Fernald  
 Personnel On-Site Danny Padilla  
 Contractors On-Site NONE  
 Client Personnel On-Site NONE  
 Drilling Method Hollow Stem Auger  
 Air Monitoring Method PID

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PID			Drilling Conditions & Blow Counts
							BZ	BH	S	
0				Boring moved ~ From B-2/MW-2 Sampling initiated @ 25' bgs						
5										
10				Were suppose to sample @ 25'						
15										
20				20-25 Cutting silty sand, yellow- orange clay, wet @ ~22 bgs.						
25				Moderate yellow-orange silty sand w/ some clay. Grades to clay (grey & yellow orange) then to silty sandy						Water @ ~22' bgs
		X	18"				0.8			
30				Terminated boring						
35				@ 30.65' bgs Converted to MW-2B						
40										

Comments: Boring was not sampled @  
 25' bgs. Driller did not  
 retrieve sample. Auger  
 cuttings very wet.

Geologist Signature 

**MONITORING WELL INSTALLATION RECORD**

**Philip Services Corporation**  
 4000 Monroe Road  
 Farmington, New Mexico 87401  
 (505) 326-2262 FAX (505) 326-2388

Borehole # B-2B  
 Well # PZ-33 (MW-2)  
 Page 1 of 1

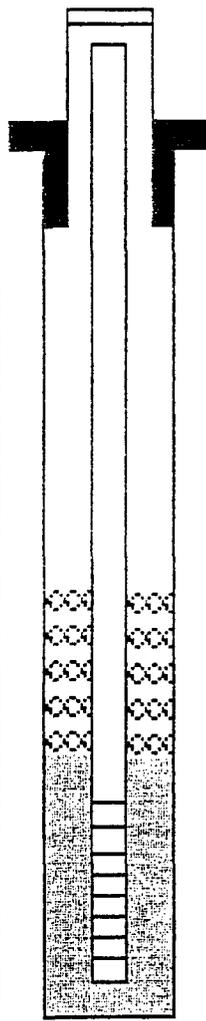
Project Name EPFS Dist.  
 Project Number 62800373 Cost Code \_\_\_\_\_  
 Project Location S. of Chaco Plant

Elevation \_\_\_\_\_  
 Well Location L: \_\_\_\_\_ S: \_\_\_\_\_ T: \_\_\_\_\_ R: \_\_\_\_\_  
 GWL Depth ~ 22' bgs  
 Installed By D. Padilla

On-Site Geologist Don Fernald  
 Personnel On-Site D. Padilla, R. Lefebvre, Aleric Raymond  
 Contractors On-Site NONE  
 Client Personnel On-Site NONE

Date/Time Started 12/6/00 -  
 Date/Time Completed 12/6/00 -

Depths in Reference to Ground Surface			
Item	Material	Depth (feet)	
Top of Protective Casing			Top of Protective Casing <u>2.55'</u>
Bottom of Protective Casing			Top of Riser <u>2.55'</u>
Top of Permanent Borehole Casing			Ground Surface <u>0</u>
Bottom of Permanent Borehole Casing			
Top of Concrete			
Bottom of Concrete			
Top of Grout			
Bottom of Grout			
Top of Well Riser	<u>2" sch 40 PVC</u>		
Bottom of Well Riser	<u>"</u>		
Top of Well Screen	<u>0.010 SCREEN</u>		Top of Seal <u>9.25'</u>
Bottom of Well Screen	<u>"</u>		
Top of Peltonite Seal	<u>3/4" bent. chips</u>		Top of Gravel Pack <u>12.5'</u>
Bottom of Peltonite Seal	<u>"</u>		Top of Screen <u>15.65'</u>
Top of Gravel Pack	<u>10-20 sand</u>		
Bottom of Gravel Pack	<u>"</u>		
Top of Natural Cave-In			
Bottom of Natural Cave-In			
Top of Groundwater			Bottom of Screen <u>30.65'</u>
Total Depth of Borehole			Bottom of Borehole <u>30.65'</u>



Comments: Original well MW-2 set @ 20' bgs, screened from 10-20' bgs. Well was dry - directed to re-drill to 30' bgs & set well if water was encountered.

Geologist Signature Don Fernald

RECORD OF SUBSURFACE EXPLORATION

Borehole # B-313  
 Well # FE-34 TW  
 Page 1 of 1

PSC

4000 Monroe Road  
 Farmington, New Mexico 87401  
 (505) 326-2262 FAX (505) 326-2388

Project Name EPFS Bisti  
 Project Number 62800373 Cost Code \_\_\_\_\_  
 Project Location S. of Chaco Plan-

Elevation \_\_\_\_\_  
 Borehole Location P2-34  
 GWL Depth ~ 7 ~  
 Logged By Don Fernald  
 Drilled By Danny Padilla  
 Date/Time Started 12-6-00  
 Date/Time Completed 12-6-00

Well Logged By Don Fernald  
 Personnel On-Site Danny Padilla  
 Contractors On-Site NONE  
 Client Personnel On-Site NONE  
 Drilling Method Hollow Stem Auger  
 Air Monitoring Method PID

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PID			Drilling Conditions & Blow Counts
							BZ	BH	S	
0				Boring moved ~ from B-3/TW-1 sampling initiated @ 20' bgs						
5										
10										
15										
20										
25		X	9"	Moderate Dusky brown silty-clay w/ some moderate red streaks			1.1			Moist
30		X	18"	Light grey-brown silty sand. Fairly hard			1.8			Moist
35				Auger refusal @ ~27' bgs						
40										

Comments: Boring/well did not reveal water in borehole @ time well was installed.

Geologist Signature



MONITORING WELL INSTALLATION RECORD

Borehole # B-3B  
 Well # FE-34 (NW)  
 Page 1 of 1

Philip Services Corporation  
 4000 Monroe Road  
 Farmington, New Mexico 87401  
 (505) 326-2262 FAX (505) 326-2388

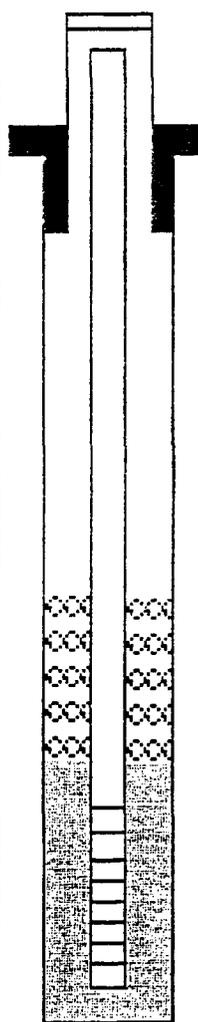
Project Name EPFS Bisti  
 Project Number 62800373 Cost Code \_\_\_\_\_  
 Project Location S. of Chaco Plant

Elevation \_\_\_\_\_  
 Well Location L: \_\_\_\_\_ S: \_\_\_\_\_ T: \_\_\_\_\_ R: \_\_\_\_\_  
 GWL Depth ~no ground water present @ time  
 Installed By D. Padilla at installation

On-Site Geologist Don Fernald  
 Personnel On-Site D. Padilla, R. LeFebvre, R. Aleric  
 Contractors On-Site NONE  
 Client Personnel On-Site NONE

Date/Time Started 12/6/00 -  
 Date/Time Completed 12/6/00 -

Depths in Reference to Ground Surface			
Item	Material	Depth (feet)	
Top of Protective Casing	N/A	—	Top of Protective Casing _____
Bottom of Protective Casing	N/A	—	Top of Riser _____
Top of Permanent Borehole Casing	N/A	—	Ground Surface _____
Bottom of Permanent Borehole Casing	N/A	—	
Top of Concrete			
Bottom of Concrete			
Top of Grout <u>50/1</u>	<u>50/1</u>	—	
Bottom of Grout <u>50/1</u>	<u>50/1</u>	—	
Top of Well Riser	2" sch 40 PVC		
Bottom of Well Riser	"	11.6'	
Top of Well Screen	0.010 SCREEN	11.6'	Top of Seal _____ 6.5'
Bottom of Well Screen	"	26.6'	
Top of Peltonite Seal	3/4" bent. Chips	6.5'	Top of Gravel Pack _____ 8.9'
Bottom of Peltonite Seal	"	8.9'	Top of Screen _____ 11.6'
Top of Gravel Pack	10-20 sand	8.9'	
Bottom of Gravel Pack	"	26.6'	
Top of Natural Cave-In	—	—	
Bottom of Natural Cave-In	—	—	
Top of Groundwater	unknown	?	Bottom of Screen _____ 26.6'
Total Depth of Borehole	silty sand	26.6'	Bottom of Borehole _____ 26.6'



Comments: Original well TW-1 set @ 20' bgs, screened from 10-20' bgs.  
Well was dry-directed to redrill to 30' bgs, set well, screen from 15-30' bgs.

Geologist Signature Don Fernald

# MONITOR WELL ABANDONMENT FORM

**PHILIP SERVICES CORP.**

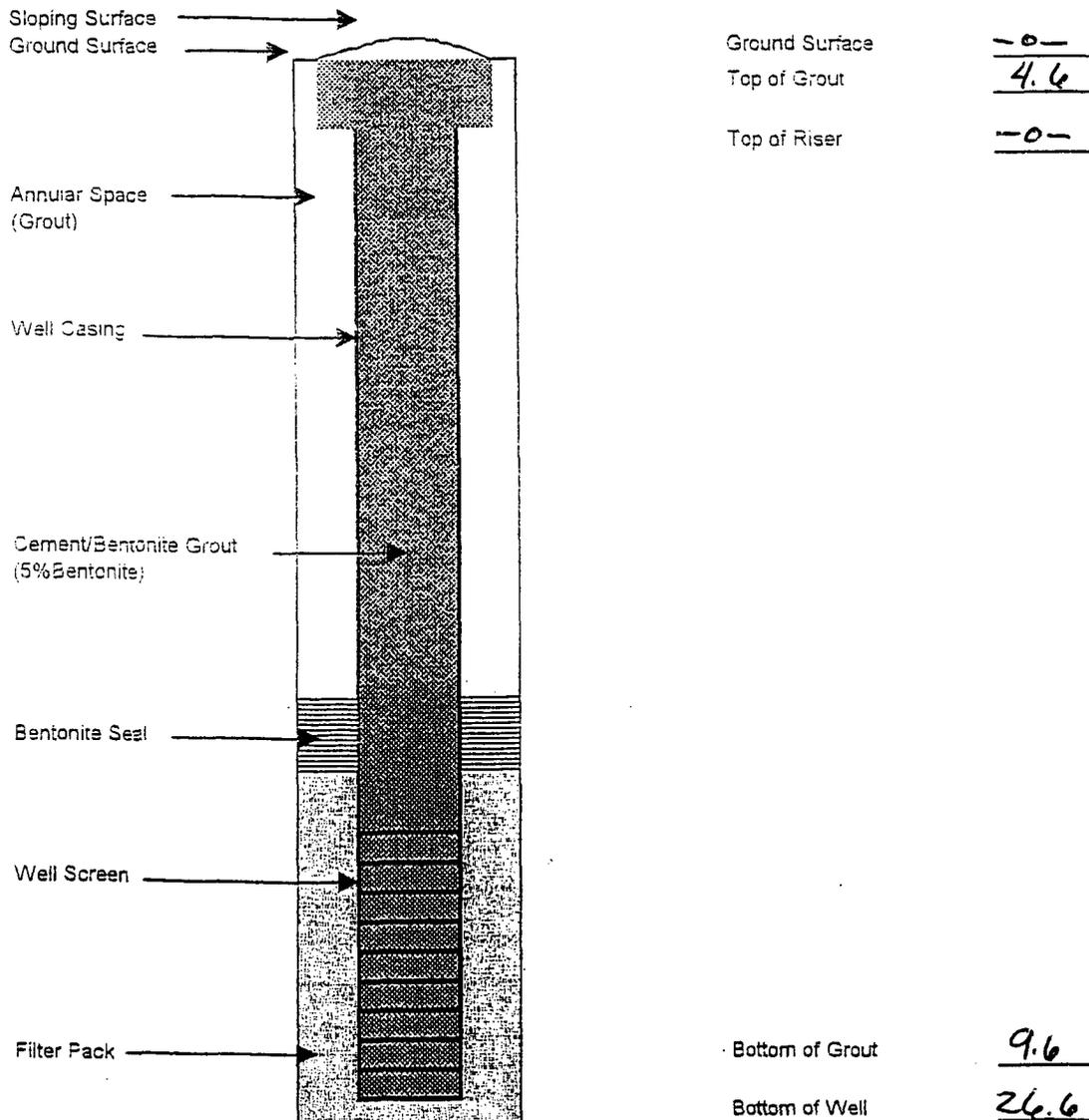
4000 Monroe Rd.

Farmington, NM 87401

(505) 326-2262 FAX (505) 326-2388

Project Name	<u>Bisti Flare Pit</u>	Well #	<u>PZ-34 (TW)</u>
Project Number/Phase	<u>628000373</u>	Well Location	<u>PZ-34</u>
Driller	<u>D. Padilla</u>	Site Location	<u>Bisti Flare Pit</u>
Date/Time Started	<u>8-12-00</u>		
Date/Time Completed	<u>8-12-00</u>		

## WELL DIAGRAM



Comments: Pulled All well material and grouted to approx. 5  
Below ground and Backfill with Soil

Drillers Signature

Darroy Padilla

RECORD OF SUBSURFACE EXPLORATION

PSC

4000 Monroe Road  
 Farmington, New Mexico 87401  
 (505) 326-2282 FAX (505) 326-2388

Borehole # B-3  
 Well # N/A  
 Page 1 of 1

Project Name EPFS Bisti  
 Project Number 62800373 Cost Code \_\_\_\_\_  
 Project Location S. of Chaco Plant

Elevation \_\_\_\_\_  
 Borehole Location NW of Flare Pit  
 GWL Depth ~12' bgs  
 Logged By Don Fernald  
 Drilled By Danny Padilla  
 Date/Time Started 12/6/05 - 8:50  
 Date/Time Completed 12/6/05 - 12:00

Well Logged By Don Fernald  
 Personnel On-Site Danny Padilla, Ryan LeFebvre, Aeric Freeman  
 Contractors On-Site NONE  
 Client Personnel On-Site Scott Hoge - EPFS  
Bill Freeman - NAVAJO EPA  
 Drilling Method Hollow Stem Auger / 5' split spoon  
 Air Monitoring Method PID

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PID			Drilling Conditions & Blw Counts
							BZ	BH	S	
0			X -40"	Moderate yellow-orange silty sand Grades to fine-med grained silty sand (~60% sand) w/some clay moderate yellow-brown			1.8			(slightly moist)
5			X ~40"	Fine silty sandy clay ~ 10% sand Dark to moderate yellow-brown w/white mottles. Grades to silty sand @ 9' ~75% sand yellow-orange			2.0			(moist)
10			X ~40"	Dark, yellowish-orange-brown fine silty sand with little clay. Thin clay layer 3" @ 13' bgs. Very moist.			-0.5			water @ ~12' bgs (very moist)
15			X 17"	Dark, yellowish-orange silty sand			-1.1			wet
			X 20"	Dusky brown clay slight moisture			-1.0			(slightly moist)
20			X 12"	Dusky brown clay w/dark orange-yellow mottles			-9.2			very slight moisture
			X 9"	Dusky brown-yellow-orange mottles - clay			-2.1			- fairly dry
			X 17"	Moderate yellow-orange clay w/moderate red veins-streaks			-8.7			fairly dry
25			X 11"	Moderate yellow-orange-red clay			-5.9			fairly dry
			X 18"	Moderate red clay, lt. gray, to yellow brown			-18.1			
			X 18"	Dark yellow-brown to pale yellow-brown silty clay ~10% fine sand			-1.4			
30				Auger refusal @ 29.5' lt. grey-brown silty sand						
35										
40										

Comments: Boring terminated at 29' bgs. Attempted to retrieve sample @ 29' bgs. Encountered compact silty sand with little 3-4" of retrieval.

Geologist Signature



**RECORD OF SUBSURFACE EXPLORATION**

Philip Environmental Services Corp.  
 4000 Monroe Road  
 Farmington, New Mexico 87401  
 (505) 326-2262 FAX (505) 326-2388

Borehole # \_\_\_\_\_  
 Well # PZ-35  
 Page 1 of 1

Project Name Bisti Flare Pit - EPFS  
 Project Number 62800432 Phase 35  
 Project Location Bisti Flare Pit / Chaco Plant

Elevation \_\_\_\_\_  
 Borehole Location PZ-35  
 GWL Depth \_\_\_\_\_  
 Logged By Don Fernald  
 Drilled By Danny Padilla  
 Date/Time Started 4/26/01 9:25  
 Date/Time Completed 4/26/01 10:15

Agency \_\_\_\_\_  
 Well Logged By Don Fernald  
 Personnel On-Site Padilla, Killion, Fernald  
~~Contractors~~ On-Site Freeman - New EPA / Baker - EPA R. 9  
 Client Personnel On-Site Scott Pope  
 Drilling Method HSA  
 Air Monitoring Method PID

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	PID		Drilling Conditions & Blow Counts
				Air Monitoring	Units: NDU Benzene H2S	
0						
5						
	21"	21"	Greyish-orange silty soil w/ some fine sand. Grades to a dark yellow-brown claystone.	26.6		- moisture interfering with PID?
10						
	22"	22"	Moderate to light brown very fine silty sand	38.6		
15						
	21"	4"	Moderate to dark greyish-black H.C. odors. Poor sample recovery Very Moist	1856		HC dark grey cuttings
20						
	22"	21"	Light to medium gray silty-clay w/ yellowish-orange mottling (moist) Grades to a light to medium gray (very tight clay) (slight H.C. odors)	1490		- hard Drilling
25						
	22"	13"	3" of moderate brownish-grey silty clay. Grades to a fine to moderate silty sand, that is light to moderate grey. HC odors are more prevalent in sands.	2032		- very hard refusal @ 26'
30						
35			Terminated Boring @ 25' bgs. Last sample @ 25-26' bgs. Well may recover slow or be dry			
40						

Comments:

Geologist Signature



**RECORD OF SUBSURFACE EXPLORATION**

Philip Environmental Services Corp.  
 4000 Monroe Road  
 Farmington, New Mexico 87401  
 (505) 326-2262 FAX (505) 326-2388

Borehole # \_\_\_\_\_  
 Well # PZ-36  
 Page 1 of 1

Project Name Bisti Flare Pit - EPFS  
 Project Number 62800433 Phase 35  
 Project Location Bisti Flare Pit

Elevation \_\_\_\_\_  
 Borehole Location Not Pit  
 GWL Depth \_\_\_\_\_  
 Logged By Don Fernald  
 Drilled By Padilla, Killion  
 Date/Time Started 4/26/01 - 12:35  
 Date/Time Completed 4/26/01 - 1:35

Well Logged By Don Fernald  
 Agency Personnel On-Site Bill Freeman - Navajo EPA  
 Contractors On-Site None  
 Client Personnel On-Site Scott Pope  
 Drilling Method HSA  
 Air Monitoring Method PID

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	Air Monitoring		Drilling Conditions & Blow Counts
				Units: NDU	Benzene H2S	
0						
5						
	22"	16"	Moderate yellowish-brown silty fine sand w/ some clay	18.7		
10						
	22"	22"	Light yellowish-orange, fine silty sand (moist) (slight H.C. odor)	258		
15						
	22"	4"	Medium dark grey fine silty sand H.C. odors	1900		
20	22"	14"	Dark grey to black fine silty sand. H.C. (very wet) Grades to a yellowish-orange-grey silty sand.	1906		(Very wet) Clay
	22"	17"	Medium grey to yellowish orange clay. Some black streaks of H.C. present in sample cross section.	524		
25						
			Light olive-grey silty sand. Very hard so blow - 2. H.C. odors (moist)	1906		Very hard drilling.
30						
35			Boring terminated @ 25'. Split spoon sample obtained @ 25-26' bgs.			
40						

Comments: \_\_\_\_\_

Geologist Signature

Don Fernald

MONITORING WELL INSTALLATION RECORD

Borehole #  
Well # PZ-36  
Page 1 of 1



4000 Monroe Road  
Farmington, New Mexico 87401  
(505) 326-2262 FAX (505) 326-2388

Project Name Bisti Flare Pit - EPFS  
Project Number 62800433 Cost Code 35  
Project Location Bisti Flare Pit/E. of Chaco

Elevation \_\_\_\_\_  
Well Location N. of Pit  
GWL Depth \_\_\_\_\_  
Installed By Padillo, Killian

On-Site Geologist Don Fernald  
Agency Personnel On-Site Bill Freeman, Navajo EPA  
Contractors On-Site \_\_\_\_\_  
Client Personnel On-Site Scott Pope

Date/Time Started 4/26/01 - 1:35  
Date/Time Completed 4/26/01 - 3:45

Depths in Reference to Ground Surface		
Item	Material	Depth (feet)
Top of Protective Casing	Metal	~ 2.5'
Bottom of Protective Casing	"	- 8"
Top of Permanent Borehole Casing	2" sch 40 PVC	~ 2.5'
Bottom of Permanent Borehole Casing	"	- 25.6'
Top of Concrete	Quikrete	+3.5"
Bottom of Concrete	"	0
Top of Grout	Quikrete, bentonite	0
Bottom of Grout	"	5.3
Top of Well Riser	2" sch 40 PVC	0
Bottom of Well Riser	"	10.6
Top of Well Screen	2" sch 40 PVC	10.6
Bottom of Well Screen	0.010 slotted	25.6
Top of Peltonite Seal	3/8" bentonite	5.3'
Bottom of Peltonite Seal	"	7.8'
Top of Gravel Pack	10-20 silica	7.8
Bottom of Gravel Pack	sand	25.6
Top of Natural Cave-In	/	/
Bottom of Natural Cave-In	/	/
Top of Groundwater	~ 19'?	/
Total Depth of Borehole		25.6'

Top of Protective Casing 2.5'  
Top of Riser ~ + 2.5'  
Ground Surface 0'  
  
Top of Seal 5.3  
Top of Gravel Pack 7.8'  
Top of Screen 10.6'  
  
Bottom of Screen \_\_\_\_\_  
Bottom of Borehole 25.6'

Comments: \* Ground water was measured at 25' (6" in well) at 3:10 P.M. 4/26/01 (slow recharge)  
Geologist Signature Don Fernald



Certified Mail # 7099 3400 0018 9756 8505

October 17, 2000

OCT 24 2000

Charmaine Hosteen  
Navajo Environmental Protection Agency  
P.O. Box 1979  
Shiprock, New Mexico 87420

**RE: Scope of Work for the Removal of Hydrocarbon Impacted Soil at the Bisti #1  
Former Flare Pit Site**

Dear Ms. Hosteen:

El Paso Field Services (EPFS) hereby requests approval of the following Scope of Work for the excavation of contaminated soils at the above-mentioned site. As discussed in the March 2000 "Annual Report Bisti Flare Pit #1", EPFS has been evaluating excavation of the remaining contaminated soils versus additional in situ treatment. The use of in situ bioremediation technologies has reduced hydrocarbon contamination dramatically; however, concentrations still remain above clean-up standards. EPFS has concluded it would be faster and possibly more cost effective to excavate the core contamination remaining in the pit than continue with in situ treatment.

**SCOPE OF WORK**

EPFS proposes to excavate 20 feet outside the berms on the north and south sides of the former flare pit. Based on work completed in the past a sandstone shelf exists to the east and the contamination pinches out the west. The proposed excavation dimensions of the former flare pit will be approximately 90' x 90' x 18' compared to the current 90' x 50' x 8'. All excavated contaminated soils will be transported by truck to Envirotech's landfarm for disposal. It is estimated the excavation will extend approximately 2 feet into saturated zone. Provisions will be made to collect and properly dispose of any liquids that may accumulate in the excavation.

Once excavation is complete EPFS intends to collect 2 composite samples to evaluate the soil quality of the excavation floor and walls. These samples will be analyzed for BTEX and TPH by methods 8021 and 8015 modified.

EPFS feels once the majority of the source material has been removed groundwater contaminate levels will begin to decline at a much faster rate. Also excavating, backfilling and capping the pit area will remove a potential groundwater recharge source

Page 2  
Ms. Charmaine Hosteen  
Navajo Environmental Protection Agency

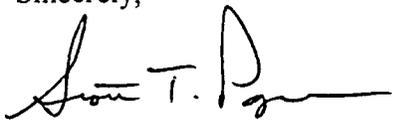
area. Water received at the surface will no longer have a preferential pathway for migration through source material to groundwater.

The contractor chosen for the project will generate a short letter report. This report will detail on site activities, number of cubic yards trucked to the landfarm for disposal, number of cubic yards of clean back fill received at the site, number of cubic yards of overburden excavated, sample collection points and sample results. The Navajo Environmental Protection Agency will be notified 72 hours prior to any site activities.

Please notify EPFS of approval of the proposed Scope of Work with in 30 days of receipt of this letter. EPFS estimates it will take approximately 30 additional days once the Scope of Work is approved to solicit bids and schedule the work.

If you have any questions or require additional information please call me at 599-2124.

Sincerely,

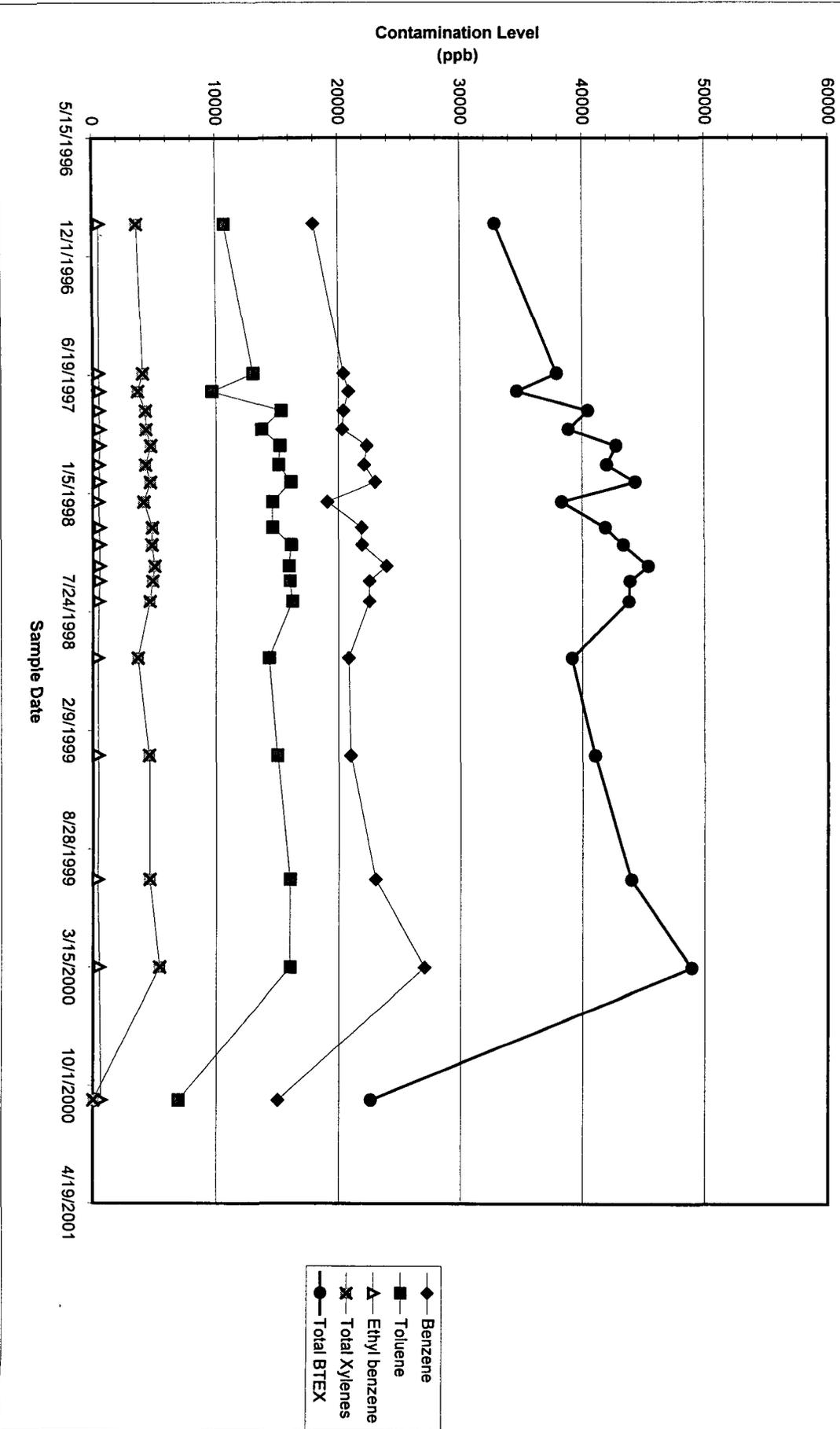


Scott T. Pope P.G.  
Senior Environmental Scientist  
Environmental Remediation Department

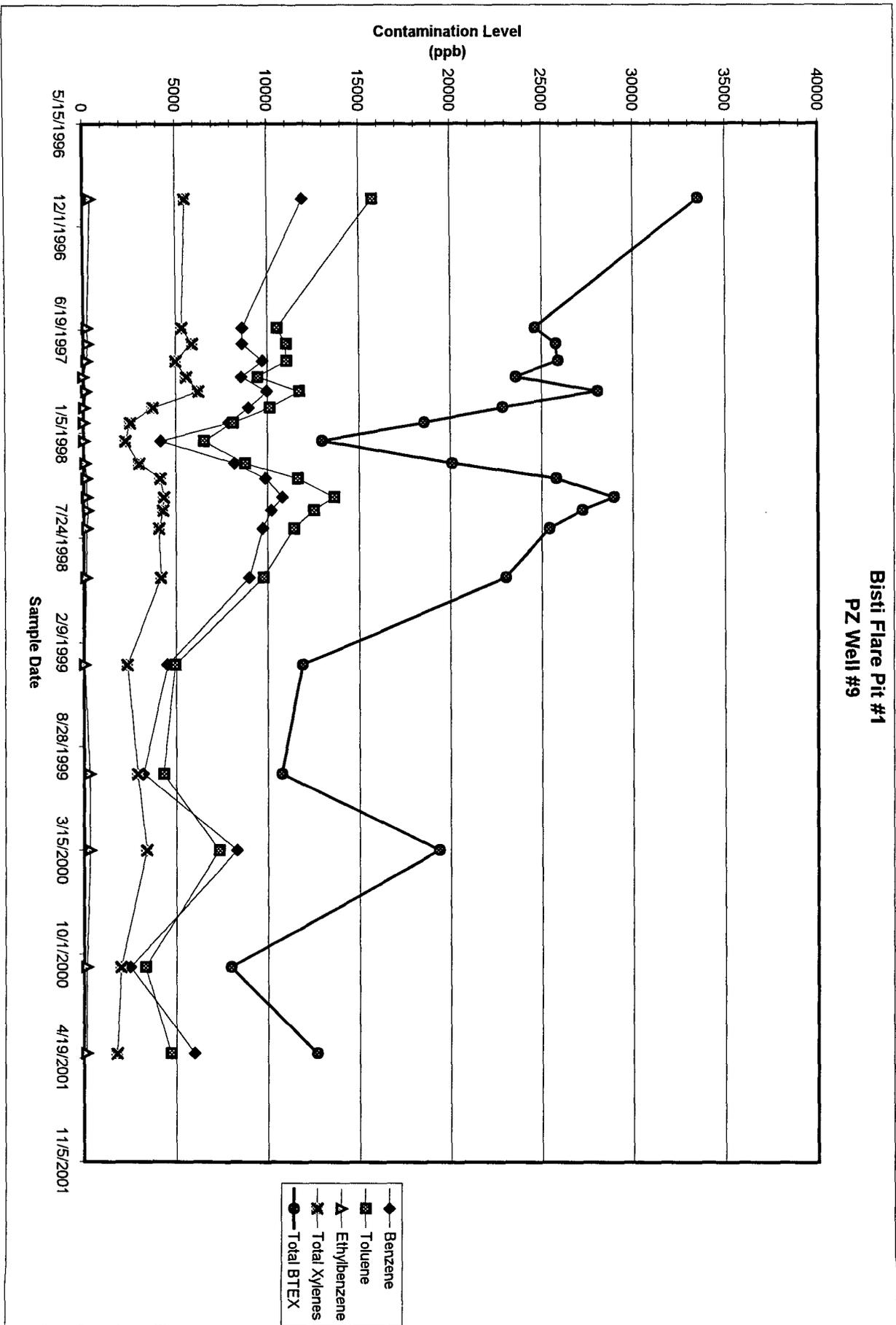
cc: James Walker – USEPA Region IX – Certified Mail # 7099 3400 0018 9756 8512

bc: Bisti Flare Pit File  
Navajo EPA file  
Scott Pope  
Bob Sterrett - HCI

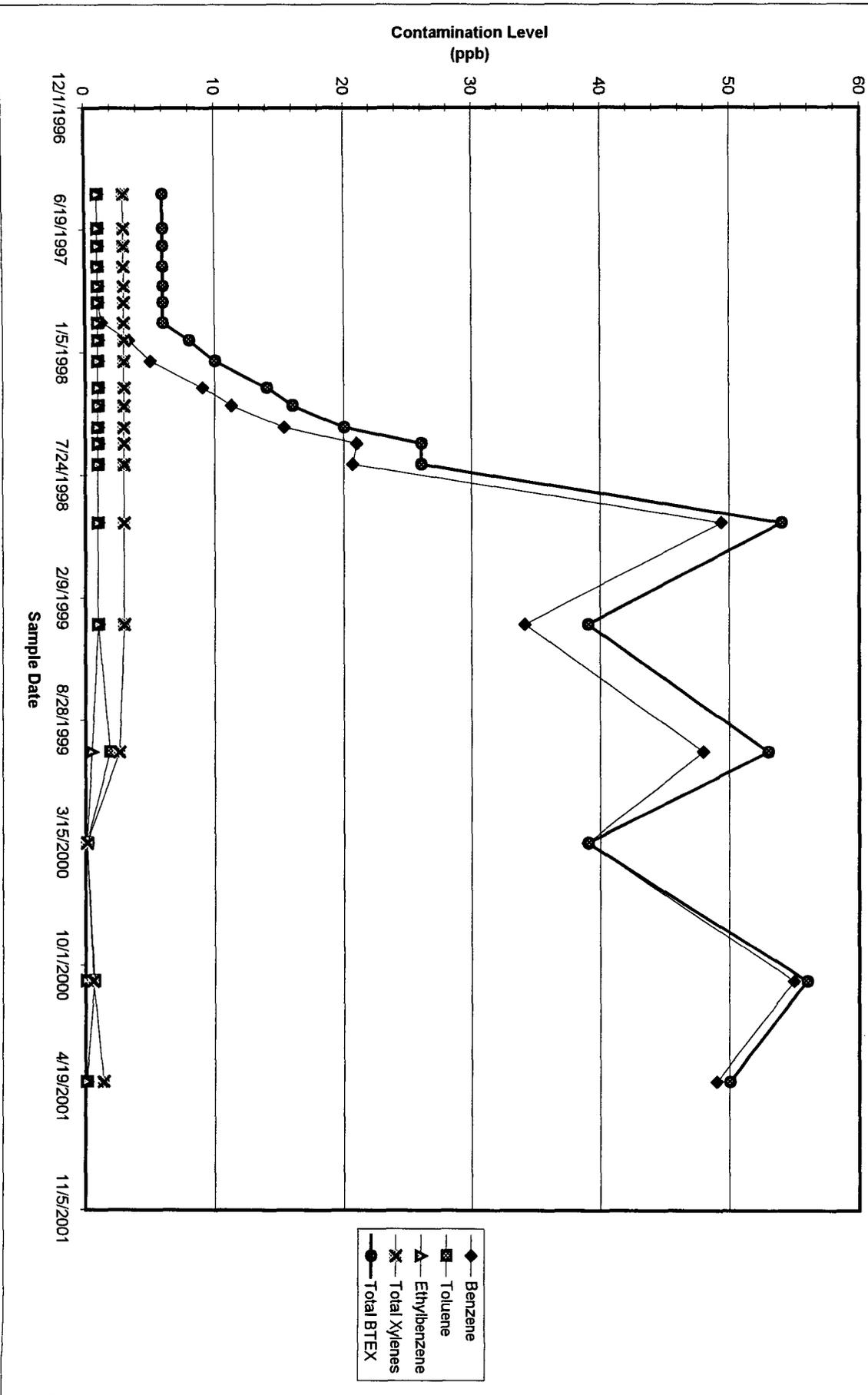
Bisti Flare Pit #1  
PZ Well #8



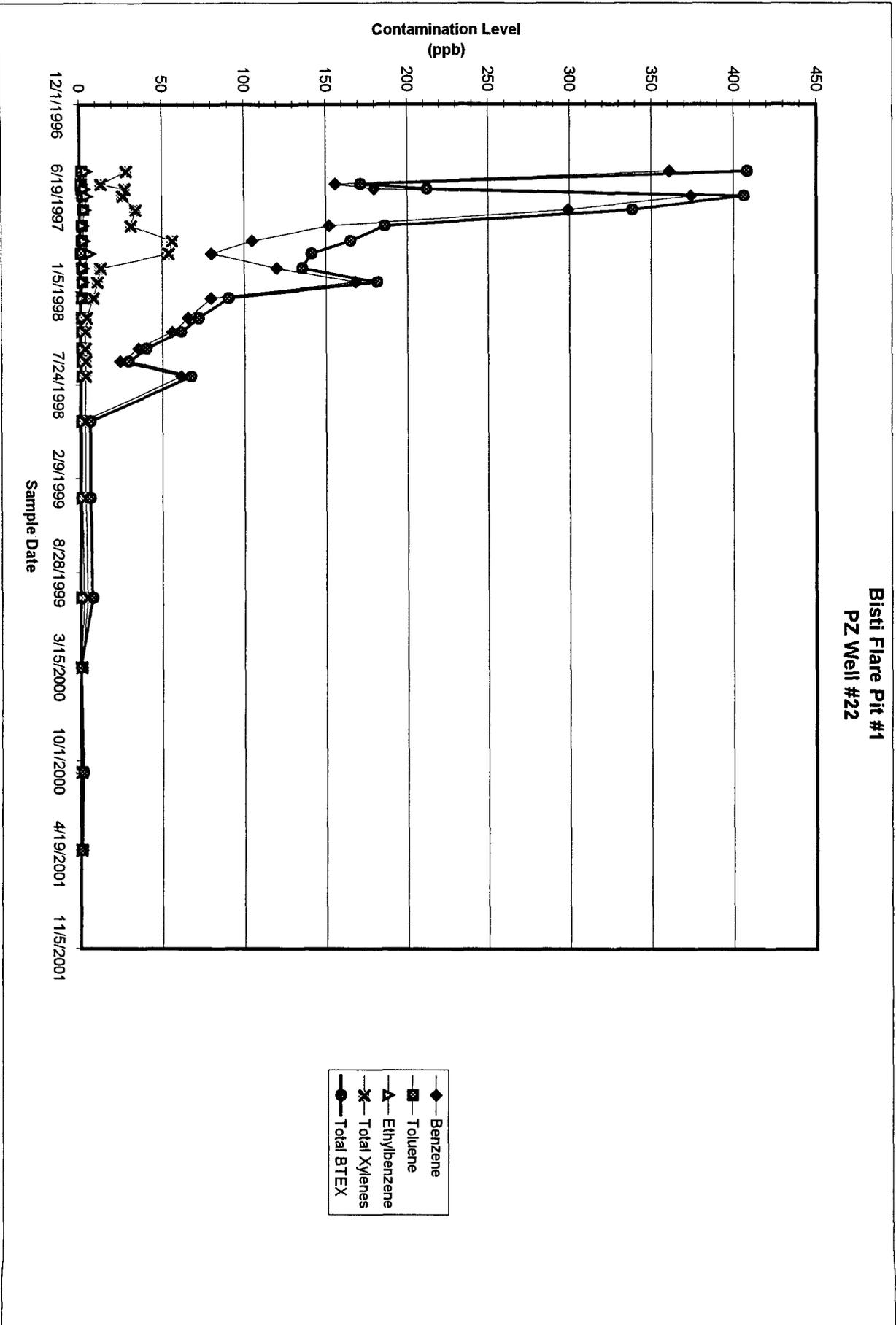
Bisti Flare Pit #1  
PZ Well #9



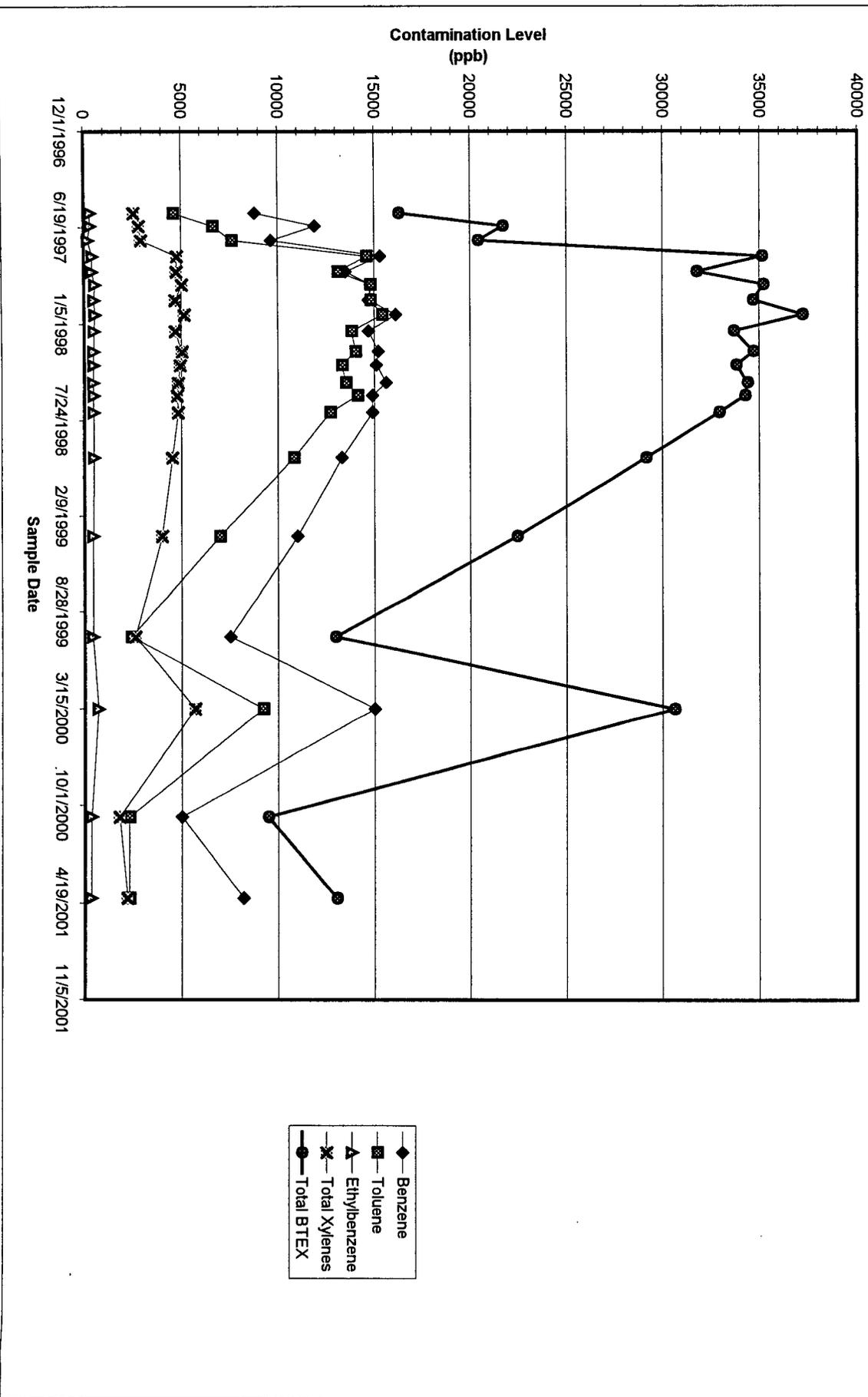
Bisfi Flare Pit #1  
PZ Well #21

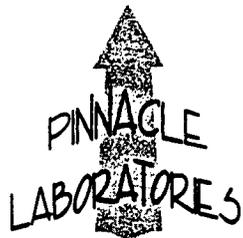


Bisti Flare Pit #1  
PZ Well #22



Bisti Flare Pit #1  
PZ Well #29





2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

June 7, 2001

Mr. Scott Pope  
El Paso Field Services  
614 Rielly Street  
Farmington, NM 87401

Dear Scott,

I have had some time to acquire data over several quarters and split the sulfate samples among three laboratories. The attached spread sheet compares the data.

Laboratories 1 and 2 use co-precipitation and Laboratory 3 uses Ion Chromatography for sulfate analysis.

After observation of the data it is clear that the data generated by Laboratory 2 in the October, 2001 round for sulfate should be discarded.

The data for the last round (April, 2001) is interesting in that all three laboratories give comparable results. The key exception is Lab 1's results for Mw-21. While they got three similar results they are an outlier from the historical results and the other two laboratories.

Since Lab 2's data is in hold time, Pinnacle will be submitting their data for this round.

We believe that the matrix contributes to the unusual irregularities with your data. For future rounds, we would suggest that we use ion chromatography on the assumption that the chromatographic equipment can negate the matrix effects.

I apologize for the long delay on submitting the data for this round, but felt it was important for both your records and our commitment to provide you with an answer to this confusing data.

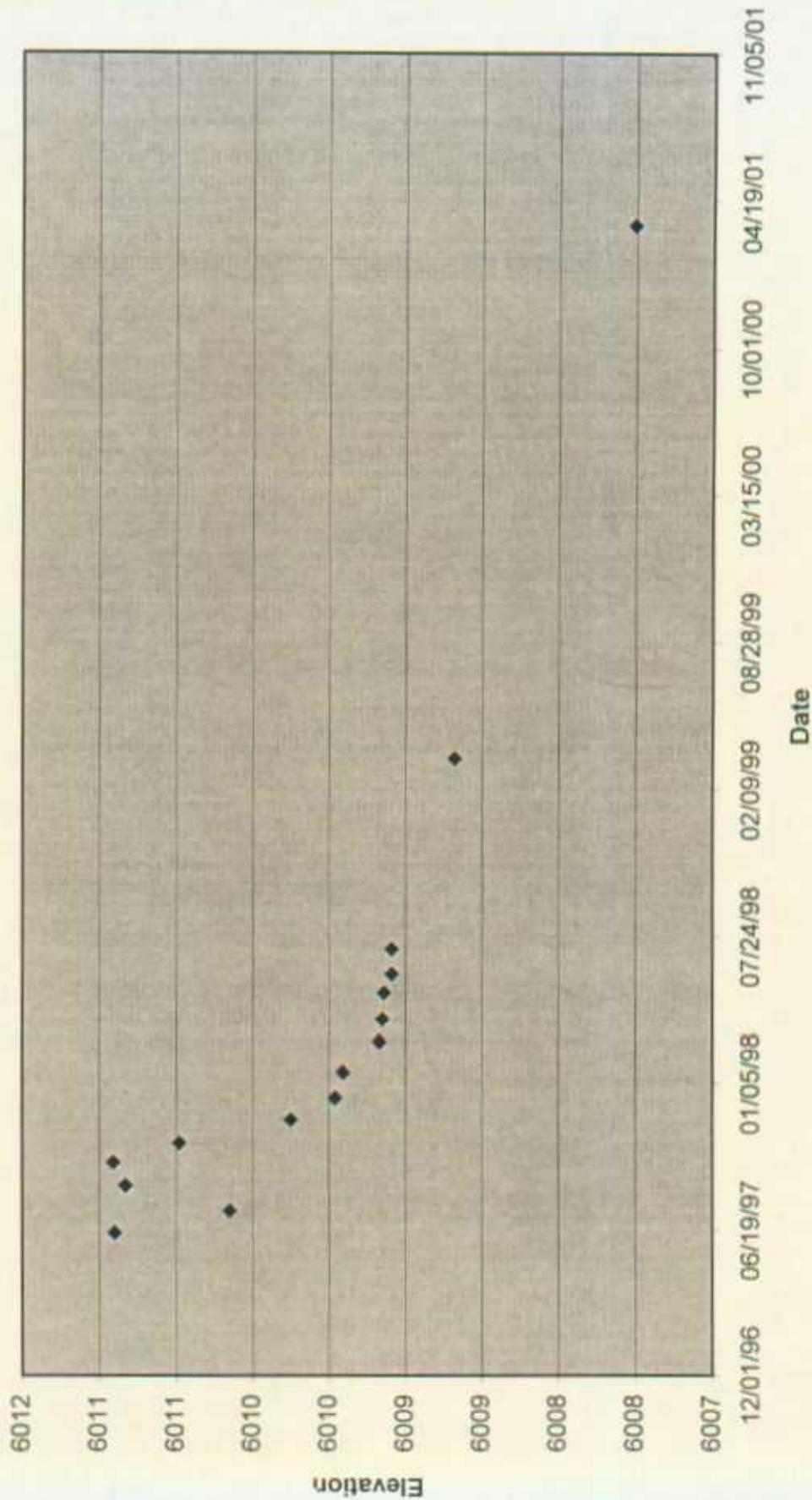
Sincerely,



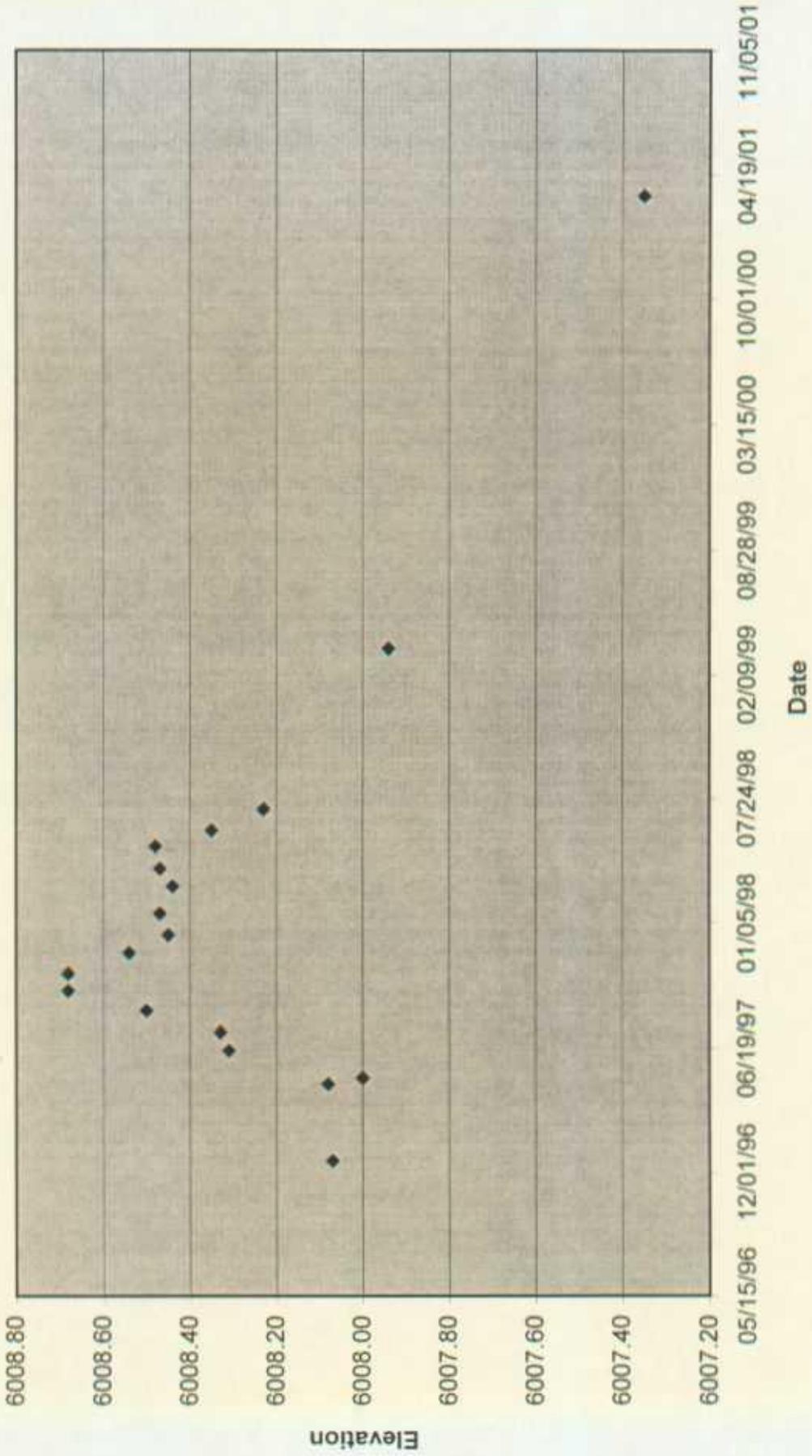
Mitch Rubenstein, Ph.D.  
President



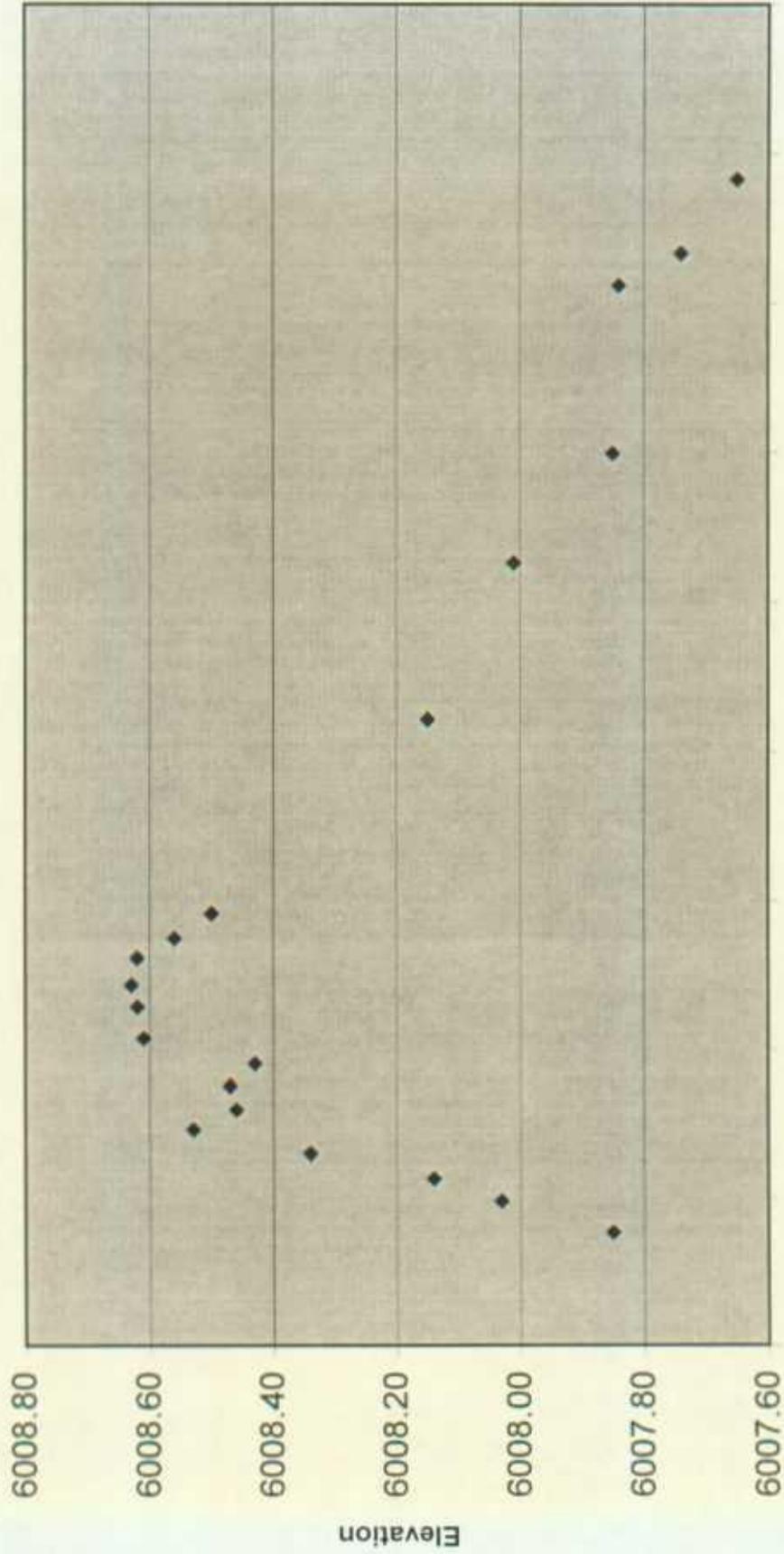
# Water Levels Well PZ-4



# Water Levels Well PZ-5

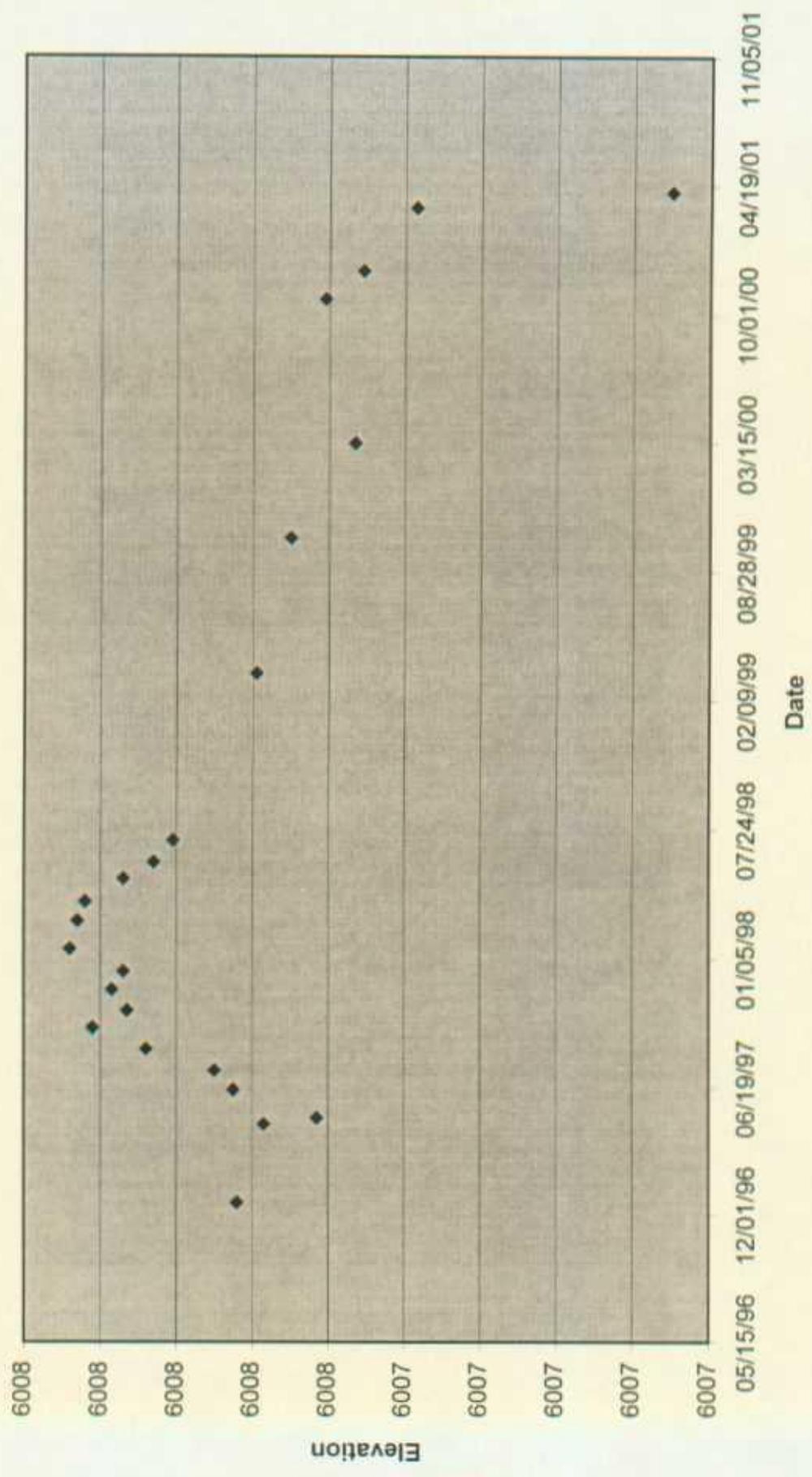


# Water Levels Well PZ-8

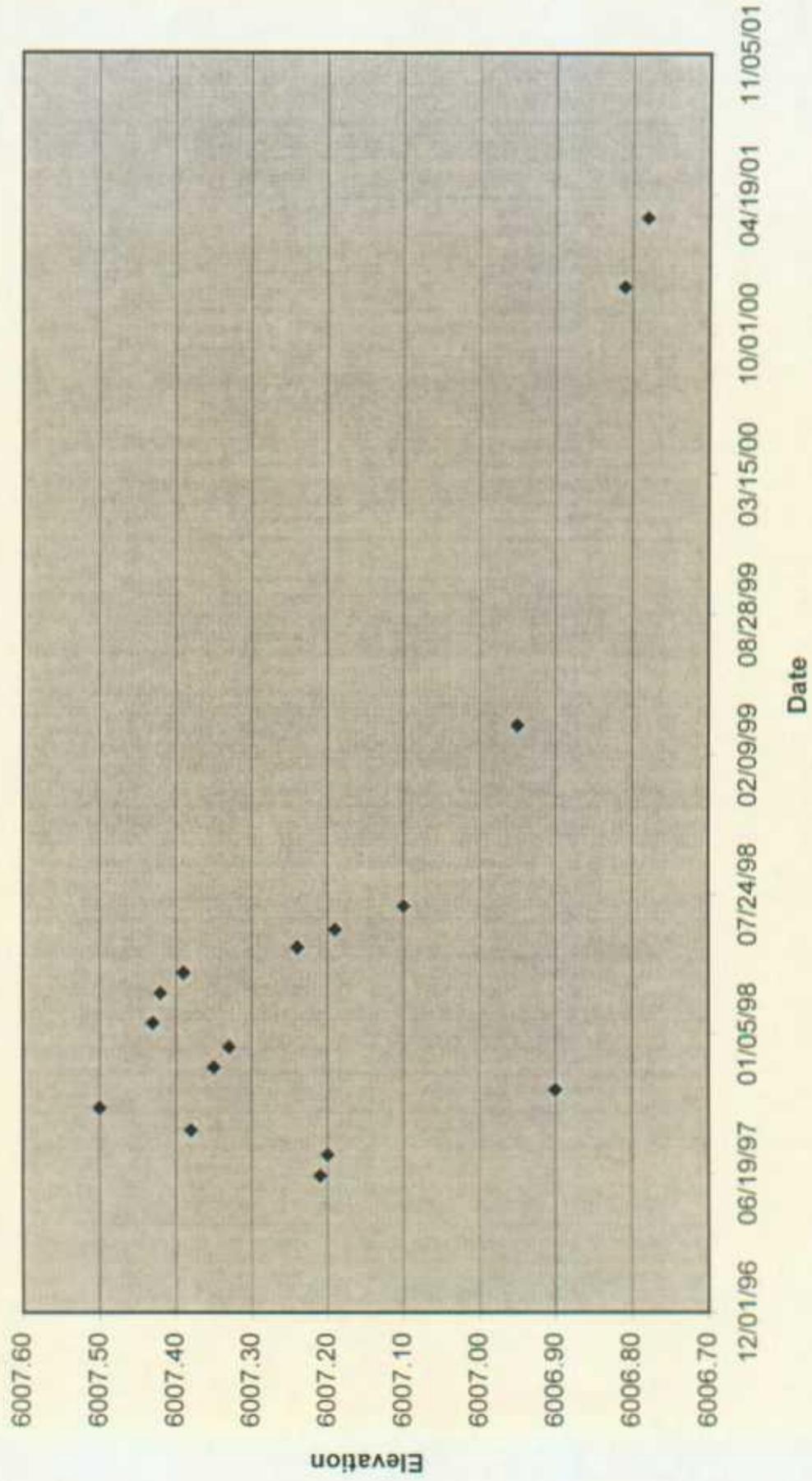


12/01/96 06/19/97 01/05/98 07/24/98 02/09/99 08/28/99 03/15/00 10/01/00 04/19/01 11/05/01  
Date

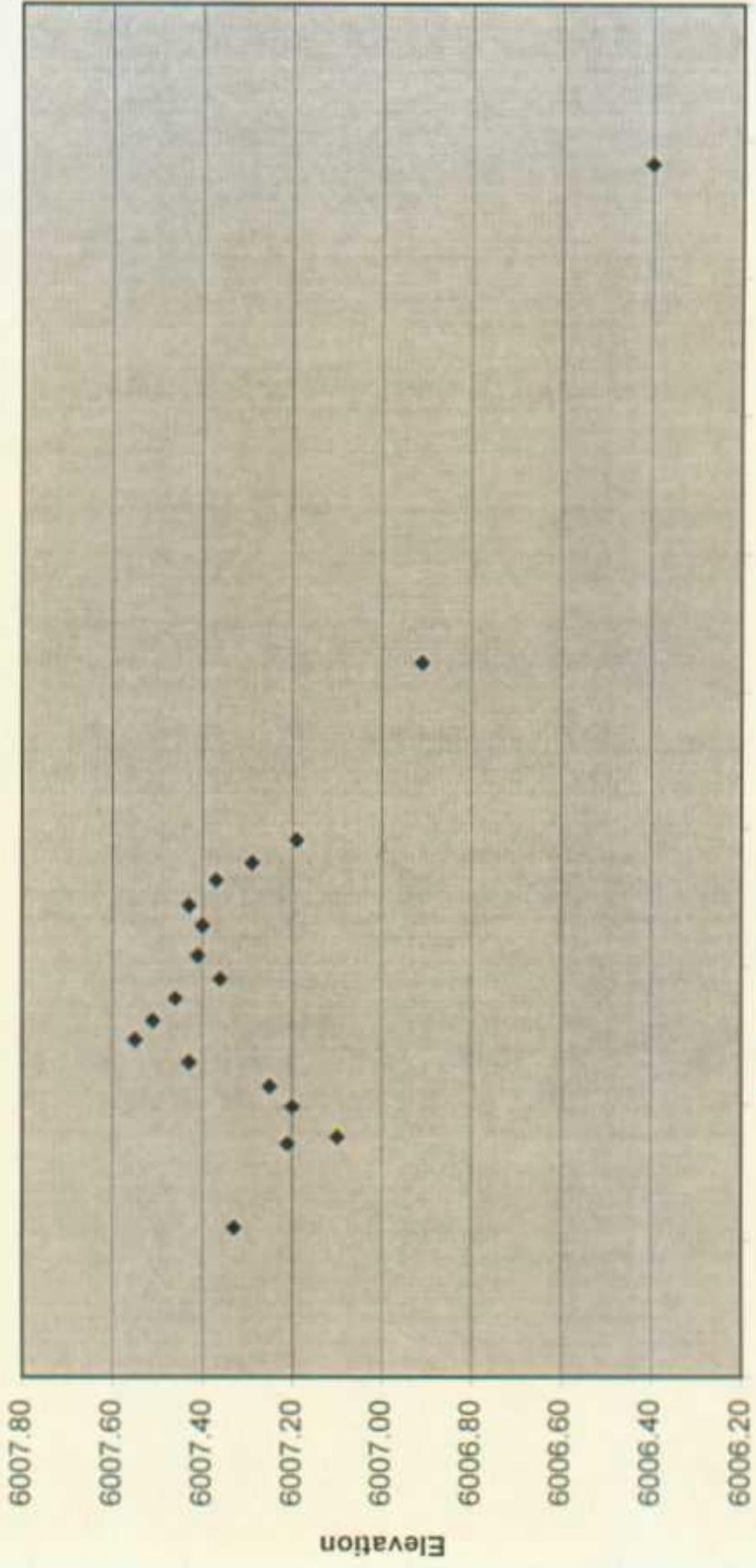
# Water Levels Well PZ-9



# Water Levels Well PZ-10



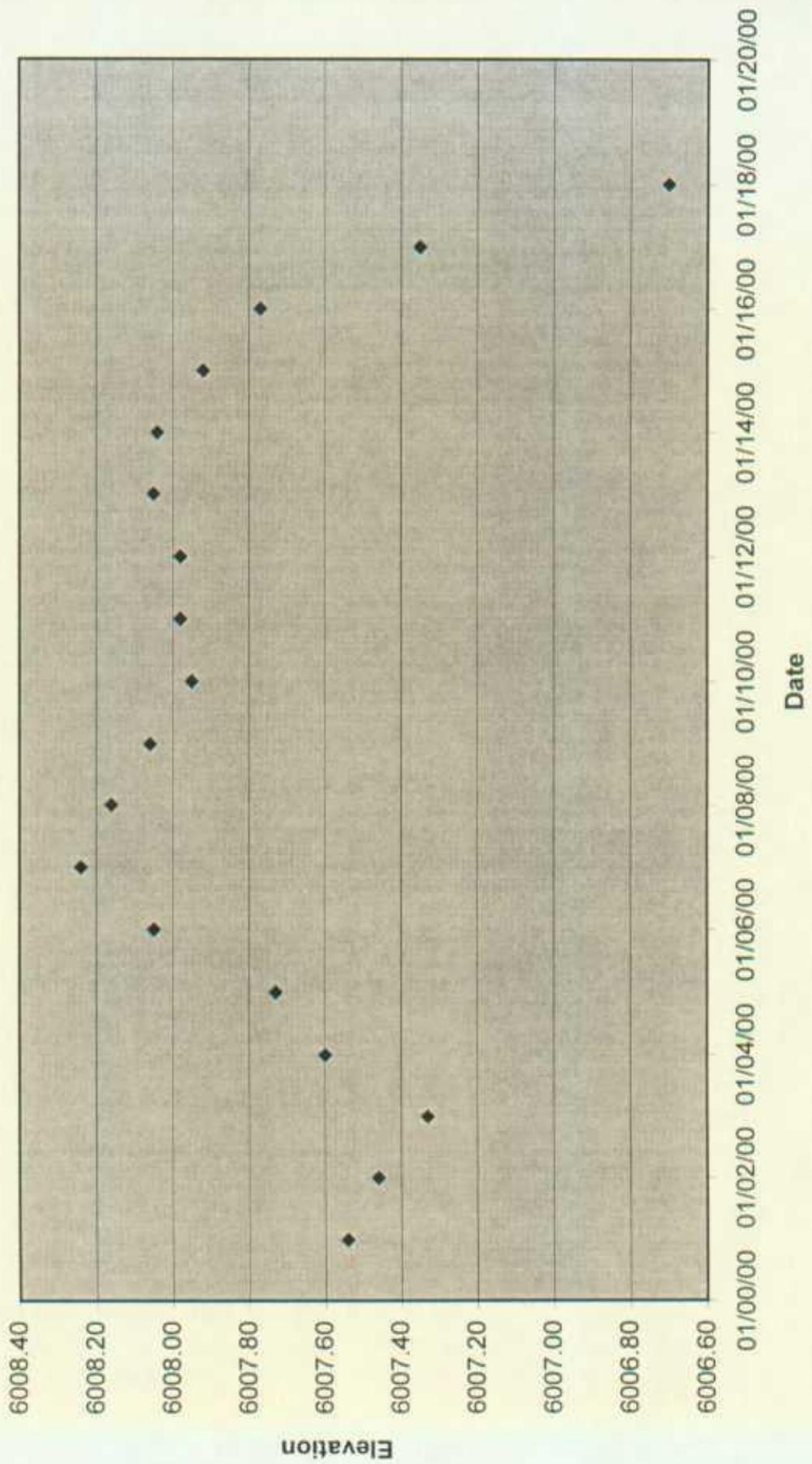
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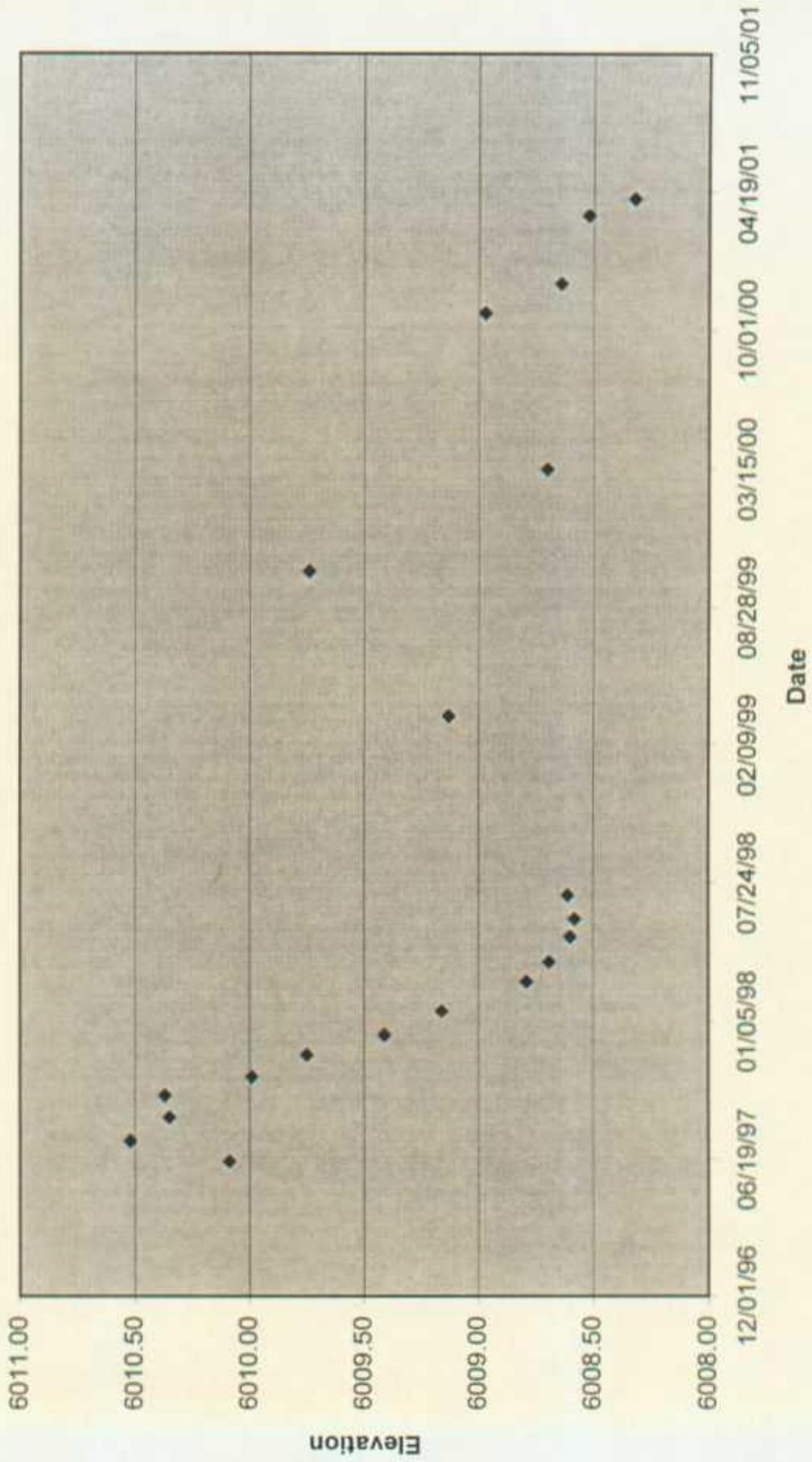
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Date

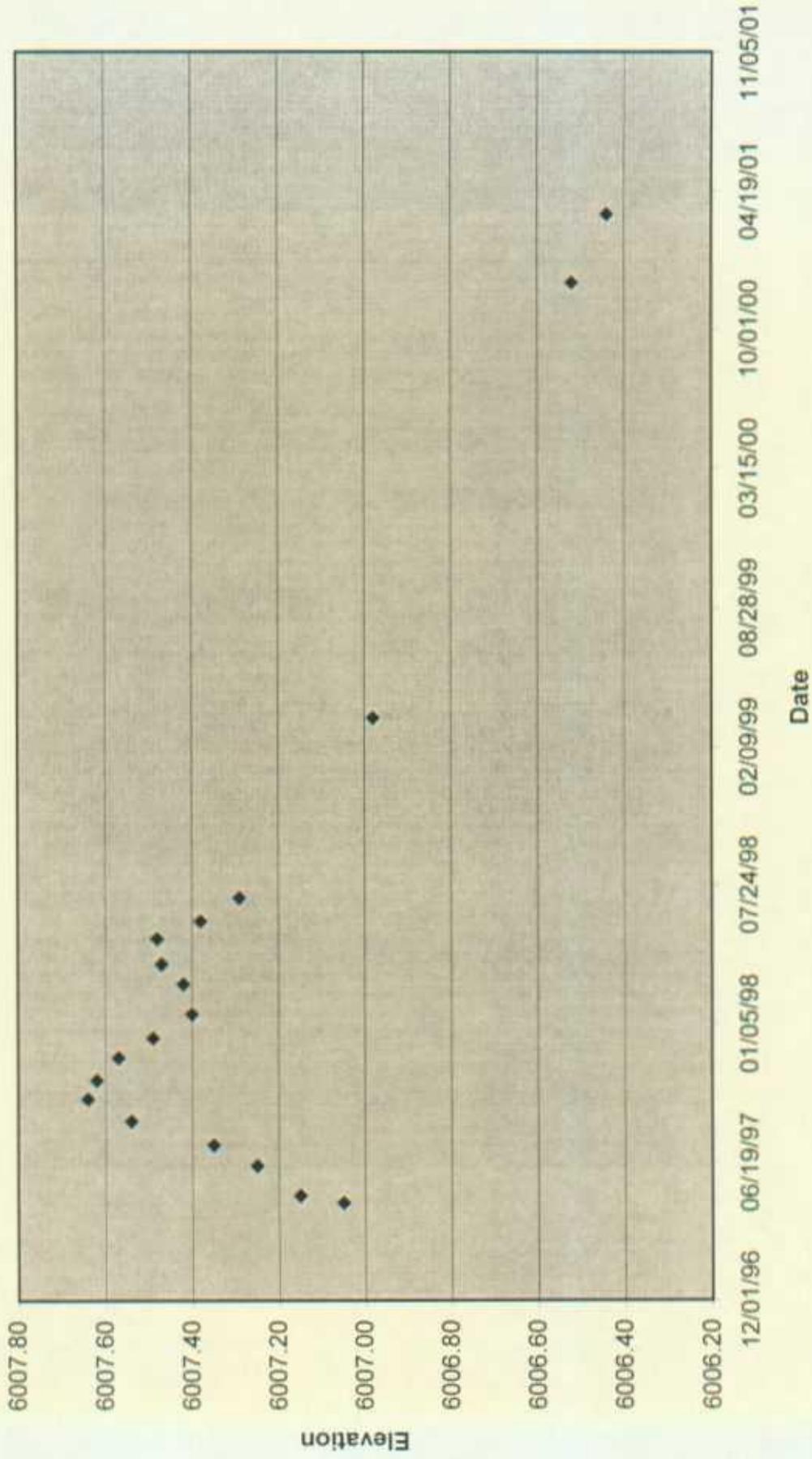
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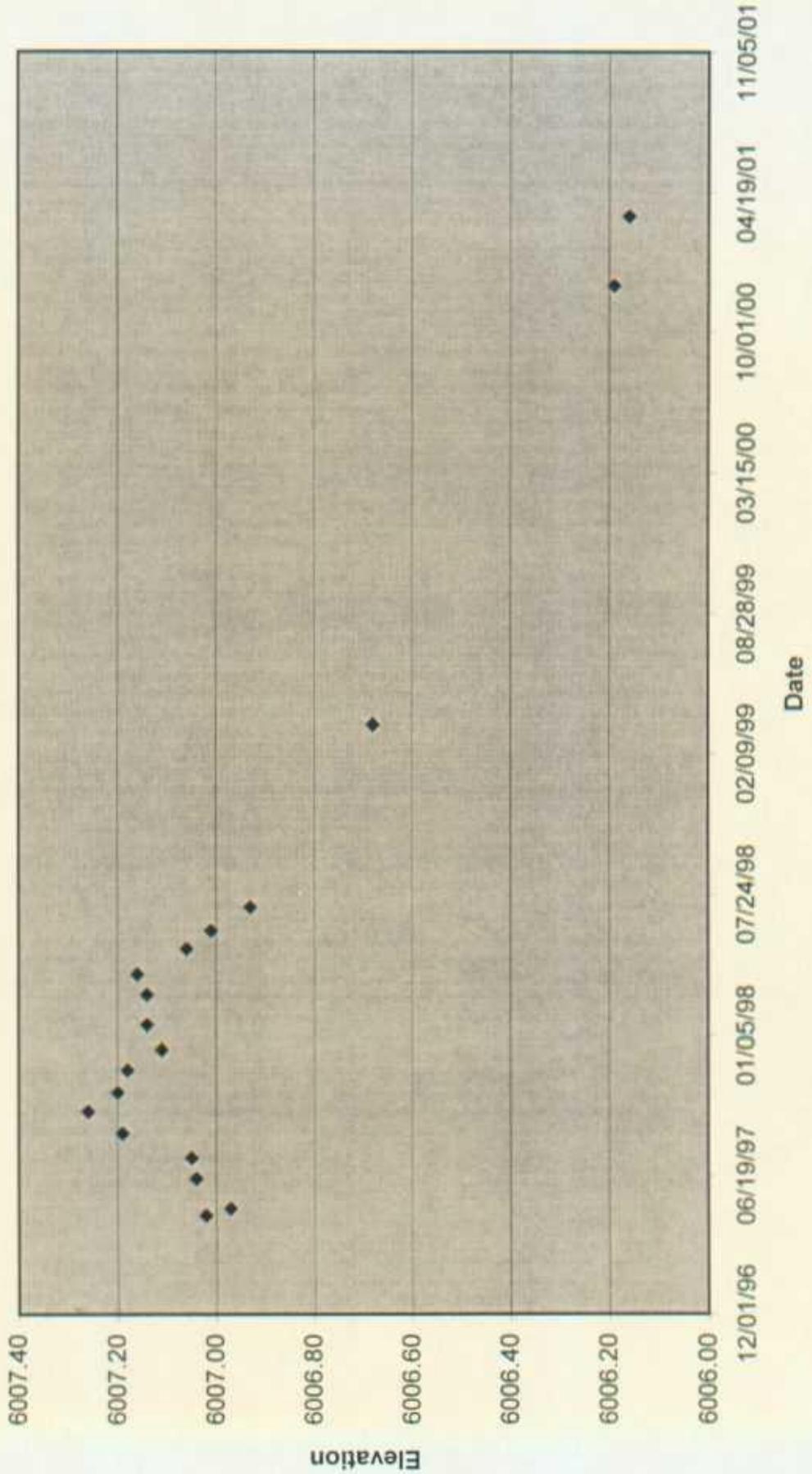
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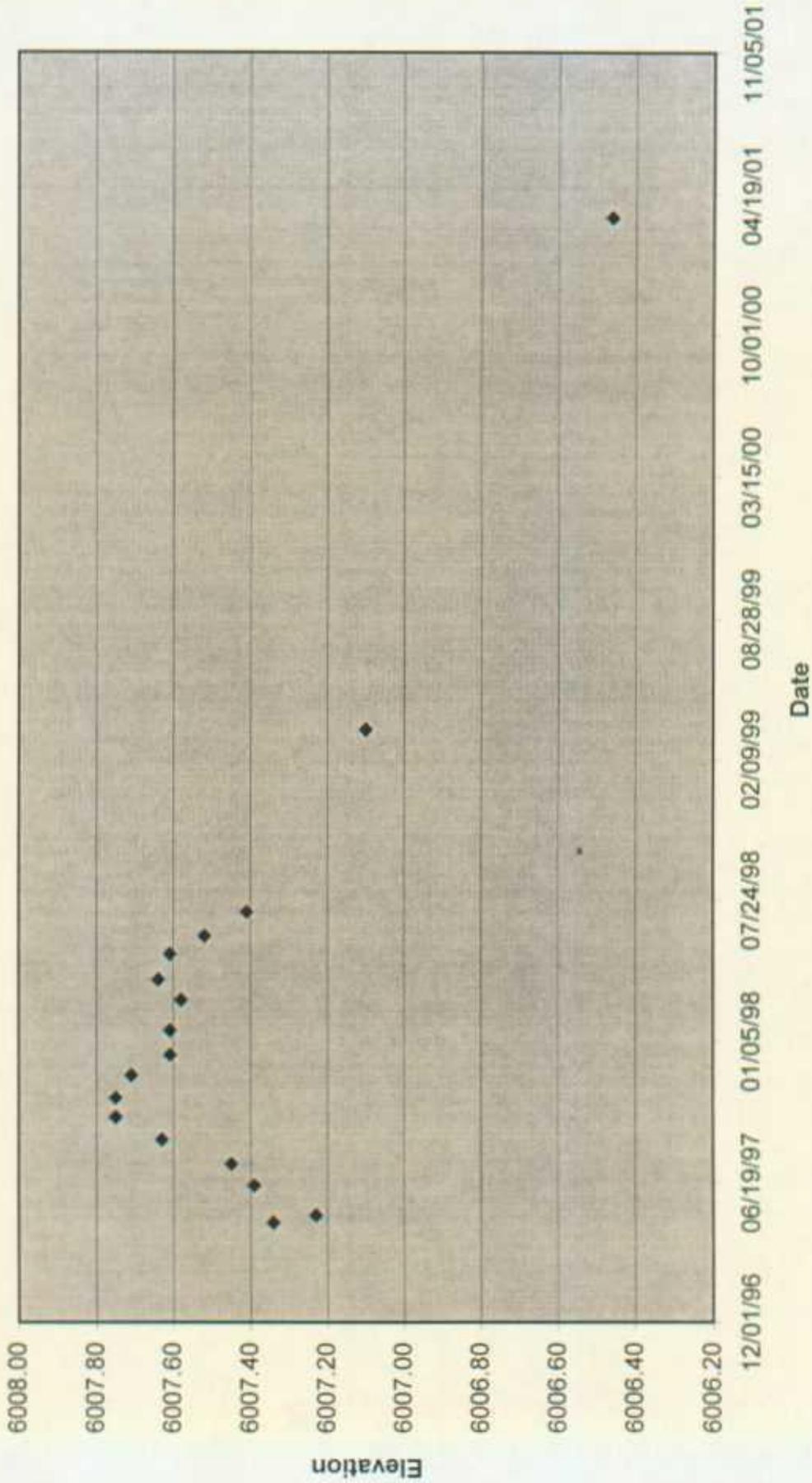
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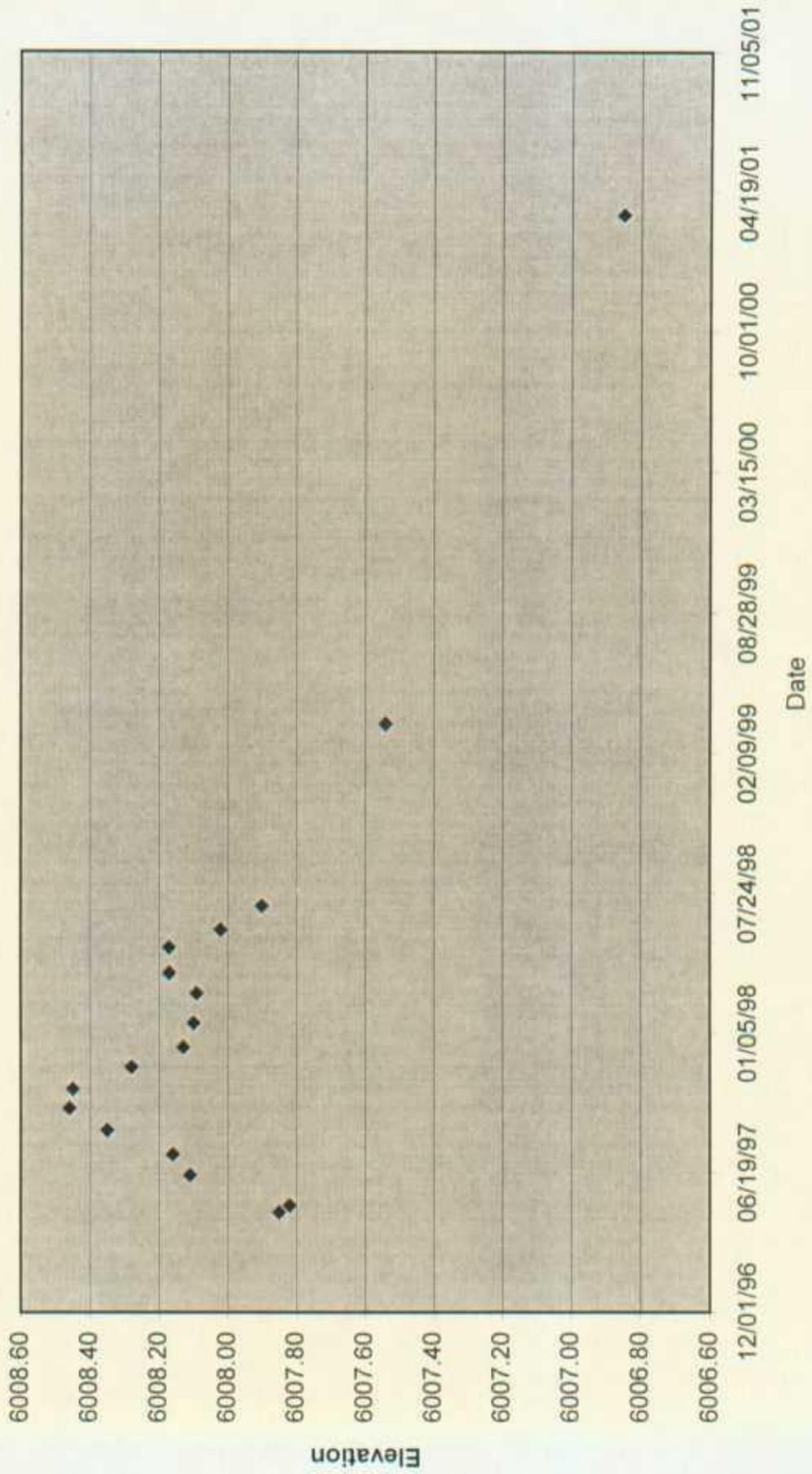
# Water Levels Well PZ-18



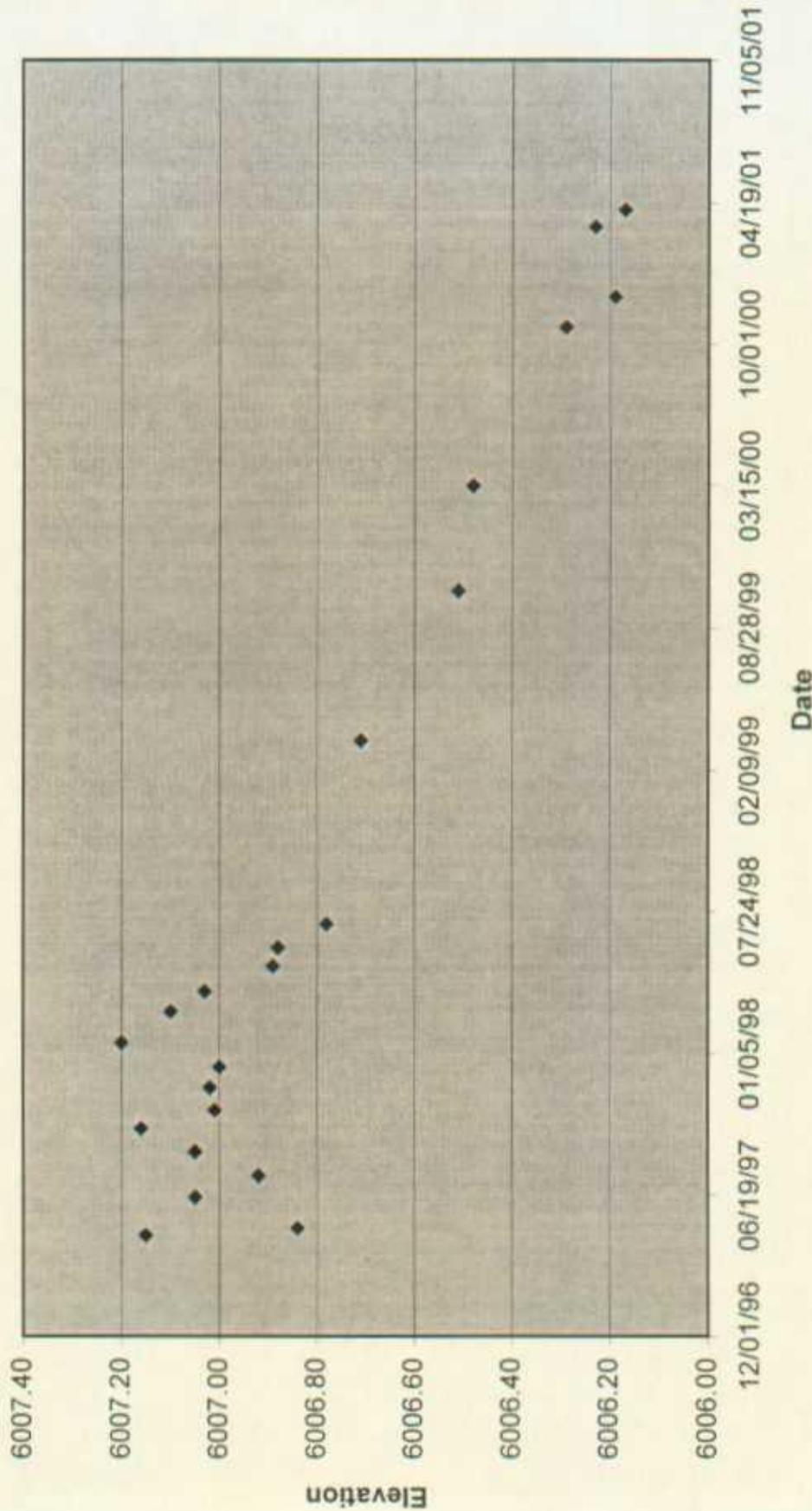
# Water Levels Well PZ-19



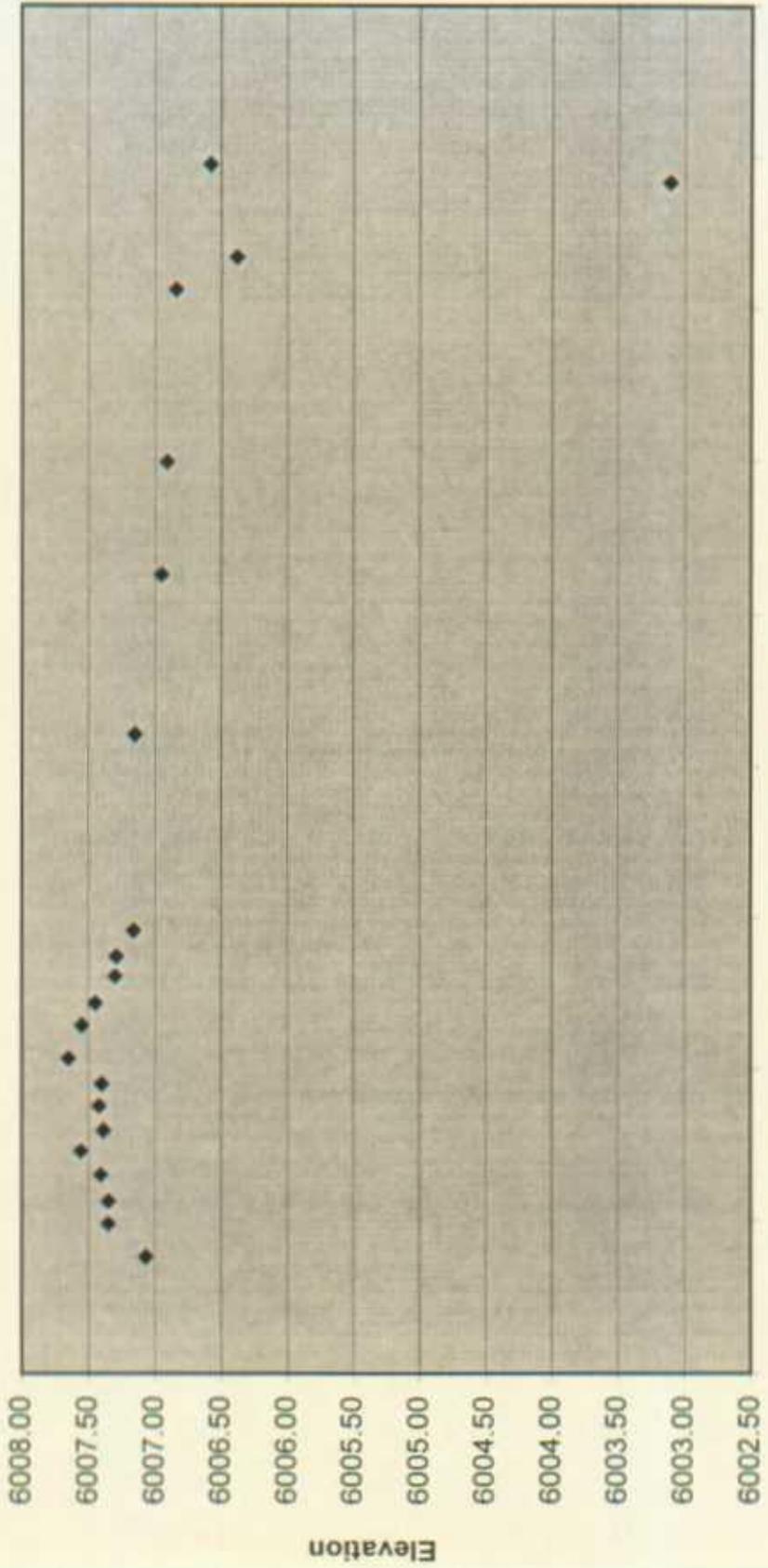
# Water Levels Well PZ-20



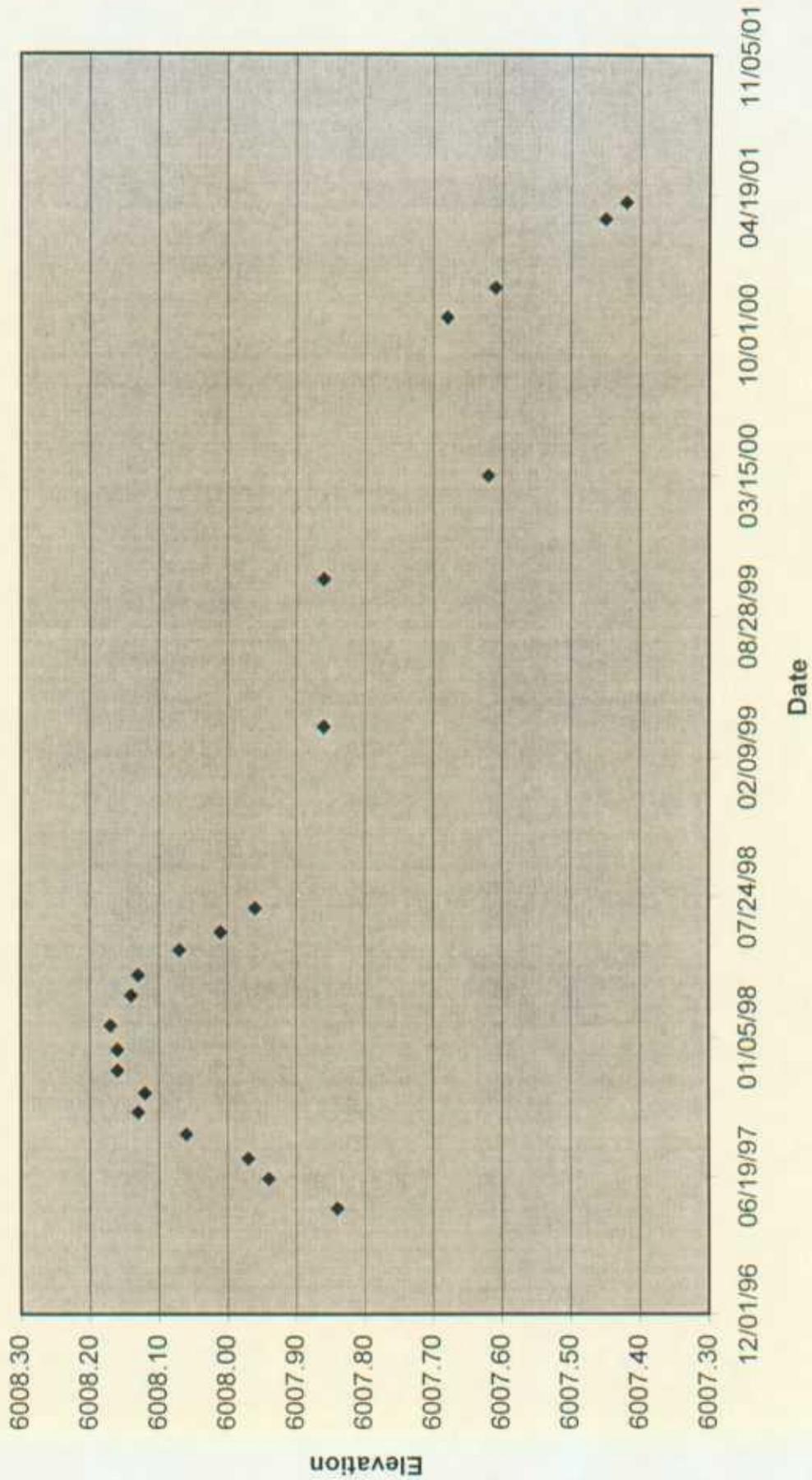
# Water Levels Well PZ-21



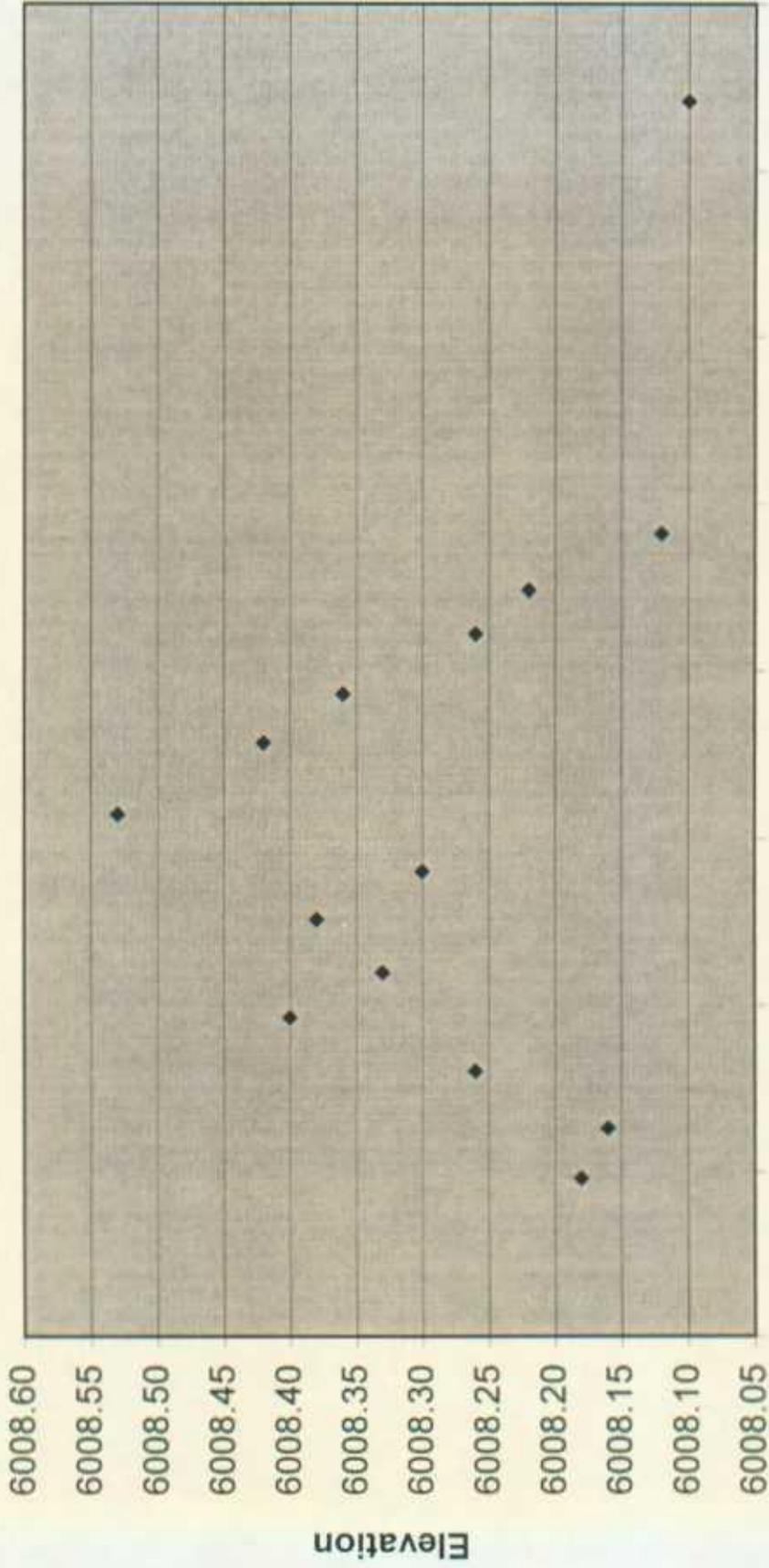
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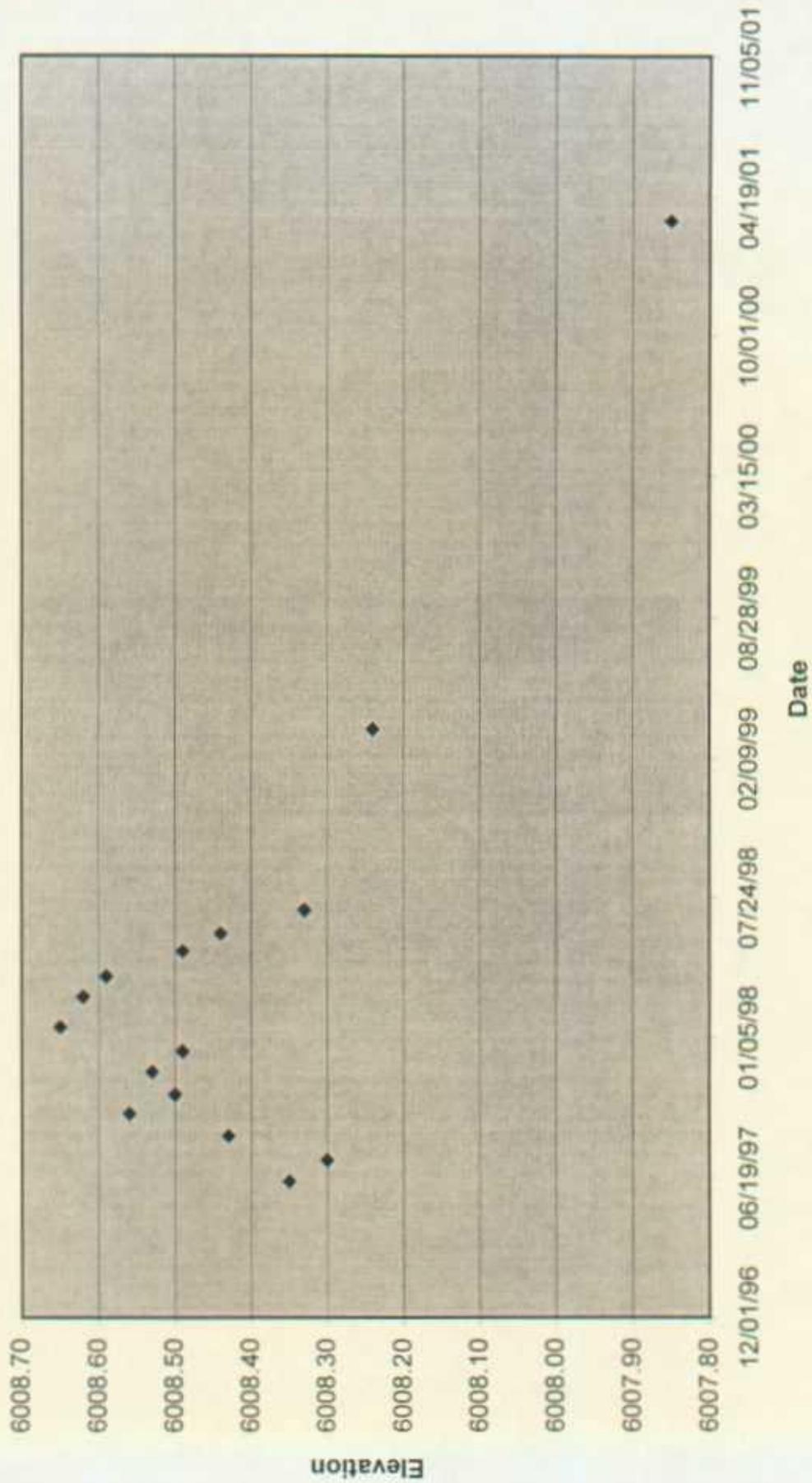
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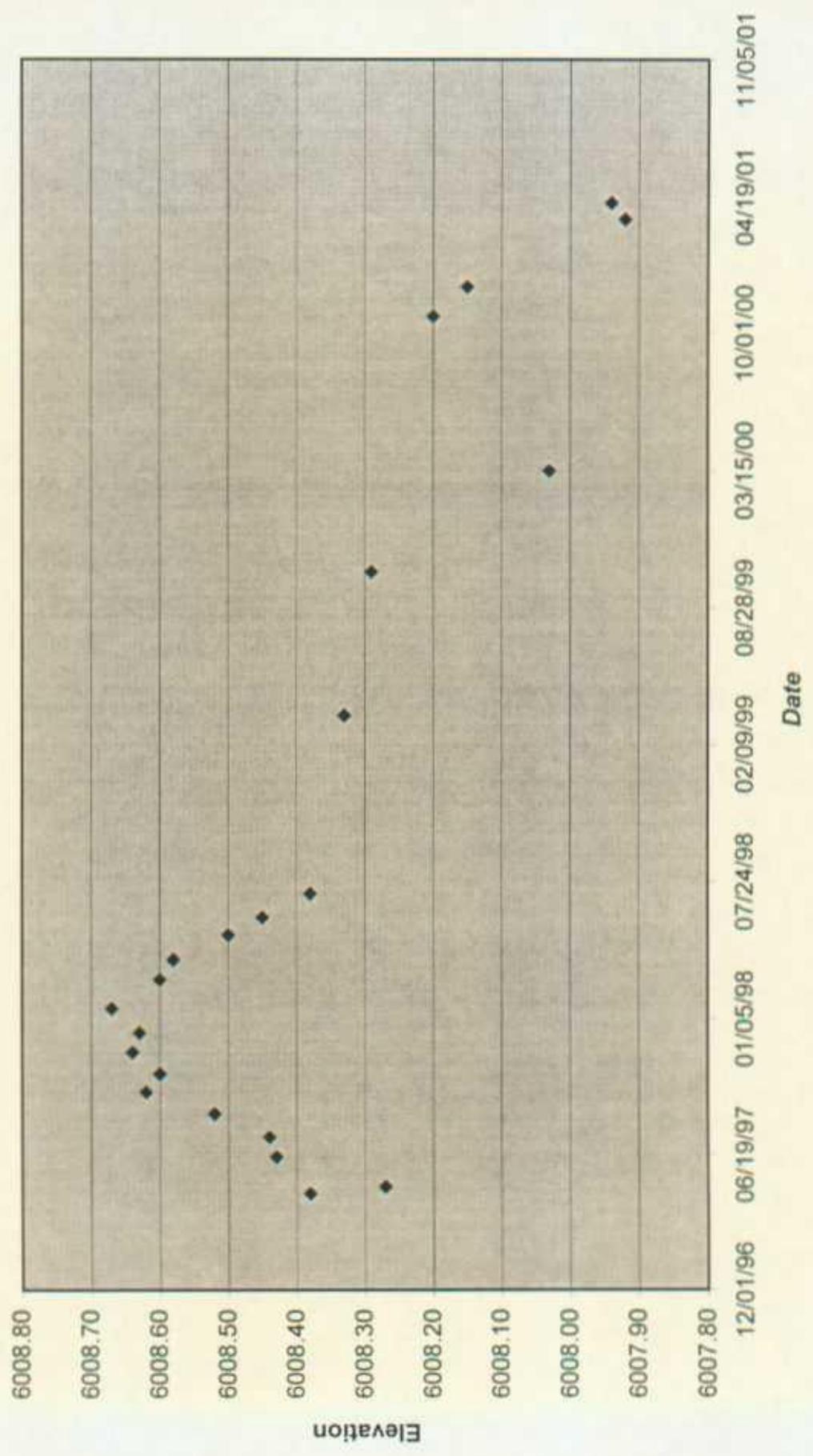
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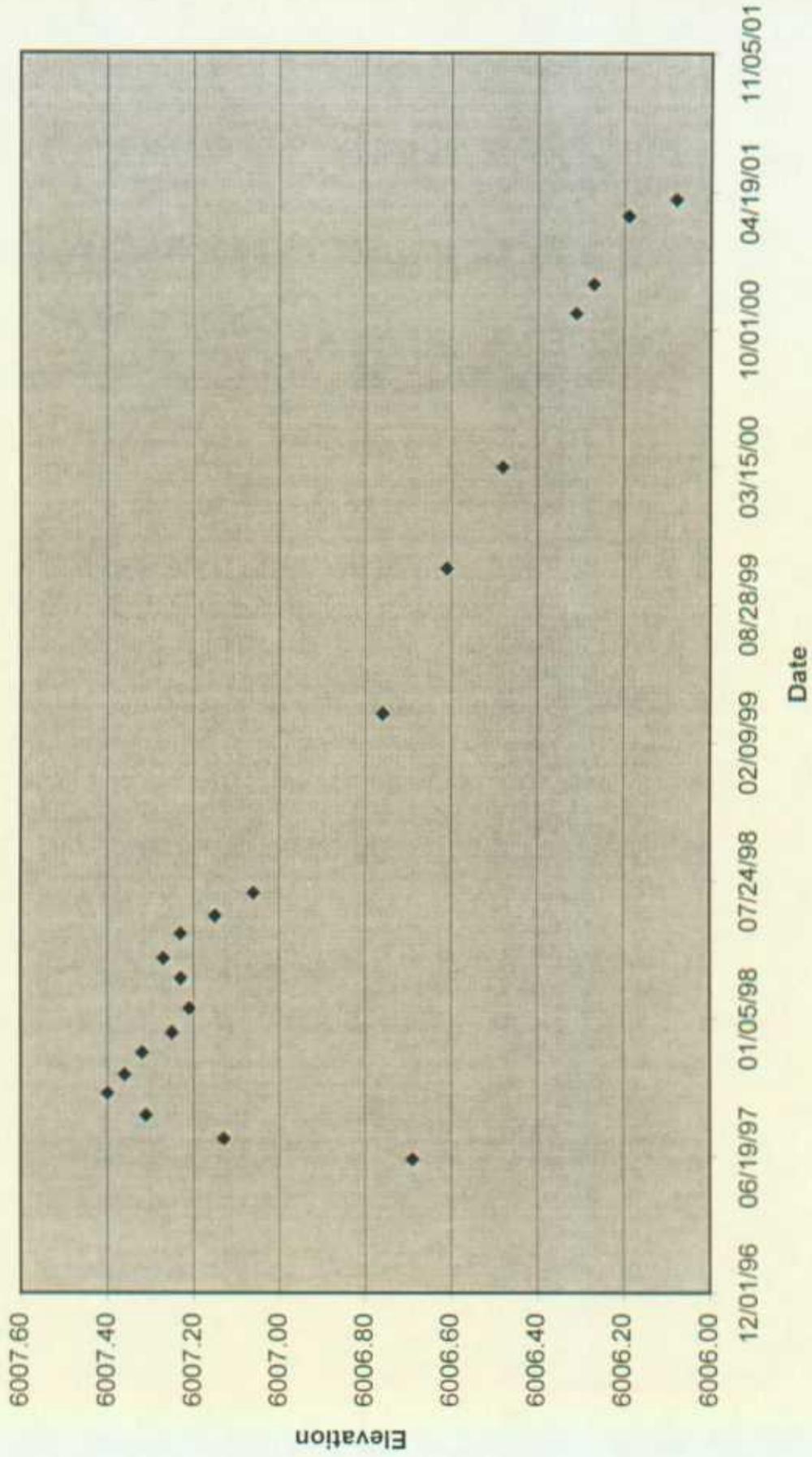
# Water Levels Well PZ-25



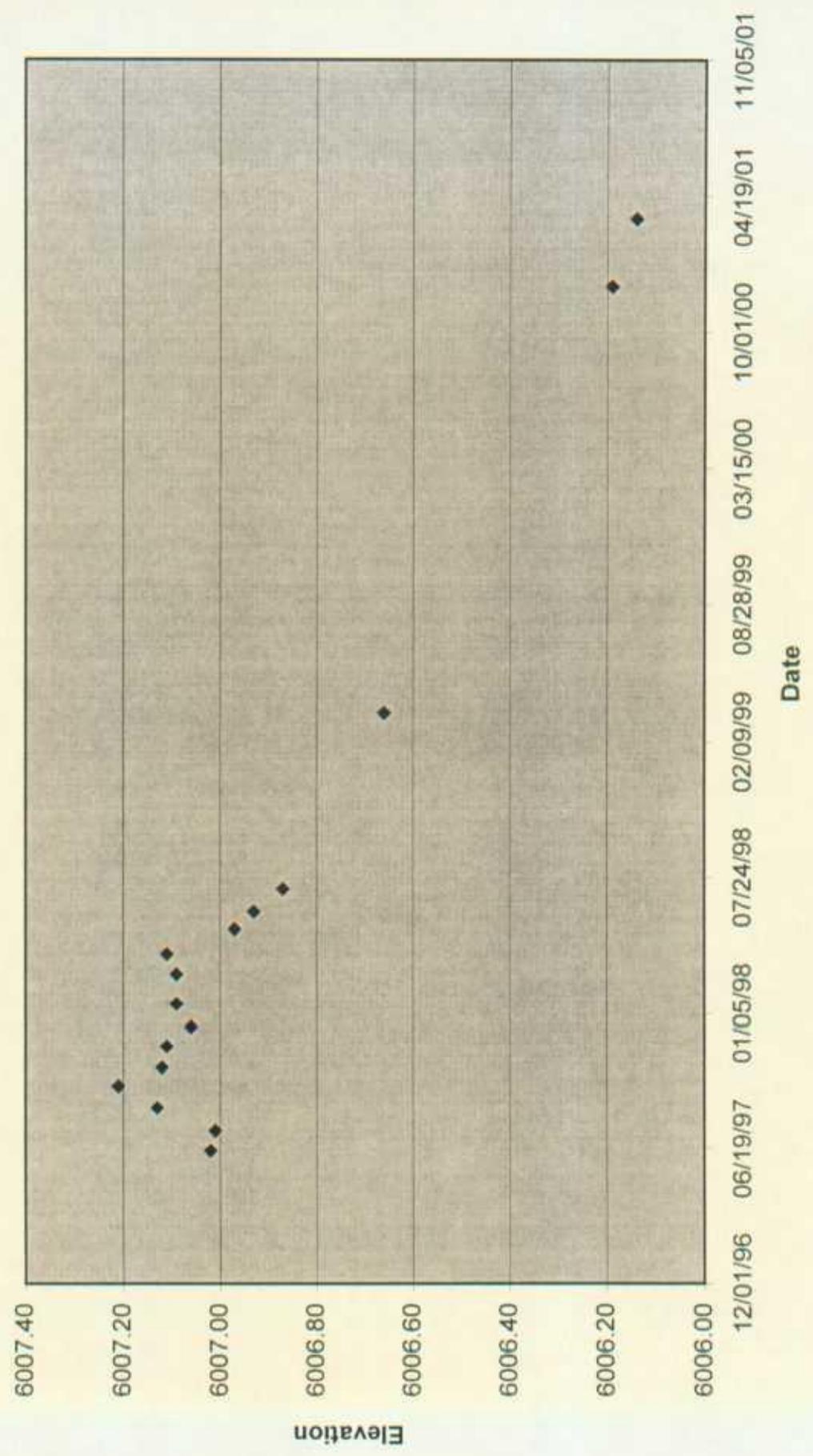
# Water Levels Well PZ-26



# Water Levels Well PZ-29



# Water Levels Well PZ-30



# Water Levels Well PZ-31

