

1R - 427-91

**Annual GW Mon.  
REPORTS**

**DATE:**

2005

# R. T. HICKS CONSULTANTS, LTD.

1909 Brunson Avenue ■ Midland, Texas 79701-6924 ■ 432.638.8740 ■ Fax: 413.403.9968

CERTIFIED MAIL

RETURN RECEIPT NO. 7099 3400 0017 1737 1797

January 5, 2006

Mr. Wayne Price  
New Mexico Energy, Minerals, & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 S. St. Francis Drive  
Santa Fe, New Mexico 87505

RE: 2005 Annual Monitoring Report  
EME P-6 Release Site (NMOCD Case # 1R0422, AP-45)  
EME N-5 Junction Box Site (NMOCD Case # 1R0427-90) AP-66  
EME E-5 Junction Box Site (NMOCD Case # 1R0427-91)  
EME M-5 SWD Site (NMOCD Case # - None assigned)  
T20S-R37E-Sections 5 and 6

Mr. Price:

R. T. Hicks Consultants, Ltd. takes this opportunity to submit the 2005 Annual Monitoring Well Report for the EME sites listed above. The above-referenced sites are located in the Eunice Monument Eumont (EME) Salt Water Disposal (SWD) System. These sites have been included in a single monitoring report because of their close proximity to one another and for correlation of water table data to generate a groundwater gradient map. Additional sites in the area may be included in subsequent reports after elevation data has been surveyed by a registered New Mexico surveyor.

ROC is the service provider (operator) for the EME Salt Water Disposal System and has no ownership of any portion of pipeline, well, or facility. The EME SWD System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis.

Thank you for your consideration concerning this annual summary of groundwater monitoring information. If you have any questions, do not hesitate to contact me at (423) 638-8740 or Kristin Farris Pope at (505) 393-9174.

Sincerely,

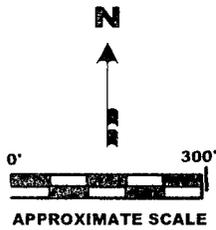


Gilbert J. Van Deventer, REM, PG, NMCS  
R. T. Hicks Consultants Ltd.

enclosures: Summary table & graphs, maps, well sample data sheets, and laboratory reports

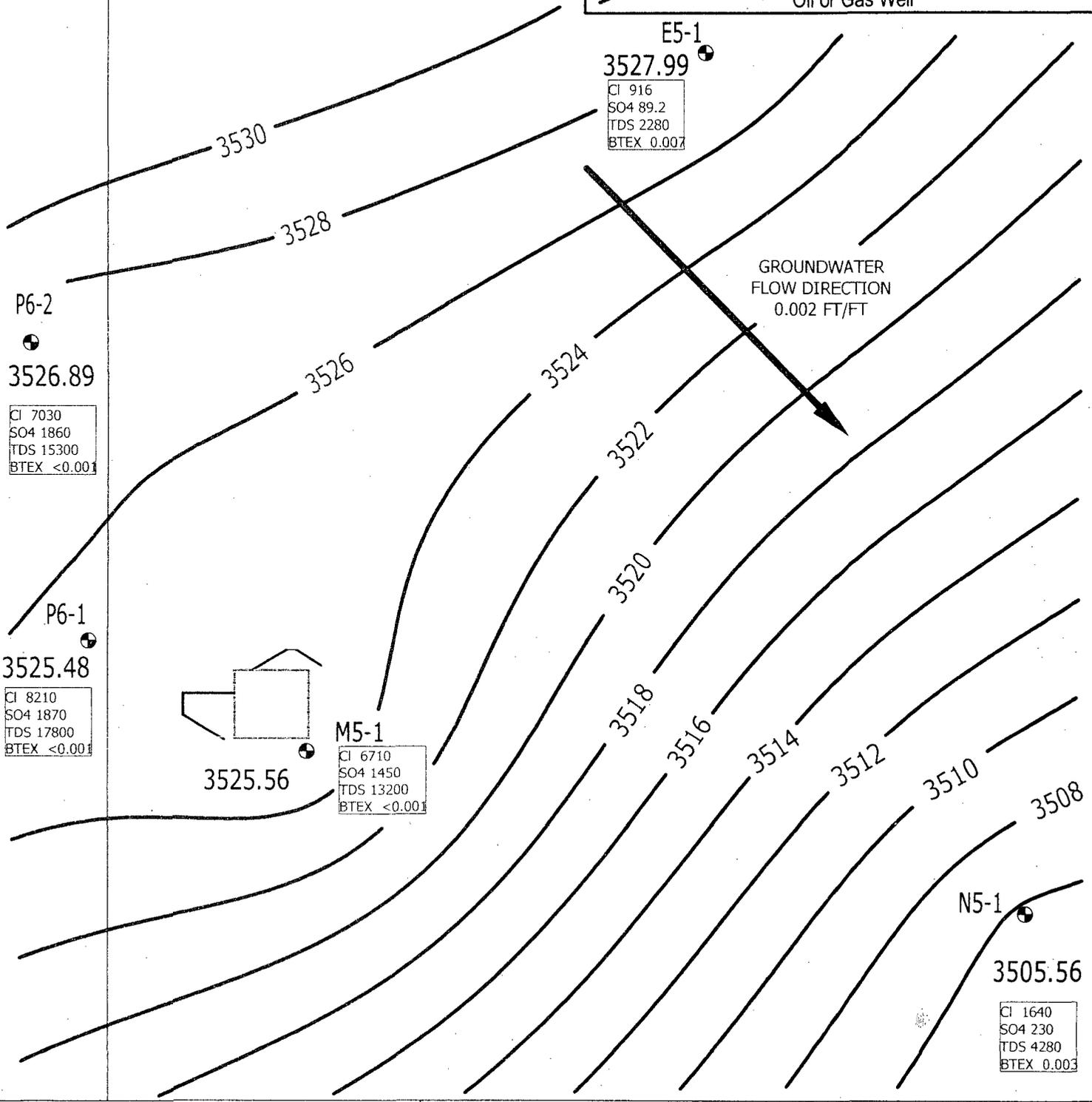
cc: LBG, CDH, KFP, file

**MAPS**



**MAP LEGEND**

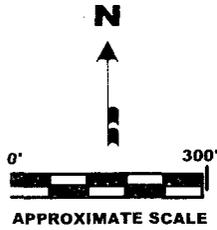
- P6-1**  
●  
3526.26  
Monitoring Well  
Groundwater Elevation (Feet AMSL)
- CI 7090  
SO4 1050  
TDS 19300  
Chloride, SO4, and TDS  
Concentrations in mg/L
- 3526.00  
Groundwater Elevation Contour  
(Contour Interval = 0.20 feet)
- Oil or Gas Well



**R. T. HICKS CONSULTANTS, LTD.**  
1909 Brunson Ave.  
Midland, Texas 79701

**Sites: EME P-6, M-5, N-5, and E-5**  
**Location: T20S-R37E-Sections 5 and 6**  
**Date: February 7, 2005**  
**Approximate Scale: 1 inch = 2000 feet**

**FIGURE 1A**  
**GROUNDWATER MONITORING MAP**



**MAP LEGEND**

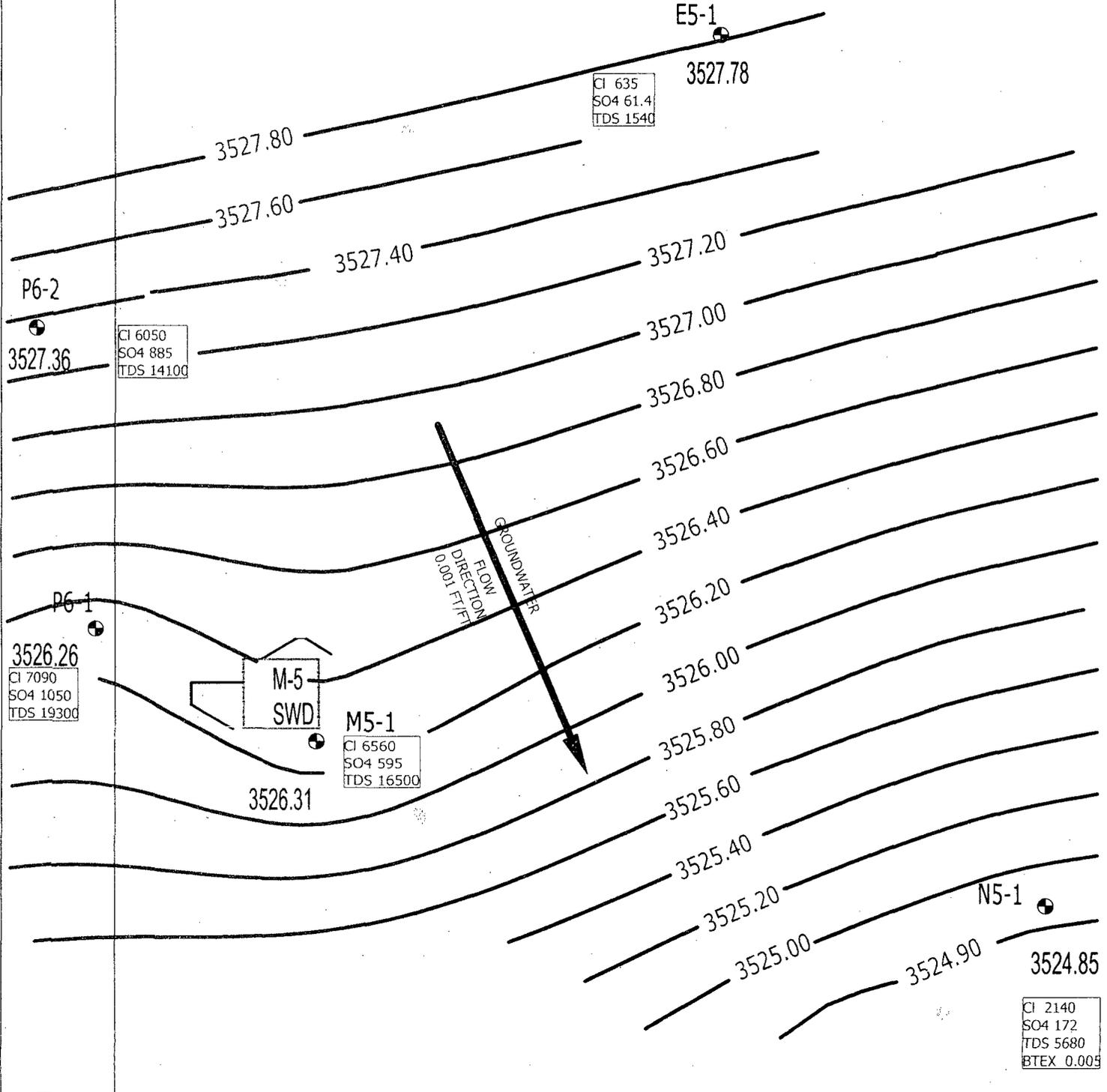
P6-1  
 ● Groundwater Elevation (Feet AMSL)  
 3526.26

CI 7090  
 SO4 1050  
 TDS 19300

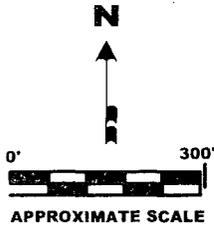
Chloride, SO4, and TDS  
 Concentrations in mg/L

3526.00  
 --- Groundwater Elevation Contour  
 (Contour Interval = 0.20 feet)

● Oil or Gas Well



<b>R. T. HICKS CONSULTANTS, LTD.</b> 1909 Brunson Ave. Midland, Texas 79701	<b>Sites:</b> EME P-6, M-5, N-5, and E-5	<b>FIGURE 1B</b>  <b>GROUNDWATER MONITORING MAP</b>
	<b>Location:</b> T20S-R37E-Sections 5 and 6	
	<b>Date:</b> May 3, 2005	
	<b>Approximate Scale:</b> 1 inch = 2000 feet	



**MAP LEGEND**

- P6-1  
3526.26  
Monitoring Well  
Groundwater Elevation (Feet AMSL)
- CI 7090  
SO4 1050  
TDS 19300  
Chloride, SO4, and TDS  
Concentrations in mg/L
- 3526.00  
Groundwater Elevation Contour  
(Contour Interval = 0.20 feet)
- Oil or Gas Well

E5-1

CI 600  
SO4 55.3  
TDS 1430  
BTEX <0.001

3527.20

3527.00

3526.80

3526.60

3526.40

3526.20

3526.00

P6-2

CI 7540  
SO4 1100  
TDS 14300  
BTEX <0.001

P6-1

CI 9210  
SO4 1140  
TDS 16600  
BTEX <0.001

M5-1

CI 6070  
SO4 574  
TDS 13800  
BTEX <0.001

GROUNDWATER  
FLOW DIRECTION  
0.001 FT/FT

N5-1

CI 1860  
SO4 144  
TDS 4480  
BTEX <0.001

R. T. HICKS CONSULTANTS, LTD.

1909 Brunson Ave.  
Midland, Texas 79701

Sites: EME P-6, M-5, N-5, and E-5

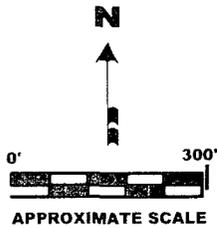
Location: T20S-R37E-Sections 5 and 6

Date: August 11, 2005

Approximate Scale: 1 inch = 2000 feet

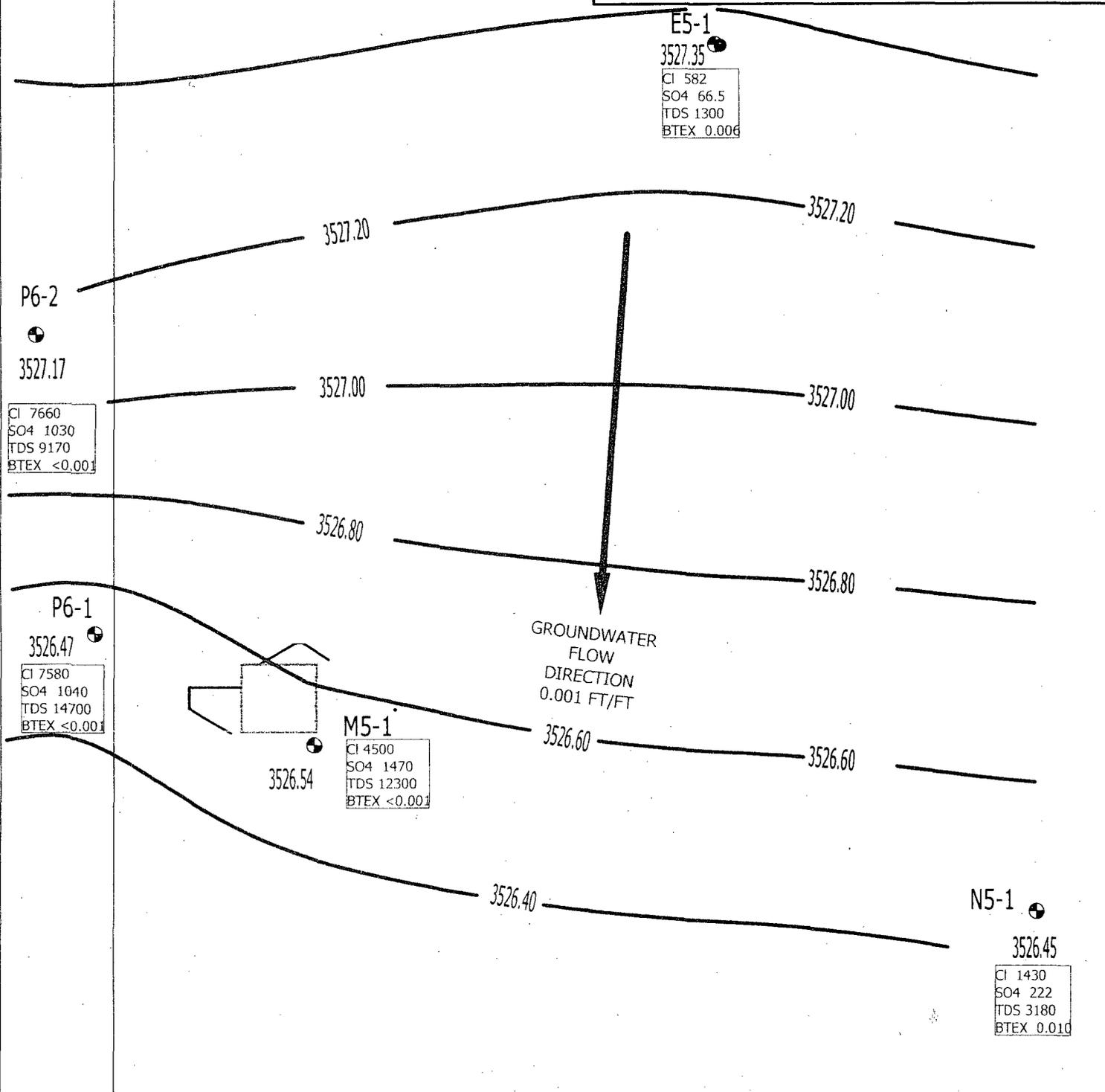
**FIGURE 1C**

**GROUNDWATER  
MONITORING MAP**



**MAP LEGEND**

- P6-1  
3526.26  
Monitoring Well  
Groundwater Elevation (Feet AMSL)
- CI 7090  
SO4 1050  
TDS 19300  
Chloride, SO4, and TDS  
Concentrations in mg/L
- 3526.00  
Groundwater Elevation Contour  
(Contour Interval = 0.20 feet)
- Oil or Gas Well



**R. T. HICKS CONSULTANTS, LTD.**  
 1909 Brunson Ave.  
 Midland, Texas 79701

**Sites:** EME P-6, M-5, N-5, and E-5  
**Location:** T20S-R37E-Sections 5 and 6  
**Date:** November 28, 2005  
**Approximate Scale:** 1inch = 2000 feet

**FIGURE 1D**  
**GROUNDWATER**  
**MONITORING MAP**

## **TABLE AND GRAPHS**

**Table 1**  
**Summary of Groundwater Monitoring Results**  
**EME P-6, M-5, N-5, and E-5 Sites**

Monitoring Well	Sample Date	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	Depth to Groundwater (feet BTOC)	Groundwater Elevation (feet AMSL)
P6-1	01/10/02	10700	999	20248	< 0.002	< 0.002	< 0.002	< 0.006	36.70	3522.32
	05/14/02	8060	852	18200	< 0.001	< 0.001	< 0.001	< 0.001	36.73	3522.29
	08/15/02	9570	646	16900	< 0.001	< 0.001	< 0.001	< 0.001	36.95	3522.07
	11/06/02	9040	952	17400	< 0.001	< 0.001	< 0.001	< 0.001	37.15	3521.87
	02/27/03	8860	741	15000	< 0.001	< 0.001	< 0.001	< 0.001	37.12	3521.90
	05/29/03	8680	858	20000	< 0.001	< 0.001	< 0.001	< 0.001	37.19	3521.83
	08/21/03	8860	683	17800	< 0.001	< 0.001	< 0.001	< 0.001	37.43	3521.59
	11/19/03	8690	619	18500	< 0.001	< 0.001	< 0.001	< 0.001	37.64	3521.38
	02/20/04	8510	830	16600	< 0.001	< 0.001	< 0.001	< 0.001	37.84	3521.18
	05/06/04	8510	756	17400	< 0.001	< 0.001	< 0.001	< 0.001	37.36	3521.66
	08/10/04	9040	889	17200	< 0.001	< 0.001	< 0.001	< 0.001	37.03	3521.99
	11/09/04	9130	1220	17600	< 0.001	< 0.001	< 0.001	< 0.001	36.28	3522.74
	02/07/05	8210	1870	17800	< 0.001	< 0.001	< 0.001	< 0.001	33.54	3525.48
05/03/05	7090	1050	19300	< 0.001	< 0.001	< 0.001	< 0.001	32.76	3526.26	
08/11/05	9210	1140	16600	< 0.001	< 0.001	< 0.001	< 0.001	32.81	3526.21	
11/28/05	7580	1040	14700	< 0.001	< 0.001	< 0.001	< 0.001	32.55	3526.47	
P6-2	02/20/04	9040	1260	19700	< 0.001	< 0.001	< 0.001	< 0.001	37.97	3521.68
	05/06/04	8330	1340	16100	< 0.001	< 0.001	< 0.001	< 0.001	37.29	3522.36
	08/10/04	8240	1220	15400	< 0.001	< 0.001	< 0.001	< 0.001	36.97	3522.68
	11/09/04	7670	1280	15700	< 0.001	< 0.001	< 0.001	< 0.001	35.83	3523.82
	02/07/05	7030	1860	15300	< 0.001	< 0.001	< 0.001	< 0.001	32.76	3526.89
	05/03/05	6050	885	14100	< 0.001	< 0.001	< 0.001	< 0.001	32.29	3527.36
	08/11/05	7540	1100	14300	< 0.001	< 0.001	< 0.001	< 0.001	32.62	3527.03
11/28/05	7660	1030	9170	< 0.001	< 0.001	< 0.001	< 0.001	32.48	3527.17	
M5-1	12/11/03	6198	99.8	10784	< 0.002	< 0.002	< 0.002	< 0.006	33.28	3521.13
	02/20/04	5320	454	14500	< 0.002	< 0.002	< 0.002	< 0.006	33.37	3521.04
	05/06/04	5940	420	12400	< 0.002	< 0.002	< 0.002	< 0.006	32.79	3521.62
	08/10/04	6910	470	17300	< 0.001	< 0.001	< 0.001	< 0.001	32.52	3521.89
	11/09/04	7090	614	14000	< 0.001	< 0.001	< 0.001	< 0.001	31.63	3522.78
	02/07/05	6710	1450	13200	< 0.001	< 0.001	< 0.001	< 0.001	28.85	3525.56
	05/03/05	6560	595	16500	< 0.001	< 0.001	< 0.001	< 0.001	28.10	3526.31
	08/13/05	6070	574	13800	< 0.001	< 0.001	< 0.001	< 0.001	28.24	3526.17
11/28/05	4500	1470	12300	< 0.001	< 0.001	< 0.001	< 0.001	27.87	3526.54	
N5-1	01/10/02	1,160	149	2,652	<0.002	<0.002	<0.006	<0.006	35.50	3523.85
	05/13/02	993	142	2,520	<0.001	0.002	0.003	0.009	37.47	3521.88
	08/12/02	939	109	2,700	<0.001	<0.001	<0.001	0.001	37.75	3521.60
	11/04/02	1,200	44.9	3,083	<0.002	<0.002	<0.002	<0.006	37.90	3521.45
	03/14/03	1,050	103	2,310	<0.001	0.002	0.004	0.011	37.78	3521.57
	05/29/03	1,130	90.4	3,230	<0.001	0.001	0.004	0.01	38.00	3521.35
	08/22/03	1,200	100	2,930	---	---	---	---	38.42	3520.93
	11/20/03	1,150	102	3,200	<0.001	0.002	0.003	0.012	38.63	3520.72
	02/20/04	1,180	57	2,575	<0.002	<0.002	<0.002	<0.006	38.50	3520.85
	05/26/04	1,000	79	2,583	<0.002	0.005	0.005	0.010	37.80	3521.55
	09/02/04	1,150	77.6	3,170	<0.001	0.001	0.002	0.003	37.94	3521.41
	12/21/04	1,330	231	3,990	<0.001	<0.001	<0.001	<0.001	35.12	3524.23
	01/26/05	1,810	220	4,280	<0.001	<0.001	0.001	0.001	34.03	3525.32
	02/08/05	1,640	230	4,280	<0.001	<0.001	0.002	0.001	33.79	3525.56
05/02/05	2,140	172	5,680	<0.001	<0.001	0.003	0.002	34.50	3524.85	
08/11/05	1,860	144	4,480	<0.001	<0.001	<0.001	<0.001	33.39	3525.96	
11/28/05	1,430	222	3,180	0.001	0.002	0.004	0.003	32.90	3526.45	
E5-1	05/14/02	886	157	2,300	<0.001	<0.001	<0.001	<0.001	40.72	3522.50
	08/12/02	993	141	2,440	<0.001	0.001	<0.001	<0.003	40.91	3522.31
	11/05/02	833	116	2,180	<0.001	<0.001	<0.001	<0.001	41.15	3522.07
	03/14/03	877	127	2,170	<0.001	<0.001	<0.001	<0.001	41.03	3522.19
	05/29/03	913	119	2,270	<0.001	<0.001	<0.001	<0.001	41.14	3522.08
	08/22/03	833	116	2,210	<0.001	<0.001	<0.001	<0.001	41.14	3522.08
	11/20/03	833	100	2,200	<0.001	<0.001	<0.001	<0.001	41.73	3521.49
	02/20/04	820	64	2,200	<0.002	<0.002	<0.002	<0.006	41.70	3521.52
	05/26/04	520	47	1,657	<0.002	<0.002	<0.002	<0.006	40.90	3522.32
	09/02/04	514	74.6	1,640	<0.001	0.001	<0.001	0.002	40.70	3522.52
	01/26/05	1,730	148	3,930	0.001	0.005	0.002	0.009	35.28	3527.94
	02/08/05	916	89.2	2,280	<0.001	<0.001	<0.001	<0.001	35.23	3527.99
	05/02/05	635	61.4	1,540	<0.001	<0.001	<0.001	<0.001	35.44	3527.78
	08/11/05	600	55.3	1,430	<0.001	<0.001	<0.001	<0.001	36.11	3527.11
11/28/05	582	66.5	1,300	<0.001	0.002	<0.001	0.003	35.87	3527.35	
WQCC Standards		250	600	1000	0.01	0.75	0.75	0.62		

Total Dissolved Solids (TDS), chloride, sulfate, and BTEX concentrations listed in milligrams per liter (mg/L).

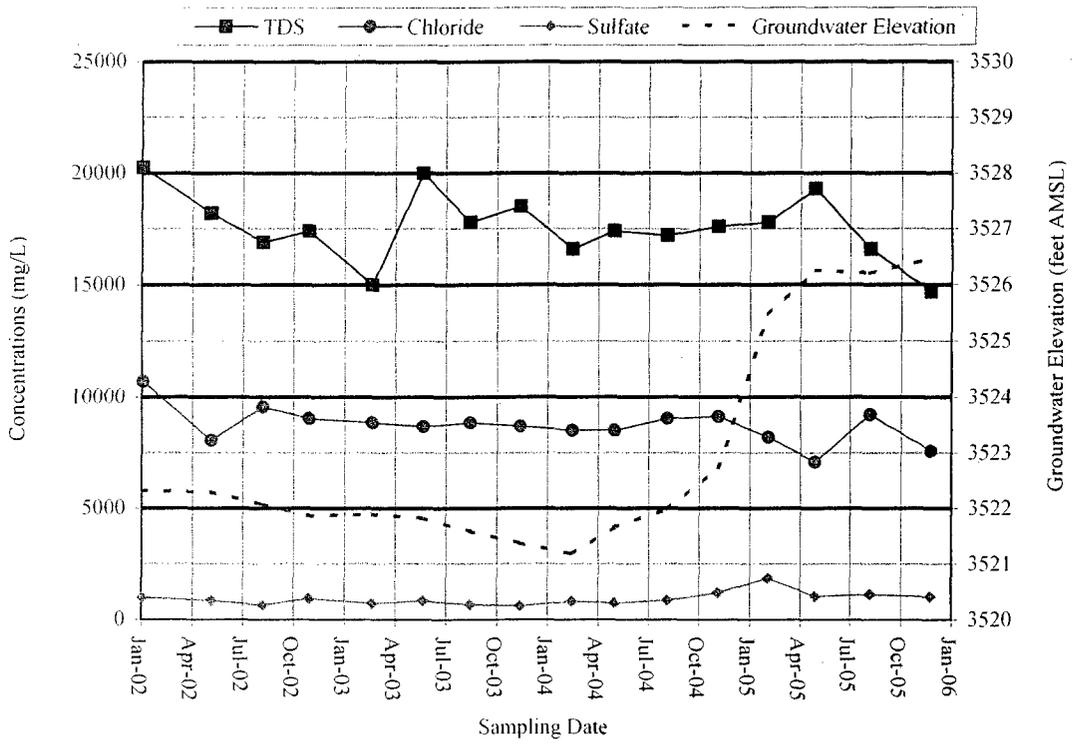
Analyses performed by Environmental Lab of Texas, Odessa, TX.

Values in boldface type indicate concentrations exceed New Mexico Water Quality Commission (WQCC) standards.

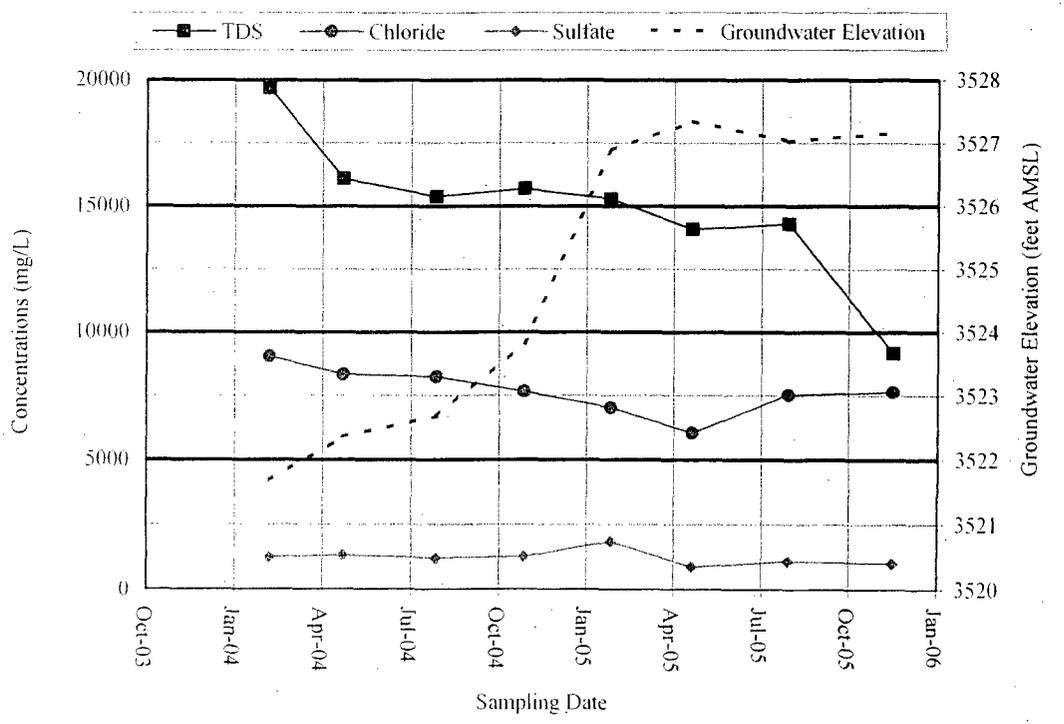
AMSL - Above Mean Sea Level; BTOC - Below Top of Casing

Elevations and state plane coordinates surveyed by Basin Surveys, Hobbs, NM.

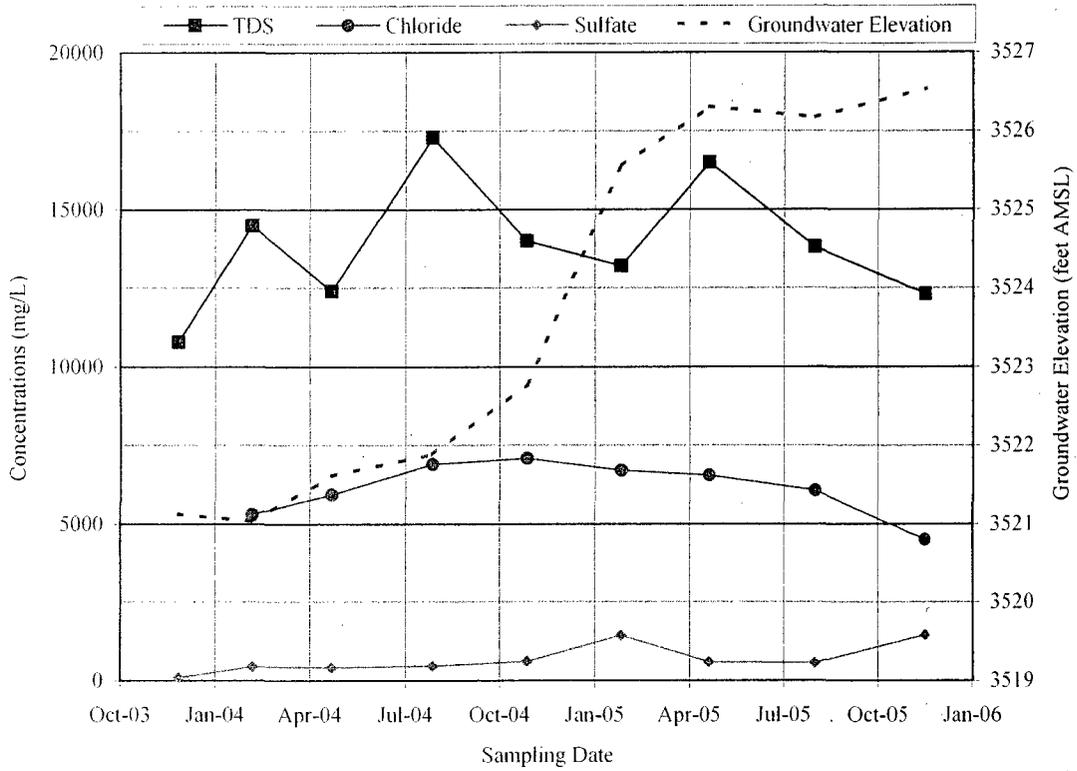
**Figure 2**  
**TDS, Chloride, Sulfate, and Groundwater Elevation Values Versus Time Graph (P6-1)**  
**P-6 Release Site (T20S, R37E, Section 6, Unit Letter P)**



**Figure 3**  
**TDS, Chloride, Sulfate, and Groundwater Elevation Values Versus Time Graph (P6-2)**  
**P-6 Release Site (T20S, R37E, Section 6, Unit Letter P)**



**Figure 4**  
**TDS, Chloride, Sulfate, and Groundwater Elevation Values Versus Time Graph (M5-1)**  
**M-5 SWD Site (T20S, R37E, Section 5, Unit Letter M)**



**Figure 5**  
**TDS, Chloride, Sulfate, and Groundwater Elevation Values Versus Time Graph (N5-1)**  
**N-5 Junction Box Site (T20S, R37E, Section 5, Unit Letter N)**

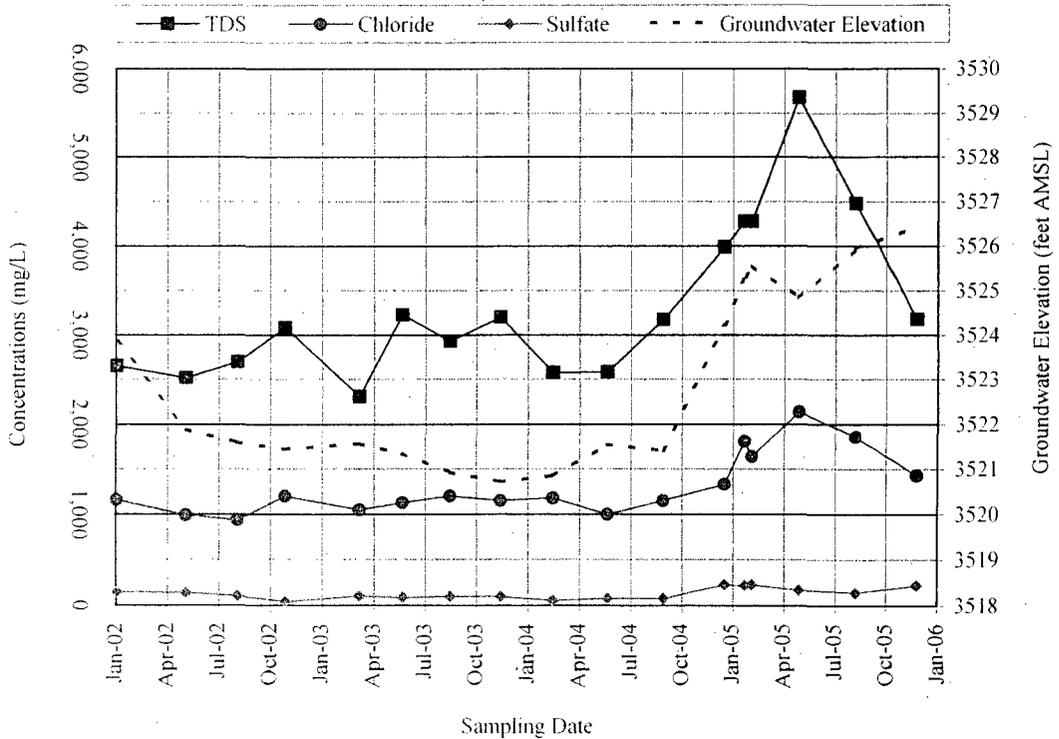
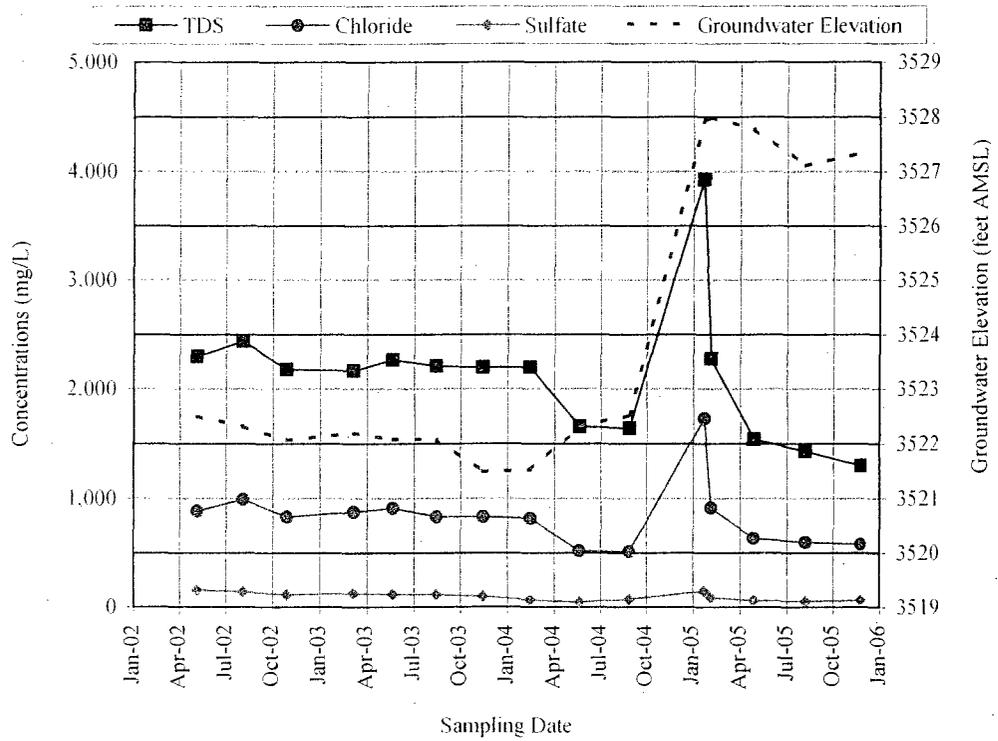


Figure 6  
TDS, Chloride, Sulfate, and Groundwater Elevation Values Versus Time Graph (E5-1)  
E-5 Junction Box Site (T20S, R37E, Section 5, Unit Letter E)



# **WELL SAMPLE DATA SHEETS**





**WELL SAMPLING DATA FORM**

CLIENT: RICE Operating Company WELL ID: P6-2  
 SYSTEM: EME System DATE: February 7, 2005  
 SITE LOCATION: P-6 Release SAMPLER: G. Van Deventer

PURGING METHOD:  Hand Bailed  Pump If Pump, Type: 3-stage Mini-Monsoon Submersible Pump

SAMPLING METHOD:  Disposable Bailer  Direct from Discharge Hose  Other: \_\_\_\_\_

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

Gloves  Alconox  Distilled Water Rinse  Other: \_\_\_\_\_

DISPOSAL METHOD OF PURGE WATER:  Surface Discharge  Drums  Disposal Facility

TOTAL DEPTH OF WELL: 72.45 Feet

DEPTH TO WATER: 32.76 Feet

HEIGHT OF WATER COLUMN: 39.69 Feet

WELL DIAMETER: 2.0 Inch

19 Minimum gallons to purge 3 well volumes

28 Actual Gallons purged

TIME	VOLUME PURGED (GAL)	TEMP. °C	COND. mS/cm	pH		PHYSICAL APPEARANCE AND REMARKS
16:20	0	---	---	---		Began purging.
16:22	4	19.4	17.81	6.59		
16:24	8	18.7	17.97	6.58		
16:27	12	18.7	18	6.58		
16:30	16	18.6	18.02	6.59		
16:32	20	18.5	18.03	6.59		
16:34	24	18.6	18.05	6.61		
16:36	28	18.4	18.01	6.62		Purging completed.
					16:36	Samples collected
0:16	:Total Time (hr:min)		28	:Total Vol (gal)		1.75 :Average Flow Rate (gal/min)

COMMENTS: \_\_\_\_\_

Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions, and TDS analysis.



**WELL SAMPLING DATA FORM**

CLIENT: RICE Operating Company WELL ID: M5-1  
 SYSTEM: EME System DATE: February 8, 2005  
 SITE LOCATION: M-5 SWD Site SAMPLER: G. Van Deventer

PURGING METHOD:  Hand Bailed  Pump If Pump, Type: \_\_\_\_\_

SAMPLING METHOD:  Disposable Bailer  Direct from Discharge Hose  Other: \_\_\_\_\_

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

Gloves  Alconox  Distilled Water Rinse  Other: \_\_\_\_\_

DISPOSAL METHOD OF PURGE WATER:  Surface Discharge  Drums  Disposal Facility

TOTAL DEPTH OF WELL: 32.52 Feet

DEPTH TO WATER: 28.85 Feet

HEIGHT OF WATER COLUMN: 3.67 Feet

WELL DIAMETER: 2.0 Inch

2 Minimum gallons to purge 3 well volumes

6 Actual Gallons purged

TIME	VOLUME PURGED (GAL)	TEMP. °C	COND. mS/cm	pH		PHYSICAL APPEARANCE AND REMARKS
9:21	0	---	---	---		Began purging.
9:25	2	17.3	14.01	6.61		
9:29	4	17.6	17.3	6.53		
9:34	6	17.9	16.93	6.55		
					9:40	Samples collected
0:13	:Total Time (hr:min)		6	:Total Vol (gal)		0.46 :Average Flow Rate (gal/min)

COMMENTS: \_\_\_\_\_

Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions, and TDS analysis.



**WELL SAMPLING DATA FORM**

CLIENT: RICE Operating Company WELL ID: N5-1  
 SYSTEM: EME System DATE: February 8, 2005  
 SITE LOCATION: N-5 Junction Box Site SAMPLER: G. Van Deventer

PURGING METHOD:  Hand Bailed  Pump If Pump, Type: \_\_\_\_\_

SAMPLING METHOD:  Disposable Bailer  Direct from Discharge Hose  Other: \_\_\_\_\_

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

Gloves  Alconox  Distilled Water Rinse  Other: \_\_\_\_\_

DISPOSAL METHOD OF PURGE WATER:  Surface Discharge  Drums  Disposal Facility

TOTAL DEPTH OF WELL: 40.15 Feet

DEPTH TO WATER: 33.79 Feet

HEIGHT OF WATER COLUMN: 6.36 Feet

WELL DIAMETER: 2.0 Inch

3 Minimum gallons to purge 3 well volumes

5 Actual Gallons purged

TIME	VOLUME PURGED (GAL)	TEMP. °C	COND. mS/cm	pH		PHYSICAL APPEARANCE AND REMARKS
11:25	0	---	---	---		Began purging.
11:27	1	17.5	4.79	6.61		
11:30	2	18.2	5.27	6.60		
11:32	3	18.3	5.55	6.64		
11:34	4	18.4	5.14	6.60		
11:37	5	18.3	5.33	6.62		
					11:40	Samples collected
0:12	:Total Time (hr:min)		5	:Total Vol (gal)		0.42 :Average Flow Rate (gal/min)

COMMENTS: \_\_\_\_\_

Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions, and TDS analysis.



**WELL SAMPLING DATA FORM**

CLIENT: RICE Operating Company WELL ID: E5-1  
 SYSTEM: EME System DATE: February 8, 2005  
 SITE LOCATION: E-5 Junction Box Site SAMPLER: G. Van Deventer

PURGING METHOD:  Hand Bailed  Pump If Pump, Type: \_\_\_\_\_

SAMPLING METHOD:  Disposable Bailer  Direct from Discharge Hose  Other: \_\_\_\_\_

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

Gloves  Alconox  Distilled Water Rinse  Other: \_\_\_\_\_

DISPOSAL METHOD OF PURGE WATER:  Surface Discharge  Drums  Disposal Facility

TOTAL DEPTH OF WELL: 45.35 Feet

DEPTH TO WATER: 35.23 Feet

HEIGHT OF WATER COLUMN: 10.12 Feet

WELL DIAMETER: 2.0 Inch

5 Minimum gallons to purge 3 well volumes

6 Actual Gallons purged

TIME	VOLUME PURGED (GAL)	TEMP. °C	COND. mS/cm	pH		PHYSICAL APPEARANCE AND REMARKS
10:37	0	---	---	---		Began purging.
10:40	2	17.9	5.54	6.92		
10:45	4	18.8	4.01	6.90		
10:48	5	18.9	4.17	6.88		
10:50	6	19.0	3.85	6.92		
					10:55	Samples collected
0:13	:Total Time (hr:min)		6	:Total Vol (gal)		0.46 :Average Flow Rate (gal/min)

COMMENTS: \_\_\_\_\_

Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions, and TDS analysis.



**WELL SAMPLING DATA FORM**

CLIENT: RICE Operating Company WELL ID: P6-1  
 SYSTEM: EME System DATE: May 3, 2005  
 SITE LOCATION: P-6 Release SAMPLER: G. Van Deventer

PURGING METHOD:  Hand Bailed  Pump If Pump, Type: \_\_\_\_\_

SAMPLING METHOD:  Disposable Bailer  Direct from Discharge Hose  Other: \_\_\_\_\_

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

Gloves  Alconox  Distilled Water Rinse  Other: \_\_\_\_\_

DISPOSAL METHOD OF PURGE WATER:  Surface Discharge  Drums  Disposal Facility

TOTAL DEPTH OF WELL: 47.95 Feet

DEPTH TO WATER: 32.76 Feet

HEIGHT OF WATER COLUMN: 15.19 Feet

WELL DIAMETER: 2.0 Inch

7 Minimum gallons to purge 3 well volumes

8 Actual Gallons purged

TIME	VOLUME PURGED (GAL)	TEMP. °C	COND. mS/cm	pH*		PHYSICAL APPEARANCE AND REMARKS
16:24	0	---	---	---		Began purging.
16:28	2	16.6	18.86	6.17		* pH readings suspect
16:32	4	16.9	17.71	6.21		
16:36	6	16.7	17.99	6.10		
16:40	8	16.9	18.92	5.28		
					16:45	Samples collected
0:16	:Total Time (hr:min)		8	:Total Vol (gal)		0.50 :Average Flow Rate (gal/min)

COMMENTS: \_\_\_\_\_

Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions, and TDS analysis.



**WELL SAMPLING DATA FORM**

CLIENT: RICE Operating Company WELL ID: P6-2  
 SYSTEM: EME System DATE: May 3, 2005  
 SITE LOCATION: P-6 Release SAMPLER: G. Van Deventer

PURGING METHOD:  Hand Bailed  Pump If Pump, Type: 3-stage Mini-Monsoon Submersible Pump

SAMPLING METHOD:  Disposable Bailer  Direct from Discharge Hose  Other: \_\_\_\_\_

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

Gloves  Alconox  Distilled Water Rinse  Other: \_\_\_\_\_

DISPOSAL METHOD OF PURGE WATER:  Surface Discharge  Drums  Disposal Facility

TOTAL DEPTH OF WELL: 72.45 Feet  
 DEPTH TO WATER: 32.29 Feet  
 HEIGHT OF WATER COLUMN: 40.16 Feet  
 WELL DIAMETER: 2.0 Inch

20 Minimum gallons to purge 3 well volumes  
35 Actual Gallons purged

TIME	VOLUME PURGED (GAL)	TEMP. °C	COND. mS/cm	pH*		PHYSICAL APPEARANCE AND REMARKS
16:20	0	---	---	---		Began purging.
16:22	5	16.4	14.45	5.09		* pH readings suspect
16:24	10	17.0	14.83	5.07		
16:27	15	17.9	15.11	5.14		
16:30	20	18.1	15.18	5.17		
16:32	25	18.1	15.14	4.88		
16:34	30	17.9	15.17	4.89		
16:36	35	18.0	15.25	4.92		Purging completed.
					16:36	Samples collected
0:16	:Total Time (hr:min)		35	:Total Vol (gal)		2.19 :Average Flow Rate (gal/min)

COMMENTS: \_\_\_\_\_

Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions, and TDS analysis.



**WELL SAMPLING DATA FORM**

CLIENT: RICE Operating Company WELL ID: M5-1  
 SYSTEM: EME System DATE: May 3, 2005  
 SITE LOCATION: M-5 SWD Site SAMPLER: G. Van Deventer

PURGING METHOD:  Hand Bailed  Pump If Pump, Type: \_\_\_\_\_

SAMPLING METHOD:  Disposable Bailer  Direct from Discharge Hose  Other: \_\_\_\_\_

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

Gloves  Alconox  Distilled Water Rinse  Other: \_\_\_\_\_

DISPOSAL METHOD OF PURGE WATER:  Surface Discharge  Drums  Disposal Facility

TOTAL DEPTH OF WELL: 32.52 Feet

DEPTH TO WATER: 28.10 Feet

HEIGHT OF WATER COLUMN: 4.42 Feet

WELL DIAMETER: 2.0 Inch

2 Minimum gallons to purge 3 well volumes

6 Actual Gallons purged

TIME	VOLUME PURGED (GAL)	TEMP. °C	COND. mS/cm	pH*		PHYSICAL APPEARANCE AND REMARKS
15:50	0	---	---	---		Began purging.
15:54	2	16.8	14.14	5.26		* pH readings suspect
15:59	4	17.1	13.53	5.31		
16:05	6	17.5	14.47	4.79		
					16:10	Samples collected
0:15	:Total Time (hr:min)		6	:Total Vol (gal)		0.40 :Average Flow Rate (gal/min)

COMMENTS: \_\_\_\_\_

Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions, and TDS analysis.





WELL SAMPLING DATA FORM

CLIENT: RICE Operating Company  
 SYSTEM: EME System  
 SITE LOCATION: E-5 Junction Box Site

WELL ID: E5-1  
 DATE: May 3, 2005  
 SAMPLER: G. Van Deventer

PURGING METHOD:  Hand Bailed  Pump If Pump, Type: \_\_\_\_\_

SAMPLING METHOD:  Disposable Bailer  Direct from Discharge Hose  Other: \_\_\_\_\_

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

Gloves  Alconox  Distilled Water Rinse  Other: \_\_\_\_\_

DISPOSAL METHOD OF PURGE WATER:  Surface Discharge  Drums  Disposal Facility

TOTAL DEPTH OF WELL: 45.35 Feet

DEPTH TO WATER: 35.44 Feet

HEIGHT OF WATER COLUMN: 9.91 Feet

WELL DIAMETER: 2.0 Inch

5 Minimum gallons to purge 3 well volumes

6 Actual Gallons purged

TIME	VOLUME PURGED (GAL)	TEMP. °C	COND. mS/cm	pH		PHYSICAL APPEARANCE AND REMARKS
16:43	0	---	---	---		Began purging.
16:47	2	18.3	3.9	7.22		
16:53	4	18.5	3.01	7.33		
16:58	6	18.6	3.16	7.21		
					17:00	Samples collected
0:15	: Total Time (hr:min)		6	: Total Vol (gal)		0.40 : Average Flow Rate (gal/min)

COMMENTS: \_\_\_\_\_

Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions, and TDS analysis.

## WELL SAMPLING DATA FORM

CLIENT: RICE Operating Company WELL ID: P6-1  
 SYSTEM: EME System DATE: August 11, 2005  
 SITE LOCATION: P-6 Release SAMPLER: G. Van Deventer

PURGING METHOD:  Hand Bailed  Pump If Pump, Type: \_\_\_\_\_

SAMPLING METHOD:  Disposable Bailer  Direct from Discharge Hose  Other: \_\_\_\_\_

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

Gloves  Alconox  Distilled Water Rinse  Other: \_\_\_\_\_

DISPOSAL METHOD OF PURGE WATER:  Surface Discharge  Drums  Disposal Facility

TOTAL DEPTH OF WELL: 47.95 Feet

DEPTH TO WATER: 32.76 Feet

HEIGHT OF WATER COLUMN: 15.19 Feet

WELL DIAMETER: 2.0 Inch

7 Minimum gallons to purge 3 well volumes

8 Actual Gallons purged

TIME	VOLUME PURGED (GAL)	TEMP. °F	COND. mS/cm	pH			PHYSICAL APPEARANCE AND REMARKS
16:51	0	---	---	---			Began purging.
16:56	2	70.2	24.63	7.76			
17:01	4	68.7	25.14	7.73			
17:10	6	67.7	25.86	7.73			
17:15	8	67.4	26.26	7.72			
						17:20	Samples collected
0:24 : Total Time (hr:min)		8 : Total Vol (gal)		0.33 : Average Flow Rate (gal/min)			

COMMENTS: \_\_\_\_\_

Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions, and TDS analysis.



## WELL SAMPLING DATA FORM

CLIENT: RICE Operating Company                      WELL ID: M5-1  
 SYSTEM: EME System                                      DATE: August 11, 2005  
 SITE LOCATION: M-5 SWD Site                          SAMPLER: G. Van Deventer

PURGING METHOD:             Hand Bailed     Pump If Pump, Type: \_\_\_\_\_

SAMPLING METHOD:             Disposable Bailer     Direct from Discharge Hose     Other: \_\_\_\_\_

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

Gloves  Alconox     Distilled Water Rinse     Other: \_\_\_\_\_

DISPOSAL METHOD OF PURGE WATER:     Surface Discharge     Drums     Disposal Facility

TOTAL DEPTH OF WELL:            32.52 Feet

DEPTH TO WATER:                 28.10 Feet

HEIGHT OF WATER COLUMN:       4.42 Feet

WELL DIAMETER:                    2.0 Inch

2 Minimum gallons to purge 3 well volumes

6 Actual Gallons purged

TIME	VOLUME PURGED (GAL)	TEMP. °F	COND. mS/cm	pH			PHYSICAL APPEARANCE AND REMARKS
19:01	0	---	---	---			Began purging.
19:09	2	71.4	18.76	7.79			
19:17	4	67.8	18.81	7.67			
19:20	6	67.0	18.89	7.63			
						19:23	Samples collected
0:19	:Total Time (hr:min)		6	:Total Vol (gal)		0.32	:Average Flow Rate (gal/min)

COMMENTS: \_\_\_\_\_

Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions, and TDS analysis.



**WELL SAMPLING DATA FORM**

CLIENT: RICE Operating Company WELL ID: E5-1  
 SYSTEM: EME System DATE: August 11, 2005  
 SITE LOCATION: E-5 Junction Box Site SAMPLER: G. Van Deventer

PURGING METHOD:  Hand Bailed  Pump If Pump, Type: \_\_\_\_\_

SAMPLING METHOD:  Disposable Bailer  Direct from Discharge Hose  Other: \_\_\_\_\_

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

Gloves  Alconox  Distilled Water Rinse  Other: \_\_\_\_\_

DISPOSAL METHOD OF PURGE WATER:  Surface Discharge  Drums  Disposal Facility

TOTAL DEPTH OF WELL: 45.35 Feet

DEPTH TO WATER: 35.44 Feet

HEIGHT OF WATER COLUMN: 9.91 Feet

WELL DIAMETER: 2.0 Inch

5 Minimum gallons to purge 3 well volumes

6 Actual Gallons purged

TIME	VOLUME PURGED (GAL)	TEMP. °F	COND. mS/cm	pH		PHYSICAL APPEARANCE AND REMARKS
19:47	0	---	---	---		Began purging.
19:51	2	69.9	3.42	8.15		
19:54	4	68.6	3.2	8.02		
19:58	6	68.3	3.06	7.99		
					20:00	Samples collected
0:11	:Total Time (hr:min)		6	:Total Vol (gal)		0.55 :Average Flow Rate (gal/min)

COMMENTS: \_\_\_\_\_

Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions, and TDS analysis.













**LABORATORY REPORTS**

**AND**

**CHAIN OF CUSTODY DOCUMENTATION**

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