Public Service Company of New Mexico 2401 Aztec NE MS Z160 Albuquerque, NM 87107

February 18, 2002

## CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. Robert Warder, EI New Mexico Environment Department Hazardous Waste Bureau 2905 Rodeo Park Drive East, Building 1 Santa Fe, NM 87505-6303



RE: Treatment Effectiveness Report, Fourth Quarter 2001, Public Service Company of New Mexico Person Generating Station Groundwater Treatment System, NMT 360010342

Dear Mr. Warder:

Enclosed please find three copies of the subject report submitted pursuant to requirements contained in the Person Station Corrective Action Directive issued in September 1991.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Toni K. Ristau

Director, Environmental Services

If you have any questions, please contact me at (505) 855-6392.

Sincerely

96hn Hale, P.E.

Technical Project Manager

Enclosures

# LIBRARY COPY

Public Service Company of New Mexico Person Generating Station Groundwater Treatment System

Treatment Effectiveness Report Fourth Quarter 2001

February 15, 2002

Report Prepared Pursuant to Requirements Contained in:

The Person Generating Station Corrective Action Directive (NMT 360010342) and
The New Mexico Environment Department Discharge Plan, DP-1006

## Table of Contents

Executive Summary	1
I. Introduction	2
II. Operational History	4
III. Groundwater Treatment Effectiveness	6
IV. Operational Activities	16
V. Influent and Effluent Flow Volumes	17
VI. Laboratory Analysis	19
A. Influent and Effluent Sampling for Chlorinated VOCs (8021 Analysis)	19
B. Effluent Sulfate Analysis and pH Monitoring	22
C. Golf Course Pond Sampling	22
VII. Groundwater Sampling	23
Appendix A. Laboratory Reports	
List of Figures	
Figure 1. Person Generating Station Site Map	3
Figure 2. Total VOCs at PSMW-16	6
Figure 3. Total VOCs at VEW	7
Figure 4. Total VOCs at EW-1	7
Figure 5. Total VOCs at PSMW-24, 25, 26	8
Figure 6. Total VOCs at EW-3	8
Figure 7. Total VOCs at EW-2	9
Figure 8. Total VOCs GTS Influent vs. Effluent – East	21
Figure 9. Total VOCs GTS Influent vs. Effluent – West	21
Figure 10. Concentration of PCE in Groundwater	24
Figure 11. Concentration of DCE in Groundwater	25
Figure 12. Concentration of TCA in Groundwater	26
List of Tables Table 1. Influent Concentrations at PSMW-16	10
Table 2. Influent Concentrations at VEW	10
Table 3. Influent Concentrations at VEW  Table 3. Influent Concentrations at EW-1	11
Table 4. Combined Influent Concentrations at PSMW-24, 25, and 26	12
Table 5. Influent Concentrations at FSW w-24, 25, and 26	13
Table 6. Influent Concentrations at EW-3	14
	14
Table 7. Influent Concentrations at EW-4 Table 8. Influent and Effluent Flow Volumes	15
Table 9. Influent and Effluent VOC Concentrations	18
Table 10. GTS Effluent Sulfate Concentrations	20
	22
Table 11. Monthly pH Readings	22

## **Executive Summary**

Contour maps of the three primary contaminants of concern, PCE, DCE, and TCA, are shown in Figures 10, 11, and 12, respectively. These contour maps indicate the areal extent of the groundwater plume and the associated contaminant concentrations within the plume. The contour maps are prepared twice per year using data from the spring and fall sampling events.

Figure 10 indicates that the low PCE concentration zone (5 ppb to 20 ppb) and the moderate PCE concentration zone (20 ppb to 100 ppb) have remained approximately the same in size since April 2001. Figure 11 indicates that the low and moderate DCE concentration zones have changed shape slightly since last April. Figure 12 indicates that the low concentration TCA plume has decreased slightly in size.

Due to the locally declining groundwater table, PSMW-16 had become hydrologically stranded and has been out of service during the past several quarters. PSMW-24 has been out of service during the past several months due to a damaged pump.

During May and June 2001, construction activities were initiated for the drilling of two new extraction wells to replace PSMW-16 and PSMW-24. The two new extraction wells were brought online in September 2001.

In July 2001, construction activities began on the installation of a pilot-scale treatment system that uses two in-series granular activated carbon canisters as an alternative to the existing air stripper/acid injection system.

Over the past several quarters, the air stripper/acid injection system has experienced frequent operational problems and has required extensive maintenance in order to remain in service. The pilot-scale system configuration is a much simpler system. Consequently, if it is able to meet the required treatment effectiveness, it should significantly reduce operational problems and maintenance requirements of the GTS.

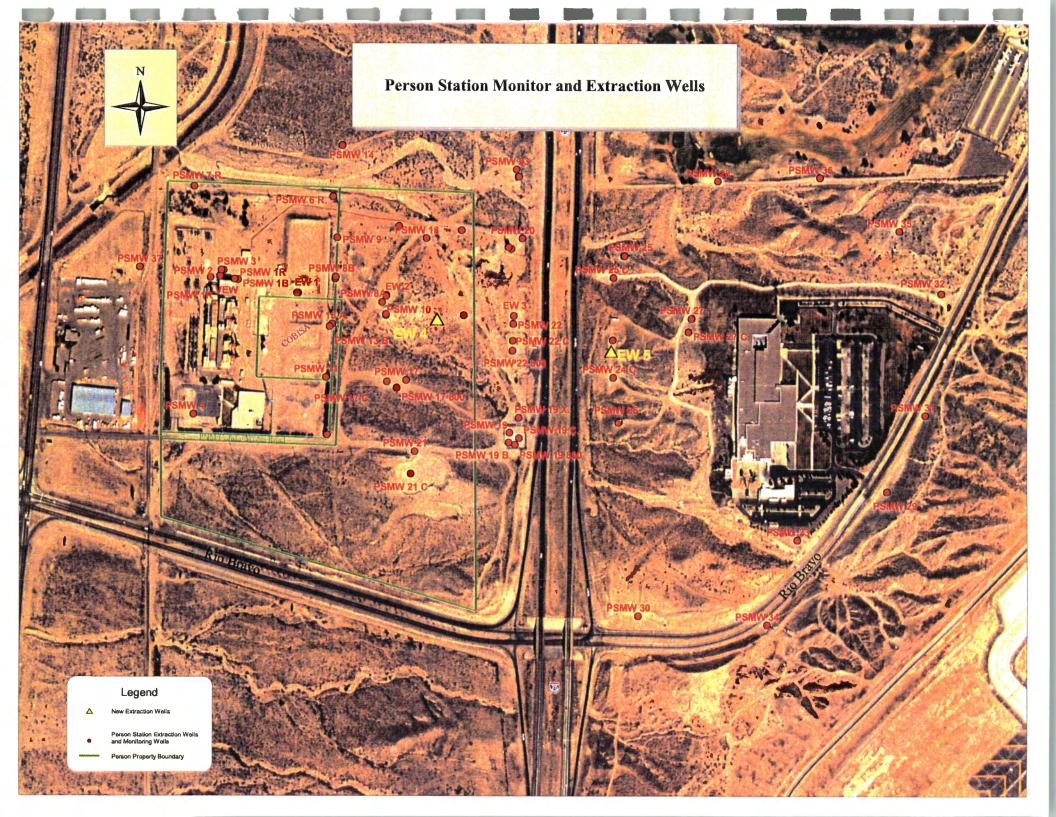
The pilot-scale system has operated consistently throughout the fourth quarter. Analytical results indicate that the pilot-scale system is achieving the necessary treatment effectiveness.

### I. Introduction

This report is prepared pursuant to requirements contained in the Person Generating Station Corrective Action Directive (NMT360010342) issued by the New Mexico Environment Department (NMED) Hazardous and Radioactive Materials Bureau, and requirements contained in Discharge Plan DP-1006 issued by the NMED Groundwater Protection and Remediation Bureau.

This report contains information on sampling results and operational activities at the Person Generating Station Groundwater Treatment System (GTS). The GTS is designed to extract volatile organic compound (VOC) contaminated groundwater, treat through an air stripper and granular activated carbon (GAC) filter, and discharge the treated water to an irrigation pond at the UNM Championship Golf Course.

Figure 1 is a site map of the Person Generating Station vicinity and shows monitor well and extraction well locations.



## II. Operational History

The GTS was started on Friday, January 27, 1995, with treated effluent being sent to the UNM Championship Golf Course.

During 1995, the GTS encountered periodic minor problems as well as a more serious problem with mineralization of the system components downstream from the air stripper. The GTS was kept off-line for most of the first quarter of 1996 while the mineralization problem was studied. After evaluation of various treatment methods, an acid treatment system was selected as the most feasible solution to the mineralization problem.

Installation of the acid treatment system began in early May 1996. In early April 1996, construction activities were initiated to convert monitor wells PSMW-24, PSMW-25, and PSMW-26 (PSMW-24, 25, and 26) to extraction wells. The GTS resumed regular operation in mid-June 1996.

The Person Generating Station Discharge Plan, DP-1006, was amended and approved by the Groundwater Protection and Remediation Bureau in mid-June 1997. As part of the amended plan, the existing plan requirement for the sulfuric acid treatment system was replaced. Previously, acid addition to the effluent was restricted to 35 mg/l. The new requirement specifies adjustment of the acid treatment system to maintain an effluent pH range of 6.0 to 9.0. A pH probe and chart recorder were installed on the effluent discharge tank for daily monitoring of pH. Effluent samples are collected monthly for total sulfate analysis.

In an effort to enhance the GTS effectiveness by increasing system pumping rates, two new extraction wells were completed during October 1999. The new wells are designated EW-2 and EW-3.

Due to the locally declining groundwater table, extraction well PSMW-16 had become hydrologically stranded, and has been out of service for the past several quarters. Extraction well PSMW-24 has been out of service for the past few quarters due to a damaged pump. An inspection of PSMW-24 indicated that the borehole casing had developed a hole, allowing material from the surrounding formation to move into the borehole permanently damaging the pump.

During May and June 2001, construction activities were initiated for the drilling of two new extraction wells to replace PSMW-16 and PSMW-24. The new extraction wells are designated EW-4 and EW-5. EW-4 is located approximately 25 feet northwest of PSMW-16. EW-5 is located approximately 25 feet south of PSMW-24. EW-4 and EW-5 were brought on line in September 2001.

Prior to drilling the replacement extraction wells, PSMW-16 and PSMW-24 were plugged and abandoned in accordance with the appropriate regulations.

In July 2001, construction activities began on the installation of a pilot-scale treatment system that uses two in-series GAC units as an alternative to the existing air stripper/acid injection system. The third quarter report erroneously described the pilot-scale system as

using air sparging in addition to carbon adsorption. This was incorrect, there is no air sparging system currently installed.

Over the past several quarters, the air stripper/acid injection system has experienced frequent operational problems and has required extensive maintenance in order to remain in service. The pilot-scale system configuration is a much simpler system. Consequently, if it is able to meet the required treatment effectiveness, it should significantly reduce operational problems and maintenance requirements of the GTS.

The pilot-scale system consists of two-stage, in-series GAC units. The influent is pumped into a large holding tank, then to the first stage GAC unit, and then to the final GAC unit. As in the original system configuration, the treated effluent is then pumped to the golf course irrigation ponds for reuse.

The pilot-scale treatment system was put into limited service in September 2001, and will remain in operation for several months so that the treatment effectiveness of the new system can be thoroughly evaluated. Effluent samples will continue to be collected monthly from various points in the pilot-scale treatment train. If laboratory analytical results indicate that the required treatment effectiveness can be achieved, the GTS will be permanently modified. This will involve removal of the two air strippers and acid injection system.

In order to install the pilot-scale system, the east treatment train was partially dismantled and is no longer operational. The west treatment train will remain off line for the duration of the pilot-scale treatment system evaluation.

### III. Groundwater Treatment Effectiveness

Figures 2, 3, and 4 show graphs of concentration of total chlorinated VOCs as measured at wells PSMW-16, VEW, and EW-1 over the operational period of the GTS. Figure 5 shows a graph of concentration of total chlorinated VOCs in the combined influent from wells PSMW-24, 25, and 26 over the operational period of these wells. Figures 6 and 7 show graphs of concentration of total chlorinated VOCs over the operational period of EW-3 and EW-2. More detailed data for these wells are shown in Tables 1, 2, 3, 4, 5, and 6.

As previously noted, PSMW-16 and PSMW-24 have been out of service for the past few quarters. The two extraction wells were permanently plugged and abandoned in the second quarter of 2001. Two new replacement extraction wells were drilled in May and June 2001, and are designated EW-4 and EW-5. EW-4 and EW-5 will replace PSMW-16 and PSMW-24, respectively.

At the beginning of the fourth quarter, total chlorinated VOCs increased slightly in the VEW, EW-1, EW-2, and EW-3, and then decreased during the remainder of the quarter.

The effluent from EW-5, the replacement extraction well for PSMW-24, is included in the combined influent from PSMW-24, 25, and 26. Figure 5 indicates an increase in total chlorinated VOCs as a result of EW-5 being in service.

EW-4, the replacement for PSMW-16 was not sampled in October 2001. However, during the remainder of the quarter, total chlorinated VOCs remained relatively constant. Analytical data is shown in Table 7.

Laboratory reports for this quarter are contained in Appendix A.

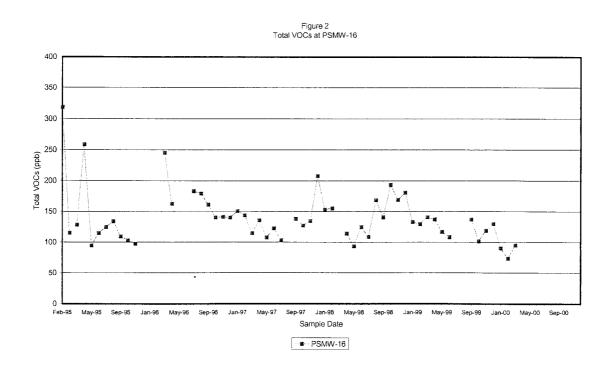
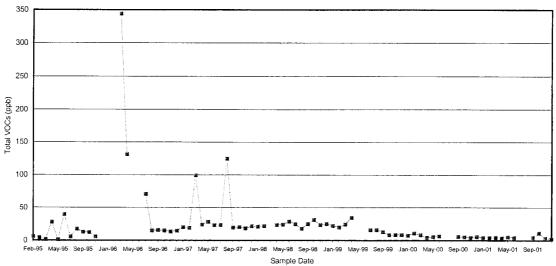
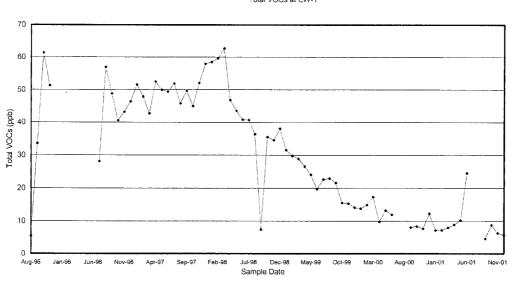


Figure 3 Total VOCs at VEW



···■···VEW

Figure 4 Total VOCs at EW-1



--•--- EW-1

Figure 5 Total VOCs at PSMW-24,25,26

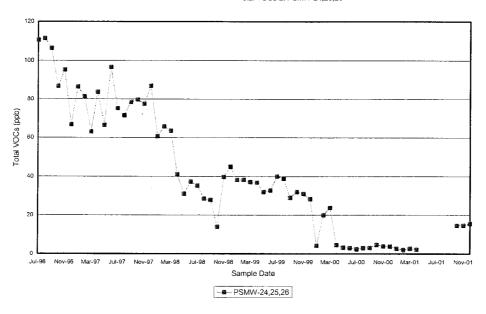
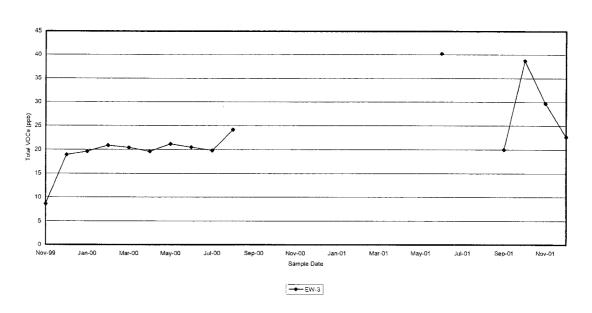


Figure 6 Total VOCs at EW-3





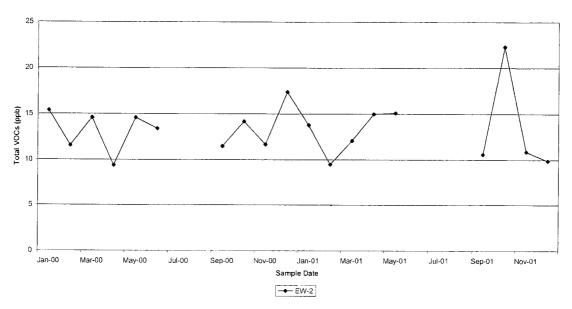


Table 1
Influent Concentrations at PSMW-16

Date	Laboratory Report No.	PCE (ppb)	DCE (ppb)	Total VOCs (ppb)
2/1/95	502304	200	110	318.4
2/15/95	502376	69	39	115.0
3/8/95	503317	78	46	128.3
4/10/95	504341	170	81	258.6
5/18/95	505371	62	30	94.6
6/21/95	506396	76	36	114.8
7/12/95	507327	75	41	124.3
8/17/95	508405	83	45	134.0
9/13/95	509339	69	35	109.2
10/11/95	510335	66	32	102.8
11/22/95	511367	58	35	97.5
3/20/96	603347	180	63	· 245.3
4/17/96	604367	110	46	162.5
7/18/96	607334	120	54	182.9
8/15/96	608331	120	51	179.1
9/18/96	609338	110	43	160.9
10/16/96	610361	97	37	140.0
11/19/96	611331	94	42	141.0
12/17/96	612331	96	39	140.0
1/16/97	701336	99	46	150.7
2/13/97	702332	100	40	143.7
3/19/97	703344	88	23	114.6
4/17/97	704355	93	38	135.8
5/15/97	705347	71	32	107.6
6/18/97	706353	83	36	122.6
7/23/97	707360	67	34	103.1
9/15/97	709332	100	34	137.9
10/15/97	710358	92	31	127.2
1/19/97	711335	95	34	134.5
2/16/97	712318	140	68	208
1/15/98	801334	110	37	153.1
2/11/98	802336	110	38	155.3
NS	-	-	-	-
4/8/98	804337	78	30	114.4
5/20/98	805379	67	23	93.4
6/16/98	806353	89	30	124.6
7/1/98	807300	76	29	108.8
8/13/98	808040	120	41	168.5
9/16/98	809042	110	26	140.7
10/7/98	810021	120	68	193.4
1/17/98	811049	100	64	169
12/9/98	812045	110	66	180.7
1/7/99	901010	100	28	132.8
2/4/99	902014	100	26	129.3
3/3/99	903010	100	36	140.5
4/21/99	904091	100	32	137.0
5/14/99	905048	87	25	116.7
6/9/99	906040	79	25	108.3
NS	700010	-	-	-
NS	-	-	-	-
9/2/99	909005	99	32	136.8
0/11/99	910036	75	23	102
1/10/99	911035	80	33	118.6
12/8/99	912027	87	36	129.5
1/12/00	001021	64	20	90.5
2/10/00	002042	54	13	73.6
3/7/00	003023	62	26	95.1
NS NS	003023	- 02	- 20	<del></del>
NS NS				-
140	-	-		-

Table 2
Influent Concentrations at VEW

Date 2/1/05	Laboratory Report No.	PCE (ppb)	DCE (ppb)	Total VOCs (ppb)
2/1/95 2/15/95	502304 502376	5.3	0.8	6.1
3/8/95	503317	1.5	0.3	4.5
4/10/95	504341	21	5.8	28.1
5/18/95	505371	1.4	<0.2	1.4
6/21/95	506396	25	9.4	39.8
7/12/95	507327	3.5	1.0	5.8
8/17/95	508405	6.4	1.1	17.7
9/13/95	509405	9.7	1.9	12.9
10/11/95	510335	9.3	1.8	12.5
11/22/95	511367	4.6	1.1	6.0
3/20/96	603347	270	72	344.3
4/17/96 7/18/96	604367 607334	94	24 14	131.2 70.6
8/15/96	608331	5.0	2.1	15.2
9/18/96	609338	3.1	2.1	15.8
10/16/96	610361	3.2	2.1	15.3
11/19/96	611331	0.8	1.8	13.6
12/17/96	612331	<0.5	2.0	15.0
1/16/97	701336	0.9	3.2	20.2
2/13/97	702332	1.0	2.4	19.2
3/19/97	703344	68	17	99.5
4/17/97 5/15/97	704355	2.8	3.4	24.4
6/18/97	705347 706353	6.1	5.3 4.2	28.5
7/23/97	706353	2.9	4.2	23.6
8/13/97	707300	57	50	124.8
9/15/97	709332	1.7	3.4	19.8
10/15/97	710358	3.2	3.1	20.5
11/19/97	711335	1.3	3.2	18.7
12/16/97	712318	1	4.8	21.7
1/15/98	801334	2.5	3.6	21.3
2/11/98	802336	2.9	3.7	22
4/8/98 5/20/98	804337	6.4	5.0	23.7
6/16/98	805379 806353	8.4	5.4 6.2	24.3
7/1/98	807300	7.6	4.6	25.0
8/13/98	808040	5.6	3.8	18.2
9/16/98	809042	8.9	5.6	25.3
10/7/98	810021	10	9.4	31.7
11/17/98	811049	6.9	5.2	23.7
12/9/98	812045	7.9	5.6	25.4
1/7/99	901010	7.7	4.3	22.5
2/4/99	902014	7.0	4.0	20.0
3/3/99	903010	7.9	6.2	24.7
4/21/99 7/6/99	904091 907015	17.0	8.9 3.0	34.8
8/5/99	908021	5.4	3.2	16.3
9/2/99	909005	2.5	2.6	13.0
10/11/99	910036	0.7	0.9	8.3
11/10/99	911035	< 0.5	1	8.7
12/8/99	912027	0.8	1.1	8.8
1/12/00	001021	0.9	1.1	7.6
2/10/00	002042	3.7	1.3	11.1
3/7/00	003023	1.1	1.3	8.3
4/12/00	004041	1.2	1.2	4.5
5/3/00	005014	< 0.5	0.9	5.6
6/8/00	006035	< 0.5	0.8	6.7
9/19/00	009101 010016	0.7	< 0.5	6.0 5.2
11/3/00	011012	< 0.5	0.5	4.4
12/5/00	012017	< 0.5	0.5	5.9
1/17/01	101052	< 0.5	0.5	4.2
2/15/01	102052	< 0.5	0.6	4.2
3/1/01	103007	< 0.5	0.4	4.5
4/5/01	104018	< 0.5	0.3	4.1
5/1/01	105004	< 0.5	0.4	5.3
6/1/01	106007	< 0.5	0.2	4.4
9/18/01	109064	< 0.5	NS	4.6
10/4/01	110023	< 0.5	0.3	11.5
11/5/01	111024	0.5	0.3	3.6
12/12/01	112047	< 0.5	0.2	2.5

Table 3
Influent Concentrations at EW-1

Date	Laboratory Report No.	PCE (ppb)	DCE(ppb)	Total VOCs (ppb)
8/17/95	508405	3.5	0.9	5.4
9/13/95	509339	25	6.1	33.6
10/11/95	510335	49	8.8	61.4
I 1/22/95	511367	38	9.5	51.3
7/18/96	607334	20	5.7	28.2
8/15/96	608331	45	8.4	57.0
9/18/96	609338	37	7.8	48.8
10/16/96	610361	29	7.3	40.6
11/19/96		32	7.0	43.2
	611331			<del></del>
12/17/96	612331	33	7.7	46.4
1/16/97	701336	36	9.2	51.6
2/13/97	702332	32	7.7	47.9
3/19/97	703344	29	5.7	42.7
4/17/97	704355	31	8.4	52.5
5/15/97	705347	27	9.7	50
6/18/97	706353	23	8.6	49.4
7/23/97	707360	25	9.5	51.9
8/13/97	708339	20	6.8	45.8
9/15/97	709332	21	8.5	49.7
10/15/97	710358	18	6.5	45
11/19/97	711335	20	9.7	52.1
12/16/97	712318	21	12	58
1/15/98	801334	20	11	58.5
2/11/98	802336	21	11	59.7
3/11/98	803324	20	16	62.7
4/8/98	804337	16	9.7	46.8
5/20/98	805379	16	9.7	43.5
6/16/98	806353	13	7.9	40.8
7/1/98	807300	12	7.7	40.7
8/13/98	808040	8.5		36.4
9/16/98	809042	3.2	2.7	7.4
10/7/98	810021	9.5	7.7	35.5
11/17/98	811049	10	7.5	34.6
12/9/98	812045	12	8.4	38.1
1/7/99	901010	10	5.8	31.6
2/4/99	902014	10	5.7	29.8
3/3/99	903010	8.2	6.9	28.9
4/21/99	904091	8.3	5.5	26.6
5/14/99	905048	7.1	4.6	24.1
6/9/99	906040	5.5	3.5	19.7
7/6/99	907015	6.1	4.1	22.7
8/5/99	908021	6.2	4.3	23.0
9/2/99	909005	5.5	4.6	21.6
10/11/99	910036			
		5	2.3	15.5
11/10/99	911035	4	2.4	15.3
12/8/99	912027	3.7	2.5	14.1
1/12/00	001021	4.7	2.5	13.8
2/10/00	002042	4.3	3.2	14.9
3/7/00	003023	5.2	3.2	17.3
4/12/00	004041	3.7	2.6	9.8
5/3/00	005014	4	2.6	13.2
6/8/00	006035	3.3	2.3	11.9
9/19/00	009101	1.7	0.6	8.1
10/4/00	010016	1.1	1.5	8.4
11/3/00	011012	0.9	0.9	7.7
12/5/00	012017	2.6	1.6	12.3
1/17/01		2.7	1.3	7.2
	101052			<del></del>
2/15/01	102052	2.4	1.3	7.2
3/1/01	103007	2.8	1.4	8.0
4/5/01	104018	3.3	1.6	8.9
5/1/01	105004	3.5	1.6	10.2
6/1/01	106007	17	3.7	24.6
9/18/01	109064	2.3	NS	6.9
10/4/01	110023	1.8	0.9	8.8
	111024	1.8	0.9	6.3
11/5/01				

Table 4 Combined Influent Concentrations at PSMW-24, 25, and 26

Date	Laboratory Report No.	PCE (ppb)	DCE (ppb)	Total VOCs (ppb)
7/18/96	607334	49	55	110.6
8/15/96	608331	47	50	111.3
9/18/96	609338	58	44	106.3
10/16/96	610361	41	40	86.8
11/19/96	611331	46	44	95.2
12/17/96	612331	33	30	66.7
1/16/97	701336	41	41	86.5
2/13/97	702332	41	37	81.5
3/19/97	703344	37	23	63.0
4/17/97	704355	42	37	83.8
5/15/97	705347	33	30	66.4
6/18/97	706353	39	55	96.6
7/23/97	707360	37	36	75.2
8/13/97	708339	39	30	71.5
9/15/97	709332	42	34	78.4
10/15/97	710358	48	29	79.8
11/19/97	711335	41	34	77.5
12/16/97	712318	40	47	87
1/15/98	801334	33	25	60.6
2/11/98	802336	36	27	65.7
3/11/98	803324	30	31	63.4
4/8/98	804337	21	18	41
5/20/98	805379	18	12	31.1
6/16/98	806353	21	15	37.3
7/1/98	807300	18	16	35.2
8/13/98	808040	14	13	28.6
9/16/98	809042	6.5	4.4	27.9
10/7/98	810021	5	7.3	13.9
11/17/98	811049	22	17	39.7
12/9/98	812045	25	19	45
1/7/99	901010	22	15	38.2
2/4/99	902014	23	14	38.2
3/3/99	903010	20	16	37.1
4/21/99	904091	20	15	36.8
5/14/99	905048	18	14	32
6/9/99	906040	18	14	32.8
7/6/99	907015	22	18	40
8/5/99	908021	22	17	39
9/2/99 .	909005	17	12	29
10/11/99	910036	19	13	32
11/10/99	911035	18	13	31
12/8/99	912027	16	12	28.3
1/12/00	001021	2.7	1.5	4.2
2/10/00	002042	10	0.2	20
3/7/00	003023	13	10	23.7
4/12/00	004041	2.5	2	4.5
5/3/00	005014	1.9	1.3	3.2
6/8/00	006035	1.8	1.2	3
7/24/00	007056	1.6	0.8	2.4
8/16/00	008062	2.1	0.9	3
9/19/00	009101	2.4	0.7	3.1
10/4/00	010016	2.5	2.1	4.6
11/3/00	011012	1.7	1.3	3.9
12/5/00	012017	1.3	1.0	3.8
1/17/01	101052	1.2	1.0	2.7
2/15/01	102052	1.1	1.0	2.1
3/1/01	103007	1.2	1.0	2.7
4/5/01	104018	1.3	0.9	2.2
NS	-	-	-	2.2
10/4/01	110023	8	< 0.2	14.5
	. 10025		- 0.2	1
11/5/01	111024	8.8	5.8	14.6

Table 5
Influent Concentrations at EW-2

Date	Laboratory Report No.	PCE (ppb)	DCE (ppb)	Total VOCs (ppb)
1/12/00	001021	2.7	4.3	15.4
2/10/00	002042	1.5	2.7	11.6
3/7/00	003023	2.7	4.3	14.6
4/12/00	004041	0.9	4.2	9.4
5/3/00	005014	1.9	4.4	14.6
6/8/00	006035	1	3.9	13.4
NS	-	-	-	-
NS	-	-	-	_
9/19/00	009101	0.9	2.2	11.5
10/4/00	010016	1.9	4.1	14.2
11/3/00	011012	1.1	3	11.7
12/5/00	012017	3.5	2.9	17.4
1/17/01	101052	3.5	3.4	13.8
2/15/01	102052	0.9	2.2	9.5
3/1/01	103007	2.1	2.9	12.1
4/5/01	104018	4.5	3.6	15
5/1/01	105004	4.4	3.3	15.1
NS	-	-	-	-
9/18/01	109064	2.7	NS	10.6
10/4/01	110023	2.1	2.1	22.3
11/5/01	111024	3	2.9	10.9
12/12/01	112047	3.7	2.2	9.9

Table 6
Influent Concentrations at EW-3

Date	Laboratory Report No.	PCE (ppb)	DCE (ppb)	Total VOCs (ppb)
11/10/99	911035	5.1	2.9	8.6
12/8/99	912027	12	6.3	18.9
1/12/00	001021	13	5.7	19.6
2/10/00	002042	12	7.7	20.9
3/7/00	003023	12	7.3	20.4
4/12/00	004041	11	8	19.6
5/3/00	005014	12	8	21.2
6/8/00	006035	11	7.9	20.5
7/24/00	007056	12	6.3	19.8
8/16/00	008062	13	9.1	24.2
NS	-	-	_	-
NS	-	_	_	-
NS	-	-	_	_
NS	-	_	-	-
NS	-	-	<del>-</del>	~
NS	-	-	-	-
NS	-	_	-	~
NS	-	-	-	-
NS	-	-	-	-
6/1/01	106007	25	11	40.7
9/18/01	109064	14	NS	20
10/4/01	110023	15	8.5	38.7
11/5/01	111024	16	9.1	29.7
12/12/01	112047	13	7.2	22.7

Table 7
Influent Concentrations at EW-4

Date	Laboratory Report No.	PCE (ppb)	DCE (ppb)	Total VOCs (ppb)
11/5/01	111024	15	10	30.6
12/12/01	112047	11	6.2	20.4

## IV. Operational Activities

During May and June 2001, construction activities were initiated for the drilling of two new extraction wells to replace PSMW-16 and PSMW-24. The new extraction wells are designated EW-4 and EW-5. EW-4 is located approximately 25 feet northwest of PSMW-16. EW-5 is located approximately 25 feet south of PSMW-24. EW-4 and EW-5 were brought on line in September 2001.

Prior to drilling the replacement extraction wells, PSMW-16 and PSMW-24 were plugged and abandoned in accordance with the appropriate regulations.

In July 2001, construction activities began on the installation of a pilot-scale treatment system that uses in-series GAC units as an alternative to the existing air stripper/acid injection system.

The pilot-scale treatment system was put into limited service in September 2001, and will remain in operation for several months so that the treatment effectiveness of the new system can be thoroughly evaluated. Effluent samples will continue to be collected monthly from various points in the pilot-scale treatment train. If laboratory analytical results indicate that the required treatment effectiveness can be achieved, the GTS will be permanently modified. This will involve removal of the two air strippers and acid injection system.

In order to install the pilot-scale system, the east treatment train was partially dismantled and is no longer operational. The west treatment train will remain off line for the duration of the pilot-scale treatment system evaluation.

The pilot-scale system operated consistently throughout the fourth quarter.

### V. Influent and Effluent Flow Volumes

Flow totalizing meters are present on each influent well line and on the effluent flow line. Table 8 below details flow volumes from each influent well and the effluent line. Differences between total influent and total effluent volumes may be attributed to water loss (evaporation) out the stack in the air stripper system and to differences, inaccuracies, and operational problems with the flow meters.

During October 2001, the existing Hayes flow meter on the EW-4 influent line was replaced with a new Sea Metrics flow meter. The Sea Metrics flow meter was put in to service with an initial reading of 0 gallons.

The Fisher Porter flow meter on the golf course effluent line is limited to recording a maximum of 9,999,999 gallons. During October 2001, the meter exceeded this maximum reading and automatically restarted recording at 0 gallons. In the October entry, 10,000,000 gallons was added to the ending actual meter reading to indicate the cumulative volume meter reading for that month. The November Start Reading entry indicates the actual meter reading.

Table 8
Influent and Effluent Flow Volumes

Source	Meter Number	Start Reading	End Reading	Volume (Gallons)
Flow Volumes for October	2001:		· · · · · · · · · · · · · · · · · · ·	<u> </u>
Influent (VEW)	Badger Meter No. 94976130	6,905,934	7,036,326	130,392
Influent (EW-4)	Hayes Meter No. 29408700	7,246,817	7,264,800	17,983
Influent (EW-4)	Sea Metrics Meter No. 09010066	0	334,027	334,027
Influent (EW-1)	Hayes Meter No. 29408732	8,252,897	8,337,828	84,931
Influent (EW-2)	Badger Meter No. 15796506	3,398,366	3,564,364	165,998
Influent (EW-3)	Badger Meter No. 15796517	4,091,223	4,582,233	491,010
Influent (EW-5)	Fisher Porter Meter	40,080	238,380	198,300
` ′	No. 960307112		100,200	.,0,000
Influent (PSMW-25)	Fisher Porter Meter No. 960307112	5,080	29,740	24,660
Influent (PSMW-26)	Fisher Porter Meter No. 960307112	3,480	20,320	16,840
Monitor Well Sample Purge				475
Effluent (to Golf Course)	Fisher Porter Meter No. 960307112	8,644,853	10,120,921	1,476,068
Flow Volumes November 2	001:			
Influent (VEW)	Badger Meter No. 94976130	7,036,326	7,233,992	197,666
Influent (EW-4)	Sea Metrics Meter No. 09010066	334,027	1,070,773	736,746
Influent (EW-1)	Hayes Meter No. 29408732	8,337,828	8,466,072	128,244
Influent (EW-2)	Badger Meter No. 15796506	3,564,364	3,817,011	252,647
Influent (EW-3)	Badger Meter No. 15796517	4,582,233	5,312,856	730,623
Influent (EW-5)	Fisher Porter Meter No. 960307112	238,380	513,510	275,130
Influent (PSMW-25)	Fisher Porter Meter No. 960307112	29,740	62,420	32,680
Influent (PSMW-26)	Fisher Porter Meter No. 960307112	20,320	42,730	22,410
Monitor Well Sample Purge				30
Effluent (to Golf Course)	Fisher Porter Meter No. 960307112	120,921	2,497,747	2,376,826
Flow Volumes for December				
Influent (VEW)	Badger Meter No. 94976130	7,233,992	7,442,576	208,584
Influent (EW-4)	Hayes Meter No. 29408700	1,070,773	1,845,771	774,998
Influent (EW-1)	Hayes Meter No. 29408732	8,466,072	8,518,754	52,682
Influent (EW-2)	Badger Meter No. 15796506	3,817,011	4,079,101	262,090
Influent (EW-3)	Badger Meter No. 15796517	5,312,856	6,074,861	762,005
Influent (EW-5)	Fisher Porter Meter No. 960307112	513,510	835,280	321,770
Influent (PSMW-25)	Fisher Porter Meter No. 960307112	62,420	101,070	38,650
Influent (PSMW-26)	Fisher Porter Meter No. 960307112	42,730	68,430	25,700
Monitor Well Sample Purge				
Effluent (to Golf Course)	Fisher Porter Meter No.960307112	2,497,747	4,949,999	2,452,252
Quarterly Total for Influent Sample Purge)	(VEW+EW-4+EW-1+EW-2+EW-3+EW-	5+PSMW-25+PSMW-26+	Monitor Well	6,287,271
Quarterly Total for Effluent:				6,305,146
Annual Totals				
Annual Cumulative Influent				12,150,147
Annual Cumulative Effluent	t Total for 2001:			12,104,442

## VI. Laboratory Analysis

# A. Influent and Effluent Sampling for Chlorinated VOCs (8021 Analysis)

Installation of the pilot-scale treatment system required modifications to the existing treatment system configuration. In addition to the extraction wells, GTS influent, surge tank discharge, and UNM reservoirs, samples are now collected from the two first stage GAC units and the final GAC unit. This sampling scheme may change as modifications are made to the pilot-scale treatment system.

Chlorinated VOC analysis of the effluent from the GAC units is shown in Table 9 below. The methylene chloride detection in the October 2001 final stage GAC effluent may be attributable to a laboratory error since this compound was not detected in either of the first stage GAC units.

For review of the GTS past performance, chlorinated VOC analysis of GTS influent and effluent (after GAC units) is shown graphically in Figures 8 and 9.

Influent and effluent sampling results indicate that the GTS has consistently removed chlorinated VOC contaminants in the 20 to 200 ppb range to levels below laboratory detection limits in the effluent sent to the golf course.

Laboratory analytical data reports are contained in Appendix A.

Table 9
Influent and Effluent VOC Concentrations

Sampling Date: 10/4/01				
VOC Compound	Influent (ppb)	Effluent After West First Stage GAC Unit (ppb)	Effluent After East First Stage GAC Unit (ppb)	Effluent After Final Stage GAC Unit (ppb)
1,1-Dichloroethane	2.3	1.4	< 0.3	< 0.3
1,1-Dichloroethene	4.1	1.9	< 0.4	< 0.4
Tetrachloroethene	7.1	1.8	< 0.2	< 0.2
Methylene Chloride	< 2.0	< 2.0	< 2.0	2.6
TOTAL VOC'S	13.5	5.1	BDL	2.6

Sampling Date: 11/5/01				
VOC Compound	Influent (ppb)	Effluent After West First Stage GAC Unit (ppb)	Effluent After East First Stage GAC Unit (ppb)	Effluent After Final Stage GAC Unit (ppb)
1,1-Dichloroethane	2.7	2.8	1.2	< 0.3
1,1-Dichloroethene	6.2	5	1	< 0.4
Tetrachloroethene	11	5.7	1	< 0.2
TOTAL VOC'S	19.9	14.8	3.2	BDL

Sampling Date: 12/12/01				
VOC Compound	Influent (ppb)	Effluent After West First Stage GAC Unit (ppb)	Effluent After East First Stage GAC Unit (ppb)	Effluent After Final Stage GAC Unit (ppb)
Chloroform	< 0.5	< 0.5	0.7	< 0.5
1,1-Dichloroethane	2.4	2	2	0.7
1,1-Dichloroethene	4.9	4.7	2.6	< 0.4
Tetrachloroethene	8.8	5.2	1.6	< 0.2
Trichloroethene	1.9	< 0.3	< 0.3	< 0.3
TOTAL VOC'S	18	11.9	6.9	0.7

Figure 8 Total VOCs GTS Influent vs. Effluent - East

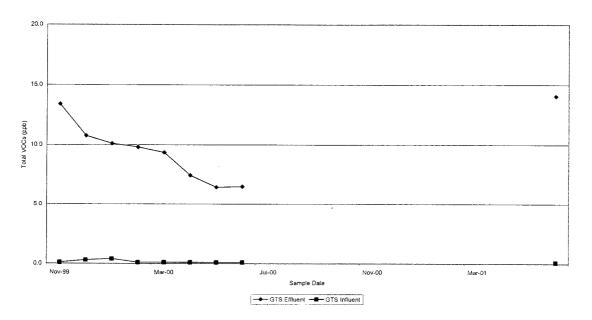
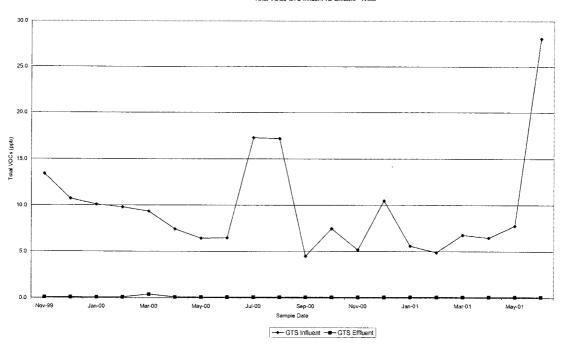


Figure 9 Total VOCs GTS Influent vs. Effluent - West



## B. Effluent Sulfate Analysis and pH Monitoring

The June 1997 amendment to DP-1006 requires monthly sulfate analysis and daily pH monitoring of the GTS effluent. Table 10 presents the results of the fourth quarter sulfate analysis using EPA Method 375.4.

The monthly minimum, maximum, and average pH readings for this quarter are shown in Table 11.

Table 10 GTS Effluent Sulfate Concentrations

Date	Lab Report Number	Sulfate (mg/l)
10/18/01	110023	520
11/5/01	111024	510
12/12/01	112047	400

Table 11 Monthly pH Readings

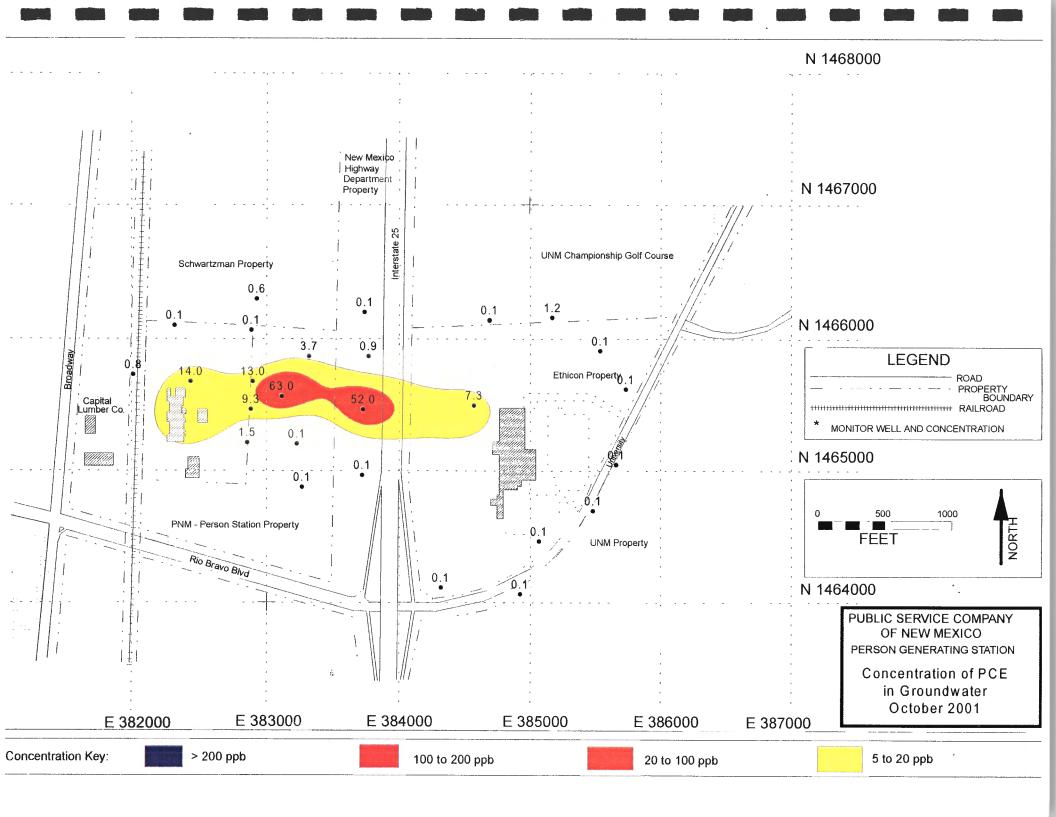
Date	Minimum pH	Maximum pH	Average pH
10/01	7.7	8.1	7.8
11/01	7.8	8.1	7.9
12/01	7.8	10.1	8.0

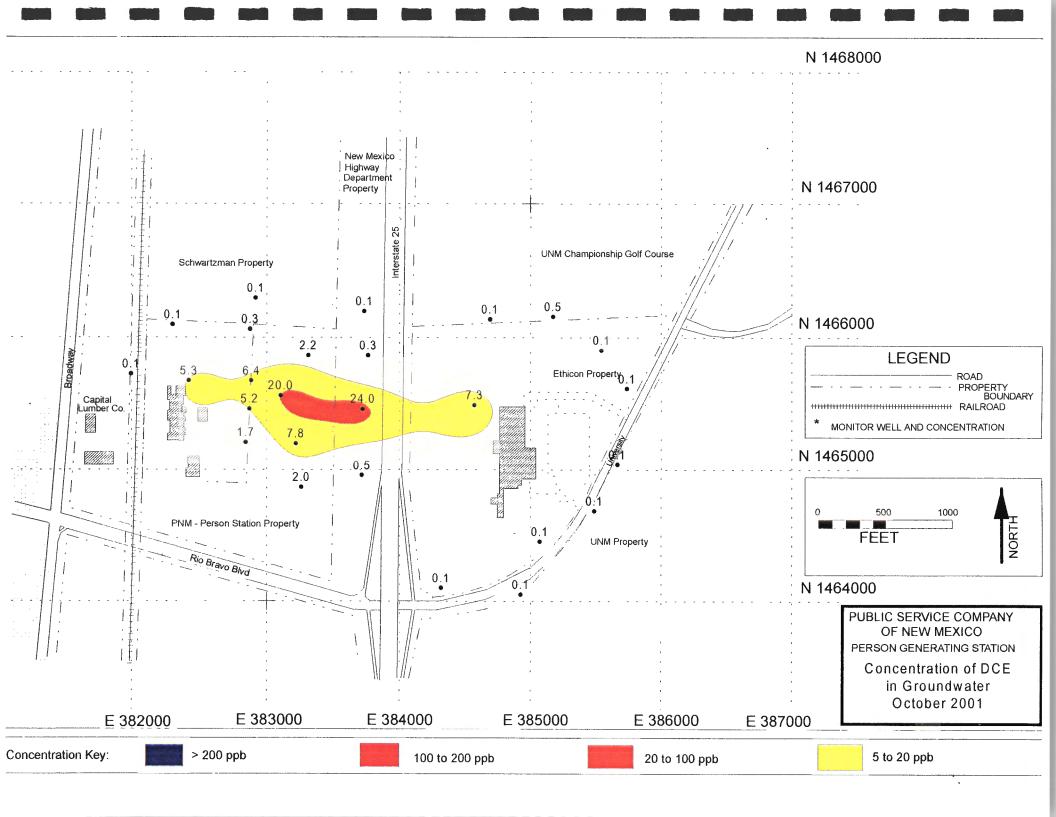
## C. Golf Course Pond Sampling

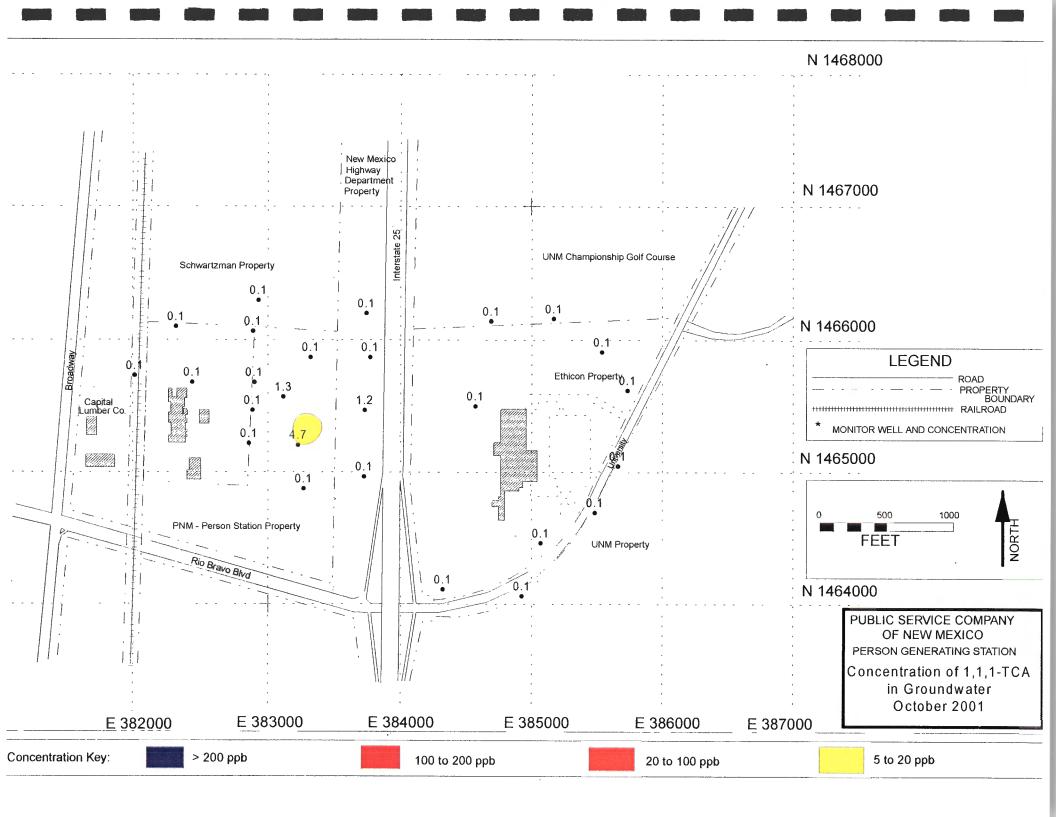
DP-1006 requires monthly sampling of the east and west ponds for 8021 (Halo) analysis during each month of operation. During the fourth quarter, the ponds were sampled three times pursuant to this requirement. No EPA Method 8021 (Halo) parameters were detected in the samples. Copies of the laboratory reports are contained in Appendix A.

## VII. Groundwater Sampling

Under the RCRA permit, a network of groundwater monitoring wells are sampled on a twice per year schedule (normally in the spring and fall). Once sampling is complete and analytical results have been analyzed, contour maps showing the areal extent and concentration of the contaminants in the groundwater are prepared. Contour maps for PCE, DCE, and TCA for the 2001 fall sampling event are shown in Figures 10, 11, and 12, respectively.







Appendix A. Laboratory Reports



Pinnacle Lab ID number November 06, 2001 110023

PUBLIC SERVICE COMPANY ALVARADO SQUARE-ER16 ALBUQUERQUE, NM 87158

Project Name

PERSON STATION

Project Number REMEDIATION

Attention:

CHUCK ARATER

On 10/04/01 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 HALO 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.

H Michell

General Manager

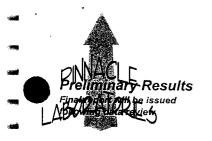
MR: jt

Enclosure





LIENT	: PUBLIC SERVICE COMPANY	PINNACLE ID	: 110023
ROJECT#	: REMEDIATION	DATE RECEIVED	: 10/04/01
ROJECT NAME	: PERSON STATION	REPORT DATE	: 11/06/01
INNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
<b>≈1</b> 0023 - 01	GTS-INFLUENT	AQUEOUS	10/04/01
10023 - 02	GTS-GAC EFFLUENT EAST	AQUEOUS	10/04/01
10023 - 03	GTS-GAC EFFLUENT WEST	AQUEOUS	10/04/01
10023 - 04	UNM EAST RESERVOIR	AQUEOUS	10/04/01
10023 - 05	UNM WEST RESERVOIR	AQUEOUS	10/04/01
<b>1</b> 0023 - 06	CARBON FILTER FINAL	AQUEOUS	10/04/01
10023 - 07	TRIP BLANK	AQUEOUS	10/04/01
<b>1</b> 0023 - 08	VEW INFLUENT	AQUEOUS	10/04/01
10023 - 09	EW-1 INFLUENT	AQUEOUS	10/04/01
10023 - 10	PSMW-24,25,26 INFLUENT	AQUEOUS	10/04/01
10023 - 11	EW-3	AQUEOUS	10/04/01
10 - 12	EW-2	AQUEOUS	10/04/01
- 13	SURGE TANK DISCHARGE	AQUEOUS	10/04/01



### GAS CHROMATOGRAPHY RESULTS

: 8021 HALO

LIENT

: PUBLIC SERVICE COMPANY

ROJECT#

: REMEDIATION

ROJECT NAME

: PERSON STATION

 DATE	DIL.	

PINNACLE I.D.: 110023

AMPLE			DATE	DATE	DATE	DIL.
<u>5. #</u>	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
1	GTS-INFLUENT	AQUEOUS	10/04/01	NA	10/12/01	1
5	GTS-GAC EFFLUENT EAST	AQUEOUS	10/04/01	NA	10/12/01	1
3	GTS-GAC EFFLUENT WEST	AQUEOUS	10/04/01	NA	10/12/01	1
					GTS-GAC	GTS CAC

****ARAMETER	DET. LIMIT	LINITO		GTS-GAC EFFLUENT	GTS-GAC EFFLUENT
ROMODICHLOROMETHANE	0.2	UNITS UG/L	GTS-INFLUENT < 0.2	< 0.2	WEST
ROMOFORM	0.5	UG/L	< 0.5	< 0.5	< 0.2
ROMOMETHANE	1.0	UG/L	< 1.0	< 1.0	< 0.5 < 1.0
ARBON TETRACHLORIDE	0.2	UG/L	< 0.2	< 0.2	< 0.2
HLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
HLOROETHANE	0.5	UG/L	< 0.5	< 0.5 < 0.5	< 0.5
HLOROFORM	0.5	UG/L	< 0.5	< 0.5 < 0.5	< 0.5 < 0.5
HLOROMETHANE	1.0	UG/L	< 1.0	< 1.0	
BROMOCHLOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 1.0
2-DIBROMOETHANE (EDB)	0.2	UG/L	< 0.2	< 0.2	< 0.2 < 0.2
2-HLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
3- HLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
4-DICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5 < 0.5
1-DICHLOROETHANE	0.3	UG/L	2.3	< 0.3	1.4
2-DICHLOROETHANE (EDC)	0.5	UG/L	< 0.5	< 0.5	
-1-DICHLOROETHENE	0.2	UG/L	4.1	< 0.3	< 0.5
s-1,2-DICHLOROETHENE	0.2	UG/L	< 0.2	< 0.2	1.9
ns-1,2-DICHLOROETHENE	1.0	UG/L	< 1.0		< 0.2
2-DICHLOROPROPANE	0.2	UG/L	< 0.2	< 1.0 < 0.2	< 1.0
s-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2		< 0.2
ans-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2 < 0.2	< 0.2	< 0.2
ETHYLENE CHLORIDE	2.0			< 0.2	< 0.2
1,2,2-TETRACHLOROETHANE	0.5	UG/L UG/L	< 2.0	< 2.0	< 2.0
ETRACHLOROETHENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,1-TRICHLOROETHANE	1.0		7.1	< 0.5	1.8
1,2-TRICHLOROETHANE		UG/L	< 1.0	< 1.0	< 1.0
**RICHLOROETHENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
RICHLOROFLUOROMETHANE	0.3	UG/L	< 0.3	< 0.3	< 0.3
	0.2	UG/L	< 0.2	< 0.2	< 0.2
NYL CHLORIDE	0.5	UG/L	< 0.5	< 0.5	< 0.5
JRROGATE:					
ROMOCHLOROMETHANE (%) JRROGATE LIMITS	(71 - 126)		88	104	87

EMIST NOTES:





#### GAS CHROMATOGRAPHY RESULTS

ST IENT

: 8021 HALO

LIENT ROJECT# : PUBLIC SERVICE COMPANY

ROJECT NAME

: REMEDIATION : PERSON STATION PINNACLE I.D.: 110023

AMPLE		<u> </u>	DATE	DATE	DATE	DIL.
# CLIENT I.D.		MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
UNM EAST RESERVOIR		AQUEOUS	10/04/01	NA	10/12/01	1
UNM WEST RESERVOIR		AQUEOUS	10/04/01	NA	10/12/01	1
CARBON FILTER FINAL		AQUEOUS	10/04/01	NA	10/12/01	1
ARAMETER	DET. LIMIT	UN	ITC	UNM EAST	UNM WEST	CARBON
ROMODICHLOROMETHANE	0.2	UC		RESERVOIR < 0.2	RESERVOIR < 0.2	FILTER FINAL
ROMOFORM	0.5		3/L	< 0.5		< 0.2
ROMOMETHANE	1.0	UG		< 1.0	< 0.5 < 1.0	< 0.5
ARBON TETRACHLORIDE	0.2	UG		< 0.2	< 0.2	< 1.0 < 0.2
	0.5	Ud		< 0.5	< 0.5	
LOROETHANE	0.5	UG		< 0.5	< 0.5	< 0.5
HLOROFORM	0.5	UG		< 0.5 < 0.5	< 0.5 < 0.5	< 0.5
LILOROMETHANE	1.0	UG		< 1.0	< 1.0	< 0.5
BROMOCHLOROMETHANE	0.2	UG		< 0.2		< 1.0
2-DIBROMOETHANE (EDB)	0.2	UG		< 0.2	< 0.2 < 0.2	< 0.2
2-DICHLOROBENZENE	0.5	UG		< 0.5		< 0.2
-B-D <u>IC</u> HLOROBENZENE	0.5	UG		< 0.5 < 0.5	< 0.5	< 0.5
LOROBENZENE	0.5	UG		< 0.5	< 0.5 < 0.5	< 0.5
1-DIGHLOROETHANE	0.3	UG		< 0.3	< 0.3	< 0.5
2-DICHLOROETHANE (EDC)	0.5	ŲG		< 0.5	< 0.5	< 0.3
-DICHLOROETHENE	0.2	UG		< 0.2	< 0.5	< 0.5
-1,2-DICHLOROETHENE	0.2	UG		< 0.2	< 0.2	< 0.2 < 0.2
ns-1,2-DICHLOROETHENE	1.0	UG		< 1.0	< 1.0	< 0.2
- DICHLOROPROPANE	0.2	UG		< 0.2	< 0.2	· -
-1,3-DICHLOROPROPENE	0.2	UG		< 0.2		< 0.2
ns-1,3-DICHLOROPROPENE	0.2	UG		< 0.2	< 0.2	< 0.2
ETHYLENE CHLORIDE	2.0	UG		< 2.0	< 0.2	< 0.2
,2,2-TETRACHLOROETHANE	0.5	UG			< 2.0	2.6
TRACHLOROETHENE	0.5	UG		< 0.5	< 0.5	< 0.5
1,1-TRICHLOROETHANE	1.0	UG		< 0.5	< 0.5	< 0.5
,2-TRICHLOROETHANE	0.2			< 1.0	< 1.0	< 1.0
ICHLOROETHENE	0.2	UG		< 0.2	< 0.2	< 0.2
ICHLOROFLUOROMETHANE	0.3	UG		< 0.3	< 0.3	< 0.3
NYL CHLORIDE		UG		< 0.2	< 0.2	< 0.2
	0.5	UG	/L	< 0.5	< 0.5	< 0.5
RROGATE:						
OMOCHLOROMETHANE (%)				00		
IRROGATE LIMITS	(74 400)			98	105	123
	(71 - 126)					

IEMIST NOTES:



#### GAS CHROMATOGRAPHY RESULTS

ST : 8021 HALO

LIENT : PUBLIC SERVICE COMPANY PINNACLE I.D.: 110023

ROJECT # : REMEDIATION ROJECT NAME : PERSON STATION

AMPLE	. r Erroon orari	011	DATE	DATE	DATE	- DII
.# CLIENT I.D.		MATRIX				DIL.
7 TRIP BLANK	······································	MATRIX AQUEOUS	10/04/01	EXTRACTED	ANALYZED	FACTOR
VEW INFLUENT		AQUEOUS	10/04/01	NA NA	10/15/01	1
EW-1 INFLUENT		AQUEOUS	10/04/01	NA NA	10/15/01	1
EVV-1 IIVI EOEIVI		AQUEOUS	10/04/01	NA	10/15/01	
ARAMETER	DET. LIMIT	UN	ITS	TRIP BLANK	VEW INFLUENT	INFLUENT
ROMODICHLOROMETHANE	0.2	U	G/L	< 0.2	< 0.2	< 0.2
ROMOFORM	0.5	U	3/L	< 0.5	< 0.5	< 0.5
ROMOMETHANE	1.0	U	G/L	< 1.0	< 1.0	< 1.0
ARBON TETRACHLORIDE	0.2	U	3/L	< 0.2	< 0.2	< 0.2
HLOROBENZENE	0.5	U	G/L	< 0.5	< 0.5	< 0.5
HLOROETHANE	0.5	U	G/L	< 0.5	< 0.5	< 0.5
HLOROFORM	0.5	U	G/L	< 0.5	< 0.5	< 0.5
HLOROMETHANE	1.0	U	3/L	< 1.0	< 1.0	< 1.0
BROMOCHLOROMETHANE	0.2		3/L	< 0.2	< 0.2	< 0.2
2-DIBROMOETHANE (EDB)	0.2	U	3/L	< 0.2	< 0.2	< 0.2
2-DICHLOROBENZENE	0.5		3/L	< 0.5	< 0.5	< 0.5
3-PHALOROBENZENE	0.5		G/L	< 0.5	< 0.5	< 0.5
1LOROBENZENE	0.5	U	3/L	< 0.5	< 0.5	< 0.5
1-DICHLOROETHANE	0.3	UC	3/L	< 0.3	3.3	3.2
2-DICHLOROETHANE (EDC)	0.5		3/L	< 0.5	< 0.5	< 0.5
1-DICHLOROETHENE	0.2	UC	3/L	< 0.2	0.3	0.9
S-1,2-DICHLOROETHENE	0.2	UC	G/L	< 0.2	< 0.2	< 0.2
ins-1,2-DICHLOROETHENE	1.0	UC	G/L	< 1.0	< 1.0	< 1.0
2-DICHLOROPROPANE	0.2	UC	G/L	< 0.2	< 0.2	< 0.2
;-1,3-DICHLOROPROPENE	0.2	UC	G/L	< 0.2	< 0.2	< 0.2
ins-1,3-DICHLOROPROPENE	0.2	UC	3/L '	< 0.2	< 0.2	< 0.2
ETHYLENE CHLORIDE	2.0	UC	3/L	< 2.0	7.9 - E	2.9 - E
1,2,2-TETRACHLOROETHANE	0.5	UC	3/L	< 0.5	< 0.5	< 0.5
TRACHLOROETHENE	0.5		3/L	< 0.5	< 0.5	1.8
1,1-TRICHLOROETHANE	1.0		3/L	< 1.0	< 1.0	< 1.0
_1,2-TRICHLOROETHANE	0.2		3/L	< 0.2	< 0.2	< 0.2
RICHLOROETHENE	0.3		3/L	< 0.3	< 0.3	< 0.3
■ ICHLOROFLUOROMETHANE	0.2		3/L	< 0.2	< 0.2	< 0.2
NYL CHLORIDE	0.5		∋/L	< 0.5	< 0.5	< 0.5
						•
JRROGATE:						
ROMOCHLOROMETHANE (%)				113	112	109
JRROGATE LIMITS	(71 - 126)				· ·-	

### HEMIST NOTES:

<sup>=</sup> This compound is reported as an estimated value due to CCV failure for dichloromethane.



### GAS CHROMATOGRAPHY RESULTS

EST

: 8021 HALO

LIENT

: PUBLIC SERVICE COMPANY

ROJECT #
ROJECT NAME

: REMEDIATION : PERSON STATION

PINNACLE I.D.: 110023

AMPLE			DATE	DATE	DATE	5
<u>**9. #</u>	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	DATE ANALYZED	DIL. FACTOR
.‱an1	PSMW-24,25,26 INFLUENT	AQUEOUS	10/04/01	NA	10/15/01	1
~~~·	EW-3	AQUEOUS	10/04/01	NA	10/15/01	1
<u>.</u>	EW-2	AQUEOUS	10/04/01	NA	10/15/01	1

ARAMETER	DET. LIMIT	UNITS	PSMW-24,2 INFLUENT	5,26 EW-3	E141.0	
ROMODICHLOROMETHANE	0.2	UG/L	< 0.2	< 0.2	EW-2	
ROMOFORM	0.5	UG/L	< 0.5	< 0.5	< 0.2	
ROMOMETHANE	1.0	UG/L	< 1.0	< 1.0	< 0.5	
ARBON TETRACHLORIDE	0.2	UG/L	< 0.2	< 0.2	< 1.0	
ILOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.2	
HLOROETHANE	0.5	UG/L	< 0.5	< 0.5	< 0.5	
HLOROFORM	0.5	UG/L	< 0.5	< 0.5	< 0.5	
HLOROMETHANE	1.0	UG/L	< 1.0		< 0.5	
BROMOCHLOROMETHANE	0.2	UG/L	< 0.2	< 1.0	< 1.0	
2-DIBROMOETHANE (EDB)	0.2	UG/L	< 0.2	< 0.2	< 0.2	
-2-DICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.2	< 0.2	
HLOROBENZENE	0.5	UG/L		< 0.5	< 0.5	
4-DICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5	
_1-DICHLOROETHANE	0.3	UG/L	< 0.5	< 0.5	< 0.5	
2-DICHLOROETHANE (EDC)	0.5	UG/L	< 0.3	3.2	5.1	
-DICHLOROETHENE	0.2	UG/L	< 0.5	< 0.5	< 0.5	
>-1,2-DICHLOROETHENE	0.2	UG/L	< 0.2	8.5	2.1	
ns-1,2-DICHLOROETHENE	1.0	UG/L	< 0.2	< 0.2	< 0.2	
2-DICHLOROPROPANE	0.2	UG/L	< 1.0	< 1.0	< 1.0	
-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2	< 0.2	< 0.2	
ins-1,3-DICHLOROPROPENE	0.2		< 0.2	< 0.2	< 0.2	
ETHYLENE CHLORIDE	2.0	UG/L	< 0.2	< 0.2	< 0.2	
1,2,2-TETRACHLOROETHANE	0.5	UG/L	5.3 - E	12 - E	12 - E	
TRACHLOROETHENE	0.5	UG/L	< 0.5	< 0.5	< 0.5	
I,1-TRICHLOROETHANE	1.0	UG/L	8.0	15	2.1	
1,2-TRICHLOROETHANE		UG/L	< 1.0	< 1.0	1.0	
ICHLOROETHENE	0.2	UG/L	< 0.2	< 0.2	< 0.2	
NCHLOROFLUOROMETHANE	0.3	UG/L	1.2	< 0.3	< 0.3	
NYL CHLORIDE	0.2	UG/L	< 0.2	< 0.2	< 0.2	••
THE OTHER PROPERTY.	0.5	UG/L	< 0.5	< 0.5	< 0.5	
RROGATE:						
OMOCHLOROMETHANE (%)			108	100	405	
RROGATE LIMITS	(71 - 126)		100	109	105	

### IEMIST NOTES:

This compound is reported as an estimated value due to CCV failure for dichloromethane.



# GAS CHROMATOGRAPHY RESULTS REAGENT BLANK

ST -ANK I.D.

: EPA 8021

: 101201

-IENT

: PUBLIC SERVICE COMPANY

ROJECT# ROJECT NAME

PINNACLE I.D. DATE EXTRACTED

: 110023

: REMEDIATION

DATE ANALYZED

: N/A : 10/12/01

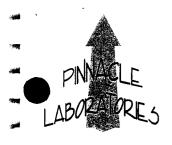
: PERSON STATION

SAMPLE MATRIX

: AQUEOUS

ARAMETER	UNITS		
<b>₩</b> OMODICHLOROMETHANE	UG/L	<0.2	
ROMOFORM	UG/L	<0.2	
*OMOMETHANE	UG/L	<0.5 <1.0	
ARBON TETRACHLORIDE	UG/L	<0.2	
HLOROBENZENE	UG/L	<0.2	
HLOROETHANE	UG/L	<0.5	
<b>∠</b> ILOROFORM	UG/L	<0.5	
HLOROMETHANE	UG/L	<1.0	
**BROMOCHLOROMETHANE	UG/L	<0.2	
2-DIBROMOETHANE (EDB)	UG/L	<0.2	
2-DICHLOROBENZENE	UG/L	<0.5	
	UG/L	<0.5	
ILOROBENZENE	UG/L	<0.5	
1-DICHLOROETHANE	UG/L	<0.3	
-2-DICHLOROETHANE (EDC)	UG/L	<0.5	
-DICHLOROETHENE	UG/L	<0.2	
3-1,2-DICHLOROETHENE	UG/L	<0.2	
■ns-1,2-DICHLOROETHENE	UG/L	<1.0	
2-DICHLOROPROPANE	UG/L	<0.2	
-1,3-DICHLOROPROPENE	UG/L	<0.2	
ns-1,3-DICHLOROPROPENE	UG/L	<0.2	
ETHYLENE CHLORIDE	UG/L	<2.0	
,2,2-TETRACHLOROETHANE	UG/L	<0.5	
TRACHLOROETHENE	UG/L	<0.5	
,1-TRICHLOROETHANE	UG/L	<1.0	
,2-TRICHLOROETHANE	UG/L	<0.2	
NCHLOROETHENE	UG/L	<0.3	•
.ICHLOROFLUOROMETHANE	UG/L	<0.2	
NYL CHLORIDE	UG/L	<0.5	
■RROGATE:			
OMOCHLOROMETHANE (%) RROGATE LIMITS (71 - 126)		108	

EMIST NOTES:



# GAS CHROMATOGRAPHY RESULTS REAGENT BLANK

**S**T ANK I.D. : EPA 8021

: 101501

-IENT ROJECT# : PUBLIC SERVICE COMPANY

**\***ROJECT NAME

: REMEDIATION

PINNACLE I.D. DATE EXTRACTED : 110023

DATE ANALYZED

: N/A : 10/15/01

: PERSON STATION

SAMPLE MATRIX

: AQUEOUS

RAMETER	UNITS		<del></del>
→ ROMODICHLOROMETHANE	UG/L	<0.2	
ROMOFORM	UG/L	<0.5	
ROMOMETHANE	UG/L	<1.0	
■ARBON TETRACHLORIDE	UG/L	<0.2	
HLOROBENZENE	UG/L	<0.5	
**HLOROETHANE	UG/L	<0.5	
<b>a</b> dLOROFORM	UG/L	<0.5	
HLOROMETHANE	UG/L	<1.0	
*BROMOCHLOROMETHANE	UG/L	<0.2	
2-DIBROMOETHANE (EDB)	UG/L	<0.2	
	UG/L	<0.5	
-DICHLOROBENZENE	UG/L	<0.5	
1-HLOROBENZENE	UG/L	<0.5	
1-DICHLOROETHANE	UG/L	<0.3	
2-DICHLOROETHANE (EDC)	UG/L	<0.5	
I-DICHLOROETHENE	UG/L	<0.2	
-1,2-DICHLOROETHENE	UG/L	<0.2	
_ns-1,2-DICHLOROETHENE	UG/L	<1.0	
2-DICHLOROPROPANE	UG/L	<0.2	
-1,3-DICHLOROPROPENE	UG/L	<0.2	
ns-1,3-DICHLOROPROPENE	UG/L	<0.2	
ETHYLENE CHLORIDE	UG/L	<2.0	
,2,2-TETRACHLOROETHANE	UG/L	<0.5	
TRACHLOROETHENE	UG/L	<0.5	
,1-TRICHLOROETHANE	UG/L	<1.0	
,2-TRICHLOROETHANE	UG/L	<0.2	
NCHLOROETHENE	UG/L	<0.3	r
**ICHLOROFLUOROMETHANE	UG/L	<0.2	
NYL CHLORIDE	UG/L	<0.5	
■RROGATE:			
'OMOCHLOROMETHANE (%)  ■RROGATE LIMITS (71 - 126)		114	

MEMIST NOTES:



# GAS CHROMATOGRAPHY - QUALITY CONTROL MSMSD

EST

: EPA 8021 MODIFIED

ISMSD#

: 110023-12

LIENT ROJECT# : PUBLIC SERVICE COMPANY

: 110023

. . : F

: REMEDIATION

DATE EXTRACTED DATE ANALYZED

PINNACLE I.D.

: N/A : 11/16/01

ROJECT NAME

: PERSON STATION

SAMPLE MATRIX

: AQUEOUS

UNITS

: UG/L

								~ ~	
	SAMPLE	CONC	SPIKED	%	DUP	DUP		REC	RPD
ARAMETER	RESULT	SPIKE	SAMPLE	REC	SPIKE	% REC	RPD	LIMITS	LIMITS
HLOROBENZENE	<0.5	10.0	10.4	104	11.0	110	6	(87 - 124)	20
1-DICHLOROETHENE	2.1	10.0	10.9	88	10.6	85	3	(80 - 120)	20
**RICHLOROETHENE	<0.3	10.0	10.7	107	11.6	116	8	(89 - 127)	20

HEMIST NOTES:

•

(Spike Sample Result - Sample Result)

Recovery =

-----X 100

Spike Concentration

(Sample Result - Duplicate Result)

→ D (Relative Percent Difference) = ----- X 100

Average Result



LOG NO: C1-10141 Received: 05 OCT 01 Reported: 18 OCT 01

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

Project: 110023, PNM-PERSON STATION

Sampled By: Client

Code: 100511018

REPORT OF RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE TIME	/ SAMPLED
10141-1	SURGE TANK DISCHARGE/110023-13	10-04	-01/10:32
PARAMETER		10141-1	
Sulfate as Dilution Analysis: Batch ID Analyst	<del>-</del>	520 20 10.15.01 SEW133 BE	



LOG NO: C1-10141 Received: 05 OCT 01 Reported: 18 OCT 01

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

Project: 110023, PNM-PERSON STATION

Sampled By: Client

Code: 100511018 Page 2

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC RE	PORT FOR LIQUID	SAMPLES		
10141-2 10141-3 10141-4 10141-5	Method Blank Lab Control Standard % Rec Matrix Spike % Recovery Matrix Spike Duplicate % R	-			
PARAMETER		10141-2	10141-3	10141-4	10141-5
Dilution Analysis Batch ID		<5.0 1 10.15.01 SEW133	92 %   SEW133	129 %   SEW133	129 %  SEW133
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.

See the Project Sample Inspection Form (PSIF) to determine if a sample was received that did not meet EPA requirements for sample collection, preservation, or holding time.

Lance Larson, Project Manager

Final Page Of Report



# **Data Qualifiers for Final Report**

The analyte was detected in the associated method blank (sample itself is flagged even though sample is ND). 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.

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).

Sample results were corrected due to contaminants in Fractionation Blank

Diluted out (surrogate or spike due to sample dilution)

Compound concentration exceeds the upper calibration range of the instrument.

The reported value is < STL Pensacola RL and ≥ the STL Pensacola MDL; therefore, the quantitation is estimation. 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",

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"

Sample and duplicate (or MS and MSD) RPD is above control limit.

The analyte was positively identified, the quantitation may be an estimation

(For positive results)Temperature limits exceeded (≤2°C or ≥ 6°C), non-reportable for NDPES compliance monitoring. (For positive results) LCS or Surrogate %R is > upper control limit (UCL), results may be biased high

Matrix spike and post spike recoveries are outside control limits. See out of Control Events/Corrective Action Form. (For positive results) LCS or Surrogate %R is < lower control limit (LCL), results may be biased low

A matrix effect was present (¹sample, MS or MSD was analyzed twice to confirm surrogate/spike failure, ²sample and/or MS/MSD chromatogram(s) had interfering peaks, ³sample result was > 4 X spike added, ⁴metals serial dilution was performed, or <sup>5</sup>metals post spike is < 40% R)

The MS and/or MSD %R or RPD was outside upper or lower control limits; not necessarily due to matrix effect. Not Calculable; Sample spiked is > 4X spike concentration (may also use this flag in place of negative numbers) Sample and duplicate results are "out of control". The sample is nonhomogeneous.

Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD) The analytical (post digestion) spike is reported due to the percent recovery being outside limits on the matrix (pre-

digestion) spike.

The quantitation may be an estimation.

(For nondetects) Temperature limits exceeded (≤2°C or ≥ 6°C); non-reportable for NDPES compliance monitoring Improper preservation, no preservative present or insufficient amounts of preservative in sample upon receipt, non-reportable for NDPES compliance monitoring

Improper preservation, incorrect preservative present in sample upon receipt, non-reportable for NPDES compliance

Holding time exceeded, non-reportable for NDPES compliance monitoring.

Sample collection requirements not met, see case narrative.

LCS or surrogate %R is < LCL <u>and</u> analyte is not detected <u>or</u> surrogate %R is < 10% for detects/nondetects.

Internal standard area outside -50% to +100% of calibration verification standard.

Initial calibration or any calibration verification exceeds acceptance criteria.

Not filtered and preserved at time of collection.

Headspace >1/4" in diameter in volatile vials, non-reportable for NPDES compliance monitoring

Samples were filtered and preserved within 4 hours of collection.

Analysis performed outside the 12-hour tune or not within tune criteria.

The Method of Standard Additions (MSA) has been performed on this sample. Incorrect sample amount was submitted to the laboratory for analysis

This method is not designed for solids and the results may not be accepted by any regulator for such purposes.

Second-column or detector confirmation exceeded the SW-846 criteria of 40% RPD for this compound.

The compound is not within the initial calibration curve. It is searched for qualitatively or as a Tentatively Identified

The analyte was analyzed for but not detected (at or above the RL or the MDL, whichever is entered next to the "U" value. Value for result will never be below the MDL)

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 The compound has been quantitated against a one point calibration.

Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)

Revised: 06/19/01

B<sub>2</sub>

**B**3

**B4** 

D

Ε

G

H1

H2

J6

J8 .19

M1

M2

N/C NH

R1

R2

R5

R6

R7

R8

R9

R10

R11

R12

S1

S<sub>2</sub>

TIC

(a)

S3 (Flashpoint)

(Metals & Wet Chem)

NoMS

R (description)

J (description)

# STL PENSACOLA State Certifications

abama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL), expires 06/30/02 Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater), expires 01/12/02 Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental), expires 02/07/02 State of California, Department of Health Services, Laboratory ID No. 01128CA (Hazardous Waste and Wastewater), expires 03/31/02 State of Connecticut, Department of Health Services, Connecticut Lab Approval No. PH-0697 (D W, H W and Wastewater), expires 09/30/01 Delaware Health & Social Services, Division of Public Health, Laboratory ID No. FL094 (Drinking Water by Reciprocity with FL) Extension granted Florida DOH Laboratory ID No. E81010 (Drinking Water, Hazardous Waste and Wastewater), expires 06/30/02 Florida DEP/DOH CompQAP # 980156 Florida, Radioactive Materials License No. G0733-1, no expiration date assigned Foreign Soil Permit, Permit No. S-37599 Kansas Department of Health & Environment, Laboratory ID No. E10253 (Wastewater and Hazardous Waste), expires 10/31/01 Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Laboratory ID No. 90043 (Drinking Water), expires 12/31/01 State of Louisiana, DHH, Office of Public Health Division of Laboratories, Laboratory ID No. LA000017 (Drinking Water), expires 12/31/01 Louisiana Department of Environmental Quality, LELAP, Laboratory ID No. 02075, Agency Interest ID 30748 (Environmental, expires 6/30/02) of Maryland, DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida), expires 09/30/02 Commonwealth of Massachusetts, DEP, Laboratory ID No. M-FL094 (Wastewater), expires 06/30/02 State of Michigan, Bureau of E&OccH, Laboratory ID No.9912 (Drinking Water by Reciprocity with Florida), expires 06/30/02 New Hampshire DES ELAP, Laboratory ID No. 250501 (Wastewater), expires 08/16/02 State of New Jersey, Department of Env. Protection & Energy, Laboratory ID No. 49006 (Wastewater and Hazardous Waster), expires 06/30/01 New York State, Department of Health, Laboratory ID No. 11503 (WW and Solids/Hazardous Waste), expires 03/31/02 North Carolina Department of Environment & Natural Resources, Laboratory ID No. 314 (Hazardous Waste and Wastewater), expires 12/31/01 North Dakota DH&Consol Labs, Laboratory ID No. R-108 Wastewater and Hazardous Waste by Reciprocity with Florida), expires 06/30/02 State of Oklahoma, Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater), expires 08/31/02 Commonwealth of Pennsylvania, Department of Environmental Resources, Laboratory ID No. 68-467 (Drinking Water), expires 12/01/01 South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater & Solids/Hazardous Waste by Reciprocity with FL), expires 06/30/02 Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water), expires 08/03/04 Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL), expires 06/30/02 State of Washington, Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater), expires 09/14/01 Virginia Division of Env., Office of Water Resources, Laboratory ID No. 136 (Haz Waste and Wastewater Reciprocity FL), expires 12/31/01 American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 100704, expires 04/01/04

\word\certlist\condcert.lst

revised 09/13/01

# STL Pensacola PROJECT SAMPLE INSPECTION FORM

01101.

Were samples checked for preservative? (Check pH of all H2O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)* Is there sufficient volume for analysis requested? Were samples received within Holding Time? (REFER TO STL-SOP 1040) Is Headspace visible > ½ " in diameter in VOA vials?* If any headspace is evident, comment in out-of-control section. If sent, were matrix spike bottles returned? Was Project Manager notified of problems? (initials:)	Yes  Yes  Yes  Yes  Yes  Yes	No* No* No No No No No No	N/A (Can) N/A
Is there sufficient volume for analysis requested?  Were samples received within Holding Time? (REFER TO STL-SOP 1040)  Is Headspace visible > ¼ " in diameter in VOA vials?* If any headspace is evident, comment in out-of-control section.  If sent, were matrix spike bottles returned?  Was Project Manager notified of problems? (initials:)	Yes Yes	No.* No.*	(Can) (N/A)
Were samples received within Holding Time? (REFER TO STL-SOP 1040) Is Headspace visible > ½ " in diameter in VOA vials?* If any headspace is evident, comment in out-of-control section.  If sent, were matrix spike bottles returned?  Was Project Manager notified of problems? (initials:)	Yes*	No No *	N/A
diameter in VOA vials?* If any headspace is evident, comment in out-of-control section. If sent, were matrix spike bottles returned? Was Project Manager notified of problems? (initials:)	Yes	No*	N/A
If sent, were matrix spike bottles returned?  Was Project Manager notified of problems? (initials:)			N/A N/A
of problems? (initials:)	Yes	No⁴	N/A
Shipped By:			
		<del></del>	
Shipping Charges:	NII	9	-
Cooler Temp(s) (°C):	a°		<del></del>
(LIST THERMOMETER NUMBER(S) FOR	VERIFICATION	}	-
(USE BACK OF PSIFFOR ADDITIONAL	NOTES AND C	OMMENT:	s)
ogged By: PE Date:	<u> </u> [ê	15/	01
	Cooler Temp(s) (°C):	Cooler Temp(s) (°C):	Cooler Temp(s) (°C):  (LIST THERMOMETER NUMBER(S) FOR VERIFICATION)  (USE BACK OF PSIFFOR ADDITIONAL NOTES AND COMMENTS

- time samples(pH, Dissolved  $O_2$  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, "" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-ofcontrol (STL-SOP 938, section 2.2.12).

2709-D Pan Americar Albuquerque, New Me 505) 344-3777 Fax (505) 344-44	exico 871	y, NE 07	<u> </u>	<u>/4 l</u>	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	-TAL (23 METALS)				Gen Chemistry: SO4	Oil and Greace	Organics GC/MS (8260)			PESTICIDES/PCB (608/8082)	Herbicides (615/8151)	PNA (8310)/8270 SIMS	8240 (TCLP 1311) ZHE	tral Acid Commo inde CC MC	(625/8270)	JM (ICP-MS)	RADIUM 226+228	Gross Alpha/Beta		NUMBER OF CONTAINERS
SAMPLE ID	DATE	TIME	MATRIX	LABID	/letals	CRA T	/letals-	Metals-TAL		70X	202	Sen C	and in	Volatile	BOD	COD	ESTIC	erbicic	% ₩ 8	Z40 (T	ia/Vas	25/8270	RANK	ADIO	ross A	TO-14	MBER
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PROJECT INFORMATION	SAMPLE RECEIPT	SAMPLES SENT TO:	RELINQUISED BY: 1	RELINQUISED BY: 2
PROJECT#: //0023	Total Number of Containers	PENSACOLA - STL-FL	Signature: - 1 - Time:	Signature; Time:
PROJ. NAME: PNM		ESL - OR	Mancine Fruio 1700	Time.
QC LEVEL: (STD) IV	Received Intact?	STL-CT		Printed Name: Date:
QC REQUIRED) MS MSD BLANK	Received Good Cond./Cold	ATEL - AZ	Francine 1011/10/10/4/01	Date.
TAT: STANDARD RUSH!!	LAB NUMBER:	ATEL - MARION	Pinnacle Laboratories, Inc.	Company
		ATEL - MELMORE	The Part of the Control of the Contr	RECEIVED BY: 2
DUE DATE: 10/18 COMMENTS		BARRINGER	Signature: Time:	Signature: Time:
RUSH SURCHARGE:		ENVIRO TEST LABS	Davedi Voined 1007	Time.
CLIENT DISCOUNT:		WCAS		Printed Name: Date;
SPECIAL CERTIFICATION		WOHL	DOVEHE HOYORD 10301	
REQUIRED: YES NO			24 0420	Company

# Pinnacle Laboratories Inc.

FORM IN COMPLETELY.

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PLEASE

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ADDRESS: ATTN: CHUC	K ARATER				Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	ا د	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	PTEX	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	EDB 🗆		8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	General Chemistry:		Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)		S NUMBER OF CONTAINERS
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GTS-AIR STRIPPER EFFLUENT WEST		<u> </u>			4	$\perp$			<u></u> '		<u> </u>		⊥ ′	$\perp$	'	'	'	⊥'	<u></u> '		'				$\int_{-}^{1}$	$\lfloor \rfloor'$		$\bar{\mathbb{L}}'$	$\int_{-\infty}^{\infty}$	$\int_{-\infty}^{\infty}$		
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PAGE: 2 OF 2 PROJECT MANAGER: ANALYSIS REQUEST. CHUCK ARATER 李清楚的 TRPH PUBLIC SERVICE COMPANY OF NEW MEXICO Base/Neutral/Acid Compounds GC/MS (625/8270) Polynuclear Aromatics (610/8310/8270-SIMS) COMPANY: RCRA Metals by TCLP (Method 1311) 8021 (BTEX)/8015 (Gasoline) MTBE ALVARADO SOUARE - ER16 ADDRESS: Petroleum Hydrocarbons (418.1) NUMBER OF CONTAINERS \*\*\*\* Pesticides /PCB (608/8081/8082) (MOD.8015) Diesel/Direct Inject ALBUQUERQUE, NM 87158 8260 (CUST) Volatile Organics Farget Analyte List Metals (23) 8260 (TCL) Volatile Organics Priority Pollutant Metals (13) Volatile Organics PHONE: (505) 241-4744 (505) 241-2487 FAX: MTBE જ Herbicides (615/8151) □/DBCP General Chemistry: SAME BILL TO: RCRA Metals (8) COMPANY: 8021 (BTEX) 8021 (HALO) 8021 (CUST) 8021 (EDX) 504.1 EDB 8260 (Full) ATTN: CHUCK ARATER ADDRESS: (M8015) Metals: 8021 8260 SAMPLE ID SEE DATE TIME MATRIX LABORD 1000 1026 **VEW INFLUENT** PSMW-16 INFLUENT 1027 **EW-1 INFLUENT** 10-4 χ 1029 PSMW 24.25.26 INFLUENT 10-4 1030 EW-3 10-4 1031 EW-2 10-4 Surge Tank Discharge 1032 124 PROJECT INFORMATION PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS. RELINQUISHED BY: **RELINQUISHED BY:** Signature: Time: PROJ. NO.: Remediation (RUSH) □ 24hr □ 48hr □ 72hr ☐ 1 WEEK (NORMAL) D Signature: 1250 PROJ. NAME: Person Station CERTIFICATION REQUIRED: INM SDWA OTHER Printed Name: Date: Printed Name Date: CHUCK Brater 10-4-01 P.O. NO.: METHANOL PRESERVATION □ PNS Company SHIPPED VIA: COMMENTS: FIXED FEE □ **4** copies Please See reverse side (Force Majeure) SAMPLE BECEPT WHEN THE RECEIVED BY WITH A PLAN IN THE PARTY OF THE RECEIVED BY: (LAB) Signature: PLEASE PROVIDE DATA ON DIS-KETTE AS WELL AS EXTRA HARD Printed Name: Date: COPY TO RON JOHNSON MS-0408 REEVEDINIACI Company Pinnacle Laboratories Inc.

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Pinnacle Lab ID number November 29, 2001

111024

PUBLIC SERVICE COMPANY ALVARADO SQUARE-MS2104 ALBUQUERQUE, NM 87158

Project Name

PERSON STATION

Project Number

REMEDIATION

Attention:

CHUCK ARATER

On 11/05/01 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





LIENT	: PUBLIC SERVICE COMPANY	PINNACLE ID	: 111024
ROJECT#	: REMEDIATION	DATE RECEIVED	: 11/05/01
ROJECT NAME	: PERSON STATION	REPORT DATE	: 11/29/01
NNACLE			DATE
ID#	CLIENT DESCRIPTION	MATRIX	COLLECTED
<b>■</b> 1024 - 01	GTS-INFLUENT	AQUEOUS	11/05/01
1024 - 02	GTS-GAC EFFLUENT EAST	AQUEOUS	11/05/01
1024 - 03	GTS-GAC EFFLUENT WEST	AQUEOUS	11/05/01
1024 - 04	UNM EAST RESERVOIR	AQUEOUS	11/05/01
1024 - 05	UNM WEST RESERVOIR	AQUEOUS	11/05/01
<b>1</b> 024 - 06	GAC FINAL	AQUEOUS	11/05/01
1024 - 07	TRIP BLANK	AQUEOUS	11/05/01
<b>1</b> 024 <b>-</b> 08	VEW INFLUENT	AQUEOUS	11/05/01
1024 - 09	PSMW-16 INFLUENT	AQUEOUS	11/05/01
1024 - 10	EW-1 INFLUENT	AQUEOUS	11/05/01
1024 - 11	PSMW-24,25,26 INFLUENT	AQUEOUS	11/05/01
10 12	EW-3	AQUEOUS	11/05/01
102-13	EW-2	AQUEOUS	11/05/01
1024 - 14	SURGE TANK DISCHARGE	AQUEOUS	11/05/01
***			



# GAS CHROMATOGRAPHY RESULTS

JENT

: 8021 HALO

: PUBLIC SERVICE COMPANY

ROJECT# ROJECT NAME : REMEDIATION

: PERSON STATION

PINNACLE I.D.: 111024

AMPLE .			DATE	DATE	DATE	DIL.
. # CLIENT I.D.	<u> </u>	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
GTS-INFLUENT		AQUEOUS	11/05/01	NA	11/07/01	1
GTS-GAC EFFLI		AQUEOUS	11/05/01	NA	11/07/01	1
GTS-GAC EFFLU	JENT WEST	AQUEOUS	11/05/01	NA	11/07/01	1
					GTS-GAC	GTS-GAC
RAMETER	DET. LIMIT	148	ITS	GTS-INFLUENT	EFFLUENT	EFFLUENT
MOMODICHLOROMETHANE			3/L	< 0.2	< 0.2	< 0.2
ROMOFORM	0.5		3/L	< 0.5	< 0.5	< 0.5
ROMOMETHANE	1.0		3/ <b>L</b> 3/L	< 1.0	< 1.0	< 1.0
RBON TETRACHLORIDE	0.4		3/L	< 0.4	< 0.4	< 0.4
HLOROBENZENE	0.5		3/L	< 0.5	< 0.5	< 0.5
ILOROETHANE	0.5		3/L	< 0.5	< 0.5	< 0.5
HLOROFORM	0.5		3/L	< 0.5	< 0.5	1.3
JLOROMETHANE	1.0		3/L	< 1.0	< 1.0	< 1.0
BROMOCHLOROMETHANE	0.2		3/L	< 0.2	< 0.2	< 0.2
2-DIBROMOETHANE (EDB)	0.2		3/L	< 0.2	< 0.2	< 0.2
?-PLOROBENZENE	0.5		3/L	< 0.5	< 0.5	< 0.5
3-LOROBENZENE	0.5	U	3/L	< 0.5	< 0.5	< 0.5
1-DICHLOROBENZENE	0.5	Ü	3/L	< 0.5	< 0.5	< 0.5
J-DICHLOROETHANE	0.3	UC	S/L	2.7	1.2	2.8
*-DICHLOROETHANE (EDC)	0.5	UC	S/L	< 0.5	< 0.5	< 0.5
-DICHLOROETHENE	0.2	UC	S/L	6.2	1.0	5.0
-1,2-DICHLOROETHENE	0.2	UC	G/L	< 0.2	< 0.2	< 0.2
ns-1,2-DICHLOROETHENE	1.0	UC	G/L	< 1.0	< 1.0	< 1.0
:-DICHLOROPROPANE	0.2	UC	S/L	< 0.2	< 0.2	< 0.2
-1,3-DICHLOROPROPENE	0.2	UG	∋/L	< 0.2	< 0.2	< 0.2
ns-1,3-DICHLOROPROPENE	0.2	UC	§/L	< 0.2	< 0.2	< 0.2
THYLENE CHLORIDE	2.0	UC	G/L	< 2.0	< 2.0	< 2.0
,2,2-TETRACHLOROETHAN	IE 0.5	UC	9/L	< 0.5	< 0.5	< 0.5
TRACHLOROETHENE	0.5	UG	S/L	11	1.0	5.7
,1-TRICHLOROETHANE	1.0	UG	G/L	< 1.0	< 1.0	< 1.0
,2-TRICHLOROETHANE	0.2	UG	G/L	< 0.2	< 0.2	< 0.2
ICHLOROETHENE	0.3	UG	S/L	< 0.3	< 0.3	< 0.3
!ICHLOROFLUOROMETHAN	IE 0.2	UG	S/L	< 0.2	< 0.2	< 0.2
NYL CHLORIDE	0.5	UG	S/L	< 0.5	< 0.5	< 0.5
TRROGATE:	· \					
OMOCHLOROMETHANE (%	o)			98	96	107

### EMIST NOTES:

RROGATE LIMITS

TE1: Detection Limit for Carbon Tetrachloride adjusted due to an interference present that colelutes s compound.

(71 - 126)



### GAS CHROMATOGRAPHY RESULTS

ST : 8021 HALO

■IENT : PUBLIC SERVICE COMPANY

ROJECT # : REMEDIATION
ROJECT NAME : PERSON STATION

PINNACLE I.D.: 111024

AMPLE	,			DATE	DATE	DATE	DIL.
<u>. #</u>	CLIENT I.D.		MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
•	UNM EAST RESERVOIR		AQUEOUS	11/05/01	NA	11/07/01	1
	UNM WEST RESERVOIR		AQUEOUS	11/05/01	NA	11/07/01	1
, <u>, , , , , , , , , , , , , , , , , , </u>	GAC FINAL		AQUEOUS	11/05/01	NA	11/07/01	1
 √RAMET	ED	DET LIMIT			UNM EAST	UNM WEST	
	CHLOROMETHANE	DET. LIMIT	UN		RESERVOIR	RESERVOIR	GAC FINAL
ROMOF(		0.2	UG		< 0.2	< 0.2	< 0.2
	ETHANE	0.5	UG		< 0.5	< 0.5	< 0.5
	TETRACHLORIDE	1.0	UG		< 1.0	< 1.0	< 1.0
	BENZENE	0.4	UG		< 0.4	< 0.4	< 0.4
LOROE		0.5	UG		< 0.5	< 0.5	< 0.5
LOROF		0.5	UG		< 0.5	< 0.5	< 0.5
		0.5	UG		< 0.5	< 0.5	< 0.5
₩ LORON		1.0	UG		< 1.0	< 1.0	< 1.0
	CHLOROMETHANE	0.2	UG		< 0.2	< 0.2	< 0.2
	MOETHANE (EDB)	0.2	UG		< 0.2	< 0.2	< 0.2
	OROBENZENE	0.5	UG		< 0.5	< 0.5	< 0.5
	OROBENZENE	0.5	UG		< 0.5	< 0.5	< 0.5
_	OROBENZENE	0.5	UG		< 0.5	< 0.5	< 0.5
	OROETHANE	0.3	UG		< 0.3	< 0.3	< 0.3
-DICHLO	OROETHANE (EDC)	0.5	UG		< 0.5	< 0.5	< 0.5
	OROETHENE	0.2	UG		< 0.2	< 0.2	< 0.2
	HLOROETHENE	0.2	UG		< 0.2	< 0.2	< 0.2
	ICHLOROETHENE	1.0	UG		< 1.0	< 1.0	< 1.0
	OROPROPANE	0.2	UG		< 0.2	< 0.2	< 0.2
	HLOROPROPENE	0.2	UG	i/L	< 0.2	< 0.2	< 0.2
	ICHLOROPROPENE	0.2	UG	/L	< 0.2	< 0.2	< 0.2
	NE CHLORIDE	2.0	UG	/L	< 2.0	< 2.0	< 2.0
	FRACHLOROETHANE	0.5	UG	/L	< 0.5	< 0.5	< 0.5
-	LOROETHENE	0.5	UG	/L	< 0.5	< 0.5	< 0.5
	HLOROETHANE	1.0	UG	/L	< 1.0	< 1.0	< 1.0
	HLOROETHANE	0.2	UG	/L	< 0.2	< 0.2	< 0.2
ICHLOR	OETHENE	0.3	UG	/L	< 0.3	< 0.3	< 0.3
	OFLUOROMETHANE	0.2	UG		< 0.2	< 0.2	< 0.2
1YL CHL	ORIDE	0.5	UG		< 0.5	< 0.5	< 0.5
						5.5	. 0.0
RROGA	TE:						
<b>*</b> ОМОСН	ILOROMETHANE (%)				106	107	125
	TE LIMITS	(71 - 126)			.00	101	120

# EMIST NOTES:

TE 1: Detection Limit for Carbon Tetrachloride adjusted due to an interference present that colelutes the this compound.



### GAS CHROMATOGRAPHY RESULTS

: 8021 HALO

JENT

: PUBLIC SERVICE COMPANY

ROJECT# ROJECT NAME : REMEDIATION

: PERSON STATION

PINNACLE I.D.: 111024

TOOLOT TANK	PERSON STATE	UN				
AMPLE .			DATE	DATE	DATE	DIL.
.# CLIENT I.D.		MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
' TRIP BLANK		AQUEOUS	11/05/01	NA	11/09/01	1
✓ VEW INFLUENT	,	AQUEOUS	11/05/01	NA	11/09/01	1
PSMW-16 INFLUENT ( Eu	<del>/-'Y')</del>	AQUEOUS	11/05/01	NA	11/09/01	1
ARAMETER	DET LIMIT					PSMW-16
ROMODICHLOROMETHANE	DET. LIMIT		ITS	TRIP BLANK	VEW INFLUENT	INFLUENT
ROMOFORM	0.2		G/L	< 0.2	< 0.2	< 0.2
COMOFORM COMOMETHANE	0.5		G/L	< 0.5	< 0.5	< 0.5
	1.0		3/L	< 1.0	< 1.0	< 1.0
ARBON TETRACHLORIDE	0.4		3/L	< 0.4	< 0.4	< 0.4
HLOROBENZENE	0.5		3/L	< 0.5	< 0.5	< 0.5
-HOROETHANE	0.5		3/L	< 0.5	< 0.5	< 0.5
HOROFORM	0.5		3/L	< 0.5	< 0.5	< 0.5
- LOROMETHANE	1.0		3/L	< 1.0	< 1.0	< 1.0
BROMOCHLOROMETHANE	0.2		3/L	< 0.2	< 0.2	< 0.2
€-DIBROMOETHANE (EDB)	0.2		3/L	< 0.2	< 0.2	< 0.2
2-DICHLOROBENZENE	0.5		G/L	< 0.5	< 0.5	< 0.5
3-DICHLOROBENZENE	0.5	UC	G/L	< 0.5	< 0.5	< 0.5
1- LOROBENZENE	0.5		G/L	< 0.5	< 0.5	< 0.5
1-DICHLOROETHANE	0.3	UC	3/L	< 0.3	2.8	4.1
2-DICHLOROETHANE (EDC)	0.5	UC	3/L	< 0.5	< 0.5	< 0.5
1-DICHLOROETHENE	0.2	UG	3/L	< 0.2	0.3	10
-1,2-DICHLOROETHENE	0.2	UG	3/L	< 0.2	< 0.2	< 0.2
ins-1,2-DICHLOROETHENE	1.0	UG	G/L	< 1.0	< 1.0	< 1.0
⊋-DICHLOROPROPANE	0.2	UG	S/L	< 0.2	< 0.2	< 0.2
-1,3-DICHLOROPROPENE	0.2	UG	3/L	< 0.2	< 0.2	< 0.2
ns-1,3-DICHLOROPROPENE	0.2		S/L	< 0.2	< 0.2	< 0.2
ETHYLENE CHLORIDE	2.0	UG		< 2.0	< 2.0	< 2.0
,2,2-TETRACHLOROETHANE	0.5	ÜĠ		< 0.5	< 0.5	< 0.5
TRACHLOROETHENE	0.5	ÜĠ		< 0.5	0.5	15
,1-TRICHLOROETHANE	1.0	UG		< 1.0	< 1.0	1.5
1,2-TRICHLOROETHANE	0.2	UG		< 0.2	< 0.2	< 0.2
ICHLOROETHENE	0.3	UG		< 0.3	< 0.3	< 0.3
ICHLOROFLUOROMETHANE	0.2	UG		< 0.2	< 0.2	< 0.2
NYL CHLORIDE	0.5	UG		< 0.5	< 0.5	< 0.5
·	0.0	00		. 0.0	- 0.0	~ U.U
RROGATE:						
COMOCHLOROMETHANE (%)				100	90	97
IRROGATE LIMITS	(71 - 126)			100	30	91
	(11-120)					

# **IEMIST NOTES:**

TE 1: Detection Limit for Carbon Tetrachloride adjusted due to an interference present that colelutes th this compound.



# GAS CHROMATOGRAPHY RESULTS

ST : 8021 HALO

PUBLIC SERVICE COMPANY

ROJECT # : REMEDIATION ROJECT NAME : PERSON STATION PINNACLE I.D.: 111024

₹MPLE	•			DATE	DATE	DATE	DIL.
*****	CLIENT I.D.		MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
	EW-1 INFLUENT	•	AQUEOUS	11/05/01	NA	11/09/01	1
	PSMW-24,25,26 INFLUENT		AQUEOUS	11/05/01	NA	11/09/01	1
	EW-3	····	AQUEOUS	11/05/01	NA NA	11/09/01	1
RAMETER		DET. LIMIT	UN	ITS	EW-1 INFLUENT	PSMW-24,25,26 INFLUENT	EW-3
	OROMETHANE	0.2	UC	S/L	< 0.2	< 0.2	< 0.2
*OMOFORM		0.5	UG	S/L	< 0.5	< 0.5	< 0.5

RAMETER	DET. LIMIT	UNITS	EW-1 INFLUENT	PSMW-24,25, INFLUENT	26 EW-3	
ROMODICHLOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2	
OMOFORM	0.5	UG/L	< 0.5	< 0.5	< 0.5	
ROMOMETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0	
RBON TETRACHLORIDE	0.4	UG/L	< 0.4	< 0.4	< 0.4	
LOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5	
TLOROETHANE	0.5	UG/L	< 0.5	< 0.5	< 0.5	
LOROFORM	0.5	UG/L	0.6	< 0.5	< 0.5	
ILOROMETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0	
BROMOCHLOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2	
?-DIBROMOETHANE (EDB)	0.2	UG/L	< 0.2	< 0.2	< 0.2	
-DICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5	
LOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5	
1-DIGHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5	
I-DICHLOROETHANE	0.3	UG/L	3.0	< 0.3	3.1	
-DICHLOROETHANE (EDC)	0.5	UG/L	< 0.5	< 0.5	< 0.5	
-DICHLOROETHENE	0.2	UG/L	0.9	5.8	9.1	
;-1,2-DICHLOROETHENE	0.2	UG/L	< 0.2	< 0.2	0.2	
_ns-1,2-DICHLOROETHENE	1.0	UG/L	< 1.0	< 1.0	< 1.0	
2-DICHLOROPROPANE	0.2	UG/L	< 0.2	< 0.2	< 0.2	
-1,3-DICHLOROPROPENE	0.2	- UG/L	< 0.2	< 0.2	< 0.2	
ns-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2	< 0.2	< 0.2	
THYLENE CHLORIDE	2.0	UG/L	< 2.0	< 2.0	< 2.0	
,2,2-TETRACHLOROETHANE	0.5	UG/L	< 0.5	< 0.5	< 0.5	
TRACHLOROETHENE	0.5	UG/L	1.8	8.8	16	
,1-TRICHLOROETHANE	1.0	UG/L	< 1.0	< 1.0	1.0	
,2-TRICHLOROETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2	
<b>ICHLOROETHENE</b>	0.3	UG/L	< 0.3	< 0.3	0.3	
CHLOROFLUOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2	
IYL CHLORIDE	0.5	UG/L	< 0.5	< 0.5	< 0.5	
₩RROGATE:						
:OMOCHLOROMETHANE (%)			101	92	93	
RROGATE LIMITS	(71 - 126)				~~	

\*\*\*EMIST NOTES:

TE 1: Detection Limit for Carbon Tetrachloride adjusted due to an interference present that colelutes the compound.



# GAS CHROMATOGRAPHY RESULTS

ST. **IENT**  : 8021 HALO

: PUBLIC SERVICE COMPANY

OJECT#

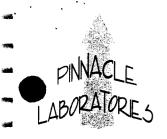
: REMEDIATION

OJECT NAME : PERSON STATION PINNACLE I.D.: 111024

MPLE			DATE	DATE	DATE	DIL.
# CLIENT I.D.		MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
EW-2		AQUEOUS	11/05/01	NA	11/09/01	1
RAMETER	DET. LIMIT	UNI	TS	EW-2		
OMODICHLOROMETHANE	0.2	UG	6/L	< 0.2		
●OMOFORM ·	0.5	UG	S/L	< 0.5		
OMOMETHANE	1.0	UG	S/L	< 1.0		
RBON TETRACHLORIDE	0.4	UG	i/L	< 0.4		
LOROBENZENE	0.5	UG	5/L	< 0.5		
LOROETHANE	0.5	UG	i/L	< 0.5		
LOROFORM	0.5	UG	i/L	< 0.5		
LOROMETHANE	1.0	UG	i/L	< 1.0		
<b>■</b> ROMOCHLOROMETHANE	0.2	UG	i/L	< 0.2		
-DIBROMOETHANE (EDB)	0.2	UG	/L	< 0.2		
-DICHLOROBENZENE	0.5	UG	/L	< 0.5		
-DICHLOROBENZENE	0.5	UG		< 0.5		
-DICHLOROBENZENE	0.5	UG		< 0.5		
-DICHLOROETHANE	0.3	UG		5.0		
DICHLOROETHANE (EDC)	0.5	UG		< 0.5		
LOROETHENE	0.2	UG		2.9		
-1,2-DICHLOROETHENE	0.2	ÜĞ		< 0.2		
_ns-1,2-DICHLOROETHENE	1.0	UG		< 1.0		
-DICHLOROPROPANE	0.2	UG		< 0.2		
1,3-DICHLOROPROPENE	0.2	UG		< 0.2		
ns-1,3-DICHLOROPROPENE	0.2	UG		< 0.2		
THYLENE CHLORIDE	2.0	UG		< 2.0		
2,2-TETRACHLOROETHANE	0.5	UG		< 0.5		
TRACHLOROETHENE	0.5	UG		3.0		
,1-TRICHLOROETHANE	1.0	UG		< 1.0		
2-TRICHLOROETHANE	0.2	UG		< 0.2		
CHLOROETHENE	0.3	UG		< 0.3		
CHLOROFLUOROMETHANE	0.2	UG/		< 0.2		
IYL CHLORIDE	0.5	UG/		< 0.5		
RROGATE:						
OMOCHLOROMETHANE (%)				93		
RROGATE LIMITS	(71 - 126)					

# "EMIST NOTES:

\_TE 1: Detection Limit for Carbon Tetrachloride adjusted due to an interference present that colelutes h this compound.



# GAS CHROMATOGRAPHY RESULTS REAGENT BLANK

ANK I.D. : EPA 8021 : 110701

-IENT : PUBLIC SERVICE COMPANY

OJECT # : REMEDIATION
OJECT NAME : PERSON STATION

PINNACLE I.D.
DATE EXTRACTED

: 111024 : N/A

DATE ANALYZED : 11/07/01 SAMPLE MATRIX : AQUEOUS

RAMETER		UNITS		
■ OMODICHLOROMETHANE		UG/L	<0.2	
OMOFORM		UG/L	<0.5	
OMOMETHANE		UG/L	<1.0	
RBON TETRACHLORIDE		UG/L	<0.4	
LOROBENZENE		UG/L	<0.5	
LOROETHANE		UG/L	<0.5	
LOROFORM		UG/L	<0.5	
LOROMETHANE		UG/L	<1.0	
■ ROMOCHLOROMETHANE		UG/L	<0.2	
DIBROMOETHANE (EDB)		UG/L	<0.2	
-DICHLOROBENZENE		UG/L	<0.5	
DICHLOROBENZENE		UG/L	<0.5	
LOROBENZENE		UG/L	<0.5	
-DICHLOROETHANE		UG/L	<0.3	
DICHLOROETHANE (EDC)		UG/L	<0.5	
DICHLOROETHENE		UG/L	<0.2	
1,2-DICHLOROETHENE		UG/L	<0.2	
is-1,2-DICHLOROETHENE		UG/L	<1.0	
DICHLOROPROPANE		UG/L	<0.2	
1,3-DICHLOROPROPENE		UG/L	<0.2	
is-1,3-DICHLOROPROPENE		UG/L	<0.2	
THYLENE CHLORIDE		UG/L	<2.0	
■2,2-TETRACHLOROETHANE		UG/L	<0.5	
「RACHLOROETHENE		UG/L	<0.5	
1-TRICHLOROETHANE		UG/L	<1.0	
■2-TRICHLOROETHANE		UG/L	<0.2	
CHLOROETHENE		UG/L	<0.3	
CHLOROFLUOROMETHANE		UG/L	<0.2	
YL CHLORIDE		UG/L	<0.5	
ROGATE:				
)MOCHLOROMETHANE (%) ROGATE LIMITS	(71 - 126)		107	

### EMIST NOTES:

TE 1: Detection Limit for Carbon Tetrachloride adjusted due to an interference present that colelutes homocompound.



# GAS CHROMATOGRAPHY RESULTS REAGENT BLANK

: EPA 8021 ANK I.D. : 110801

JENT : PUBLIC SERVICE COMPANY

OJECT# **₩**OJECT NAME : PERSON STATION PINNACLE I.D. DATE EXTRACTED

: 111024 : N/A

: REMEDIATION

DATE ANALYZED SAMPLE MATRIX

: 11/08/01 : AQUEOUS

·			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.000
RAMETER	· · · · · · · · · · · · · · · · · · ·	UNITS		
OMODICHLOROMETHANE		UG/L	<0.2	
OMOFORM		UG/L	<0.5	
■OMOMETHANE		UG/L	<1.0	
RBON TETRACHLORIDE		UG/L	<0.4	
LOROBENZENE		UG/L	<0.5	
LOROETHANE		UG/L	<0.5	
LOROFORM		UG/L	<0.5	
LOROMETHANE		UG/L	<1.0	
ROMOCHLOROMETHANE		UG/L	<0.2	
DIBROMOETHANE (EDB)		UG/L	<0.2	
DICHLOROBENZENE		UG/L	<0.5	
DICHLOROBENZENE		UG/L	<0.5 <0.5	
LOROBENZENE		UG/L	<0.5 <0.5	
DICHLOROETHANE		UG/L	<0.3	
DICHLOROETHANE (EDC)		UG/L	<0.5	
DICHLOROETHENE		UG/L	<0.2	
1,2-DICHLOROETHENE		UG/L	<0.2	
s-1,2-DICHLOROETHENE		UG/L	<1.0	
DICHLOROPROPANE		UG/L	<0.2	
■1,3-DICHLOROPROPENE		UG/L	<0.2	
s-1,3-DICHLOROPROPENE		UG/L	<0.2	
THYLENE CHLORIDE		UG/L	<2.0	
2,2-TETRACHLOROETHANE		UG/L	<0.5	
RACHLOROETHENE		UG/L	<0.5 <0.5	
1-TRICHLOROETHANE		UG/L	<1.0	
2-TRICHLOROETHANE		UG/L	<0.2	
CHLOROETHENE		UG/L	<0.3	
-CHLOROFLUOROMETHANE		UG/L	<0.2	
YL CHLORIDE		UG/L		
		OG/L	<0.5	
ROGATE:				
MOCHLOROMETHANE (%)			98	
ROGATE LIMITS	( 71 - 126 )			

\*\*\*MIST NOTES:

JE 1: Detection Limit for Carbon Tetrachloride adjusted due to an interference present that colelutes compound.



# GAS CHROMATOGRAPHY - QUALITY CONTROL MSMSD

**-51** 

: EPA 8021 MODIFIED

SMSD# JENT

: 110801

ROJECT #

: PUBLIC SERVICE COMPANY

: REMEDIATION : PERSON STATION PINNACLE I.D. DATE EXRACTED

111024 N/A

DATE ANALYZED SAMPLE MATRIX 11/08/01 AQUEOUS

UNITS

HO/L

and the same of th		<del></del>			OIVITO			UG/L	
****	SAMPLE	CONC	SPIKED	%	DUP	DUP		REC	RPD
ARAMETER	RESULT	SPIKE	SAMPLE	REC	SPIKE	% REC	RPD	LIMITS	LIMITS
ILOROBENZENE	< 0.5	10.0	10.8	108	11.2	112	4	(87 - 124)	20
-DICHLOROETHENE	<0.2	10.0	9.7	97	9.3	93	4	(80 - 120)	20
RICHLOROETHENE	< 0.3	10.0	11.1	111	11.1	111	0	(89 - 127)	20
Silver							•	(00 - 127)	20

"IEMIST NOTES:

Recovery =

(Spike Sample Result - Sample Result)

Spike Concentration

(Sample Result - Duplicate Result)

D (Relative Percent Difference) = ------ X 100

Average Result



LOG NO: C1-11149 Received: 06 NOV 01 Reported: 21 NOV 01

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

Project: 111024, PNM-PERSON STATION

Sampled By: Client Code: 103111121

REPORT OF RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	1490 1
11149-1	SURGE TANK DISCHARGE   111024-14	11-05-01/13:1	.9
PARAMETER		11149-1	
Sulfate as Dilution I Analysis I Batch ID Analyst		510 25 11.09.01 SEW139 BE	



LOG NO: C1-11149 Received: 06 NOV 01 Reported: 21 NOV 01

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

Project: 111024, PNM-PERSON STATION

Sampled By: Client Code: 103111121

#### REPORT OF RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION , QC REPORT	FOR LIQUID	SAMPLES	DATE/ TIME SAMPLED	
11149-2 11149-3 11149-4 11149-5	Method Blank Lab Control Standard % Recovery Matrix Spike % Recovery Matrix Spike Duplicate % Recove				
PARAMETER		11149-2	11149-	3 11149-4	11149-5
Sulfate as Dilution Analysis Batch ID Analyst		<5.0 1 11.09.01 SEW139 BE	90 °		112 % SEW139

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.

See the Project Sample Inspection Form (PSIF) to determine if a sample was received that did not meet EPA requirements for sample collection, preservation, or holding time.

Lance Larson, Project Manager

Final Page Of Report



# **Data Qualifiers for Final Report**

The analyte was detected in the associated method blank (sample itself is flagged even though sample is ND). 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.

The analyte was found in the associated blank as well as in the associated sample(s) (qualifier is applied to the sample, not

Sample results were corrected due to contaminants in Fractionation Blank

Diluted out (surrogate or spike due to sample dilution)

Compound concentration exceeds the upper calibration range of the instrument.

The reported value is < STL Pensacola RL and ≥ the STL Pensacola MDL; therefore, the quantitation is estimation. 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"

Sample and duplicate (or MS and MSD) RPD is above control limit. The analyte was positively identified, the quantitation may be an estimation

(For positive results)Temperature limits exceeded (≤2°C or ≥ 6°C), non-reportable for NDPES compliance monitoring.

(For positive results) LCS or Surrogate %R is > upper control limit (UCL), results may be biased high

Matrix spike and post spike recoveries are outside control limits. See out of Control Events/Corrective Action Form. (For positive results) LCS or Surrogate %R is < lower control limit (LCL), results may be biased low

A matrix effect was present (1sample, MS or MSD was analyzed twice to confirm surrogate/spike failure, 2sample 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  $^{5}$  metals post spike is < 40% R)

The MS and/or MSD %R or RPD was outside upper or lower control limits; not necessarily due to matrix effect. Not Calculable; Sample spiked is > 4X spike concentration (may also use this flag in place of negative numbers) Sample and duplicate results are "out of control". The sample is nonhomogeneous.

Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD) The analytical (post digestion) spike is reported due to the percent recovery being outside limits on the matrix (predigestion) spike.

The quantitation may be an estimation.

(For nondetects) Temperature limits exceeded (≤2°C or ≥ 6°C); non-reportable for NDPES compliance monitoring Improper preservation, no preservative present or insufficient amounts of preservative in sample upon receipt, non-reportable for NDPES compliance monitoring

Improper preservation, incorrect preservative present in sample upon receipt, non-reportable for NPDES compliance Holding time exceeded, non-reportable for NDPES compliance monitoring.

Sample collection requirements not met, see case narrative.

LCS or surrogate %R is < LCL and analyte is not detected or surrogate %R is < 10% for detects/nondetects.

Internal standard area outside -50% to +100% of calibration verification standard.

R8 Initial calibration or any calibration verification exceeds acceptance criteria. Not filtered and preserved at time of collection. R9

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.

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.

Second-column or detector confirmation exceeded the SW-846 criteria of 40% RPD for this compound.

The compound is not within the initial calibration curve. It is searched for qualitatively or as a Tentatively Identified

Compound.

The analyte was analyzed for but not detected (at or above the RL or the MDL, whichever is entered next to the "U" value.

Value for result will never be below the MDL)

Post-digestion spike for Furnace AA is out of control limits (85-115%), while sample absorbance is less than 50% spike

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

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)

Revised, 06/19/01

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**B**3 B4

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J8 J9

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R1

R2

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S1

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J (description)

R (description)

# STL PENSACOLA State Certifications

abama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL), expires 06/30/02 Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater), expires 01/12/02 Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental), expires 02/07/02 دوسيحصوني بالرابع يهوجه State of California, Department of Health Services, Laboratory ID No. 01128CA (Hazardous Waste and Wastewater), expires 03/31/02 State of Connecticut, Department of Health Services, Connecticut Lab Approval No. PH-0697 (D W, H W and Wastewater), expires 09/30/01 Delaware Health & Social Services, Division of Public Health, Laboratory ID No. FL094 (Drinking Water by Reciprocity with FL) Extension granted Florida DOH Laboratory ID No. E81010 (Drinking Water, Hazardous Waste and Wastewater), expires 06/30/02 Florida DEP/DOH CompQAP # 980156 Florida, Radioactive Materials License No. G0733-1, no expiration date assigned Foreign Soil Permit, Permit No. S-37599 Kansas Department of Health & Environment, Laboratory ID No. E10253 (Wastewater and Hazardous Waste), expires 10/31/01 Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Laboratory ID No. 90043 (Drinking Water), expires 12/31/01 State of Louisiana, DHH, Office of Public Health Division of Laboratories, Laboratory ID No. LA000017 (Drinking Water), expires 12/31/01 Louisiana Department of Environmental Quality, LELAP, Laboratory ID No. 02075, Agency Interest ID 30748 (Environmental, expires 6/30/02) e of Maryland, DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida), expires 09/30/02 Commonwealth of Massachusetts, DEP, Laboratory ID No. M-FL094 (Wastewater), expires 06/30/02 State of Michigan, Bureau of E&OccH, Laboratory ID No.9912 (Drinking Water by Reciprocity with Florida), expires 06/30/02 New Hampshire DES ELAP, Laboratory ID No. 250501 (Wastewater), expires 08/16/02 State of New Jersey, Department of Env. Protection & Energy, Laboratory ID No. 49006 (Wastewater and Hazardous Waster), expires 06/30/01 New York State, Department of Health, Laboratory ID No. 11503 (WW and Solids/Hazardous Waste), expires 03/31/02 North Carolina Department of Environment & Natural Resources, Laboratory ID No. 314 (Hazardous Waste and Wastewater), expires 12/31/01 North Dakota DH&Consol Labs, Laboratory ID No. R-108 Wastewater and Hazardous Waste by Reciprocity with Florida), expires 06/30/02 State of Oklahoma, Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater), expires 08/31/02 Commonwealth of Pennsylvania, Department of Environmental Resources, Laboratory ID No. 68-467 (Drinking Water), expires 12/01/01 South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater & Solids/Hazardous Waste by Reciprocity with FL), expires 06/30/02 Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water), expires 08/03/04 Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL), expires 06/30/02 State of Washington, Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater), expires 09/14/01 st Virginia Division of Env., Office of Water Resources, Laboratory ID No. 136 (Haz Waste and Wastewater Reciprocity FL), expires 12/31/01 American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 100704, expires 04/01/04

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revised 09/13/01

# STL Pensacola PROJECT SAMPLE INSPECTION FORM

ab Order #: <u>C111149</u> Date Received: // 60 **SERVICES** Was there a Chain of Custody? (Yes 8. Were samples checked for Yes No\* (N/À preservative? (Check pH of all H2O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)+ 2. Was Chain of Custody properly No\* 9. Yes Is there sufficient volume for No\* N/A filled out and relinquished? analysis requested? (Can) 3. Were samples received cold? No\* N/A 10. Were samples received within No\* (Criteria: 2° - 6°C: STL-SOP Holding Time? (REFER TO STL-SOP 1040) 4. Were all samples properly No\* Is Headspace visible > \( \frac{1}{4} \)" in Yes\* No labeled and identified? diameter in VOA vials?\* If Did samples require splitting or  $(N_0)$ any headspace is evident, compositing\*? comment in out-of-control Req By: PM Client Other section No\* Were samples received in (Yes 12. If sent, were matrix spike Yes proper containers for analysis bottles returned? requested? Were all sample containers 13. Was Project Manager notified received intact? of problems? (initials: Shipped By: ( ) Airbill Number(s): 1% 878 168 CI Shipping Charges: NA ooler Number(s): Cooler Temp(s) (°C): Cooler Weight(s): LIST THERMOMETER NUMBER(S) FOR VERIFICATION) Out of Control Events and Inspection Comments: (USE BACK OF PSIFFOR ADDITIONAL NOTES AND COMMENTS ) Inspected By: DMH Date: [[.]0.()] Date: 11-6-31 Logged By: Note all Out-of-Control and/or questionable events on Comment Section of this form. For holding times, the analyticl depertment will flag immediate hold time samples(pH, Dissolved O2, 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

SEVERN TRENT

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

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TAT: STANDARD RUSH!!	LAB NUMBER:	ATEL - MARION	Pinnacle Laboratories, Inc.	Company
		ATEL - MELMORE	RECEIVED BY: 1	RECEIVED BY: 2
DUE DATE: /// /9 COM	MENTS:	BARRINGER	Signature: Time:	Signature: Time:
RUSH SURCHARGE:		ENVIRO TEST LABS	travellethuned 0955	
CLIENT DISCOUNT: -		WCAS	Printed Name: Date:	Printed Name: Date:
SPECIAL CERTIFICATION		WOHL	Davesta Harred 11-601	
REQUIRED: YES NO			Company STL-DIOS	Company

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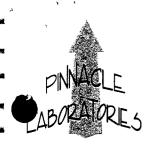
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COMPANY: PUBLIC SERVICE COMPANY: ALVARADO SQUAI ALBUQUERQUE, N PHONE: (505) 241-4744	RE - ER16	W MEXICO					ш																	(22)	Method 1311)		人をはなったい
FAX:(505) 241-2487  BILL TO:SAME  COMPANY: ADDRESS:ATTN: CHUCK ARATER  SAURTED			Petroleum Hydrocarhons (418 1)	(MOD.8015) Diesel/Direct Inject		(M8015) Gas/Purge & Trap 8021 (BTEX)/8015 (Gasoline) MTRF	8021 (BTEX) ☐ MTBE ☐ TMB	i	8021 (EDX)	8021 (HALO)	CUST)	504.1 EDB□/DBCP□	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	General Chemistry:	Priority Pollutant Metals (13)	Tarnet Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:	NUMBER OF CONTAINERS
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11/10/98 PLI Inc.: Pinnacle Laboratories, Inc. • 2709-D Pan American Freeway, NE • Albuquerque, New Mexico 87107 • (505) 344-3777 • Fax (505) 344-4413 • E-mail: PIN\_LAB@WORLDNET.ATT.NET

DISTRIBUTION: White - PLI, Canary - Originator





PL I.D. 112047

December 28, 2001

Public Service Co of NM Alvarado Square MS2104 Albuquerque, NM 87158

Project Name/Number: PERSON STATION REMEDIATION

Attention: Chuck Arater

On 12/12/01, 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





LIENT	: PUBLIC SERVICE COMPANY	PINNACLE ID	: 112047
ROJECT#	: REMEDIATION	DATE RECEIVED	: 12/12/01
ROJECT NAME	: PERSON STATION	REPORT DATE	: 12/28/01
NNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
12047 - 01	GTS-INFLUENT	AQUEOUS	12/12/01
12047 - 02	INFLUENT TANK EFFLUENT EAST	AQUEOUS	12/12/01
2047 - 03	GTS-GAC EFFLUENT EAST	AQUEOUS	12/12/01
12047 - 04	GTS-GAC EFFLUENT WEST	AQUEOUS	12/12/01
12047 - 05	UNM EAST RESERVOIR	AQUEOUS	12/12/01
<b>2047 - 06</b>	UNM WEST RESERVOIR	AQUEOUS	12/12/01
12047 - 07	FINAL GAC	AQUEOUS	12/12/01
<b>2047 - 08</b>	TRIP BLANK	AQUEOUS	12/12/01
2047 - 09	VEW INFLUENT	AQUEOUS	12/12/01
2047 - 10	PSMW-16 INFLUENT	AQUEOUS	12/12/01
_l2047 - 11	EW-1 INFLUENT	AQUEOUS	12/12/01
2045 - 12	PSMW 24,25,26 INFLUENT	AQUEOUS	12/12/01
2 13	EW-3	AQUEOUS	12/12/01
120-7 - 14	EW-2	AQUEOUS	12/12/01
<b>2047 - 15</b>	SURGE TANK DISCHARGE	AQUEOUS	12/12/01



PINNACLE I.D.: 112047

### GAS CHROMATOGRAPHY RESULTS

TEST

: 8021 HALO

CLIENT ROJECT# : PUBLIC SERVICE COMPANY

: REMEDIATION

PROJECT NAME

: PERSON STATION

SAMPLE			DATE	DATE	DATE	DIL.
ID.#	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	GTS-INFLUENT	AQUEOUS	12/12/01	NA	12/12/01	1
<b>a</b> 02	INFLUENT TANK EFFLUENT EAST	AQUEOUS	12/12/01	NA	12/12/01	1
03	GTS-GAC EFFLUENT EAST	AQUEOUS	12/12/01	NA	12/12/01	1

•				INFLUENT TANK	GTS-GAC
PARAMETER	DET. LIMIT	UNITS	GTS-INFLUENT	EFFLUENT EAST	EFFLUENT EAST
BROMODICHLOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
BROMOFORM	0.5	UG/L	< 0.5	< 0.5	< 0.5
BROMOMETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
CARBON TETRACHLORIDE	0.2	UG/L	< 0.2	< 0.2	< 0.2
CHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
CHLOROETHANE	0.5	UG/L	< 0.5	< 0.5	< 0.5
→ CHLOROFORM	0.5	UG/L	< 0.5	< 0.5	0.7
CHLOROMETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
DIBROMOCHLOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
1 BROMOETHANE (EDB)	0.2	UG/L	< 0.2	< 0.2	< 0.2
** 1 CHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,3-DICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,4-DICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHANE	0.3	UG/L	2.4	2.1	2.0
** 1,2-DICHLOROETHANE (EDC)	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHENE	0.2	UG/L	4.9	3.2	2.6
cis-1,2-DICHLOROETHENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
trans-1,2-DICHLOROETHENE	1.0	UG/L	< 1.0	< 1.0	< 1.0
1,2-DICHLOROPROPANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
cis-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
** trans-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
METHYLENE CHLORIDE	2.0	UG/L	< 2.0	< 2.0	< 2.0
1,1,2,2-TETRACHLOROETHANE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TETRACHLOROETHENE	0.5	UG/L	8.8	7.4	1.6
1,1,1-TRICHLOROETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
1,1,2-TRICHLOROETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
TRICHLOROETHENE	0.3	UG/L	1.9	< 0.3	< 0.3
TRICHLOROFLUOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
VINYL CHLORIDE	0.5	UG/L	< 0.5	< 0.5	< 0.5
SURROGATE:					
BROMOCHLOROMETHANE (%)			93	80	93
SURROGATE LIMITS	(71 - 126)				

CHEMIST NOTES:



PINNACLE I.D.: 112047

# GAS CHROMATOGRAPHY RESULTS

TEST : 8021 HALO

CLIENT : PUBLIC SERVICE COMPANY

PROJECT # : REMEDIATION
PROJECT NAME : PERSON STATION

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	GTS-GAC EFFLUENT WEST	AQUEOUS	12/12/01	NA	12/12/01	1
05	UNM EAST RESERVOIR	AQUEOUS	12/12/01	NA	12/12/01	1
06	UNM WEST RESERVOIR	AQUEOUS	12/12/01	NA	12/12/01	1
				GTS-GAC		

·			GTS-GAC EFFLUENT	LINIA FACT	LINIMANGOT
PARAMETER	DET. LIMIT	UNITS	WEST	UNM EAST RESERVOIR	UNM WEST RESERVOIR
BROMODICHLOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
BROMOFORM	0.5	UG/L	< 0.5	< 0.5	< 0.5
BROMOMETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
CARBON TETRACHLORIDE	0.2	UG/L	< 0.2	< 0.2	< 0.2
CHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
CHLOROETHANE	0.5	UG/L	< 0.5	< 0.5	< 0.5
CHLOROFORM	0.5	UG/L	< 0.5	< 0.5	< 0.5
CHLOROMETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
DIBROMOCHLOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
1,2-DIBROMOETHANE (EDB)	0.2	UG/L	< 0.2	< 0.2	< 0.2
1 CHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1, ICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,4-DICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
■ 1,1-DICHLOROETHANE	0.3	UG/L	2.0	< 0.3	< 0.3
1,2-DICHLOROETHANE (EDC)	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHENE	0.2	UG/L	4.7	< 0.2	< 0.2
cis-1,2-DICHLOROETHENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
trans-1,2-DICHLOROETHENE	1.0	UG/L	< 1.0	< 1.0	< 1.0
1,2-DICHLOROPROPANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
cis-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
trans-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
METHYLENE CHLORIDE	2.0	UG/L	< 2.0	< 2.0	< 2.0
1,1,2,2-TETRACHLOROETHANE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TETRACHLOROETHENE	0.5	UG/L	5.2	< 0.5	< 0.5
1,1,1-TRICHLOROETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
1,1,2-TRICHLOROETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
TRICHLOROETHENE	0.3	UG/L	< 0.3	< 0.3	< 0.3
TRICHLOROFLUOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
VINYL CHLORIDE	0.5	UG/L	< 0.5	< 0.5	< 0.5
■ SURROGATE:					
BROMOCHLOROMETHANE (%)			73	81	104
SURROGATE LIMITS	(71 - 126)			•	

CHEMIST NOTES:

N/A



PINNACLE I.D.: 112047

### GAS CHROMATOGRAPHY RESULTS

TEST : 8021 HALO

CLIENT : PUBLIC SERVICE COMPANY

PROJECT # : REMEDIATION
PROJECT NAME : PERSON STATION

-	TROOLOTI	47 (141C	. FERSON STATION					
_	SAMPLE			DATE	DATE	DATE	DIL.	-
-	ID.#	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR	
	07	FINAL GAC	AQUEOUS	12/12/01	NA	12/12/01	1	-
	08	TRIP BLANK	AQUEOUS	12/12/01	NA	12/12/01	1	
•	09	VEW INFLUENT	AQUEOUS	12/12/01	NA	12/13/01	1	

PARAMETER	DET. LIMIT	UNITS	FINAL GAC	TRIP BLANK	VEW INFLUENT
BROMODICHLOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
BROMOFORM	0.5	UG/L	< 0.5	< 0.5	< 0.5
BROMOMETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
CARBON TETRACHLORIDE	0.2	UG/L	< 0.2	< 0.2	< 0.2
CHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
CHLOROETHANE	0.5	UG/L	< 0.5	< 0.5	< 0.5
CHLOROFORM	0.5	UG/L	< 0.5	< 0.5	< 0.5
CHLOROMETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
DIBROMOCHLOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
1,2-DIBROMOETHANE (EDB)	0.2	UG/L	< 0.2	< 0.2	< 0.2
1,2-DICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1 CHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1, ICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHANE	0.3	UG/L	0.7	< 0.3	2.3
** 1,2-DICHLOROETHANE (EDC)	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHENE	0.2	UG/L	< 0.2	< 0.2	0.2
cis-1,2-DICHLOROETHENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
trans-1,2-DICHLOROETHENE	1.0	UG/L	< 1.0	< 1.0	< 1.0
1,2-DICHLOROPROPANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
cis-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
trans-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
METHYLENE CHLORIDE	2.0	UG/L	< 2.0	< 2.0	< 2.0
1,1,2,2-TETRACHLOROETHANE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TETRACHLOROETHENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,1,1-TRICHLOROETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
1,1,2-TRICHLOROETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
TRICHLOROETHENE	0.3	UG/L	< 0.3	< 0.3	< 0.3
TRICHLOROFLUOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
VINYL CHLORIDE	0.5	UG/L	< 0.5	< 0.5	< 0.5
<b>**</b>					- · <del>-</del>
SURROGATE:					
■ BROMOCHLOROMETHANE (%)			85	86	92
SURROGATE LIMITS	(71 - 126)				- <del>-</del>
'99 <b>6</b>	` '				

CHEMIST NOTES:

N/A



PINNACLE I.D.: 112047

# GAS CHROMATOGRAPHY RESULTS

TEST : 8021 HALO

CLIENT : PUBLIC SERVICE COMPANY

PROJECT # : REMEDIATION
PROJECT NAME : PERSON STATION

-	1110000	-7 11 7 1 1	. I EROOM OTATION				
_	SAMPLE			DATE	DATE	DATE	DIL.
	ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
ij.	10	PSMW-16 INFLUENT	AQUEOUS	12/12/01	NA	12/13/01	1
ä	11	EW-1 INFLUENT	AQUEOUS	12/12/01	NA	12/13/01	1
	12	PSMW 24,25,26 INFLUEN	T AQUEOUS	12/12/01	NA	12/13/01	1

PARAMETER	DET. LIMIT	UNITS	PSMW-16 INFLUENT	EW-1 INFLUENT	PSMW 24,25,26 INFLUENT
BROMODICHLOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
BROMOFORM	0.5	UG/L	< 0.5	< 0.5	< 0.5
BROMOMETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
CARBON TETRACHLORIDE	0.2	UG/L	< 0.2	< 0.2	< 0.2
CHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
CHLOROETHANE	0.5	UG/L	< 0.5	< 0.5	< 0.5
CHLOROFORM	0.5	UG/L	< 0.5	< 0.5	< 0.5
- CHLOROMETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
DIBROMOCHLOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
1,2-DIBROMOETHANE (EDB)	0.2	UG/L	< 0.2	< 0.2	< 0.2
ICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
N WICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,4-DICHLOROBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHANE	0.3	UG/L	3.2	2.4	< 0.3
1,2-DICHLOROETHANE (EDC)	0.5	UG/L	< 0.5	< 0.5	< 0.5
1,1-DICHLOROETHENE	0.2	UG/L	6.2	0.8	6.6
cis-1,2-DICHLOROETHENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
trans-1,2-DICHLOROETHENE	1.0	UG/L	< 1.0	< 1.0	< 1.0
1,2-DICHLOROPROPANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
cis-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
trans-1,3-DICHLOROPROPENE	0.2	UG/L	< 0.2	< 0.2	< 0.2
METHYLENE CHLORIDE	2.0	UG/L	< 2.0	< 2.0	< 2.0
1,1,2,2-TETRACHLOROETHANE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TETRACHLOROETHENE	0.5	UG/L	11	2.5	9.0
1,1,1-TRICHLOROETHANE	1.0	UG/L	< 1.0	< 1.0	< 1.0
1,1,2-TRICHLOROETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
TRICHLOROETHENE	0.3	UG/L	< 0.3	< 0.3	< 0.3
TRICHLOROFLUOROMETHANE	0.2	UG/L	< 0.2	< 0.2	< 0.2
VINYL CHLORIDE	0.5	UG/L	< 0.5	< 0.5	< 0.5
SURROGATE:					
BROMOCHLOROMETHANE (%) SURROGATE LIMITS	(71 - 126)		79	93	78

CHEMIST NOTES:



PINNACLE I.D.: 112047

## GAS CHROMATOGRAPHY RESULTS

TEST : 8021 HALO

CLIENT : PUBLIC SERVICE COMPANY

PROJECT # : REMEDIATION
PROJECT NAME : PERSON STATION

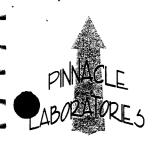
SAMPLE DATE DATE DATE DIL. ID. # CLIENT I.D. **MATRIX** SAMPLED **EXTRACTED ANALYZED FACTOR** 13 EW-3 **AQUEOUS** 12/12/01 12/13/01 NA 1 14 EW-2 **AQUEOUS** 12/12/01 NA 12/13/01 1 PARAMETER DET. LIMIT UNITS EW-3 EW-2 BROMODICHLOROMETHANE 0.2 UG/L < 0.2 < 0.2 **BROMOFORM** 0.5 UG/L < 0.5 < 0.5 **BROMOMETHANE** 1.0 UG/L < 1.0 < 1.0 CARBON TETRACHLORIDE 0.2 UG/L < 0.2 < 0.2 CHLOROBENZENE 0.5 UG/L < 0.5 < 0.5 **CHLOROETHANE** 0.5 UG/L < 0.5 < 0.5 CHLOROFORM 0.5 UG/L < 0.5 < 0.5 **CHLOROMETHANE** 1.0 UG/L < 1.0 < 1.0 DIBROMOCHLOROMETHANE 0.2 UG/L < 0.2 < 0.2 1,2-DIBROMOETHANE (EDB) 0.2 UG/L < 0.2 < 0.2 1,2-DICHLOROBENZENE 0.5 UG/L < 0.5 < 0.5 1,3-DICHLOROBENZENE 0.5 UG/L < 0.5 < 0.5 1,4-DICHLOROBENZENE 0.5 UG/L < 0.5 < 0.5 CHLOROETHANE 0.3 UG/L 2.5 4.0 SICHLOROETHANE (EDC) 0.5 UG/L < 0.5 < 0.5 1,1-DICHLOROETHENE 0.2 UG/L 7.2 2.2 cis-1,2-DICHLOROETHENE 0.2 UG/L < 0.2 < 0.2 trans-1,2-DICHLOROETHENE 1.0 UG/L < 1.0 < 1.0 1,2-DICHLOROPROPANE 0.2 UG/L < 0.2 < 0.2 cis-1,3-DICHLOROPROPENE < 0.2 0.2 UG/L < 0.2 trans-1,3-DICHLOROPROPENE 0.2 UG/L < 0.2 < 0.2 METHYLENE CHLORIDE 2.0 UG/L < 2.0 < 2.0 1,1,2,2-TETRACHLOROETHANE 0.5 UG/L < 0.5 < 0.5 **TETRACHLOROETHENE** 0.5 UG/L 13 3.7 1,1,1-TRICHLOROETHANE 1.0 UG/L < 1.0 < 1.0 1,1,2-TRICHLOROETHANE 0.2 UG/L < 0.2 < 0.2 TRICHLOROETHENE 0.3 UG/L < 0.3 < 0.3 TRICHLOROFLUOROMETHANE 0.2 UG/L < 0.2 < 0.2 VINYL CHLORIDE 0.5 UG/L < 0.5 < 0.5 SURROGATE: BROMOCHLOROMETHANE (%) 85 81

(71 - 126)

CHEMIST NOTES:

SURROGATE LIMITS

N/A



# GAS CHROMATOGRAPHY RESULTS REAGENT BLANK

TEST BLANK I.D. : EPA 8021 : 121201

CLIENT

CHEMIST NOTES:

N/A

: PUBLIC SERVICE COMPANY

PROJECT # : REMEDIATION
PROJECT NAME : PERSON STATION

PINNACLE I.D.

DATE EXTRACTED DATE ANALYZED SAMPLE MATRIX : 112047 : N/A

: 12/12/01 : AQUEOUS

PARAMETER		UNITS		
BROMODICHLOROMETHANE	···	UG/L	<0.2	
BROMOFORM		UG/L	<0.5	
BROMOMETHANE		UG/L	<1.0	
CARBON TETRACHLORIDE		UG/L	<0.2	
CHLOROBENZENE		UG/L	<0.5	
CHLOROETHANE		UG/L	<0.5	
CHLOROFORM		UG/L	<0.5	
CHLOROMETHANE		UG/L	<1.0	
DIBROMOCHLOROMETHANE		UG/L	<0.2	
1,2-DIBROMOETHANE (EDB)		UG/L	<0.2	
1,2-DICHLOROBENZENE		UG/L	<0.5	
1,3-DICHLOROBENZENE		UG/L	<0.5	
1,4-DICHLOROBENZENE		UG/L	<0.5	
-DICHLOROETHANE		UG/L	<0.3	
2-DICHLOROETHANE (EDC)		UG/L	<0.5	
1,1-DICHLOROETHENE		UG/L	<0.2	
cis-1,2-DICHLOROETHENE		UG/L	<0.2	
trans-1,2-DICHLOROETHENE		UG/L	<1.0	
1,2-DICHLOROPROPANE		UG/L	<0.2	
cis-1,3-DICHLOROPROPENE		UG/L	<0.2	
trans-1,3-DICHLOROPROPENE		UG/L	<0.2	
METHYLENE CHLORIDE		UG/L	<2.0	
1,1,2,2-TETRACHLOROETHANE		UG/L	<0.5	
TETRACHLOROETHENE		UG/L	<0.5	
1,1,1-TRICHLOROETHANE		UG/L	<1.0	
1,1,2-TRICHLOROETHANE		UG/L	<0.2	
TRICHLOROETHENE		UG/L	<0.3	
TRICHLOROFLUOROMETHANE		UG/L	<0.2	
VINYL CHLORIDE		UG/L	<0.5	
SURROGATE: BROMOCHLOROMETHANE (%) SURROGATE LIMITS	( 71 - 126 )		106	



# GAS CHROMATOGRAPHY RESULTS REAGENT BLANK

TEST

: EPA 8021

BLANK I.D. CLIENT

: 121301 : PUBLIC SERV

PROJECT #
PROJECT NAME

: PUBLIC SERVICE COMPANY : REMEDIATION

: PERSON STATION

PINNACLE I.D.
DATE EXTRACTED

DATE ANALYZED SAMPLE MATRIX : 112047

: N/A : 12/13/01 : AQUEOUS

BROMODICHLOROMETHANE		UNITS		
- · · · · · · · · · · · · · · · · · · ·		UG/L	<0.2	
BROMOFORM		UG/L	<0.5	
BROMOMETHANE		UG/L	<1.0	
CARBON TETRACHLORIDE		UG/L	<0.2	
CHLOROBENZENE		UG/L	<0.5	
CHLOROETHANE		UG/L	<0.5	
CHLOROFORM		UG/L	<0.5	
CHLOROMETHANE		UG/L	<1.0	
DIBROMOCHLOROMETHANE		UG/L	<0.2	
1,2-DIBROMOETHANE (EDB)		UG/L	<0.2	
1,2-DICHLOROBENZENE		UG/L	<0.5	
1,3-DICHLOROBENZENE		UG/L	<0.5	
1,4-DICHLOROBENZENE		UG/L	<0.5	
-DICHLOROETHANE		UG/L	<0.3	
Z-DICHLOROETHANE (EDC)		UG/L	<0.5	
1,1-DICHLOROETHENE		UG/L	<0.2	
cis-1,2-DICHLOROETHENE		UG/L	<0.2	
trans-1,2-DICHLOROETHENE		UG/L	<1.0	
1,2-DICHLOROPROPANE		UG/L	<0.2	
cis-1,3-DICHLOROPROPENE		UG/L	<0.2	
trans-1,3-DICHLOROPROPENE		UG/L	<0.2	
METHYLENE CHLORIDE		UG/L	<2.0	
1,1,2,2-TETRACHLOROETHANE		UG/L	<0.5	
TETRACHLOROETHENE		UG/L	<0.5	
1,1,1-TRICHLOROETHANE		UG/L	<1.0	
1,1,2-TRICHLOROETHANE		UG/L	<0.2	
TRICHLOROETHENE		UG/L	<0.3	
TRICHLOROFLUOROMETHANE		UG/L	<0.2	
VINYL CHLORIDE		UG/L	<0.5	
SURROGATE:				
BROMOCHLOROMETHANE (%) SURROGATE LIMITS	(71 106)		107	
OUT TO OATE LIMITS	(71 - 126)			

CHEMIST NOTES:

N/A



## GAS CHROMATOGRAPHY - QUALITY CONTROL MSMSD

TEST

: EPA 8021 MODIFIED

MSMSD# CLIENT

: 112047-14

PROJECT#

: PUBLIC SERVICE COMPANY

PROJECT NAME

: PERSON STATION

PINNACLE I.D.

: 112047

DATE EXTRACTED

: N/A

: REMEDIATION

DATE ANALYZED SAMPLE MATRIX

: 12/13/01

UNITS

: AQUEOUS : UG/L

	SAMPLE	CONC	SPIKED	%	DUP	DUP		REC	RPD
PARAMETER	RESULT	SPIKE	SAMPLE	REC	SPIKE	% REC	RPD	LIMITS	LIMITS
CHLOROBENZENE	<0.5	10.0	11.1	111	10.1	101	9	(87 - 124)	20
1,1-DICHLOROETHENE	2.2	10.0	13.2	110	11.9	97	13	(80 - 120)	20
TRICHLOROETHENE	<0.3	10.0	11.8	118	9.8	98	19	(89 - 127)	20

CHEMIST NOTES:

N/A

% Recovery =

(Spike Sample Result - Sample Result)

Spike Concentration

(Sample Result - Duplicate Result)

RPD (Relative Percent Difference) = ----- X 100

Average Result



## GAS CHROMATOGRAPHY - QUALITY CONTROL LCS/LCSD

**TEST** 

: EPA 8021 MODIFIED

MSMSD#

: 121201

CLIENT

: PUBLIC SERVICE COMPANY

PROJECT# PROJECT NAME

: REMEDIATION

: PERSON STATION

PINNACLE I.D. DATE EXRACTED 112047

DATE ANALYZED SAMPLE MATRIX N/A 12/12/01 **AQUEOUS** 

UNITS

UG/L

	SAMPLE	CONC	SPIKED	%	DUP	DUP		REC	RPD
PARAMETER	RESULT	SPIKE	SAMPLE	REC	SPIKE	% REC	RPD	LIMITS	LIMITS
CHLOROBENZENE	N/A	10.0	10.4	104	9.7	97	7	(87 - 124)	20
1,1-DICHLOROETHENE	N/A	10.0	8.2	82	8.2	82	0	(80 - 120)	20
TRICHLOROETHENE	N/A	10.0	10.7	107	9.7	97	10	(89 - 127)	20

CHEMIST NOTES:

N/A

% Recovery =

(Spike Sample Result - Sample Result)

----X 100

Spike Concentration

(Sample Result - Duplicate Result)

RPD (Relative Percent Difference) = ----- X 100

Average Result



LOG NO: C1-12330 Received: 13 DEC 01 Reported: 19 DEC 01

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

Project: 112047, PNM-PERSON STATION

Sampled By: Client

Code: 170511219

REPORT OF RESULTS

Page 1

	REPORT OF RESOURS		Page 1
LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMI	PLED
12330-1	SURGE TANK DISCHARGE/112047-15	12-12-01/	/13:33
PARAMETER		12330-1	
Sulfate as Dilution I Analysis I Batch ID Analyst		400 12.5 12.17.01 SEW151 BE	



LOG NO: C1-12330 Received: 13 DEC 01 Reported: 19 DEC 01

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

Project: 112047, PNM-PERSON STATION

Sampled By: Client

Code: 170511219

REPORT OF RESULTS

Page 2

SAMPLE DESCRIPTION , QC REP	ORT FOR LIQUID	SAMPLES 1	DATE/ FIME SAMPLED	J
Matrix Spike % Recovery	_			
	12330-2	12330-3	12330-4	12330-5
SO4 (375.4), mg/l Factor Date	<5.0 1 12.17.01 SEW151	94 %   SEW151	80 %   SEW151	85 %   SEW151
	Method Blank Lab Control Standard % Recording Matrix Spike % Recovery Matrix Spike Duplicate % Recording Matrix Spike Dup	Method Blank Lab Control Standard % Recovery Matrix Spike % Recovery Matrix Spike Duplicate % Recovery  12330-2  S04 (375.4), mg/l <5.0 Factor 1 Date 12.17.01	Method Blank Lab Control Standard % Recovery Matrix Spike % Recovery Matrix Spike Duplicate % Recovery  12330-2 12330-3  SO4 (375.4), mg/l <5.0 94 % Factor 1 Oate 12.17.01 SEW151 SEW151	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES TIME SAMPLED  Method Blank Lab Control Standard % Recovery Matrix Spike % Recovery Matrix Spike Duplicate % Recovery  12330-2 12330-3 12330-4  SO4 (375.4), mg/l <5.0 94 % 80 % Factor 1 SEW151 SEW151 SEW151

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.

See the Project Sample Inspection Form (PSIF) to determine if a sample was received that did not meet EPA requirements for sample collection, preservation, or holding time.

Lance Larson, Project Manager

Final Page Of Report

SEVERN PROJECT SAMPLE INSPECTION FORM TRENT 112330bate Received: 12-13:01 **SERVICES** Was there a Chain of Custody? Yes No\* 8. Were samples checked for Yes preservative? (Check pH of all H2O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)+ 2. Was Chain of Custody properly No\* 9. Is there sufficient volume for No\* ∕Yes ີ N/A filled out and relinquished? analysis requested? (Can) No\* Were samples received cold? 3. N/A Were samples received within (Criteria: 2° - 6°C: STL-SOP Holding Time? (REFER TO STL-SOP 1040) 4. Were all samples properly Is Headspace visible > 1/4" in No\* 11. No (N/A labeled and identified? diameter in VOA vials?\* If Did samples require splitting or any headspace is evident, No. compositing\*? comment in out-of-control Reg By: PM Client Other section. Were samples received in No\* If sent, were matrix spike Yes proper containers for analysis bottles returned? requested? 13. 7. Were all sample containers No\* Was Project Manager notified Yes received intact? of problems? (initials: ) Shipped By: UPS Airbill Number(s): 12 878 168 01 4 319

ooler Number(s): CLIENT	Shipping Charges: NA
poler Weight(s): 6#	Cooler Temp(s) (°C): 2°C
	(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

MULTIPLE PROJECT

(USE BACK OF PSIFFOR ADDITIONAL NOTES AND COMMENTS )

Inspected By: Date: 12-13-01 Logged By: Date: 13-Dec-01

Note all Out-of-Control and/or questionable events on Comment Section of this form. For holding times, the analyticl 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, %" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-ofcontrol (STL-SOP 938, section 2.2.12).

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SAMPLE ID DAT	23	30 Imatrix	)	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL (23 METALS)		TOX	100 60 Chamister (7.7)	TO CHEMINAL TO	Oil and Grease	Volatile Organics GC/MS (8260)	ВОБ	QO;	PESTICIDES/PCB (608/8082)	Herbicides (615/8151)	PNA (8310)/8270 SIMS	240 (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
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SPECIAL CERTIFICATION

REQUIRED: YES NO

Company

F. ( OBURGON 12-13-01

Company STZ-PAS

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PHONE: _	(505) 241-4744	5L, 14W 6715							(M8015) Gas/Purge & Trap	MTRE TARE						.	anics	SOLU.	8260 (COST) Volatile Organics	Pesticides /PCR (608/8081/8082)		SCAMS	8310/82			(13)	Target Analyte List Metals (23)		RCRA Metals by TCLP (Method 1311)			
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