Hydrex
ENVIRONMENTAL, INC.

February 11, 2010

MC-124
Mr. Gale Baker, P.G.
MSW Permits Section
Office of Waste Management, Permits Division
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, TX 78711-3087

Re: Response to First Technical Notice of Deficiency (NOD) for the Groundwater Monitoring System Design Angelina County Waste Management Center- Angelina County Municipal Solid Waste - Permit No. 2105A Tracking No. 11995083; RN101947323 / CN600833511

Dear Mr. Baker:

The following information is provided, on behalf of the Angelina County Waste Management Center, as a revision to the previously submitted request for modification to the approved groundwater monitoring system design for the above-referenced facility. In addition, this correspondence addresses the comments provided in the above-referenced TCEQ correspondence. For your convenience, each comment from the TCEQ correspondence is presented below followed by the response.

TCEQ Comment:

1. *The permit modification application contains revisions to Part III, Attachment 5, Groundwater Characterization Report. However, the permit modification did not include a complete submittal of Attachment 5. Some sections, exhibits, and appendices were omitted. Please submit a complete replacement for Attachment 5.*

Response:

A complete replacement for Attachment 5 (including pages unchanged for purposes of this permit modification) is included with this submittal. February 2010 revision dates are included on pages modified for this permit modification.

TCEQ Comment:

2. *Attachment 5 will need to include an updated groundwater monitoring design certification by a qualified groundwater scientist pursuant to §330.403(e).*

Response:

A new groundwater monitoring design certification to replace the certification included with the March 2008 submittal is included with this NOD response.

TCEQ Comment:

3. *The permit modification did not include sufficient documentation that would justify the plugging and abandonment of monitor wells MW-1B and MW-15B. Additional documentation needs to be provided in Attachment 5 such as a discussion about the historic groundwater analyses results for these wells, cross-sections showing the "deep" water-bearing zone along with the uppermost aquifer, groundwater contour maps showing the gradient of the "deep" water-bearing zone, and the basis for these monitoring wells as currently permitted. It is noted that monitor well MW-13B is currently in an assessment of corrective measures pursuant to 30 TAC §330.411. Does MW-13B monitor the same "deep" water-bearing zone as MW-1B and MW-15B?*

Response:

The use of the term "deep water-bearing zone" was intended to describe the deeper portion of the uppermost groundwater bearing zone. As described in the *Initial Groundwater Characterization Report* (December 1, 1995), the uppermost groundwater bearing zone is made up of a number of hydraulically connected channel sands incised by other channel sands. Interbedded silty sand and clay units flanking the channel sands lessen hydraulic connectivity between water bearing units in both vertical and lateral directions. Although the interbedded silty sand and clay units limit flow between the sand bodies, distinct evidence of interconnectivity remains. Water levels in monitor wells installed in close proximity, such as wells MW-1B and MW-18, demonstrate the interconnectivity of vertically separated channel sands. Comparisons of historical water level data for monitor wells MW-1B and MW-18 show pronounced correlation between changes in water levels during successive events since 1999. Additionally, parallels with respect to analytical data further indicate the wells monitor the same zone. As the wells monitor the same groundwater bearing unit and are located approximately 11 feet apart, we propose to plug and abandon monitor well MW-1A and maintain monitor MW-18. Data, calculations, and resulting graphical representations used to show the interconnectivity of monitor wells MW-1B and MW-18 are included as Exhibit 8.8 of Attachment 5.

Similarly, water levels in monitor wells MW-15A and 15B demonstrate considerable interconnectivity based on water level change correlation. However, related historical analytical data show less correlation. Therefore, the request to plug and abandon MW-15B has been removed from this permit modification request.

Monitor well MW-13B was originally paired with MW-13A. Monitor well MW-13A was plugged and abandoned as it was consistently dry. Therefore, monitor well MW-13B remains as a monitoring point for the uppermost water bearing zone as described in the *Initial Groundwater Characterization Report* (December 1, 1995).

TCEQ Comment:

4. *The permit modification proposed the following in Section 5 of Attachment 5:*

"Installation of monitor wells MW-21, MW-22, and MW-24 and plugging of wells MW-1B, MW-2, MW-4, MW-7, MW-15B and MW-20 will occur following approval of the revised groundwater monitoring system design. . . . Monitoring of wells MW-6, MW-10, MW-11, MW-25, and MW-26 will commence prior to placement of the first waste in Tract 2."

Please revise Attachment 5 to indicate that monitor well MW-20 will not be plugged and abandoned until the commencement of groundwater monitoring for Tract 2. Monitor well MW-20 currently serves as a downgradient well along the northeast side of Tract 1.

Response:

The groundwater monitoring system has been redesigned to address the spacing requirements between MW-5 and MW-6. The resultant design includes the installation of MW-25 as a replacement well for MW-5 and initiation of monitoring for MW-6. Groundwater contour maps constructed for the facility indicate that proposed monitor wells MW-24 and MW-25 are downgradient of both MW-20 and the Tract 1 disposal area. As the point of compliance along the northernmost permit boundary includes monitor wells MW-24, MW-25 (downgradient of Tract 1) and MW-6 (downgradient of Tract 2), monitor well MW-20 is considered an unnecessary internal well. Therefore, we respectfully maintain the request to plug monitor well MW-20 in accordance with the proposed monitoring system installation schedule.

TCEQ Comment:

5. *The permit modification proposed a spacing of 629 feet between monitor wells MW-5 and MW-6. The permit modification did not include a site-specific technical demonstration to support a spacing greater than 600 feet pursuant to 30 TAC §330.403(a)(2). Please revise Attachment 5 to comply with the monitor well spacing requirements in the above rule or submit a site-specific technical demonstration. This technical demonstration should address potential contamination plume widths and may include multi-dimensional groundwater flow modeling. The technical demonstration should show that monitor wells are spaced so that plumes cannot pass wells undetected. Also, see comment #6 below regarding the monitor well spacing of MW-18 and MW-15A.*

Response:

The groundwater monitoring system has been revised to ensure well spacing does not exceed 600 feet in accordance with 30 TAC §330.403(a)(2). Exhibit 8.3 has been revised to reflect the changes to the groundwater monitoring system design.

TCEQ Comment:

6. *Some of the monitor well spacing as labeled on the proposed revision of Exhibit 8.3 (Site Map of ACWMC Showing Location of Monitor Wells) in Attachment 5 were not measured around the corners along the point of compliance (POC). For example, the spacing between MW-18 and MW-15A is labeled as 491 feet and the distance*

was measured "as the crow flies." The spacing as measured around the corner along the POC on revised Exhibit 8.3, is about 440 feet from MW-18 to the southwest corner, and then about 200 feet to MW-15A, for a total spacing of about 640 feet. Please revise Exhibit 8.3 to correct the spacing label for these two monitor wells, along with the spacing labels for MW-12A/MW-13B and MW-23/MW-24. Please note that comment #5 above also applies to the monitor well spacing for MW-18 and MW-15A.

Response:

The groundwater monitoring system has been revised to ensure point of compliance well spacing does not exceed 600 feet in accordance with 30 TAC §330.403(a)(2). The revised spacing are measured along the point of compliance and equidistant from waste based on existing well spacing from waste. Exhibit 8.3 has been revised to reflect the changes to the groundwater monitoring system design.

TCEQ Comment:

7. *Based upon current Exhibit 8.3 in Attachment 5, it appears that the POC proposed in the permit modification may have been changed. The current or permitted POC for Permit 2105A needs to be clarified with respect to the POC proposed in the revisions to Attachment 5.*

Response:

The current POC is not clearly defined in the existing permit documentation. However, previous permit drawings and the associated monitoring system design indicate the current point of compliance extends along the permit boundary from existing monitor well MW-7 to the west and then south to monitor wells MW-15B and 15A. Additionally, the current POC also extends along the permit boundary between monitor wells MW-12A and MW-13B. Exhibit 8.3 of Attachment 5 has been revised to show an extended point of compliance that now includes proposed monitor wells MW-27 and MW-28.

TCEQ Comment:

8. *The permit modification proposed that the POC along the northeast side of Tract 2 will end at monitor well MW-26. The permit modification did not include sufficient data, such as groundwater contour maps, to justify ending the POC at this location. At a minimum, the POC should be extended southeast of MW-26 to the permit boundary (i.e., southeast corner of Tract 2) and a new POC monitor well proposed at this location. Also, see comment #7 above regarding the current or permitted POC.*

Response:

To address this comment, monitor well MW-28 has been added to the proposed monitoring system. Exhibit 8.3 includes this newly proposed well.

TCEQ Comment:

9. *Please include a table in Attachment 5 that shows the as-built design details for all current monitoring wells and the proposed design details for monitor wells MW-21, MW-22, MW-23, MW-24, MW-25, and MW-26 (i.e., surface elevation, total depth, screen elevations, etc.).*

Response:

The as-built design details for all current monitoring wells and the proposed design details for proposed monitor wells are included in Attachment 5 Table 5-1.

Additional Discussion

A list of figures and pages requiring revision based on the responses presented above is included as Section 1 of this submittal. Section 2 includes a copy of these revised pages indicating added text by underline and deleted text by ~~strikeout~~. Section 3 of this submittal presents the revised figures and revised pages without marked changes. Section 4 is proof of submittal of the permit modification application fee that is required by 30 TAC §330.59(h)(1). The modification dates for each page are shown on each replacement figure or footer of each replacement page. Pages revised based on this NOD response include a February 2010 revision date.

If you have any questions regarding this permit modification request, please feel free to contact me at (936) 568-9451 or by e-mail at tscarborough@hydrex-inc.com.

Sincerely,
Hydrex Environmental, Inc.

Leonell N. Scarborough, P.G.
Hydrogeologist

Attachments

Distribution:

original + 1 copy Mr. Gale Baker, P.G.
MSW Permits Section
Office of Waste Management, Permits Division
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, TX 78711-3087

(1) Ms. Heather Ross, Regional Director
TCEQ Regional Office 10
3870 Eastex Freeway
Beaumont, TX 77703-1892

(1) Mr. Chris Fitzgerald
Landfill Manager
Angelina County Waste Management Center
P.O. Box 1862
Lufkin, Texas 75902-1862

(1) Hydrex Environmental, Inc.

Texas Commission on Environmental Quality

Permit or Registration Application for Municipal Solid Waste Facility

Part I

A. General Information

Facility Name:	Angelina County Waste Management Center			
Physical or Street Address (if available):	Approximately 1 mile south of the intersection of FM 58 and FM 2108 on 7521 FM 58			
(City) (County)(State)(Zip Code):	Lufkin	Angelina	TX	75901
(Area Code) Telephone Number:	936-632-7168			
Charter Number:	N/A			

If the application is submitted on behalf of a corporation, provide the Charter Number as recorded with the Office of the Secretary of State for Texas.

Operator Name[1]:	Angelina County			
Mailing Address:	P. O. Box 908			
(City) (County)(State)(Zip Code):	Lufkin	Angelina	TX	75902
(Area Code) Telephone Number:	936-634-5413			
(Area Code) FAX Number:				
Charter Number:	N/A			

If the permittee is the same as the operator, type "Same as Operator".

Permittee Name:	Same as Operator			
Physical or Street Address (if available):				
(City) (County)(State)(Zip Code):				
(Area Code) Telephone Number:				
Charter Number:				

If the application is submitted by a corporation or by a person residing out of state, the applicant must register an Agent in Service or Agent of Service with the Texas Secretary of State's office and provide a complete mailing address for the agent. The agent must be a Texas resident.

Agent Name:	N/A			
Mailing Address:				
(City) (County)(State)(Zip Code):				
(Area Code) Telephone Number:				
(Area Code) FAX Number:				

Application Type:

☐	Permit	☐	Major Amendment	☐	Minor Amendment
☐	Registration	☒	Modification	☐	Temporary Authorization
		☒	w/Public Notice		
		☐	w/out Public Notice	☒	Notice of Deficiency Response

[1] The operator has the duty to submit an application if the facility is owned by one person and operated by another [30 TAC 305.43(b)]. The permit will specify the operator and the owner who is listed on this application [Section 361.087 Texas Health and Safety Code].

Facility Classification:

☒	Type I	☐	Type IV	☐	Type V	☐	Type IX
☐	Type I AE	☐	Type IV AE	☐	Type VI		

Activities covered by this application (check all that apply):

☐	Storage	☐	Processing	☒	Disposal

Waste management units covered by this application (check all that apply):

☐	Containers	☐	Tanks	☐	Surface Impoundments	☒	Landfills
☐	Incinerators	☐	Composting	☐	Type IV Demonstration Unit	☐	Type IX Energy/Material Recovery
☐	Other (Specify)			☐	Other (Specify)		
☐	Other (Specify)			☐	Other (Specify)		

Is this submittal part of a Consolidated Permit Processing request, in accordance with 30 TAC Chapter 33?
☐ Yes ☒ No

If yes, state the other TCEQ program authorizations requested.

Provide a brief description of the portion of the facility covered by this application. For amendments, modifications, and temporary authorizations, provide a brief description of the exact changes to the permit or registration conditions and supporting documents referenced by the permit or registration. Also, provide an explanation of why the amendment, modification, or temporary authorization is requested.
Modification to the permit as required under 30 TAC 330 Subchapter J (Well Spacing and Groundwater Monitoring System changes)

Does the application contain confidential Material?	☐ Yes ☒ No

If yes, cross-reference the confidential material *throughout the application* and submit as a separate document or binder conspicuously marked "CONFIDENTIAL."

Bilingual Notice Instructions

For certain permit applications, public notice in an alternate language is required. If an elementary school or middle school nearest to the facility offers a bilingual program, notice may be required to be published in an alternative language. The Texas Education Code, upon which the TCEQ alternative language notice requirements are based, trigger a bilingual education program to apply to an entire school district should the requisite alternative language speaking student population exist. However, there may not exist any bilingual-speaking students at a particular school within a district which is required to offer the bilingual education program. For this reason, the requirement to publish notice in an alternative language is triggered if the nearest elementary or middle school, as a part of a larger school district, is required to make a bilingual education program available to qualifying students and either the school has students enrolled at such a program on-site, or has students who attend such a program at another location in satisfaction of the school's obligation to provide such a program as a member of a triggered district.

If it is determined that a bilingual notice is required, the applicant is responsible for ensuring that the publication in the alternate language is complete and accurate in that language. Electronic versions of the Spanish template examples are available from the TCEQ to help the applicant complete the publication in the alternative language.

Bilingual Notice Application Form:

Bilingual notice confirmation for this application:

1. Is a bilingual program required by the Texas Education Code in the school district where the facility is located? ☒ YES ☐ NO

   (If NO, alternative language notice publication not required)

2. If YES to question 1, are students enrolled in a bilingual education program at either the elementary school or the middle school nearest to the facility? ☒ YES ☐ NO

(IF YES to questions 1 and 2, alternative language publication is required; If NO to question 2, then consider the next question)

3. If YES to question 1, are there students enrolled at either the elementary school or the middle school nearest to the facility who attend a bilingual education program at another location? ☐ YES ☐ NO

(If Yes to questions 1 and 3, alternative language publication is required; If NO to question 3, then consider the next question)

4. If YES to question 1, would either the elementary school or the middle school nearest to the facility be required to provide a bilingual education program but for the fact that it secured a waiver from this requirement, as available under 19 TAC §89.1205(g)? ☐ YES ☐ NO

(If Yes to questions 1 and 4, alternative language publication is required; If NO to question 4, alternative language notice publication not required)

If a bilingual education program(s) is provided by either the elementary school or the middle school nearest to the facility, which language(s) is required by the bilingual program?

Note: Applicants for new permits and major amendments must make a copy of the administratively complete application available at a public in the county where the facility is, or will be, located for review and copying by the public.

Public place where administratively complete permit application will be located.				
Public Place (e.g., public library, county court house, city hall, etc.):	N/A			
Mailing Address:				
(City) (County)(State)(Zip Code):				
(Area Code) Telephone Number:				

B. Facility Location

Except for Type I AE and Type IV AE landfill facilities, for permits, registrations, amendments, and modifications requiring public notice, provide the URL address of a publicly accessible internet website where the application and all revisions to that application will be posted.
www.angelinacounty.net/waste

Local Government Jurisdiction:	Angelina County
Within City Limits of:	N/A
Within Extraterritorial Jurisdiction of City of:	Lufkin

Is the proposed municipal or industrial solid waste disposal or processing facility located in an area in which the governing body of the municipality or county has prohibited the disposal or processing of municipal or industrial solid waste? (If YES, provide a copy of the ordinance or order):
☐ YES ☒ NO

Provide a description of the location of the facility with respect to known or easily identifiable landmarks.
Approximately 1 mile south of the intersection of FM 58 and FM 2108 on 7521 FM 58

Detail the access routes from the nearest United States or state highway to the facility.
Approximately 1 mile south of the intersection of FM 58 and FM 2108

Provide the latitudinal and longitudinal geographic coordinates of the facility.

Latitude	**N 31-15-00**
Longitude	**W 94-42-20**
Elevation (above msl)	270 feet

Is the facility within the Coastal Management Program boundary?	☐ Yes ☒ No

Texas Department of Transportation District Location:

TXDOT District Name & Number:	Lufkin District 11			
District Engineer's Name:	Dennis Cooley, P. E.			
Street or P. O. Box:	1805 North Timberland Drive			
(City) (County)(State)(Zip Code):	Lufkin	Angelina	TX	75901
(Area Code) Telephone Number:	936-634-4433			
(Area Code) FAX Number:	936-633-4378			

The local governmental authority or agency responsible for road maintenance:

Contact Person's Name:	Lynn George, Angelina Co. Commissioner			
Street or P. O. Box:	P. O. Box 908			
(City) (County)(State)(Zip Code):	Lufkin	Angelina	TX	75902
(Area Code) Telephone Number:	936-632-5531			
(Area Code) FAX Number:	N/A			

State Representative:

District Number:	12			
State Representative's Name:	Jim McReynolds			
District Office Address:	203 South First Street, Suite A			
(City) (County)(State)(Zip Code):	Lufkin	Angelina	TX	75904
(Area Code) Telephone Number:	936-634-9786			
(Area Code) FAX Number:	936-637-6694			

State Senator:

District Number:	3			
State Senator's Name:	Robert Nichols			
District Office Address:	4100 South Medford Drive, Suite B-2			
(City) (County)(State)(Zip Code):	Lufkin	Angelina	TX	75901
(Area Code) Telephone Number:	936-699-4988			
(Area Code) FAX Number:				

Council of Government (COG) Information:

COG Name:	Deep East Texas			
COG Representative's Name:	Walter Diggles			
COG Representative's Title:	Executive Director			
Street or P. O. Box:	210 Premier Drive			
(City) (County)(State)(Zip Code):	Jasper	Jasper	TX	75951
(Area Code) Telephone Number:	409-384-5704			
(Area Code) FAX Number:	409-384-5390			

River Basin Information:

River Authority:	Angelina & Neches River Authority			
Contact Person's Name:	Kenneth Reneau			
Watershed Sub-Basin Name:	Upper Neches River			
Street or P. O. Box:	210 East Lufkin Avenue			
(City) (County)(State)(Zip Code):	Lufkin	Angelina	TX	75901
(Area Code) Telephone Number:	936-632-7795			
(Area Code) FAX Number:	936-632-2564			

This site is located in the following District of the U.S. Army Corps of Engineers:
☐ Albuquerque, NM ☒ Ft. Worth, TX ☐ Galveston, TX ☐ Tulsa, OK

C. Maps

General

For permits, registrations, and amendments only, submit a topographic map, ownership map, county highway map, or a map prepared by a registered professional engineer or a registered surveyor which shows the facility and each of its intake and discharge structures and any other structure or location regarding the regulated facility and associated activities. Maps must be of material suitable for a permanent record, and shall be on sheets 8-1/2 inches by 14 inches or folded to that size, and shall be on a scale of not less than one inch equals one mile. The map shall depict the approximate boundaries of the tract of land owned or to be used by the applicant and shall extend at least one mile beyond the tract boundaries sufficient to show the following:

each well, spring, and surface water body or other water in the state within the map area;

the general character of the areas adjacent to the facility, including public roads, towns and the nature of development of adjacent lands such as residential, commercial, agricultural, recreational, undeveloped, etc;

the location of any waste disposal activities conducted on the tract not included in the application; and the ownership of tracts of land adjacent to the facility and within a reasonable distance from the proposed point or points of discharge, deposit, injection, or other place of disposal or activity.

General location maps
For permits, registrations, and amendments only, submit at least one general location map at a scale of one-half inch equals one mile. This map shall be all or a portion of a county map prepared by Texas Department of Transportation (TxDOT). If TxDOT publishes more detailed maps of the proposed facility area, the more detailed maps shall also be included in Part I. Use the latest revision of all maps.

Land ownership map
Provide a map that locates the property owned by adjacent and potentially affected landowners. The maps should show all property ownership within 500 feet of the facility, on-site facility easement holders, and all mineral interest ownership under the facility.

Landowners list
Provide the adjacent and potentially affected landowners' list, keyed to the land ownership map with each property owner's name and mailing address. The list shall include all property owners within 500 feet of the facility, easement holders, and all mineral interest ownership under the facility. Provide the property, easement holders', and mineral interest owners' names and mailing addresses derived from the real property appraisal records as listed on the date that the application is filed. Provide the list in electronic form, as well.

D. Property owner information

For permits, registrations, amendments, and modifications that change the legal description, a change in owner, or a change in operator only, provide the following:

(1) the legal description of the facility;

- (A) the abstract number as maintained by the Texas General Land Office for the surveyed tract of land;
- (B) the legal description of the property and the county, book, and page number or other generally accepted identifying reference of the current ownership record;
- (C) for property that is platted, the county, book, and page number or other generally accepted identifying reference of the final plat record that includes the acreage encompassed in the application and a copy of the final plat, in addition to a written legal description;
- (D) a boundary metes and bounds description of the facility signed and sealed by a registered professional land surveyor;
- (E) on-site easements at the facility, and
- (F) drawings of the boundary metes and bounds description; and

(2) a property owner affidavit signed by the owner.

E. Legal authority

Provide verification of the legal status of the owner and operator, such as a one-page certificate of incorporation issued by the secretary of state. List all persons having over a 20% ownership in the proposed facility.

Indicate Ownership status of the facility:									
☐	Private	☐	Corporation	☐	Partnership	☐	Proprietorship	☐	Non-Profit Organization
☐	Public	☐	Federal	☐	Military	☐	State	☐	Regional
☒	County	☐	Municipal	☐	Other (Specify)				

Does the operator own the facility units and the facility property?	☒ Yes ☐ No

If "No," for permits, registrations, amendments, and modifications that changes the legal description, a change in owner, or a change in operators submit a copy of the lease for the use of or the option to buy the facility units or facility property, as appropriate, and identify:				
Owner Name:				
Street or P. O. Box:				
(City) (County)(State)(Zip Code):				
(Area Code) Telephone Number:				
(Area Code) FAX Number:				
Charter Number:				

F. Evidence of competency

For permits, registrations, amendments, and modifications that change the legal description, a change in owner, or a change in operators submit a list of all Texas solid waste sites that the owner and operator have owned or operated within the last ten years.				
Site Name	Site Type	Permit/Reg. No.	County	Dates of Operation
N/A				

Submit a list of all solid waste sites in all states, territories, or countries in which the owner and operator have a direct financial interest.			
Site Name	Location	Dates of Operation	Regulatory Agency (Name & Address)
N/A			

A licensed solid waste facility supervisor, as defined in 30 TAC Chapter 30, Occupational Licenses and Registrations will be employed before commencing facility operation.

Provide the names of the principals and supervisors of the owner's and operator's organization, together with previous affiliations with other organizations engaged in solid waste activities.		
Name	Previous Affiliation	Other Organization
N/A		

For landfill permit applications only, evidence of competency to operate the facility shall also include landfilling and earthmoving experience if applicable, and other pertinent experience, or licenses as described in 30 TAC Chapter 30 possessed by key personnel. The number and size of each type of equipment to be dedicated to facility operation will be specified in greater detail on Part IV of the application within the site operating plan.

Landfilling/Earthmoving Equipment Types	Personnel Experience or Licenses

For mobile liquid waste processing units, submit a list of all solid waste, liquid waste, or mobile waste units that the owner and operator have owned or operated within the past five years. Submit a list of any final enforcement orders, court judgments, consent decrees, and criminal convictions of this state and the federal government within the last five years relating to compliance with applicable legal requirements relating to the handling of solid or liquid waste under the jurisdiction of the commission or the United States Environmental Protection Agency. Applicable legal requirement means an environmental law, regulation, permit, order, consent decree, or other requirement.

Solid waste, liquid waste, or mobile waste units owned or operated within past 5 years	Texas and federal final enforcement orders, court judgments, consent decrees, and criminal convictions

G. Appointments

Provide documentation that the person signing the application meets the requirements of 30 TAC §305.44, Signatories to Applications. If the authority has been delegated, provide a copy of the document issued by the governing body of the owner or operator authorizing the person that signed the application to act as agent for the owner or operator.

H. Application Fees

For a new permit, registration, amendment, modification, or temporary authorization, submit a $150 application fee.

For authorization to construct an enclosed structure over an old, closed municipal solid waste landfill in accordance with 30 TAC 330 Subchapter T, submit a $2,500 application fee.

If paying by check, send payment to:

Texas Commission on Environmental Quality
Financial Administration Division, MC 214
P. O. Box 13087
Austin, Texas 78711-3087

Payment maybe made online using TCEQ e-pay at www.tceq.state.tx.us/e-services/	
E-pay confirmation number	

PROPERTY OWNER AFFIDAVIT

"I, ____,
(property owner)
acknowledge that the State of Texas may hold me either jointly or severally responsible for the operation, maintenance, and closure and post-closure care of the facility. For a facility where waste will remain after closure, I acknowledge that I have a responsibility to file with the county deed records an affidavit to the public advising that the land will be used for a solid waste facility prior to the time that the facility actually begins operating as a municipal solid waste landfill facility, and to file a final recording upon completion of disposal operations and closure of the landfill units in accordance with Title 30 Texas Administrative Code §330.19, Deed Recordation. I further acknowledge that I or the operator and the State of Texas shall have access to the property during the active life and post-closure care period, if required, after closure for the purpose of inspection and maintenance."

______________________________ ______________________________
(Owner signature) (Date)

Signature Page

I, Wes Suiter, County Judge,
(Operator) (Title)

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 there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: [signature] Date: 2/15/10

TO BE COMPLETED BY THE OPERATOR IF THE APPLICATION IS SIGNED BY AN AUTHORIZED REPRESENTATIVE FOR THE OPERATOR

I, ______________________, hereby designate ______________________
(Print or Type Operator Name) (Print or Type Representative Name)

as my representative and hereby authorize said representative to sign any application, submit additional information as may be requested by the Commission; and/or appear for me at any hearing or before the Texas Commission on Environmental Quality in conjunction with this request for a Texas Water Code or Texas Solid Waste Disposal Act permit. I further understand that I am responsible for the contents of this application, for oral statements given by my authorized representative in support of the application, and for compliance with the terms and conditions of any permit which might be issued based upon this application.

____
Printed or Typed Name of Operator or Principal Executive Officer

____
Signature

SUBSCRIBED AND SWORN to before me by the said Wes Suiter

On this 15th day of February, 2010

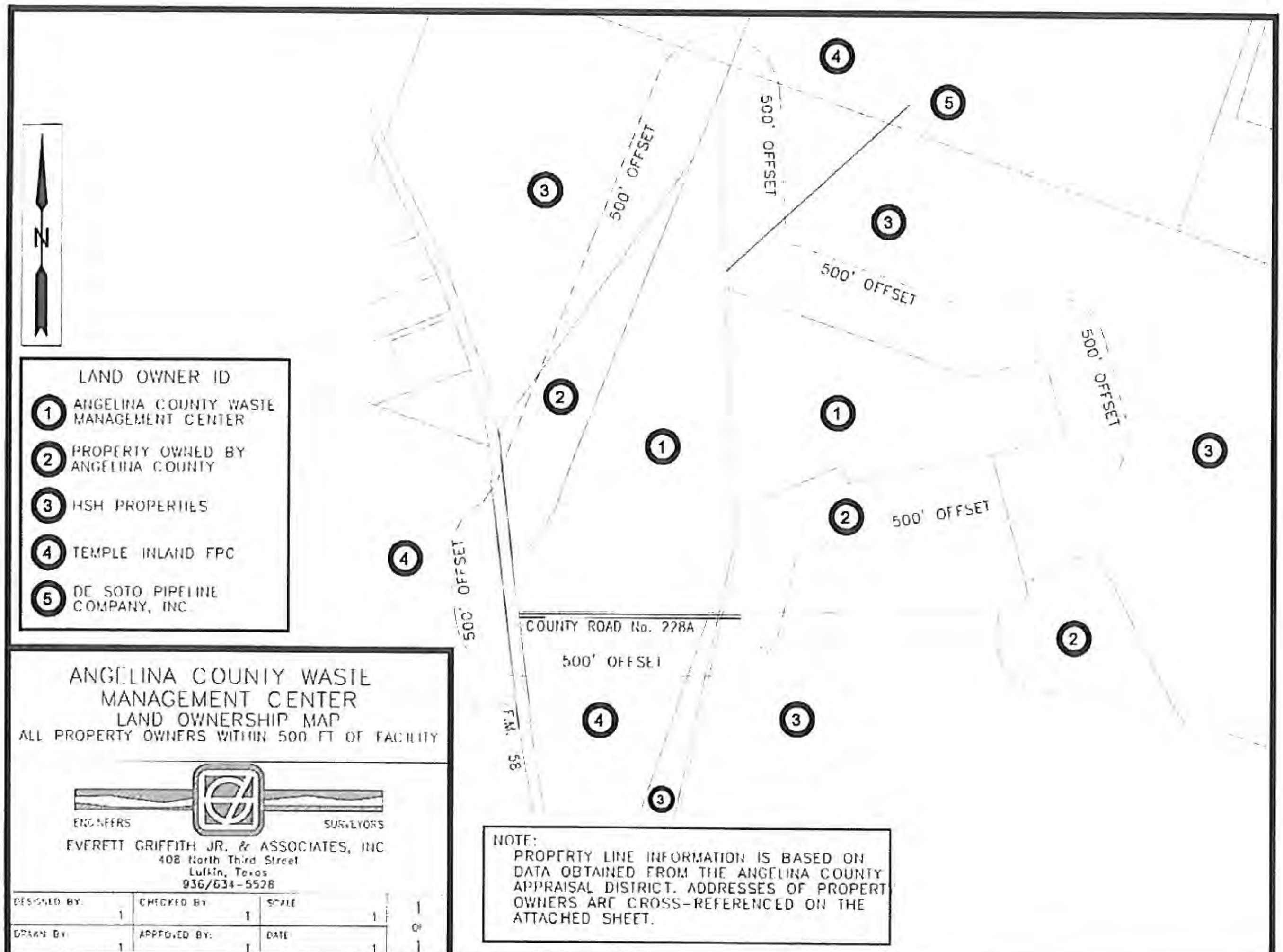
My commission expires on the 20th day of February, 2010

SALLIE ALEXANDER
Notary Public
STATE OF TEXAS
My Comm. Exp. 2-20-2010

[signature]
Notary Public in and for

Angelina County, Texas

(Note: Application Must Bear Signature & Seal of Notary Public)


N
LAND OWNER ID
1 ANGELINA COUNTY WASTE MANAGEMENT CENTER
2 PROPERTY OWNED BY ANGELINA COUNTY
3 HSH PROPERTIES
4 TEMPLE INLAND FPC
5 DE SOTO PIPELINE COMPANY, INC.
500' OFFSET
500' OFFSET
500' OFFSET
500' OFFSET
500' OFFSET
500' OFFSET
500' OFFSET
COUNTY ROAD No. 228A
F.M. 58
ANGELINA COUNTY WASTE MANAGEMENT CENTER
LAND OWNERSHIP MAP
ALL PROPERTY OWNERS WITHIN 500 FT OF FACILITY
ENGINEERS
SURVEYORS
EVERETT GRIFFITH JR. & ASSOCIATES, INC
408 North Third Street
Lufkin, Texas
936/634-5528
DESIGNED BY:
CHECKED BY:
SCALE
DRAWN BY:
APPROVED BY:
DATE
1 OF 1
NOTE:
PROPERTY LINE INFORMATION IS BASED ON DATA OBTAINED FROM THE ANGELINA COUNTY APPRAISAL DISTRICT. ADDRESSES OF PROPERTY OWNERS ARE CROSS-REFERENCED ON THE ATTACHED SHEET.

ANGELINA COUNTY WASTE MANAGEMENT CENTER
ADJACENT LANDOWNERS LIST

The attached landowner map indicates the location of the Angelina County Waste Management Center landfill. The names and addresses of adjacent landowners within 500 feet of the facility are provided below, numerically cross referenced with the attached map.

1. Angelina County Waste Management Center (the applicant)

2. Other property owned by Angelina County

3. HSH Properties Partnership LP
   P.O. Box 1365
   Lufkin, TX. 75902-1365

4. Temple-Inland FPC
   c/o Prop Tax Dept/ Robert Samford
   P.O. Box 1149
   Austin, TX. 78767

5. De Soto Pipeline Company, Inc.
   P.O. Box 708
   Lufkin, TX. 75902-0708

Information regarding property location and landowner names and addresses is based on data obtained from the Angelina County Appraisal District.

MINERAL INTEREST OWNERS UNDER THE FACILITY

TIN, INC.
Attn: Kenneth G. Christopher
303 S. Temple Drive
Diboll, Texas 75941

Carrie Wiener Ajnassian
944 Stanford St.
Santa Monica, CA 90403-2224

Alyson Alexander,
Trustee FBO the Alyson D. Alexander 1988 Trust
Dated 4/6/88
P.O. Box 3076
Santa Barbara, CA 93130

Malcolm Graham Alexander, Jr.
5425 Quail Run
Blaine, Washington 98230

Rose Mary W. Balter
130 Garlan Rd.
Newton, MA 02159

Laurie Alexander Black
1241 Cerro Gordo Rd.
Santa Fe, NM 87501-6106

H. Whitney Boggs, Jr.,
Trustee of the Mary H. Boggs Testamentary Trust
630 Piermont
Shreveport, LA 71106

Bonnie Cockrell
P.O. Box 8511
Aspen, CO 81612

Susan Hedrick Conie
8418 Beeswing Court
Dublin, OH 40317

Lynn Fisher
1860 Old Mill Rd.
Lufkin, TX 75904-1822

Susan S. Green
94 Martin Avenue
Barrington, RI 02806

Mildred L. H. Grinstead
211 Belmed Lane
Tyler, TX 75701

Diane R. Harris
5404 Bright Star Trail
Arlington, TX 76017

Melba J. Heselmeyer
15514 Seahorse
Houston, TX 77062

Andrew Karl Hursey
c/o Colleen Hursey-Dunstane
502 W. Shore Drive
Alexandria, LA 71303-2089

Sally Ann Hudnall
5623 Melshire Drive
Dallas, TX 75230-2113

Charles Stephen Hursey
c/o Colleen Hursey-Dunstane
502 W. Shore Drive
Alexandria, LA 71303-2089

Colleen Hursey-Dunstane
502 W. Shore Drive
Alexandria, LA 71303-2089

Leah Kristen Hursey
1323 Arlington Ave.
Baton Rouge, LA 70806

Michael David Hursey
c/o Colleen Hursey-Dunstan
502 W. Shore Drive
Alexandria, LA 71303-2089

The Jameson Mineral Trust
Thomas G. Jameson, Trustee
c/o Peter K. Jameson
Andrews & Kurth L.L.P.
600 Travis, Suite 4200
Houston, TX 77002

Paul Bruce Hursey
3369 Deborah Dr.
Monroe, LA 71201

Calvine W. Jayroe
103 W. 4th St. Loft
Taylor, TX 76574

Irwin Ray Jayroe
103 Harmony Hill Ct.
Lufkin, TX 75901

JHRSB Partners, L. P.
A Delaware Partnership
JHRSB Partners, L.P.
c/o Jill S. McLinden
272 Voss Road
Bethel Park, PA 15102

Karen Kurth Kelly
4717 Innisbrook Court North
Elkton, FL 32033

Joseph G. Kurth
11510 Wendover Lane
Houston, TX 77024

Joseph G. Kurth, Jr.
3815 Bratton
Sugarland, TX 77479

John Henderson, Jr. Testamentary Trust
Regions Bank, Trustee
Account 390360014
Regions Bank, Trustee
J.H. Kurth Jr., Testamentary Trust
P. O. Box 1900
Tyler TX 75710-1900

Estate of Melvin H. Kurth
First Bank & Trust East Texas,
Independent Executor
c/o Thomas Rainey, V-P & Trust Officer
First Bank & Trust East Texas
P. O. Box 152020
Lufkin, TX 75915-2020

Christopher Maas
7738 Forest Lane, Suit 425
Dallas, TX 75230

Leisa Maas
P.O. Box 16073
Fort Worth, TX 76133

Charles Louis McBride
13203 Willow Forest Drive
Louisville, KY 40245

George K. McBride, Jr.
81 Edgewood Place
Vicksburg, MS 39180

James Hughes McBride
9221 Frenchman's Way
Dallas, TX 75220

Mrs. James A. McMullan
6213 Ravenswood Drive
Ft. Worth, TX 76112

James A. McMullan III
6300 Ridgelea Place, Suite 509
Fort Worth, TX 76116

Ora Elizabeth McMullen
6213 Ravenwood Drive
Ft. Worth, TX 76112

Frances Maas Mithoff
7304 Good Samaritan Court, #106
El Paso, TX 79912

Estate of Robin Wilson Moore
6175 Preston Creek Court
Dallas, TX 75240

Vardeman Griffith Moore
6175 Preston Creek Court
Dallas, TX 75240

Selma Ray Kahn Nachman
8333 Douglas Avenue, Suite 1270
Dallas, TX 75225

Ellen W. Oppenheim
156 E. 79th Street, Apt 7A
New York, NY 10021

Alexander C. O'Reilly
P. O. Box 59704
Chicgao, IL 60659

Kay Kurth Owen
2423 N.W. 35th St.
Boca Raton, FL 33431

Michael Walter Page
P. O. Box 11692
Fort Worth, TX 76110

Aurelia Rice
4012 Kenosha Road
Plano, TX 75024

Linda S. Pittman
Box 1316
Silsbee, TX 77565

Renrew Minerals, Ltd.
333 Texas St., Suite 2375
Shreveport, LA 71101-5304

Nancy Hedrick Parker
885 East Zia Road
Santa Fe, NM 87505

SAVIJO
(A Grantor Trust)
Ms. Jo Kurth Jagoda
7131 Brookshire Circle
Dallas, TX 75230

Susan Kay Page Schairbaum
3688 Encanto
Ft. Worth, TX 75230

Jeff M. Segrest
9120 Hwy 18
Hermanville, MS 39086

Thomas L. Segrest
Graham & Segrest
P. O. Box 1442
Columbus, MS 39703-1442

Charlotte Jane Squyres
(Mrs. Hulen Squyres)
Route 2, Box 4350
Lufkin, TX 75901

Carol Brooke Stollenwereck
4305 University Blvd.
Dallas, TX 75205

June Carol Henderson Stollewerck
6124 St. Andrews Drive
Dallas, TX 75205-1732

Laura Kathryne Sumrall
10630 E. Stockbridge Ct.
Zeeland, MI 49464

Mildred W. Teitelbaum
5326 Paisley Lane
Houston, TX 77096

Jimmy L. Tipton
P. O. Box 2071
Rockport, TX 78382

Jay L. Wiener
3858 Redbud Road
Jackson, MS 39211

John S. Wiener
3313 Devon Road
Durham, NC 27707

Mrs. Kathryn L. Wiener
3858 Redbud Road
Jackson, MS 39211

Mary L. Weiner
166 Bank Street, 1A
New York, NY 10014

William B. Wiener, III
3 Bradford Court
Houston, TX 77024

Benjamin Dee Winston
P. O. Box 2359
Lufkin, TX 75901

John Randolph Winston, III
P. O. Box 152802
Lufkin, TX 75915-2802

Simon Wood Winston
P. O. Box 2359
Lufkin, TX 75901

Kathleen Tubbs Wizbicki
551 Valkeith
Houston, TX 77096

Irma Veree Henderson Alexander
(Irma) Veree Henderson Alexander Living Trust
c/o Angelo Pantele, Agent
48737 Sageflower Lane
Palm Desert, CA 92260-6739

Dean Bruce Cowie, Jr.
P. O. Box 4922
Lancaster, PA 17604

Douglas Randolph Cowie
50 Alwington Ave.
Kingston, Ontario
Canada, K4L 4R3

Joal Fischer, MD
1607 Dilwort Road West
Charlotte, NC 28203-5213

Karen W. Freyer
5908 Southmoor Lane,
Cherry Hill Village, CO 80111

Simon W. Henderson III
P. O. Box 1365
Lufkin, TX 75902-1365

Kurth Family Partnership
c/o Melvin E. Kurth, Jr.
235 Camino Del Norte
Santa Fe, NM 87501

Nancy W. Marcus
4500 Roland Ave., #806
Dallas, TX 75219

Lyska K, Marsh
1295 Sheridan
Beaumont, TX 77706

Laura Sue Henderson McMurry
3663 Del Monte
Houston, TX 77019

Joseph A. Meis, MD
782 Timberhill Lane
Highland Park IL 60035

J.F. Reeves
2525 Lake Oaks Road
Waco, TX 76710

Trudy H. O'Reilly
3113 Chesapeake Ave.
Hampton, VA 23661-3439

Mrs. Elizabeth Henderson Page
4429 Overton Crest
Fort Worth, TX 76109

Matt A. Meis
11639 Cohansey Road
San Diego, CA 92131

Mrs. Laura Thompson Reeves
2525 Lake Oaks Road
Waco, TX 76710

Sandfield Limited Partnership
c/o Mrs. Joan S. Jackson
10036 Hollow Way Road
Dallas, TX 75229

Aimee B. Freyer Valls
4370 Eat Perry Parkway
Greenwood Village, CO 80121

Daniel P. Wiener
333 Texas St., Suite 2375
Shreveport, LA 71101-5304

David M. Wiener
333 Texas St., Suite 2375
Shreveport, LA 71101-5304

Earl Louis Wiener
333 Texas St., Suite 2375
Shreveport, LA 71101-5304

Florence Eva Wiener
333 Texas St., Suite 2375
Shreveport, LA 71101-5304

Fred Samuel Wiener
333 Texas St., Suite 2375
Shreveport, LA 71101-5304

Samuel G. Wiener, Jr.
333 Texas St., Suite 2375
Shreveport, LA 71101-5304

Thomas Eli Wiener
One Belmont Ave., Suite 605
Bala Cynwyd, PA 19004-1609

Sara M. Wiener
333 Texas St., Suite 2375
Shreveport, LA 71101-5304

William B. Wiener, Jr.
333 Texas St., Suite 2375
Shreveport, LA 71101-5304

Mrs. Virginia Henderson Winston
4205 Highway 59 North
Lufkin, TX 75901

Carol Cowie Zeppenfeld
1799 Beachfield Road
Annapolis, MD 21410

Anderson Mineral Trust
Regions Bank, Trustee
Joseph E. Hand Jr.
Regions Bank
P. O. Box 1900
Tyler, TX 75710

J. Kurth Brown
2816 Revere Street
Houston, TX 77098-1314

Patricia Jayroe Gage Testamentary Trust
Hibernia National Bank, Trustee
Attn: Thomas Kelley, Trust Dept.
P. O. Box 3928
Beaumont, TX 77704

Judith Kurth Gibson Trust
Regions Bank, Trustee
Joseph E. Hand Jr.
Regions Bank
P. O. Box 1900
Tyler, TX 75710

Christine Henderson
235 Creekwood
Huntington, TX 75949

Henderson Mineral, Inc.
George H. Henderson, III President
P. O. Box 3659
Lufkin, TX 75903-3659

Kurth Investment Corporation
c/o Mr. Wyatt Leinhart
Box 1506
Lufkin, TX 75901

Katherine Kurth Trust
Regions Bank, Trustee
Joseph E. Hand Jr.
Regions Bank
P. O. Box 1900
Tyler, TX 75710

Estate of Nance Thompson Medford
c/o Davod Medford, Executor
1307 8th Avenue
Fort Worth, TX 76104

Russell T. Rudy Energy, L.L.C.
5701 Woodway Drive, Suite 222
Houston, TX 77057-1505

Texas Arkansas & Florida Mineral Trust
c/o Simon W. Henderson III
P. O. Box 1365
Lufkin, TX 75902-1365

Melissa Cockrell Theriot
430 Irvine Avenue
Newport Beach, CA 92663

Winston Securities Partnership,
c/o Virginia Henderson Winston
4205 Highway 59 North
Lufkin, TX 75901

John Henderson, Jr.
P. O. Box 545
Hunt, TX 78024

John Henderson, Jr. Trust
P. O. Box 545
Hunt, TX 78024

John H. Henderson, III
P. O. Box 90573
San Antonio, TX 78209

Mark Henderson
3089 Fm 326
Lufkin, TX 75901-1822

HSH Properties Partnership, L. P
c/o Simon Wood Henderson, III
P. O. Box 1365
Lufkin, TX 75902-1365

Mrs. Laura Thompson Reeves
2525 Lake Oaks Road
Waco, TX 76710

Elizabeth Louise Henderson Page
4429 Overton Crest
Fort Worth, TX 76109

Hattie K. Parker
c/o Aaron Ball
Chamberlain Hrdlicka Law Firm
1200 Smith St. Suite 1400
Houston, TX 77002

Jonathan A. Parker
c/o 4899 Montorose Blvd. Apt. 1103
Houston, TX 77006-6167

Robert F. Parker, II
c/o 4899 Montorose Blvd. Apt. 1103
Houston, TX 77006-6167

Mrs. Irma Veree Henderson Alexander
Veree Henderson Alexander Living Trust
c/o Angelo Pantele, Agent
48737 Sageflower Lane
Palm Desert, CA 92260-6739

Laura Sue H. McMurrey
3663 Del Monte
Houston, TX 77019

MAP Securities Partnership
c/o Simon W. Henderson III
P.O. Box 1365
Lufkin, TX 75902-1365

Section 1
List of Revised Figures and Pages

List of Revised Figures and Pages

List of Replaced Figures

Attachment No.	Exhibit	Description of Change
5	8.3	Site Map Showing Proposed Groundwater Monitoring System

List of Added Figures

Attachment No.	Exhibit	Title
5	8.3.1.1	Groundwater Contour Map, Uppermost Aquifer, 02/07/1996 Water Levels
5	8.3.1.2	Groundwater Contour Map, Uppermost Aquifer, 05/09/1996 Water Levels
5	8.3.1.3	Groundwater Contour Map, Uppermost Aquifer, 08/12/1996 Water Levels
5	8.3.1.4	Groundwater Contour Map, Uppermost Aquifer, 11/07/1996 Water Levels
5	8.3.2.1	Groundwater Contour Map, Uppermost Aquifer, 02/05/1997 Water Levels
5	8.3.2.2	Groundwater Contour Map, Uppermost Aquifer, 05/07/1997 Water Levels
5	8.3.2.3	Groundwater Contour Map, Uppermost Aquifer, 08/04/1997 Water Levels
5	8.3.2.4	Groundwater Contour Map, Uppermost Aquifer, 11/10/1997 Water Levels
5	8.3.3.1	Groundwater Contour Map, Uppermost Aquifer, 05/05/1998 Water Levels
5	8.3.3.2	Groundwater Contour Map, Uppermost Aquifer, 11/09/1998 Water Levels
5	8.3.4.1	Groundwater Contour Map, Uppermost Aquifer, 05/05/1999 Water Levels
5	8.3.4.2	Groundwater Contour Map, Uppermost Aquifer, 10/20/1999 Water Levels
5	8.3.4.3	Groundwater Contour Map, Uppermost Aquifer, 11/02/1999 Water Levels
5	8.3.5.1	Groundwater Contour Map, Uppermost Aquifer, 04/04/2000 Water Levels
5	8.3.5.2	Groundwater Contour Map, Uppermost Aquifer, 05/09/2000 Water Levels
5	8.3.5.3	Groundwater Contour Map, Uppermost Aquifer, 10/25/2000 Water Levels
5	8.3.5.4	Groundwater Contour Map, Uppermost Aquifer, 11/06/2000 Water Levels
5	8.3.6.1	Groundwater Contour Map, Uppermost Aquifer, 04/19/2001 Water Levels
5	8.3.6.2	Groundwater Contour Map, Uppermost Aquifer, 05/08/2001 Water Levels
5	8.3.6.3	Groundwater Contour Map, Uppermost Aquifer, 10/08/2001 Water Levels
5	8.3.6.4	Groundwater Contour Map, Uppermost Aquifer, 11/13/2001 Water Levels
5	8.3.7.1	Groundwater Contour Map, Uppermost Aquifer, 04/02/2002 Water Levels
5	8.3.7.2	Groundwater Contour Map, Uppermost Aquifer, 05/13/2002 Water Levels
5	8.3.7.3	Groundwater Contour Map, Uppermost Aquifer, 10/10/2002 Water Levels
5	8.3.7.4	Groundwater Contour Map, Uppermost Aquifer, 11/05/2002 Water Levels
5	8.3.8.1	Groundwater Contour Map, Uppermost Aquifer, 05/07/2003 Water Levels
5	8.3.8.2	Groundwater Contour Map, Uppermost Aquifer, 05/20/2003 Water Levels
5	8.3.8.3	Groundwater Contour Map, Uppermost Aquifer, 11/10/2003 Water Levels
5	8.3.8.4	Groundwater Contour Map, Uppermost Aquifer, 11/26/2003 Water Levels
5	8.3.9.1	Groundwater Contour Map, Uppermost Aquifer, 05/03/2004 Water Levels
5	8.3.9.2	Groundwater Contour Map, Uppermost Aquifer, 06/01/2004 Water Levels
5	8.3.9.3	Groundwater Contour Map, Uppermost Aquifer, 09/07/2004 Water Levels
5	8.3.9.4	Groundwater Contour Map, Uppermost Aquifer, 11/08/2004 Water Levels
5	8.3.9.5	Groundwater Contour Map, Uppermost Aquifer, 11/10/2004 Water Levels
5	8.3.10.1	Groundwater Contour Map, Uppermost Aquifer, 05/02/2005 Water Levels
5	8.3.10.2	Groundwater Contour Map, Uppermost Aquifer, 05/26/2005 Water Levels
5	8.3.10.3	Groundwater Contour Map, Uppermost Aquifer, 11/03/2005 Water Levels
5	8.3.10.4	Groundwater Contour Map, Uppermost Aquifer, 11/07/2005 Water Levels
5	8.3.11.1	Groundwater Contour Map, Uppermost Aquifer, 01/03/2006 Water Levels
5	8.3.11.2	Groundwater Contour Map, Uppermost Aquifer, 05/31/2006 Water Levels
5	8.3.11.3	Groundwater Contour Map, Uppermost Aquifer, 06/29/2006 Water Levels
5	8.3.11.4	Groundwater Contour Map, Uppermost Aquifer, 08/14/2006 Water Levels
5	8.3.11.5	Groundwater Contour Map, Uppermost Aquifer, 11/07/2006 Water Levels

List of Added Figures Continued

Attachment No.	Exhibit	Title
5	8.3.11.6	Groundwater Contour Map, Uppermost Aquifer, 11/09/2006 Water Levels
5	8.3.12.1	Groundwater Contour Map, Uppermost Aquifer, 02/14/2007 Water Levels
5	8.3.12.2	Groundwater Contour Map, Uppermost Aquifer, 05/02/2007 Water Levels
5	8.3.12.3	Groundwater Contour Map, Uppermost Aquifer, 07/05/2007 Water Levels
5	8.3.12.4	Groundwater Contour Map, Uppermost Aquifer, 08/27/2007 Water Levels
5	8.3.12.5	Groundwater Contour Map, Uppermost Aquifer, 11/07/2007 Water Levels
5	8.3.13	Monitor Well Construction Details

List of Added/Revised Pages

Attachment No.	Page Number	Topic
5	NA	Cover Page
5	NA	Certification Page
5	III-5-i	Title Page
5	III-5-ii	Table of Contents
5	III-5-iii	Table of Contents
5	III-5-1	Section 1 - Introduction
5	III-5-2	Section 2 - Historic Groundwater Monitoring Data
5	III-5-3	Section 3 - Site Hydrogeological Conditions
5	III-5-4	Section 4 - Maps
5	III-5-5	Section 5 - Groundwater Monitoring System
5	III-5-5A	Table 5-1 Groundwater Monitoring Well Design Summary
5	III-5-7, 7A, 7B	Section 7 - Historical Groundwater Analysis
5	III-5-8, 8A	Section 8 - Exhibits

List of Added/Revised Tables

Attachment No.	Page Number	Topic
5	III-5-5A	Table 5-1 Groundwater Monitoring Well Design Summary
5	III-5-28-1 through III-5-28-71	Tabulation of Groundwater Data
5	III-5-34	Tabulation of Water Level Measurements
5	III-5-35 through III-5-40	Demonstration of interconnectivity between wells MW-1B and MW-18
5	III-5-41	Section 9 Appendices

Section 2
Underline Strikeout Copy of Attachment 5

ANGELINA COUNTY WASTE MANAGEMENT CENTER
TYPE I SANITARY LANDFILL
ANGELINA COUNTY, TEXAS
MSW PERMIT NO. 2105A

PART III - SITE DEVELOPMENT PLAN
ATTACHMENT 5
GROUND-WATER CHARACTERIZATION REPORT

SEPTEMBER 12, 1996

REVISED February 2010

~~APPLICATION TO~~
~~TEXAS NATURAL RESOURCE CONSERVATION COMMISSION~~
~~FOR THE AMENDMENT OF~~
~~MSW PERMIT NO. 2105~~

Applicant:

Angelina County Waste Management Center
P.O. Box 1862
Lufkin, Texas 75902-1862

Prepared by:

Hydrex Environmental, Inc.
1120 NW Stallings Drive~~409 East Hospital Street~~
Nacogdoches, Texas 75964~~1~~

This document is issued for permit review purposes only. It is not intended for construction or bidding purposes.

TABLE OF CONTENTS

Hydrex Environmental, Inc. has been contracted by Angelina County Waste Management Center to provide a groundwater characterization report for the landfill site of the Angelina County Waste Management Center.

This Groundwater Characterization Report is based on a historical review of previous investigations and groundwater monitoring activities at the site. Previous studies that provide the basis of the information presented herein ~~are~~ include:

- Groundwater Monitoring Reports and Laboratory Analytical Reports (monitoring conducted September 1992 ~~to January 1994~~ through November 2007.
- Report of Monitor Well Installation, Angelina County Landfill, 114.5-Acre Tract; Pickett-Jacobs Consultants, Inc.; May 26, 1992.
- Supplement No. 1 to Monitor Well Installation, Angelina County Waste Management Center, 114.5-Acre Tract; Pickett-Jacobs Consultants, Inc.; November 2, 1994.
- Supplement No. 2 to Monitor Well Installation, Angelina County Waste Management Center, 114.5-Acre Tract; Pickett-Jacobs Consultants, Inc.; February 24, 1995.
- Initial Groundwater Characterization Report, Angelina County Waste Management Center, 114.5-Acre Tract; Hydrex Environmental, Inc.; December 1, 1995.
- Report on Cadmium in Groundwater, Angelina County Waste Management Center, Hydrex Environmental, Inc.; May 26, 1999.
- Applicability of a May 26, 1999 Alternate Source Demonstration (ASD) for Metals in Groundwater, Angelina County Waste Management Center, December 5, 2007.

Previous groundwater monitoring at the Angelina County Waste Management Center consisted of quarterly sampling and analysis of all monitoring wells for TNRCC parameters Groups 1 through 4. Exhibit 8.1 includes ~~is~~ a tabulation of the results of all previous laboratory testing of groundwater at the site.

Background monitoring for Subtitle D parameters was initiated in February 1996. Eight samples were collected and analyzed quarterly over a two year period to establish background values for the required parameters. The last of eight background monitoring events for the first wells installed was conducted in November 1997. Since that time, detection monitoring has been on-going on a semiannual basis.

Results of background and detection monitoring events through November 2007 from wells at Angelina County Waste Management Center are tabulated on pages III-5-28-1 through III-5-28-71in Exhibit 8.1.

One near-surface water-bearing system has been identified at the site. This system occurs within sands and clayey sands of the Yegua Formation. A detailed discussion of site groundwater conditions is provided in Attachment 4, Geological Report, Section 6.3 and in Appendix 9.1 of this attachment.

The uppermost water-bearing unit at the site consists of locally continuous sand bodies bounded by finer grained silt and clay facies. The sand bodies typically do not exceed a thickness of 10 feet. Marginal to the primary silty sand and clayey sand bodies the lithologies are dominated by interbedded silty sand and clay. These thin interbeds are the conduit for communication between the primary sands. This premise is supported by the observation that monitor wells which are completed in interbedded silty sand and clay bodies located marginal to the primary sands have similar water level elevations as those completed in the primary sand bodies. Examples include monitor wells MW-10 and MW-11. Similarly, monitor wells completed in sands which are vertically separated have similar water levels, such as monitor wells MW-7 and MW-8. As a result of the channel-fill nature of the sands, the possibility exists that the individual channels are in contact where meandering channels were deposited on, or incised into older deposits.

Deeper bodies of silty sand and clayey sand are often under confined conditions due to the presence of organic silts and clays which can form a locally confining unit. The lower confining bed of the uppermost aquifer is a hard gray clay with sand seams which underlies the silty sand and clayey sand of the deeper, locally confined zones.

At the site, flow in the uppermost aquifer is to the north-northeast except at the southwestern end of the site where the flow direction is to the southwest (Attachment 4, Exhibit 4-13).

The Darcy equation, stated below, relates groundwater velocity, V, to effective porosity, N_e, hydraulic gradient, I, and hydraulic conductivity, K.

$$V = (K \times I) \div N_e$$

Hydraulic gradient was obtained from calculations and a groundwater contour map constructed for the uppermost water-bearing zone (Exhibit 4-13). The average of these values was given to be 0.014 ft/ft.

Groundwater beneath the site is primarily found in clayey sand (SC) deposits and in silty sand (SM) layers within fat clay (CH). Recognized values for effective porosity are 1% for clay (CL, CH) and 20% for sand (SM, SC).

$$\mathbf{V = (1.0^{-8} \times 0.014\ ft/ft) \div 0.01 = 3.98 \times 10^{-5}\ ft/day\ (clay)}$$
$$\mathbf{V = (1.0^{-6} \times 0.014\ ft/ft) \div 0.20 = 1.99 \times 10^{-4}\ ft/day\ (sand)}$$

Based upon these values, the horizontal component of linear velocity of groundwater is expected to range from 3.98×10^{-5} ft/day in the clay to 1.99×10^{-4} ft/day in the sand bodies.

A delineation of the Angelina County Waste Management Center property boundary is shown on Exhibit 8.2. The site point of compliance and groundwater monitoring system are presented on Exhibit 8.3. A potentiometric surface map of the uppermost water-bearing zone, which reflects conditions in November 1995, is found as Exhibit 4-13 in Attachment 4.

Groundwater contour maps of the uppermost aquifer are found as Exhibit 8.3.1.1 through 8.3.12.5. Tabulated water level measurements are found as Exhibit 8.7.

Groundwater conditions ~~The groundwater monitoring system~~ for Angelina County Waste Management Center are ~~is~~ described in detail in the Initial Groundwater Characterization Report, Angelina County Waste Management Center; Hydrex Environmental, Inc.; December 1, 1995, which is included as Appendix 9.I of Attachment 5.

The current certified groundwater monitoring system for the site consists of monitor wells MW-1B, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-10, MW-11, MW-12A, MW-13B, MW-14, MW-15A, MW-15B, MW-18, and MW-20. Monitor wells MW-6, -7, -10, and -11 are Tract 2 wells and currently warehoused pending site development in that area of the facility.

In order to meet well spacing requirements and extend the point of compliance, monitor wells MW-21, MW-22, MW-23, MW-24, MW-25, MW-26, MW-27, MW-28, and MW-29 will be installed at the facility. In addition, monitor well MW-2, which has not had sufficient water volume for sampling since 1996, will be plugged and abandoned. Monitor well MW-1B will also be plugged and abandoned as monitor well MW-18 sufficiently to monitors this area of the water bearing unit. Data included as Exhibit 8.8 demonstrates the interconnectivity of monitor wells MW-1B and MW-18 and the sufficiency of monitor well MW-18. Four additional wells (MW-4, MW-5, MW-7, and MW-20) will be eliminated as the distances between wells are adjusted to comply with spacing requirements. Plugging and abandonment activities and reporting will be conducted in accordance with applicable regulations.

Installation of monitor wells MW-21, MW-22, MW-23, MW-24, MW-25, and MW-29 and plugging of wells MW-1B, MW-2, MW-4, MW-5, MW-7, and MW-20 will occur within 90 days of final approval of the revised groundwater monitoring system design. Background monitoring for the new wells will commence within 90 days of installation. Installation of wells MW-26, MW-27, and MW-28 and initiation of background monitoring for wells MW-6, MW-10, MW-11, MW-26, MW-27, and MW-28 will commence prior to placement of the first waste in Tract 2 (Exhibit 8.3).

The final system will consist of nineteen wells (wells MW-3, MW-6, MW-10, MW-11, MW-12A, MW-13B, MW-14, MW-15A, MW-15B, MW-18, MW-21, MW-22, MW-23, MW-24, MW-25, MW-26, MW-27, MW-28, and MW-29). All wells will be constructed according to the specifications outlined in 30 TAC §330.421. Typical monitor well construction specifications are included as Exhibit 8.3.13. A map showing the locations of waste disposal areas and monitor well locations is included as Exhibit 8.3. The groundwater monitoring system installation will be certified by a qualified groundwater scientist as defined in 30 TAC §330.3 following installation of Tract 1 monitor wells (MW-21, MW-22, MW-23, MW-24, MW-25, and MW-29) and Tract 2 monitor wells (MW-26, MW-27, and MW-28).

The following table summarizes the groundwater monitoring system for Angelina County Waste Management Center. ~~The current groundwater monitoring system is summarized on the following table.~~

~~**Proposed Monitoring System**~~

Well/Piezometer	Lithology Screened	Status	Aquifer	Remarks
MW-1A	Interbedded Sand-clay	Plugged & Abandoned	———	Plugged 8-27-96
MW-1B	Interbedded Sand-clay	Existing		Downgradient Tract 1
MW-2	Silty Sand	Existing		Downgradient Tract 1
MW-3	Clayey Sand - Lean Clay	Existing	uppermost	Downgradient Tract 1
MW-4	Clayey Sand	Existing		Downgradient Tract 1
MW-5	Clayey Sand, Clay Sand	Existing	uppermost	Downgradient Tract 1
MW-6	Interbedded Clay-Sand	Existing	uppermost	Warehouse
MW-7	Interbedded Clay-Sand	Existing		Warehouse
MW-8	Interbedded Clay-Sand	Plugged & Abandoned		Plugged 8-27-96
MW-9	Silty Sand	Plugged & Abandoned		Plugged 8-27-96
MW-10	Interbedded Clay-Sand	Existing	uppermost	Warehouse
MW-11	Silty Sand - Clayey Sand	Existing	uppermost	Warehouse
MW-12A	Interbedded Clay-Sand	Existing	uppermost	Downgradient Tract 1
MW-12B	Fine Sand (SP)	Plugged & Abandoned		Plugged 8-27-96
MW-13A	Clayey Sand	Plugged & Abandoned		Plugged 8-27-96
MW-13B	Interbedded Clay-Sand	Existing	uppermost	Downgradient Tract 1
MW-14	Clayey Sand	Existing	uppermost	Upgradient well
MW-15A	Silty Sand-Lean Clay	Existing	uppermost	Downgradient Tract 1
MW-15B	Clayey Sand	Existing		Downgradient Tract 1
MW-16	Interbedded Clay Sand	Plugged & Abandoned		Plugged 8-27-96
MW-17	Clayey Sand	Plugged & Abandoned		Plugged 8-27-96
MW-18	Silty Sand - Clayey Sand	Existing		Installed 8-26-96
MW-19	Interbedded Clay-Sand	To be drilled		Replacement for MW-9
MW-20	Silty Sand	Existing		Installed 8-26-96

Table 5-1

Groundwater Monitoring Well Design Summary

Well ID	Ground Surface Elevation (MSL)	Well Depth (feet BGS)		Screened Interval (feet)		Remarks
		Depth (feet BGS)	Elevation (MSL)	Depth (feet BGS)	Elevation (MSL)	
MW-3	277.0	33	244	12 - 32	265.0 - 245.0	POC well downgradient of Tract 1
MW-6	268.8	27	241.8	16 - 26	252.8 - 242.8	POC well downgradient of Tract 2
MW-10	272.9	35	237.9	19 - 34	253.9 - 238.9	Upgradient Well
MW-11	272.5	21	251.5	10 - 20	262.5 - 252.5	Upgradient Well
MW-12A	290.5	26	264.5	10 - 25	280.5 - 265.5	POC well downgradient of Tract 1
MW-13B	304.1	47	257.1	26 - 46	278.1 - 258.1	POC well downgradient of Tract 1
MW-14	307.3	33	274.3	17 - 32	290.3 - 275.3	Upgradient Well
MW-15A	310.5	42	268.5	26 - 41	284.5 - 269.5	POC well downgradient of Tract 1
MW-15B	310.5	64	246.5	48 - 63	262.5 - 247.5	POC well downgradient of Tract 1
MW-18	319.7	55	264.7	44 - 54	275.7 - 265.7	POC well downgradient of Tract 1
MW-21*	300	40	260	30 - 40	250 - 260	POC well downgradient of Tract 1
MW-22*	282	40	242	30 - 40	232 - 242	POC well downgradient of Tract 1
MW-23*	274	35	239	25 - 35	229 - 239	POC well downgradient of Tract 1
MW-24*	272	35	237	25 - 35	227 - 237	POC well downgradient of Tract 1
MW-25*	275	35	240	25 - 35	230 - 240	POC well downgradient of Tract 1 and 2
MW-26*	263	30	233	20 - 30	223 - 233	POC well downgradient of Tract 2
MW-27*	260	35	225	25 - 35	215 - 225	POC well downgradient of Tract 2
MW-28*	265	35	230	25 - 35	220 - 230	POC well downgradient of Tract 2
MW-1B	319.5	81	238.5	60 - 80	259.5 - 239.5	Plug and Abandon
MW-2	287.6	15	272.6	4 - 14	283.6 - 273.6	Plug and Abandon
MW-4	269.7	31	238.7	10 - 30	259.7 - 239.7	Plug and Abandon
MW-5	275.5	33	242.5	13 - 32	263.5 - 243.5	Plug and Abandon
MW-7	262.2	26	236.2	10 - 25	252.2 - 237.2	Plug and Abandon
MW-20	281	20	261	9 - 19	272.0 - 262.0	Plug and Abandon
MW-CA1	302.2	45.5	256.7	35 - 45	266.7 - 256.7	Corrective Action Well

*Wells to be installed; design values are estimates

From September 1992 to January 1994, four samples were collected and analyzed for TNRCC parameters Groups 1 through 4. Of the hazardous constituents listed in Table I of TAC 330.200, five (barium, nitrate, fluoride, cadmium, and mercury,) were reported as detectable in the groundwater monitoring events.

Nitrate was detected in several of the wells during past monitoring events. Concentrations ranged up to 0.9 mg/L, which is significantly lower than the MCL of 10 mg/L. The nitrate concentrations are not considered to result from a release of contaminants from the facility.

During past monitoring events, all monitor wells have been reported to contain detectable concentrations of barium. Barium was reported in concentrations up to 0.9 mg/L. No barium was detected in excess of the 1.0 mg/L MCL for the metal. The reported barium levels are assumed to represent naturally occurring background at the site.

Fluoride was detected in concentrations up to 1.4 mg/L. Laboratory reports indicate that the detectable fluoride is relatively consistent with respect to concentration and occurrence. No fluoride was reported in excess of the MCL of 4.0 mg/L. These low levels of fluoride are assumed to represent naturally occurring background concentrations.

Mercury greater than or equal to the MCL of 0.002 mg/L was reported for five wells (MW-1, MW-5, MW-7, MW-8, and MW-14). Cadmium greater than or equal to the MCL of 0.01 mg/L was reported for two wells (MW-14 and MW-15A). None of the wells were reported to contain elevated concentrations of mercury for all four monitoring events. A single well, MW-15A, was reported to contain cadmium equal to or exceeding the MCL for all four events. Exhibit 8.4 shows reported concentrations and MCLs for the two parameters. Exhibit 8.5 summarizes the reported elevated occurrences of mercury and cadmium.

A review of the analytical reports and laboratory Quality Assurance/Quality Control data suggests that reported values for cadmium and mercury are suspect. Exhibit 8.6 summarizes relevant QA/QC data for each respective sampling event. The ranges of recovery, many of which exceed the accepted variance of 10%, are taken from laboratory QA/QC reports for those samples reported to contain elevated mercury or cadmium. In addition, the field blank for the monitoring event on April 1992, was reported to contain 0.001 mg/L mercury. A review of other water quality indicators does not suggest a release of contaminants to the groundwater. Based upon these factors, the validity of the analytical data is questionable.

~~Monitoring for required background parameters, as set forth in the Groundwater Sampling and Analysis Plan, is expected to be initiated in the second or third quarter of 1995. Previous analytical results will not be used in establishing background values of any parameters.~~ Collection of background under Subtitle D was performed between February 1996 and August 1998. Background monitoring was completed for monitor wells MW-1B, -3, -4, -5, -12A, -13B, -14, -15A, and -15B in November 1997 and for monitor wells MW-18 and -20 in August 1998. Monitor well MW-2 repeatedly demonstrates insufficient water for sampling. Therefore, background for volatile organic compounds (VOCs) in MW-2 was not completed until May 2005 and background monitoring for the remaining detection monitoring list has not been completed. As with pre-subtitle D monitoring (Exhibit 8.1), Subtitle D background monitoring results indicate the presence of numerous dissolved metals in wells of the current monitoring system. Dissolved metals reported for background monitoring events included arsenic, barium, cadmium, chromium, nickel, and selenium. Monitor well MW-18 was the only monitoring well that did not report concentrations of dissolved metals above their respective reporting limit. Concentrations of nitrate were reported for all wells of the current monitoring system during background monitoring. All concentrations of nitrate reported during background monitoring were less than 1 mg/L. No VOCs were reported for any well during background monitoring activities. Results of Subtitle D background and detection monitoring are included as pages III-5-28-1 through III-5-28-71 in Exhibit 8.1

Subsequent to completion of background monitoring, detection monitoring has been conducted on a semiannual basis for the parameters listed in the facility's GWSAP. Statistical analysis of the data collected during the detection monitoring events is performed in accordance with the GWSAP and applicable regulations. Statistical analysis has reported numerous statistically significant changes (SSCs) and/or statistically significant increases (SSIs) in concentration for various constituents during detection monitoring. Where an SSI is indicated, assessment monitoring or an Alternate Source Demonstration (ASD) may be required. A discussion of SSIs reported for detection monitoring results that resulted in assessment monitoring or an ASD is presented below. The SSIs are addressed on a per well basis.

Monitor Well MW-13B

The results of the November 1998 detection monitoring event reported cis-1,2-dichloroethylene in monitor well MW-13B at a concentration of 12.8 µg/L. Verification resampling confirmed the reported concentration and assessment monitoring for MW-13B was initiated February 1999. The assessment monitoring included sampling and analysis for the complete list of constituents found in Appendix II of 40 CFR part 258 (assessment constituents) and those listed on the facility's approved alternative detection monitoring list. The results of the assessment monitoring reported no new assessment constituents. Subsequent TNRCC correspondence approved assessment monitoring for detection monitoring constituents on a semiannual basis. Monitor well MW-13B remained in assessment monitoring until a statistical exceedance of the groundwater protection standard (GWPS) was reported for VOCs for the June 2004 monitoring event. The exceedance of the GWPS initiated corrective action monitoring for well MW-13B. The TCEQ was notified of the exceedance and the initiation of corrective action monitoring for well MW-13B in correspondence dated July 29, 2004. In accordance with applicable regulation, installation of a monitoring well in the direction of potential contaminant migration was required. Pursuant to this requirement, MW-CA1 was installed on August 19, 2004. The well was subsequently sampled for assessment constituents during September 2004. Assessment monitoring of MW-CA1 reported no concentrations of VOCs above their respective reporting limits. Documentation referencing the installation details for MW-CA1 was forwarded to the TCEQ on September 14, 2004.

Following completion of the assessment of corrective measures a report titled *Report on Assessment of Corrective Measures and Selection of Remedy* was forwarded to the TCEQ. This report, dated March 23, 2005, indicated that landfill gas was the likely source of the VOCs reported for MW-13B. Additionally, the report detailed a remedy that included the installation of a passive vent trench system to interrupt the landfill gas migration in the area of MW-13B. The remedy was approved in TCEQ correspondence dated May 13, 2005. Subsequently, necessary permit modifications to allow the installation of the trench system and an additional gas monitoring probe were approved by the TCEQ. Following approval of the remedy, VOCs reported for MW-13B have diminished to a single compound (cis-1,2-dichloroethylene) with concentrations currently at or below the reporting limit (5 µg/L). Additionally, it should be noted that VOCs have not been detected in MW-CA1 for any monitoring event.

Monitor Well MW-20

The results of the June 2004 monitoring event for MW-20 reported nitrate at a concentration of 0.67 mg/L. Statistical analyses demonstrated an apparent SSI for this constituent for the June 2004 event. On June 29, 2004 the TCEQ was notified of an SSI for nitrate concentrations in monitor well MW-20. Following verification of the reported value, an ASD was prepared for the reported SSI. The ASD was approved in TCEQ correspondence dated November 23, 2004. Based on the TCEQ correspondence monitor well MW-20 remained in detection monitoring.

Monitor Well MW-14

Upgradient monitor well MW-14 reported 1,1-dichloroethane at a concentration of 6.10 µg/L for the November 2005 monitoring event. Verification resampling performed during January 2006 did not confirm the reported value. During the next monitoring event (May 2006),well MW-14 again reported 1,1-dichloroethane at a concentration of 6.78 µg/L. Verification resampling performed during August 2006 confirmed the reported value. Based on TCEQ correspondence, MW-14 was sampled for the full list of assessment constituents during December of 2006. Mercury was the only assessment list constituent detected for the monitoring event. In accordance with applicable regulations, background sampling for mercury was performed. Mercury is currently sampled concurrent with regularly scheduled monitoring events. 1,1-Dichloroethane has been sporadically reported since the initial detection and is likely associated with landfill gas migration.

Other SSIs

Dissolved metals including arsenic, barium, cadmium, chromium, nickel, and selenium have been consistently reported at detectable concentrations during both detection and background monitoring. In correspondence dated March 12, 1999 the TNRCC requested a discussion of elevated cadmium concentrations reported for monitor wells MW-12A, -14, and -15. In response to this request a report titled *Report on Cadmium in Groundwater* was forwarded to the TNRCC on May 26, 1999. The report presented documentation of a natural source for cadmium and other metals reported for monitoring wells at the facility. The report described occurrence of lignite in the shallow subsurface. The report further demonstrated how weathering (oxidation) of this naturally occurring lignite can release significant concentrations of metals into the groundwater. Approval of the report was provided in correspondence dated June 28, 1999. As the conditions related to the oxidation of the lignite in the shallow subsurface have not changed, the ASD remains both applicable and relevant to the evaluation of groundwater quality at the facility.

Migration of landfill gas appears to have resulted in detectable VOC concentrations in monitor wells MW-13B and MW-14. Current remediation efforts have reduced the concentrations of these constituents to near non-detect levels. These efforts will continue in accordance with applicable regulatory requirements. In addition, reported concentrations of metals have been shown to be related to naturally occurring sources. Therefore, there is no indication of groundwater contamination at the facility resulting from a release of leachate from the waste cells.

~~Based upon the information presented herein, there is no evidence that groundwater at Angelina County Waste Management Center has been impacted by a release of contaminants.~~

~~The following exhibits are included as part of this Groundwater Characterization Report:~~

~~EXHIBIT No.~~

8.7 Tabulation of Water Level measurements

Angelina County Waste management Center, Permit no. MSW 2105A, Angelina County, TX - Water Level Elevations (feet, msl)

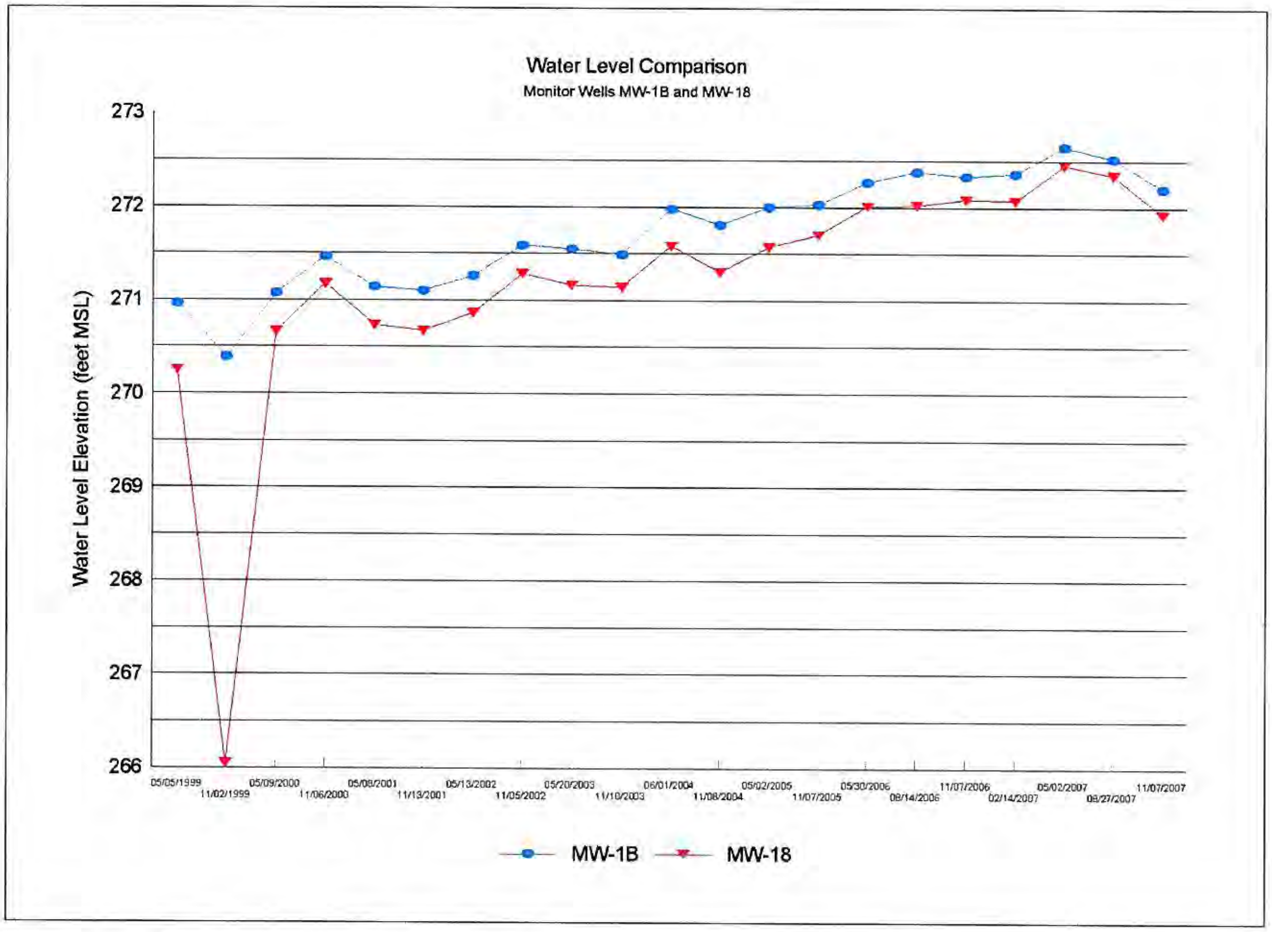
Monitor Well	02/07/96	05/09/96	08/12/96	11/07/96	02/05/97	05/07/97	08/04/97	11/10/97	05/05/98	11/09/98	05/05/99	11/02/99	05/09/00	11/06/00	05/08/01	11/13/01	05/13/02
MW-1B	269.28	267.58	269.59	269.91	269.54	269.81	269.99	270.00	270.35	269.49	270.96	270.39	271.07	271.46	271.14	271.10	271.26
MW-2	275.24	274.88	274.80	274.70	274.46	274.28	274.32	274.26	274.10	274.10	274.05	--	--	--	274.09	274.58	274.72
MW-3	268.83	269.04	269.93	269.53	268.87	269.51	270.42	270.04	269.75	269.62	269.82	269.30	268.87	269.26	269.26	269.56	269.66
MW-4	259.65	259.74	258.87	259.04	260.07	261.30	260.80	259.92	261.30	259.61	261.12	259.52	260.66	259.34	261.63	259.67	259.55
MW-5	256.87	257.12	256.22	256.32	256.77	258.22	258.06	257.95	258.50	256.82	258.10	256.54	257.24	256.40	258.34	257.59	258.20
MW-12A	277.06	277.27	277.18	277.24	277.26	277.71	277.73	277.85	278.32	277.98	278.36	277.32	278.45	278.98	278.32	278.12	278.55
MW-13B	270.05	270.52	270.59	271.77	271.13	271.19	271.44	271.54	271.99	271.93	272.83	270.10	272.91	273.28	273.13	269.18	273.29
MW-14	280.51	280.67	280.69	280.47	280.65	280.43	280.58	280.90	281.07	280.98	281.27	280.45	280.91	279.49	280.41	280.43	280.45
MW-15A	274.67	275.47	275.53	275.30	275.43	275.22	275.34	275.35	275.65	275.50	275.95	275.17	275.73	274.31	275.37	275.36	275.38
MW-15B	271.03	270.57	270.64	270.61	270.63	270.67	270.93	271.00	271.42	271.50	271.98	271.36	272.01	271.38	271.95	272.04	272.13
MW-18	--	--	--	269.29	269.30	269.44	269.68	269.69	270.02	269.95	270.25	266.05	270.66	271.17	270.73	270.67	270.86
MW-20	--	--	--	266.61	265.37	263.90	265.64	267.36	264.27	267.81	264.97	267.44	264.37	266.96	263.88	267.68	266.92
MW-CA1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Monitor Well	11/05/02	05/20/03	11/10/03	06/01/04	09/07/04	11/08/04	05/02/05	11/07/05	01/03/06	05/31/06	08/14/06	11/07/06	02/14/07	05/02/07	08/27/07	11/07/07
MW-1B	271.59	271.55	271.49	271.98	272.06	271.81	272.00	272.03	272.38	272.27	272.38	272.33	272.36	272.65	272.52	272.20
MW-2	274.97	274.59	275.15	274.82	276.14	274.89	276.44	--	--	--	--	--	--	--	--	--
MW-3	270.21	269.82	269.59	270.49	271.03	270.22	270.08	269.30	268.77	268.68	269.32	268.97	267.83	268.64	269.86	269.08
MW-4	260.23	259.71	259.15	260.24	260.29	260.09	260.70	258.78	258.60	258.90	258.25	258.47	259.52	260.10	259.67	259.10
MW-5	257.57	258.14	257.27	258.60	258.83	258.27	259.66	256.92	256.87	256.95	256.20	256.42	257.14	257.97	258.06	257.44
MW-12A	278.52	278.87	278.50	279.60	279.57	279.08	279.56	278.59	278.57	278.23	277.97	277.96	278.74	279.11	279.21	278.63
MW-13B	273.48	273.50	273.41	274.31	274.38	273.99	274.45	274.50	274.80	274.51	274.48	274.69	274.38	274.98	275.04	275.03
MW-14	280.69	280.35	280.25	280.76	280.78	280.45	280.65	280.91	281.31	281.04	281.09	281.16	281.11	281.29	281.10	280.68
MW-15A	275.71	275.51	274.38	275.91	275.78	274.98	275.68	275.78	276.25	275.97	275.97	275.98	275.96	276.22	276.01	275.54
MW-15B	272.58	272.45	272.38	272.90	272.59	272.61	272.88	273.04	273.49	273.27	273.31	273.37	273.39	273.64	273.51	273.14
MW-18	271.28	271.16	271.14	271.58	271.74	271.30	271.57	271.70	272.18	272.01	272.02	272.08	272.07	272.45	272.34	271.92
MW-20	269.02	268.80	268.92	269.04	269.10	268.61	268.48	267.70	266.95	263.81	266.48	267.07	264.71	264.71	266.24	266.64
MW-CA1	--	--	--	--	271.45	271.31	271.63	271.73	272.15	272.03	271.99	272.20	272.00	272.48	272.35	272.14

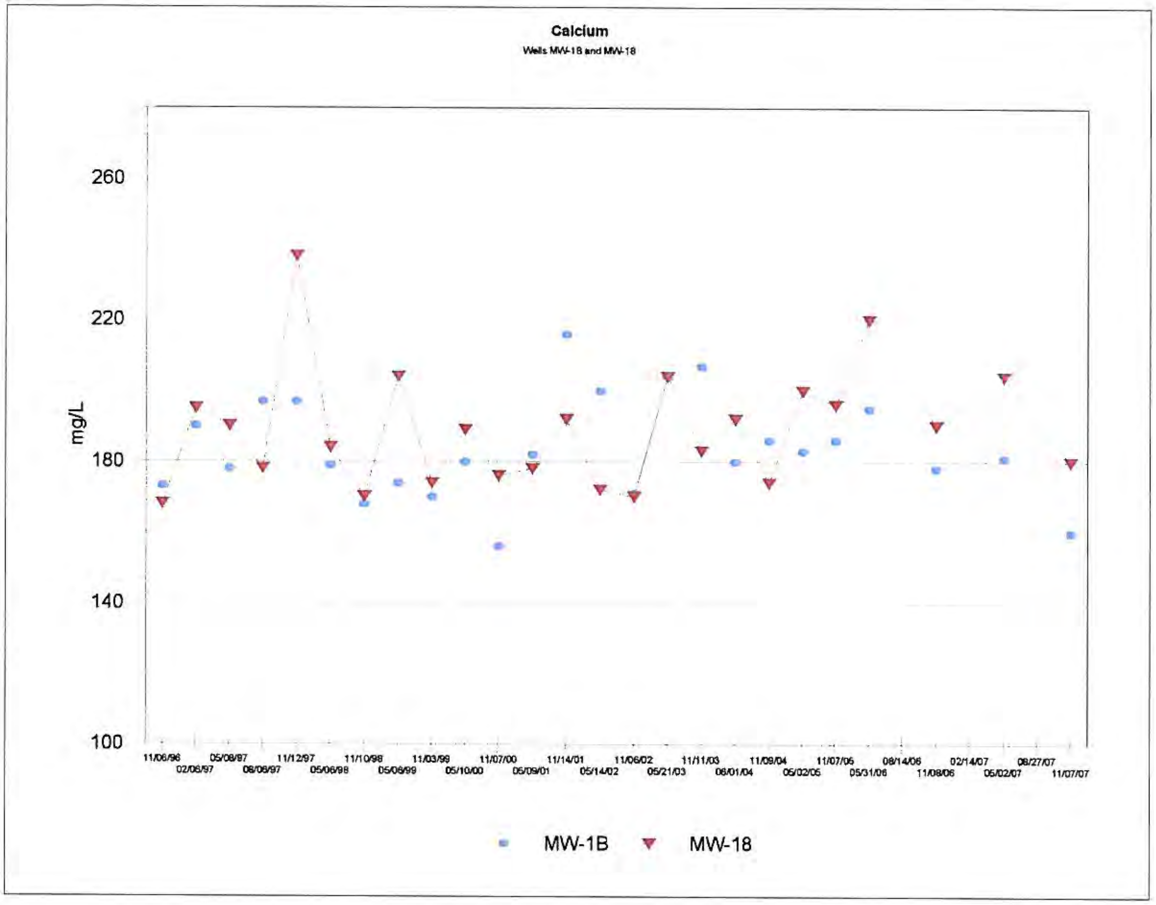
8.8 Demonstration of Interconnectivity Between Wells MW-1B and MW-18

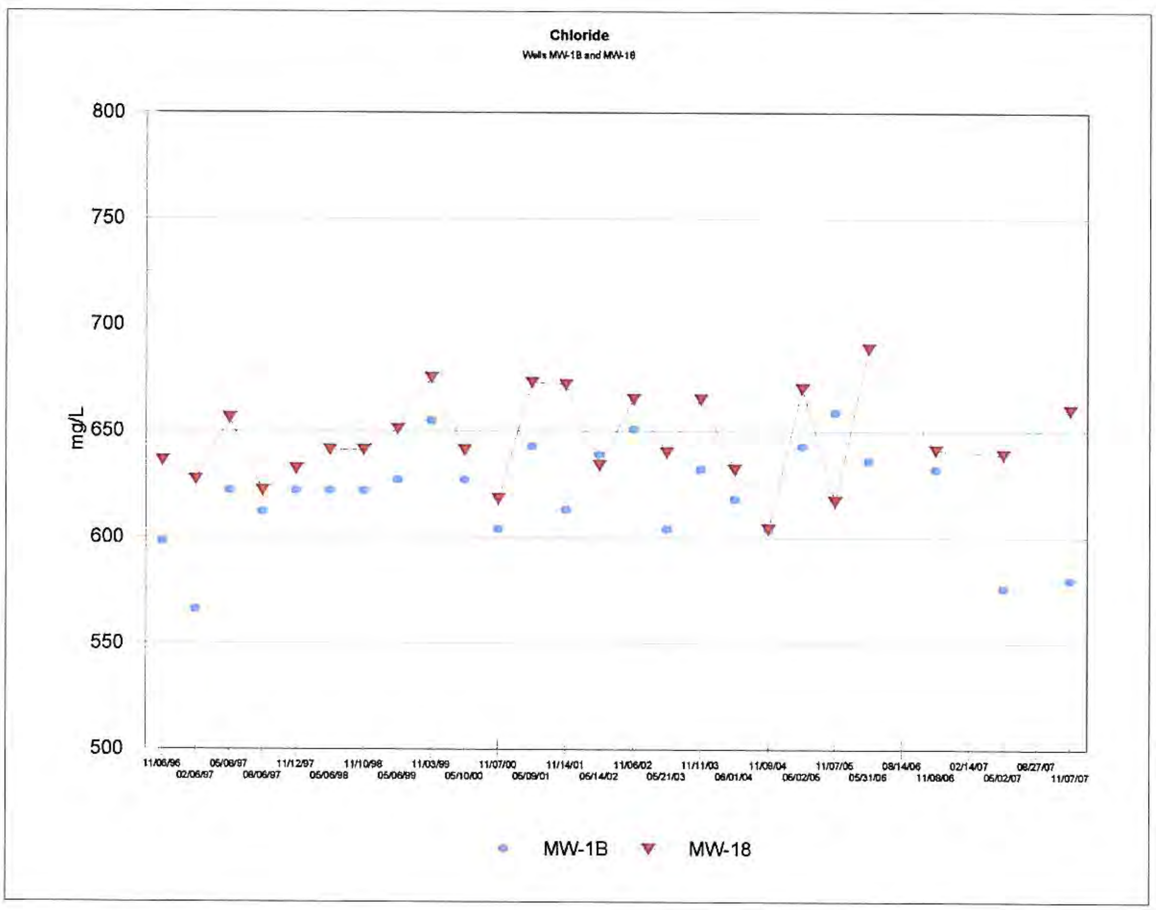
As described in the *Initial Groundwater Characterization Report* (Attachment 9.1), the uppermost groundwater bearing zone is made up of a number of hydraulically connected channel sands incised by other channel sands. Interbedded silty sand and clay units flanking the channel sands lessen hydraulic connectivity between water bearing units in both vertical and lateral directions. Although the interbedded silty sand and clay units limit flow between the sand bodies, distinct evidence of interconnectivity remains. Water levels in monitor wells installed in close proximity, such as wells MW-1B and MW-18, demonstrate the interconnectivity of vertically separated channel sands. Comparisons of historical water level data for monitor wells MW-1B and MW-18 show pronounced correlation between changes in water levels during successive events since 1999.

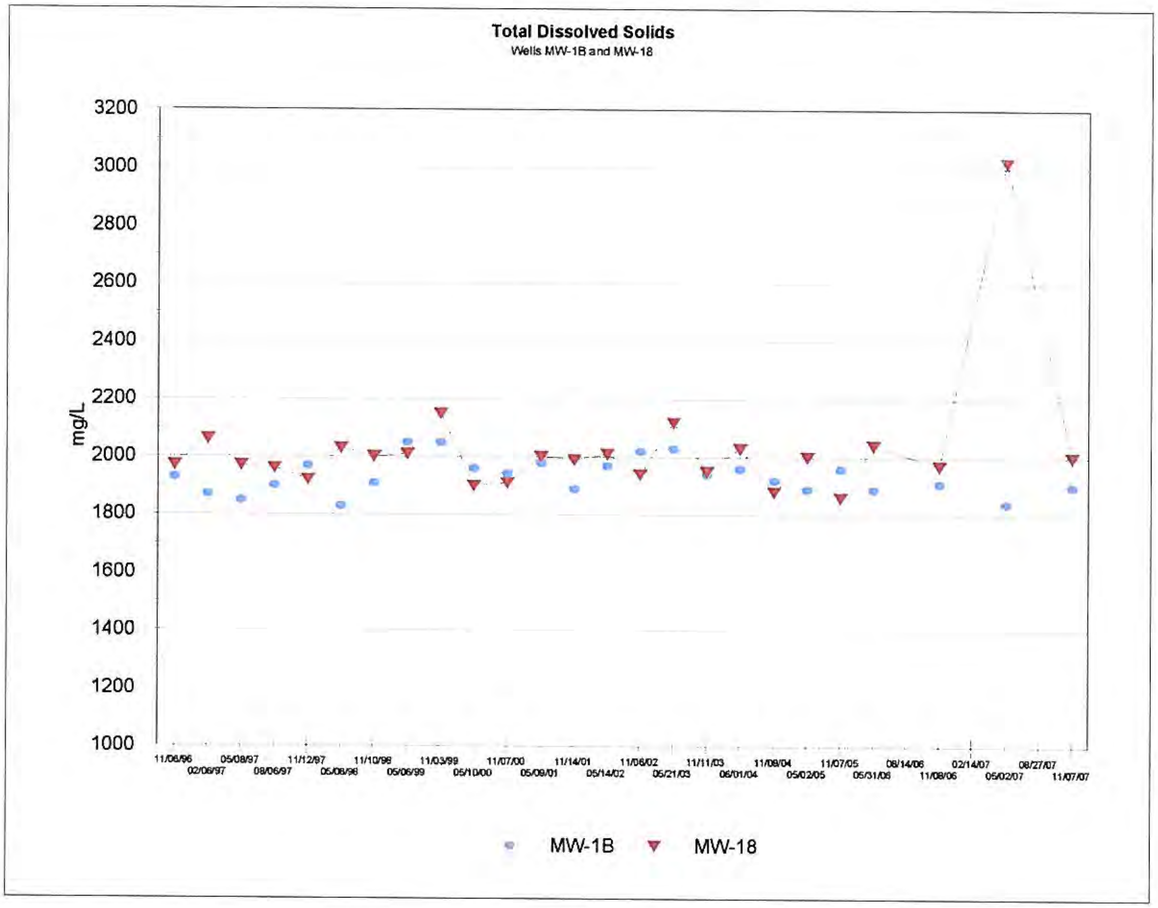
In order to demonstrate the interconnectivity of monitor wells MW-1B and MW-18 an evaluation of water levels was performed. Regression analysis of water levels from monitor wells MW-1B and MW-18 produced a correlation coefficient (r-squared value) of 0.9849. Based on their limited separation, the calculated r-squared value indicates excellent interconnectivity between the two wells. Additionally, the change in water level for successive monitoring events for each well was calculated. Regression analysis of the resulting values for wells MW-1B and MW-18 yielded an r-squared value of 0.9370 with a geometric mean of 0.0992 feet, further demonstrating the interconnectivity of the two closely spaced wells. The following graph illustrates the correlation of the water level measurements.

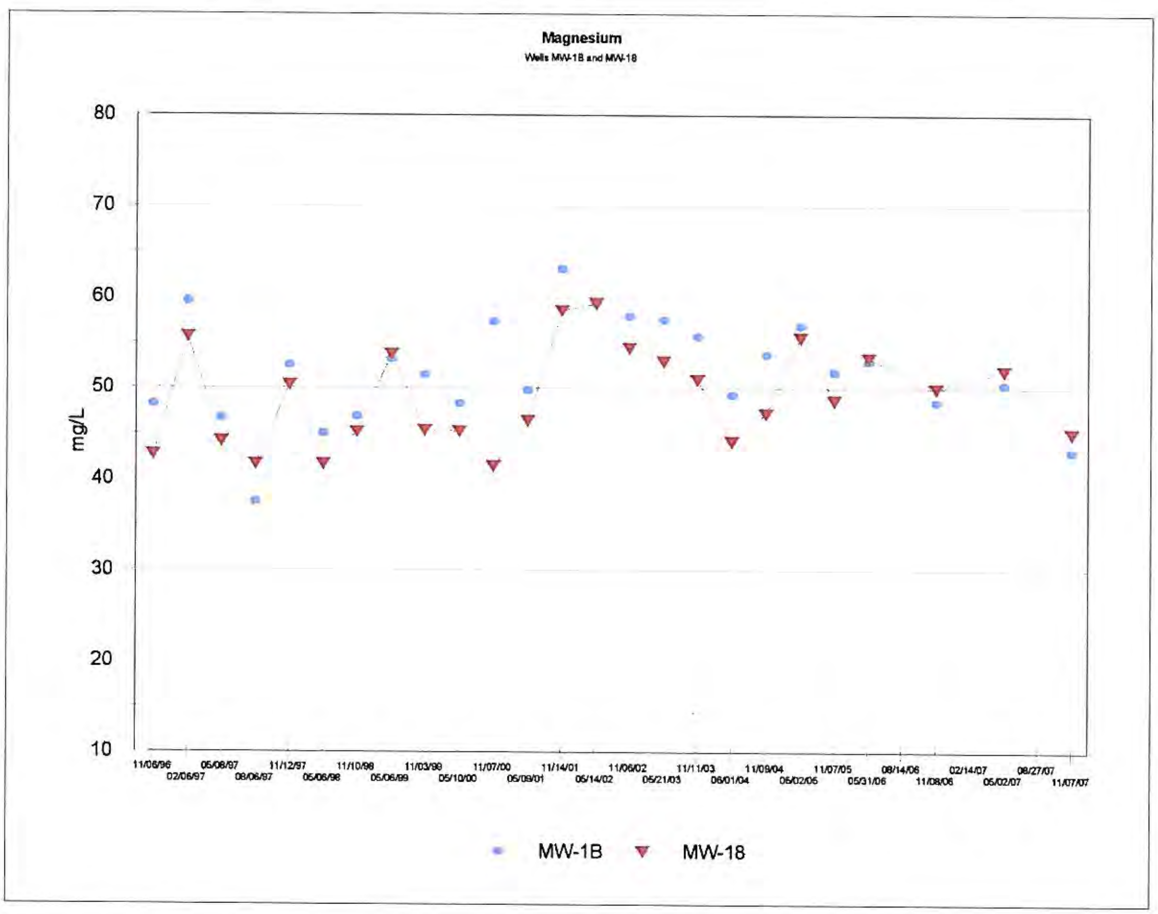


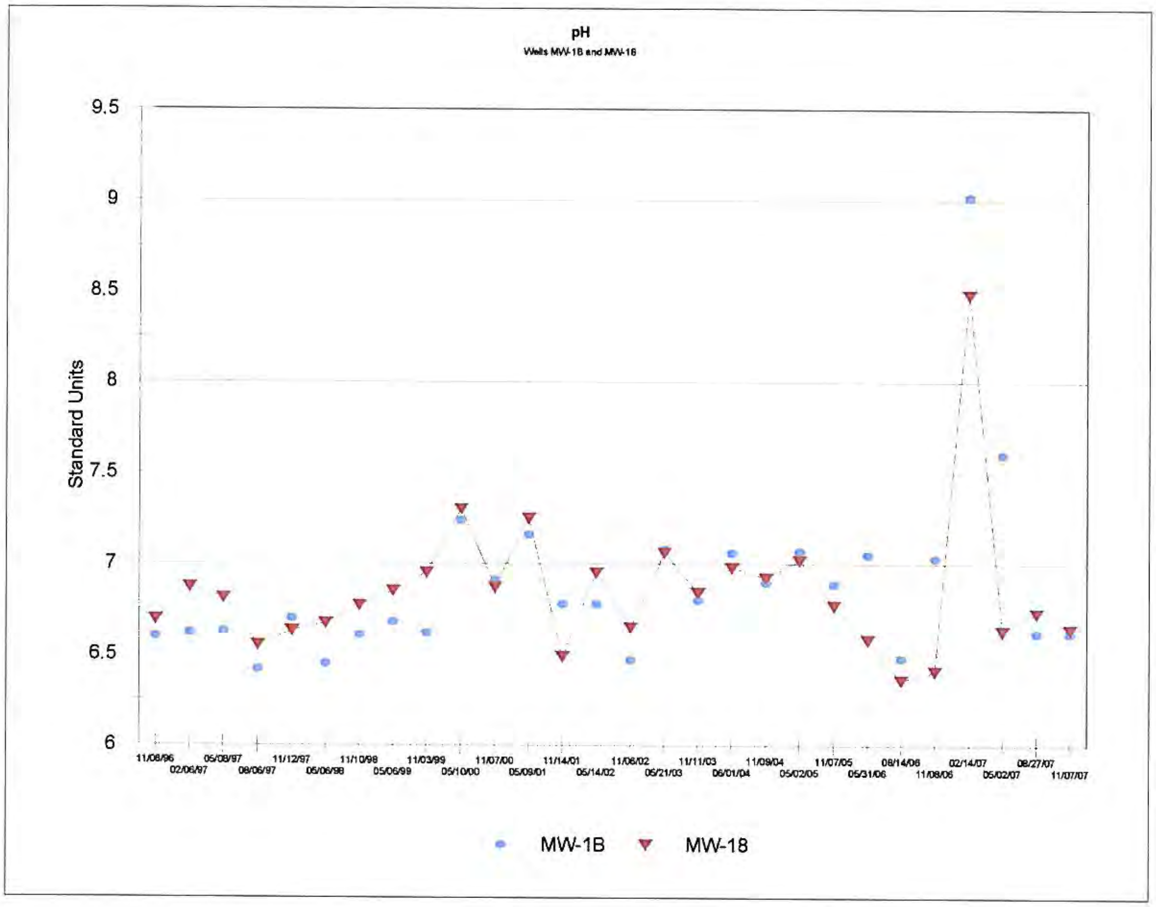
Additionally, parallels with respect to analytical data further indicate the wells monitor the same zone. The following graphs illustrate the correlation of analytical results from multiple sampling events.

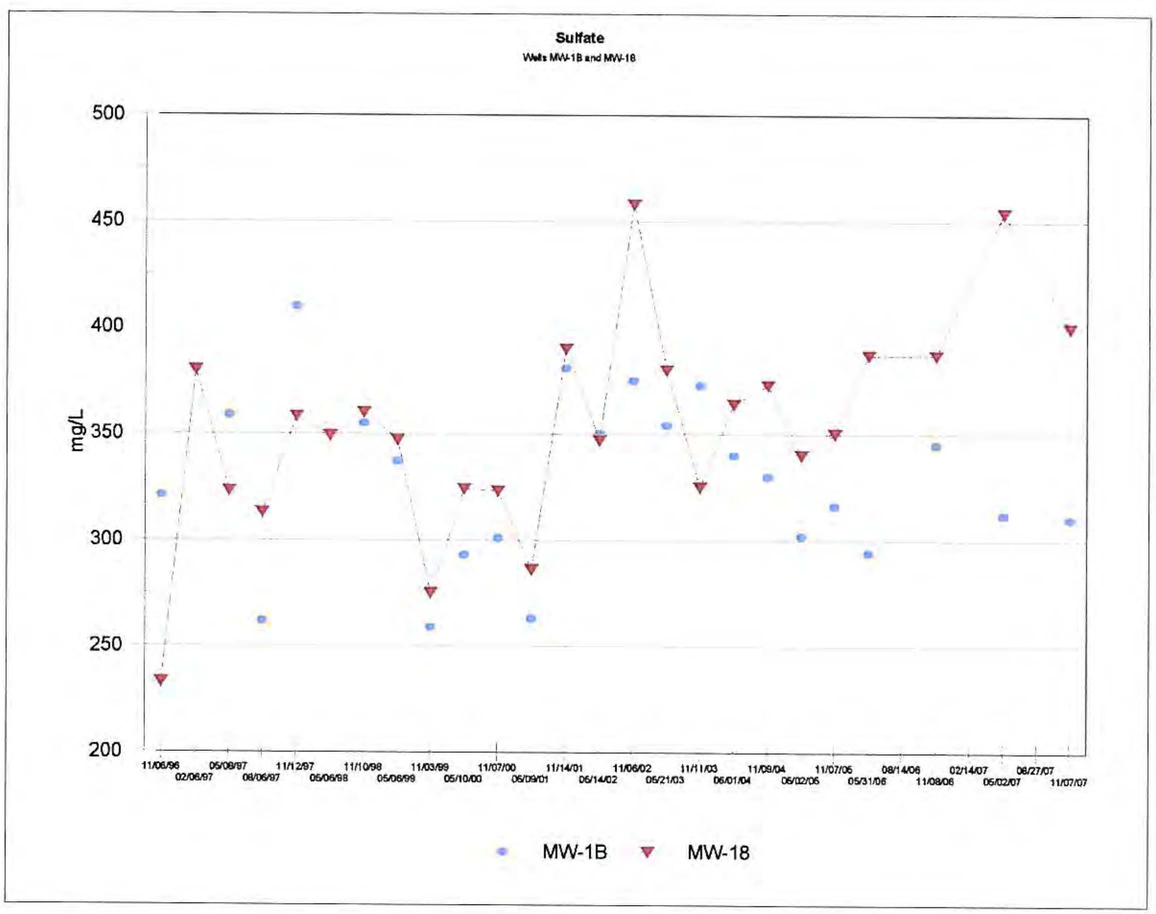

Calcium
Wells MW-1B and MW-18
260
220
180
140
100
mg/L
11/06/96
02/06/97
05/08/97
08/06/97
11/12/97
05/06/98
11/10/98
05/06/99
11/03/99
05/10/00
11/07/00
05/09/01
11/14/01
05/14/02
11/06/02
05/21/03
11/11/03
06/01/04
11/09/04
05/02/05
11/07/05
05/31/06
08/14/06
11/08/06
02/14/07
05/02/07
08/27/07
11/07/07
MW-1B
MW-18

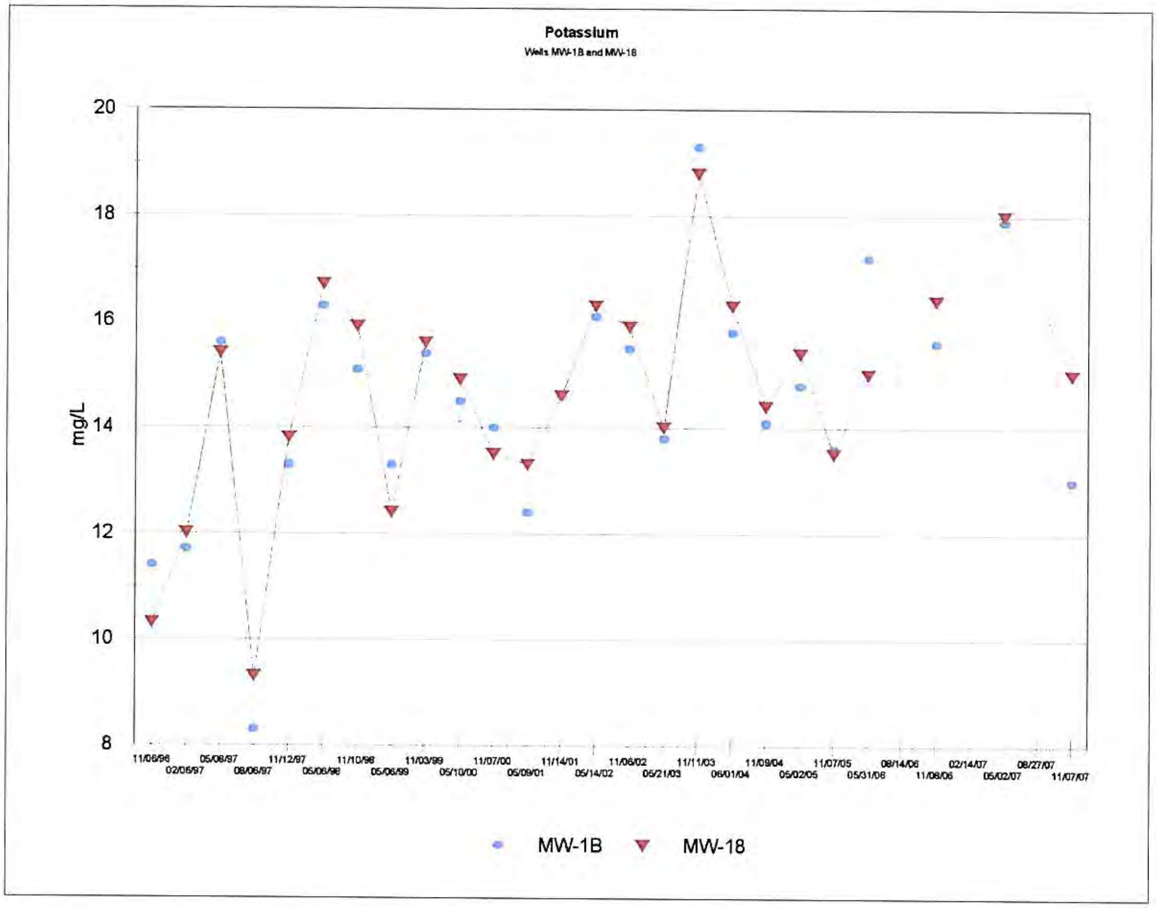

Chloride
Wells MW-1B and MW-18
800
750
700
650
600
550
500
mg/L
11/06/96
02/06/97
05/08/97
08/06/97
11/12/97
05/06/98
11/10/98
05/06/99
11/03/99
05/10/00
11/07/00
05/09/01
11/14/01
05/14/02
11/06/02
05/21/03
11/11/03
06/01/04
11/09/04
05/02/05
11/07/05
05/31/06
08/14/06
11/08/06
02/14/07
05/02/07
08/27/07
11/07/07
MW-1B
MW-18

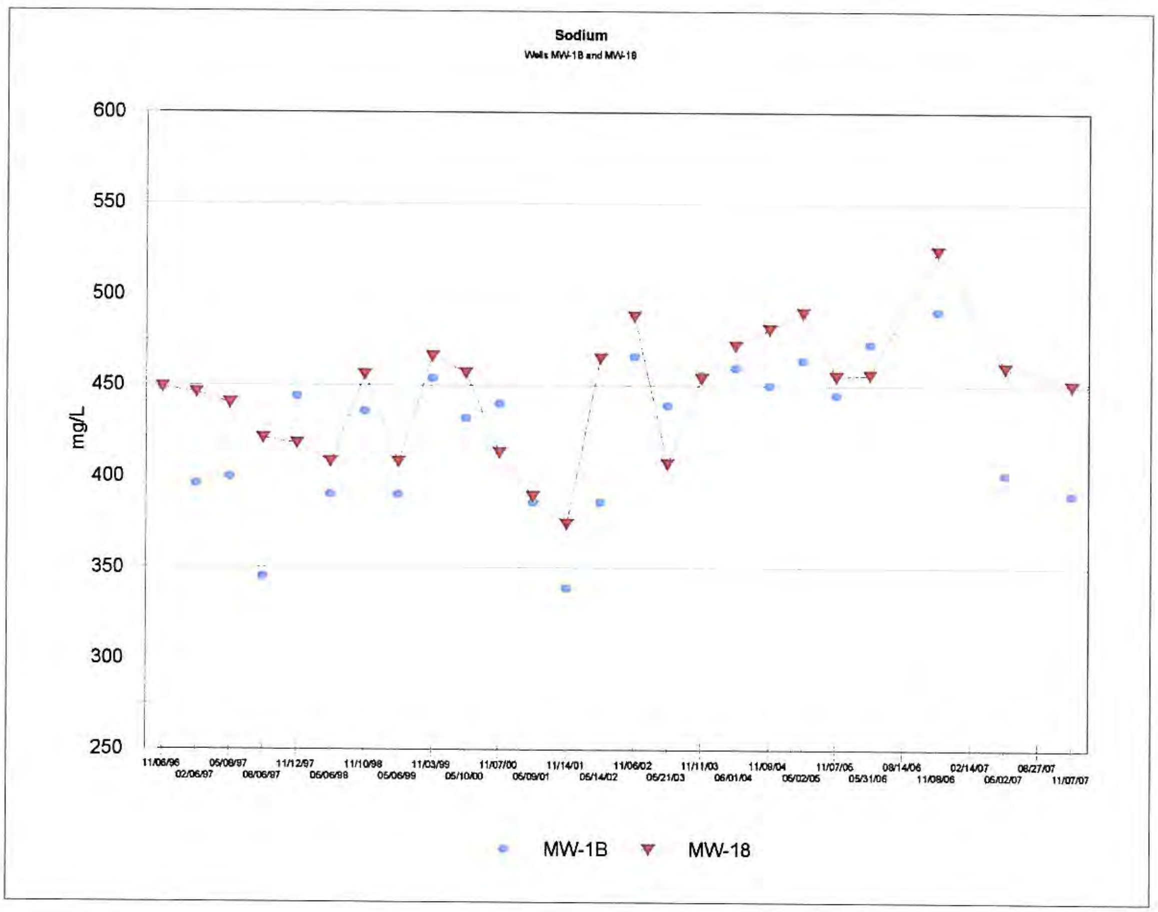

Total Dissolved Solids
Wells MW-1B and MW-18
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
mg/L
11/06/96
02/06/97
05/08/97
08/06/97
11/12/97
05/06/98
11/10/98
05/06/99
11/03/99
05/10/00
11/07/00
05/09/01
11/14/01
05/14/02
11/06/02
05/21/03
11/11/03
06/01/04
11/09/04
05/02/05
11/07/05
05/31/06
08/14/06
11/08/06
02/14/07
05/02/07
08/27/07
11/07/07
MW-1B
MW-18

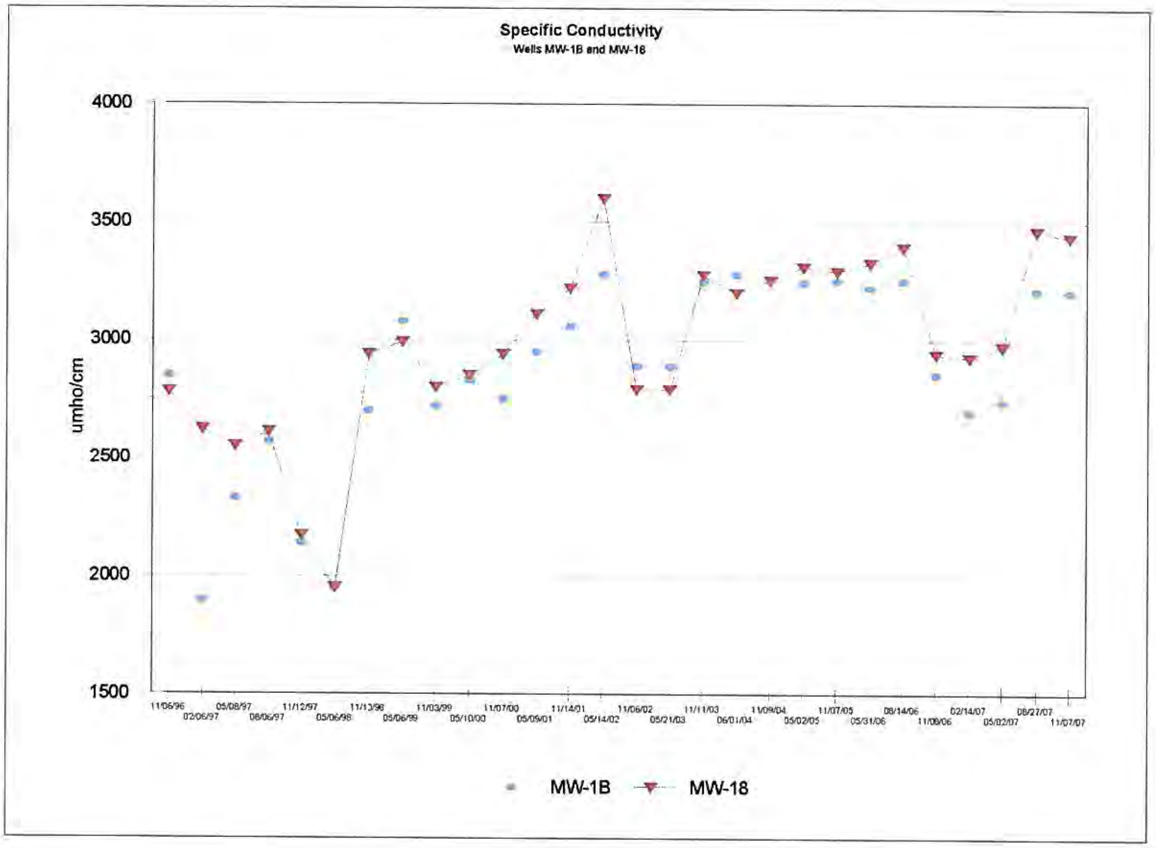

Magnesium
Wells MW-1B and MW-18
80
70
60
50
40
30
20
10
mg/L
11/06/96
02/06/97
05/08/97
08/06/97
11/12/97
05/06/98
11/10/98
05/06/99
11/03/99
05/10/00
11/07/00
05/09/01
11/14/01
05/14/02
11/06/02
05/21/03
11/11/03
06/01/04
11/09/04
05/02/05
11/07/05
05/31/06
08/14/06
11/08/06
02/14/07
05/02/07
08/27/07
11/07/07
MW-1B
MW-18


pH
Wells MW-1B and MW-18
Standard Units
9.5
9
8.5
8
7.5
7
6.5
6
11/06/96
02/06/97
05/08/97
08/06/97
11/12/97
05/06/98
11/10/98
05/06/99
11/03/99
05/10/00
11/07/00
05/09/01
11/14/01
05/14/02
11/06/02
05/21/03
11/11/03
06/01/04
11/09/04
05/02/05
11/07/05
05/31/06
08/14/06
11/08/06
02/14/07
05/02/07
08/27/07
11/07/07
MW-1B
MW-18


Sulfate
Wells MW-1B and MW-18
mg/L
500
450
400
350
300
250
200
11/06/96
02/06/97
05/08/97
08/06/97
11/12/97
05/06/98
11/10/98
05/06/99
11/03/99
05/10/00
11/07/00
05/09/01
11/14/01
05/14/02
11/06/02
05/21/03
11/11/03
06/01/04
11/09/04
05/02/05
11/07/05
05/31/06
08/14/06
11/08/06
02/14/07
05/02/07
08/27/07
11/07/07
MW-1B
MW-18


Potassium
Wells MW-1B and MW-18
mg/L
20
18
16
14
12
10
8
11/06/96
02/06/97
05/08/97
08/06/97
11/12/97
05/06/98
11/10/98
05/06/99
11/03/99
05/10/00
11/07/00
05/09/01
11/14/01
05/14/02
11/06/02
05/21/03
11/11/03
06/01/04
11/09/04
05/02/05
11/07/05
05/31/06
08/14/06
11/08/06
02/14/07
05/02/07
08/27/07
11/07/07
MW-1B
MW-18


Sodium
Wells MW-1B and MW-18
mg/L
600
550
500
450
400
350
300
250
11/06/96
02/06/97
05/08/97
08/06/97
11/12/97
05/06/98
11/10/98
05/06/99
11/03/99
05/10/00
11/07/00
05/09/01
11/14/01
05/14/02
11/06/02
05/21/03
11/11/03
06/01/04
11/09/04
05/02/05
11/07/05
05/31/06
08/14/06
11/08/06
02/14/07
05/02/07
08/27/07
11/07/07
MW-1B
MW-18



Both the water level and analytical data demonstrate the interconnected nature of these two monitor wells. As the wells monitor the same groundwater bearing unit and are approximately 11 feet apart only one well is necessary to monitor this portion of the point of compliance. Therefore, monitor well MW-1A will be plugged and abandoned and monitor MW-18 will remain part of the point of compliance monitoring system. Data used for this demonstration are included in Exhibits 8.1 and 8.7.

Appendix No.

Section 3
Replacement Copy of Attachment 5

ANGELINA COUNTY WASTE MANAGEMENT CENTER
ANGELINA COUNTY, TEXAS
MSW PERMIT NO. 2105A

PART III - SITE DEVELOPMENT PLAN
ATTACHMENT 5
GROUNDWATER CHARACTERIZATION REPORT

Modification
FOR COMPLIANCE WITH 30 TAC CHAPTER 330 SUBCHAPTER J

Prepared for:

Angelina County Waste Management Center
P.O. Box 1862
Lufkin, TX 75902-1862

February 2010

Glen A. Collier, P. G.
Senior Hydrogeologist

Leonell N. Scarborough, P.G.
Hydrogeologist

Hydrex Environmental, Inc.
1120 NW Stallings Drive
Nacogdoches, Texas
75964

Certification of Groundwater Monitoring System Design

Angelina County Waste Management Center
MSW Permit No. 2105A
Angelina County, Texas

I certify that the design of the groundwater monitoring system described herein meets the requirements of 30 TAC §330.403 and has been prepared based on facility boundaries as determined during telephone conversations on February 15, 2010 (documented in TCEQ correspondence dated February 17, 2010). I further certify that I am a qualified groundwater scientist as defined in 30 TAC §330.3.

STATE OF TEXAS
LEONELL N. SCARBOROUGH
GEOLOGY
#10048
LICENSED
PROFESSIONAL GEOSCIENTIST

Leonell N. Scarborough, P.G.
Hydrogeologist

2/15/10
Date

ANGELINA COUNTY WASTE MANAGEMENT CENTER
TYPE I SANITARY LANDFILL
ANGELINA COUNTY, TEXAS
MSW PERMIT NO. 2105A

PART III - SITE DEVELOPMENT PLAN
ATTACHMENT 5
GROUND-WATER CHARACTERIZATION REPORT

SEPTEMBER 12, 1996

REVISED February 2010

Applicant:

Angelina County Waste Management Center
P.O. Box 1862
Lufkin, Texas 75902-1862

Prepared by:

Hydrex Environmental, Inc.
1120 NW Stallings Drive
Nacogdoches, Texas 75964

This document is issued for permit review purposes only. It is not intended for construction or bidding purposes.

TABLE OF CONTENTS

Hydrex Environmental, Inc. has been contracted by Angelina County Waste Management Center to provide a groundwater characterization report for the landfill site of the Angelina County Waste Management Center.

This Groundwater Characterization Report is based on a historical review of previous investigations and groundwater monitoring activities at the site. Previous studies that provide the basis of the information presented herein include:

- Groundwater Monitoring Reports and Laboratory Analytical Reports (monitoring conducted September 1992 through November 2007.
- Report of Monitor Well Installation, Angelina County Landfill, 114.5-Acre Tract; Pickett-Jacobs Consultants, Inc.; May 26, 1992.
- Supplement No. 1 to Monitor Well Installation, Angelina County Waste Management Center, 114.5-Acre Tract; Pickett-Jacobs Consultants, Inc.; November 2, 1994.
- Supplement No. 2 to Monitor Well Installation, Angelina County Waste Management Center, 114.5-Acre Tract; Pickett-Jacobs Consultants, Inc.; February 24, 1995.
- Initial Groundwater Characterization Report, Angelina County Waste Management Center, 114.5-Acre Tract; Hydrex Environmental, Inc.; December 1, 1995.
- Report on Cadmium in Groundwater, Angelina County Waste Management Center, Hydrex Environmental, Inc.; May 26, 1999.
- Applicability of a May 26, 1999 Alternate Source Demonstration (ASD) for Metals in Groundwater, Angelina County Waste Management Center, December 5, 2007.

Previous groundwater monitoring at the Angelina County Waste Management Center consisted of quarterly sampling and analysis of all monitoring wells for TNRCC parameters Groups 1 through 4. Exhibit 8.1 includes a tabulation of the results of all previous laboratory testing of groundwater at the site.

Background monitoring for Subtitle D parameters was initiated in February 1996. Eight samples were collected and analyzed quarterly over a two year period to establish background values for the required parameters. The last of eight background monitoring events for the first wells installed was conducted in November 1997. Since that time, detection monitoring has been on-going on a semiannual basis.

Results of background and detection monitoring events through November 2007 from wells at Angelina County Waste Management Center are tabulated on pages III-5-28-1 through III-5-28-71in Exhibit 8.1.

One near-surface water-bearing system has been identified at the site. This system occurs within sands and clayey sands of the Yegua Formation. A detailed discussion of site groundwater conditions is provided in Attachment 4, Geological Report, Section 6.3 and in Appendix 9.1 of this attachment.

The uppermost water-bearing unit at the site consists of locally continuous sand bodies bounded by finer grained silt and clay facies. The sand bodies typically do not exceed a thickness of 10 feet. Marginal to the primary silty sand and clayey sand bodies the lithologies are dominated by interbedded silty sand and clay. These thin interbeds are the conduit for communication between the primary sands. This premise is supported by the observation that monitor wells which are completed in interbedded silty sand and clay bodies located marginal to the primary sands have similar water level elevations as those completed in the primary sand bodies. Examples include monitor wells MW-10 and MW-11. Similarly, monitor wells completed in sands which are vertically separated have similar water levels, such as monitor wells MW-7 and MW-8. As a result of the channel-fill nature of the sands, the possibility exists that the individual channels are in contact where meandering channels were deposited on, or incised into older deposits.

Deeper bodies of silty sand and clayey sand are often under confined conditions due to the presence of organic silts and clays which can form a locally confining unit. The lower confining bed of the uppermost aquifer is a hard gray clay with sand seams which underlies the silty sand and clayey sand of the deeper, locally confined zones.

At the site, flow in the uppermost aquifer is to the north-northeast except at the southwestern end of the site where the flow direction is to the southwest (Attachment 4, Exhibit 4-13).

The Darcy equation, stated below, relates groundwater velocity, V, to effective porosity, N_e, hydraulic gradient, I, and hydraulic conductivity, K.

$$V = (K \times I) \div N_e$$

Hydraulic gradient was obtained from calculations and a groundwater contour map constructed for the uppermost water-bearing zone (Exhibit 4-13). The average of these values was given to be 0.014 ft/ft.

Groundwater beneath the site is primarily found in clayey sand (SC) deposits and in silty sand (SM) layers within fat clay (CH). Recognized values for effective porosity are 1% for clay (CL, CH) and 20% for sand (SM, SC).

$$\mathbf{V = (1.0^{-8} \times 0.014\ ft/ft) \div 0.01 = 3.98 \times 10^{-5}\ ft/day\ (clay)}$$
$$\mathbf{V = (1.0^{-6} \times 0.014\ ft/ft) \div 0.20 = 1.99 \times 10^{-4}\ ft/day\ (sand)}$$

Based upon these values, the horizontal component of linear velocity of groundwater is expected to range from 3.98×10^{-5} ft/day in the clay to 1.99×10^{-4} ft/day in the sand bodies.

A delineation of the Angelina County Waste Management Center property boundary is shown on Exhibit 8.2. The site point of compliance and groundwater monitoring system are presented on Exhibit 8.3. A potentiometric surface map of the uppermost water-bearing zone, which reflects conditions in November 1995, is found as Exhibit 4-13 in Attachment 4.

Groundwater contour maps of the uppermost aquifer are found as Exhibit 8.3.1.1 through 8.3.12.5. Tabulated water level measurements are found as Exhibit 8.7.

Groundwater conditions for Angelina County Waste Management Center are described in detail in the Initial Groundwater Characterization Report, Angelina County Waste Management Center; Hydrex Environmental, Inc.; December 1, 1995, which is included as Appendix 9.I of Attachment 5.

The current certified groundwater monitoring system for the site consists of monitor wells MW-1B, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-10, MW-11, MW-12A, MW-13B, MW-14, MW-15A, MW-15B, MW-18, and MW-20. Monitor wells MW-6, -7, -10, and -11 are Tract 2 wells and currently warehoused pending site development in that area of the facility.

In order to meet well spacing requirements and extend the point of compliance, monitor wells MW-21, MW-22, MW-23, MW-24, MW-25, MW-26, MW-27, MW-28, and MW-29 will be installed at the facility. In addition, monitor well MW-2, which has not had sufficient water volume for sampling since 1996, will be plugged and abandoned. Monitor well MW-1B will also be plugged and abandoned as monitor well MW-18 sufficiently to monitors this area of the water bearing unit. Data included as Exhibit 8.8 demonstrates the interconnectivity of monitor wells MW-1B and MW-18 and the sufficiency of monitor well MW-18. Four additional wells (MW-4, MW-5, MW-7, and MW-20) will be eliminated as the distances between wells are adjusted to comply with spacing requirements. Plugging and abandonment activities and reporting will be conducted in accordance with applicable regulations.

Installation of monitor wells MW-21, MW-22, MW-23, MW-24, MW-25, and MW-29 and plugging of wells MW-1B, MW-2, MW-4, MW-5, MW-7, and MW-20 will occur within 90 days of final approval of the revised groundwater monitoring system design. Background monitoring for the new wells will commence within 90 days of installation. Installation of wells MW-26, MW-27, and MW-28 and initiation of background monitoring for wells MW-6, MW-10, MW-11, MW-26, MW-27, and MW-28 will commence prior to placement of the first waste in Tract 2 (Exhibit 8.3).

The final system will consist of nineteen wells (wells MW-3, MW-6, MW-10, MW-11, MW-12A, MW-13B, MW-14, MW-15A, MW-15B, MW-18, MW-21, MW-22, MW-23, MW-24, MW-25, MW-26, MW-27, MW-28, and MW-29). All wells will be constructed according to the specifications outlined in 30 TAC §330.421. Typical monitor well construction specifications are included as Exhibit 8.3.13. A map showing the locations of waste disposal areas and monitor well locations is included as Exhibit 8.3. The groundwater monitoring system installation will be certified by a qualified groundwater scientist as defined in 30 TAC §330.3 following installation of Tract 1 monitor wells (MW-21, MW-22, MW-23, MW-24, MW-25, and MW-29) and Tract 2 monitor wells (MW-26, MW-27, and MW-28).

The following table summarizes the groundwater monitoring system for Angelina County Waste Management Center.

Table 5-1

Groundwater Monitoring Well Design Summary						
Well ID	Ground Surface Elevation (MSL)	Well Depth (feet BGS)		Screened Interval (feet)		Remarks
		Depth (feet BGS)	Elevation (MSL)	Depth (feet BGS)	Elevation (MSL)	
MW-3	277.0	33	244	12 - 32	265.0 - 245.0	POC well downgradient of Tract 1
MW-6	268.8	27	241.8	16 - 26	252.8 - 242.8	POC well downgradient of Tract 2
MW-10	272.9	35	237.9	19 - 34	253.9 - 238.9	Upgradient Well
MW-11	272.5	21	251.5	10 - 20	262.5 - 252.5	Upgradient Well
MW-12A	290.5	26	264.5	10 - 25	280.5 - 265.5	POC well downgradient of Tract 1
MW-13B	304.1	47	257.1	26 - 46	278.1 - 258.1	POC well downgradient of Tract 1
MW-14	307.3	33	274.3	17 - 32	290.3 - 275.3	Upgradient Well
MW-15A	310.5	42	268.5	26 - 41	284.5 - 269.5	POC well downgradient of Tract 1
MW-15B	310.5	64	246.5	48 - 63	262.5 - 247.5	POC well downgradient of Tract 1
MW-18	319.7	55	264.7	44 - 54	275.7 - 265.7	POC well downgradient of Tract 1
MW-21*	300	40	260	30 - 40	250 - 260	POC well downgradient of Tract 1
MW-22*	282	40	242	30 - 40	232 - 242	POC well downgradient of Tract 1
MW-23*	274	35	239	25 - 35	229 - 239	POC well downgradient of Tract 1
MW-24*	272	35	237	25 - 35	227 - 237	POC well downgradient of Tract 1
MW-25*	275	35	240	25 - 35	230 - 240	POC well downgradient of Tract 1 and 2
MW-26*	263	30	233	20 - 30	223 - 233	POC well downgradient of Tract 2
MW-27*	260	35	225	25 - 35	215 - 225	POC well downgradient of Tract 2
MW-28*	265	35	230	25 - 35	220 - 230	POC well downgradient of Tract 2
MW-1B	319.5	81	238.5	60 - 80	259.5 - 239.5	Plug and Abandon
MW-2	287.6	15	272.6	4 - 14	283.6 - 273.6	Plug and Abandon
MW-4	269.7	31	238.7	10 - 30	259.7 - 239.7	Plug and Abandon
MW-5	275.5	33	242.5	13 - 32	263.5 - 243.5	Plug and Abandon
MW-7	262.2	26	236.2	10 - 25	252.2 - 237.2	Plug and Abandon
MW-20	281	20	261	9 - 19	272.0 - 262.0	Plug and Abandon
MW-CA1	302.2	45.5	256.7	35 - 45	266.7 - 256.7	Corrective Action Well

*Wells to be installed; design values are estimates

SECTION 6 - GROUNDWATER MONITORING PROGRAM

A detailed discussion of the groundwater monitoring program is presented as Attachment 11, Groundwater Sampling and Analysis Plan (GWSAP). The GWSAP sets forth sampling, analysis, and statistical comparison procedures for evaluating groundwater monitoring data at the Angelina County Waste Management Center.

From September 1992 to January 1994, four samples were collected and analyzed for TNRCC parameters Groups 1 through 4. Of the hazardous constituents listed in Table I of TAC 330.200, five (barium, nitrate, fluoride, cadmium, and mercury,) were reported as detectable in the groundwater monitoring events.

Nitrate was detected in several of the wells during past monitoring events. Concentrations ranged up to 0.9 mg/L, which is significantly lower than the MCL of 10 mg/L. The nitrate concentrations are not considered to result from a release of contaminants from the facility.

During past monitoring events, all monitor wells have been reported to contain detectable concentrations of barium. Barium was reported in concentrations up to 0.9 mg/L. No barium was detected in excess of the 1.0 mg/L MCL for the metal. The reported barium levels are assumed to represent naturally occurring background at the site.

Fluoride was detected in concentrations up to 1.4 mg/L. Laboratory reports indicate that the detectable fluoride is relatively consistent with respect to concentration and occurrence. No fluoride was reported in excess of the MCL of 4.0 mg/L. These low levels of fluoride are assumed to represent naturally occurring background concentrations.

Mercury greater than or equal to the MCL of 0.002 mg/L was reported for five wells (MW-1, MW-5, MW-7, MW-8, and MW-14). Cadmium greater than or equal to the MCL of 0.01 mg/L was reported for two wells (MW-14 and MW-15A). None of the wells were reported to contain elevated concentrations of mercury for all four monitoring events. A single well, MW-15A, was reported to contain cadmium equal to or exceeding the MCL for all four events. Exhibit 8.4 shows reported concentrations and MCLs for the two parameters. Exhibit 8.5 summarizes the reported elevated occurrences of mercury and cadmium.

A review of the analytical reports and laboratory Quality Assurance/Quality Control data suggests that reported values for cadmium and mercury are suspect. Exhibit 8.6 summarizes relevant QA/QC data for each respective sampling event. The ranges of recovery, many of which exceed the accepted variance of 10%, are taken from laboratory QA/QC reports for those samples reported to contain elevated mercury or cadmium. In addition, the field blank for the monitoring event on April 1992, was reported to contain 0.001 mg/L mercury. A review of other water quality indicators does not suggest a release of contaminants to the groundwater. Based upon these factors, the validity of the analytical data is questionable.

Collection of background under Subtitle D was performed between February 1996 and August 1998. Background monitoring was completed for monitor wells MW-1B, -3, -4, -5, -12A, -13B, -14, -15A, and -15B in November 1997 and for monitor wells MW-18 and -20 in August 1998. Monitor well MW-2 repeatedly demonstrates insufficient water for sampling. Therefore, background for volatile organic compounds (VOCs) in MW-2 was not completed until May 2005 and background monitoring for the remaining detection monitoring list has not been completed. As with pre-subtitle D monitoring (Exhibit 8.1), Subtitle D background monitoring results indicate the presence of numerous dissolved metals in wells of the current monitoring system. Dissolved metals reported for background monitoring events included arsenic, barium, cadmium, chromium, nickel, and selenium. Monitor well MW-18 was the only monitoring well that did not report concentrations of dissolved metals above their respective reporting limit. Concentrations of nitrate were reported for all wells of the current monitoring system during background monitoring. All concentrations of nitrate reported during background monitoring were less than 1 mg/L. No VOCs were reported for any well during background monitoring activities. Results of Subtitle D background and detection monitoring are included as pages III-5-28-1 through III-5-28-71 in Exhibit 8.1

Subsequent to completion of background monitoring, detection monitoring has been conducted on a semiannual basis for the parameters listed in the facility's GWSAP. Statistical analysis of the data collected during the detection monitoring events is performed in accordance with the GWSAP and applicable regulations. Statistical analysis has reported numerous statistically significant changes (SSCs) and/or statistically significant increases (SSIs) in concentration for various constituents during detection monitoring. Where an SSI is indicated, assessment monitoring or an Alternate Source Demonstration (ASD) may be required. A discussion of SSIs reported for detection monitoring results that resulted in assessment monitoring or an ASD is presented below. The SSIs are addressed on a per well basis.

Monitor Well MW-13B

The results of the November 1998 detection monitoring event reported cis-1,2-dichloroethylene in monitor well MW-13B at a concentration of 12.8 µg/L. Verification resampling confirmed the reported concentration and assessment monitoring for MW-13B was initiated February 1999. The assessment monitoring included sampling and analysis for the complete list of constituents found in Appendix II of 40 CFR part 258 (assessment constituents) and those listed on the facility's approved alternative detection monitoring list. The results of the assessment monitoring reported no new assessment constituents. Subsequent TNRCC correspondence approved assessment monitoring for detection monitoring constituents on a semiannual basis. Monitor well MW-13B remained in assessment monitoring until a statistical exceedance of the groundwater protection standard (GWPS) was reported for VOCs for the June 2004 monitoring event. The exceedance of the GWPS initiated corrective action monitoring for well MW-13B. The TCEQ was notified of the exceedance and the initiation of corrective action monitoring for well MW-13B in correspondence dated July 29, 2004. In accordance with applicable regulation, installation of a monitoring well in the direction of potential contaminant migration was required. Pursuant to this requirement, MW-CA1 was installed on August 19, 2004. The well was subsequently sampled for assessment constituents during September 2004. Assessment monitoring of MW-CA1 reported no concentrations of VOCs above their respective reporting limits. Documentation referencing the installation details for MW-CA1 was forwarded to the TCEQ on September 14, 2004.

Following completion of the assessment of corrective measures a report titled *Report on Assessment of Corrective Measures and Selection of Remedy* was forwarded to the TCEQ. This report, dated March 23, 2005, indicated that landfill gas was the likely source of the VOCs reported for MW-13B. Additionally, the report detailed a remedy that included the installation of a passive vent trench system to interrupt the landfill gas migration in the area of MW-13B. The remedy was approved in TCEQ correspondence dated May 13, 2005. Subsequently, necessary permit modifications to allow the installation of the trench system and an additional gas monitoring probe were approved by the TCEQ. Following approval of the remedy, VOCs reported for MW-13B have diminished to a single compound (cis-1,2-dichloroethylene) with concentrations currently at or below the reporting limit (5 µg/L). Additionally, it should be noted that VOCs have not been detected in MW-CA1 for any monitoring event.

Monitor Well MW-20

The results of the June 2004 monitoring event for MW-20 reported nitrate at a concentration of 0.67 mg/L. Statistical analyses demonstrated an apparent SSI for this constituent for the June 2004 event. On June 29, 2004 the TCEQ was notified of an SSI for nitrate concentrations in monitor well MW-20. Following verification of the reported value, an ASD was prepared for the reported SSI. The ASD was approved in TCEQ correspondence dated November 23, 2004. Based on the TCEQ correspondence monitor well MW-20 remained in detection monitoring.

Monitor Well MW-14

Upgradient monitor well MW-14 reported 1,1-dichloroethane at a concentration of 6.10 μg/L for the November 2005 monitoring event. Verification resampling performed during January 2006 did not confirm the reported value. During the next monitoring event (May 2006),well MW-14 again reported 1,1-dichloroethane at a concentration of 6.78 μg/L. Verification resampling performed during August 2006 confirmed the reported value. Based on TCEQ correspondence, MW-14 was sampled for the full list of assessment constituents during December of 2006. Mercury was the only assessment list constituent detected for the monitoring event. In accordance with applicable regulations, background sampling for mercury was performed. Mercury is currently sampled concurrent with regularly scheduled monitoring events. 1,1-Dichloroethane has been sporadically reported since the initial detection and is likely associated with landfill gas migration.

Other SSIs

Dissolved metals including arsenic, barium, cadmium, chromium, nickel, and selenium have been consistently reported at detectable concentrations during both detection and background monitoring. In correspondence dated March 12, 1999 the TNRCC requested a discussion of elevated cadmium concentrations reported for monitor wells MW-12A, -14, and -15. In response to this request a report titled *Report on Cadmium in Groundwater* was forwarded to the TNRCC on May 26, 1999. The report presented documentation of a natural source for cadmium and other metals reported for monitoring wells at the facility. The report described occurrence of lignite in the shallow subsurface. The report further demonstrated how weathering (oxidation) of this naturally occurring lignite can release significant concentrations of metals into the groundwater. Approval of the report was provided in correspondence dated June 28, 1999. As the conditions related to the oxidation of the lignite in the shallow subsurface have not changed, the ASD remains both applicable and relevant to the evaluation of groundwater quality at the facility.

Migration of landfill gas appears to have resulted in detectable VOC concentrations in monitor wells MW-13B and MW-14. Current remediation efforts have reduced the concentrations of these constituents to near non-detect levels. These efforts will continue in accordance with applicable regulatory requirements. In addition, reported concentrations of metals have been shown to be related to naturally occurring sources. Therefore, there is no indication of groundwater contamination at the facility resulting from a release of leachate from the waste cells.

8.1 Historical Groundwater Data

The following pages are included as a tabulation of historical groundwater analytical data.

8.1(cont.) HISTORICAL GROUND-WATER DATA - MW-1B

- shaded values exceed MCLs

GROUP	PARAMETER	UNITS	9-16-92 LEVEL	11-18-92 LEVEL	4-22-93 LEVEL	1-19-94 LEVEL
1	Dissolved Arsenic	mg/l	<0.2	<0.1	<0.1	<0.1
	Dissolved Barium	mg/l	0.18	0.16	0.08	0.66
	Dissolved Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Chromium	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Copper	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0.1
	Dissolved Mercury	mg/l	<0.001	<0.001	<0.001	0.0022
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.1
	Dissolved Silver	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Zinc	mg/l	<0.01	<0.01	0.03	0.44
2	Dissolved Calcium	mg/l	140	180	180	160
	Dissolved Magnesium	mg/l	34	42	42	41
	Dissolved Sodium	mg/l	410	450	400	400
	Dissolved Potassium	mg/l	13	15	17	13
	Carbonate	mg/l	<0.5	<5.0	<0.5	<0.5
	Bicarbonate	mg/l	430	360	390	370
	Sulfate	mg/l	210	370	270	360
	Flouride	mg/l	<1.0	<1.0	<1.0	<0.25
	Nitrate(N)	mg/l	0.12	<0.1	0.12	<0.1
	P ALK(CaCO3)	mg/l	<1.0	<5.0	<2.0	<1.0
	Alk(CaCO3)	mg/l	430	360	390	370
	Total Hardness	mg/l	480	500	620	630
	Anion-Cation Balance	meq/L:meq/L	27.52/28.01	32.48/30.37	30.27/28.36	29.21/32.26
3	Chloride	mg/l	540	540	540	610
	pH		6.6	6.2	6.47	6.6
	Specific Conductance	umho/cm	3000	2400	2800	3600
	Total Dissolved Solids	mg/l	1740	1900	1900	2000
	Total Organic Carbon	mg/l	15.6	19.2	16.8	8.8
	Total Organic Carbon	mg/l	15.1	20.9	14.7	8.5
	Total Organic Carbon	mg/l	15.7	18.5	14.3	8
	Total Organic Carbon	mg/l	15.6	20.4	14.9	8.8
4	Dissolved Iron	mg/l	<0.05	<0.05	0.46	1
	Dissolved Manganese	mg/l	0.96	1.2	1.1	1
	MSL Elevation	Ft.	267.55	267.45	265.01	268.01

8.1(cont.) HISTORICAL GROUND-WATER DATA - MW-2

- shaded values exceed MCLs

GROUP	PARAMETER	UNITS	9-18-92 LEVEL	11-18-92 LEVEL	4-22-93 LEVEL	1-17-94 LEVEL
1	Dissolved Arsenic	mg/l	<0 2	<0.1	<0 1	<0 1
	Dissolved Barium	mg/l	0.08	0.12	0 03	0 66
	Dissolved Cadmium	mg/l	<0 01	<0.01	<0 01	<0 01
	Dissolved Chromium	mg/l	<0 02	<0.02	<0 02	<0 02
	Dissolved Copper	mg/l	<0 02	<0.02	<0 02	<0 02
	Dissolved Lead	mg/l	<0.10	<0.1	<0 1	<0.1
	Dissolved Mercury	mg/l	<0.002	<0 001	0.001	<0 0005
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	< 02
	Dissolved Silver	mg/l	<0 01	<0.01	<0 01	<0 01
	Dissolved Zinc	mg/l	<0.01	0.01	0 02	0 16
2	Dissolved Calcium	mg/l	35	13	17	16
	Dissolved Magnesium	mg/l	9	3.9	4 6	4.4
	Dissolved Sodium	mg/l	240	150	160	170
	Dissolved Potassium	mg/l	7	5	7	4 9
	Carbonate	mg/l	<0.5	<0 5	<0 5	<0 5
	Bicarbonate	mg/l	390	250	290	300
	Sulfate	mg/l	190	63	88	80
	Flouride	mg/l	1.1	<1.0	1.3	1.1
	Nitrate(N)	mg/l	0.89	0.3	0 52	0.5
	P ALK(CaCO3)	mg/l	<5 0	<5.0	<2.0	<1 0
	Alk(CaCO3)	mg/l	390	250	290	300
	Total Hardness	mg/l	130	<5 0	58	62
	Anion-Cation Balance	meq/L:meq/L	13.1/13.1	7.62/7.00	8 36/8 07	8.69/7 99
3	Chloride	mg/l	67	47	37	36
	pH		6.7	6.7		6 9
	Specific Conductance	umho/cm	1400	850	810	840
	Total Dissolved Solids	mg/l	900	500	600	600
	Total Organic Carbon	mg/l	24 5	30.3	13 2	10 6
	Total Organic Carbon	mg/l	23 6	30.2	15.4	9 7
	Total Organic Carbon	mg/l	24	28.8	12.2	9 3
	Total Organic Carbon	mg/l	24.7	30.7	7 9	9 5
4	Dissolved Iron	mg/l	<0.05	<0.05	<0 05	0.28
	Dissolved Manganese	mg/l	<0 01	<0.03	<0 01	<0 03
	MSL Elevation	Ft.	275 86	275.78	276 24	276 49

8.1(cont.) HISTORICAL GROUND-WATER DATA - MW-3

- shaded values exceed MCLs

GROUP	PARAMETER	UNITS	9-16-92 LEVEL	11-18-92 LEVEL	4-22-93 LEVEL	1-17-94 LEVEL
1	Dissolved Arsenic	mg/l	<0.2	<0.1	<0.1	<0.1
	Dissolved Barium	mg/l	0.08	0.12	0.03	0.66
	Dissolved Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Chromium	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Copper	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0.1
	Dissolved Mercury	mg/l	<0.002	<0.001	0.001	<0.0005
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.02
	Dissolved Silver	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Zinc	mg/l	<0.01	0.01	0.02	0.16
2	Dissolved Calcium	mg/l	35	13	17	16
	Dissolved Magnesium	mg/l	9	3.9	4.6	4.4
	Dissolved Sodium	mg/l	240	150	160	170
	Dissolved Potassium	mg/l	7	5	7	4.9
	Carbonate	mg/l	<0.5	<0.5	<0.5	<0.5
	Bicarbonate	mg/l	390	250	290	300
	Sulfate	mg/l	190	63	88	80
	Flouride	mg/l	1.1	<1.0	1.3	1.1
	Nitrate(N)	mg/l	0.89	0.3	0.52	0.5
	P ALK(CaCO3)	mg/l	<5.0	<5.0	<2.0	<1.0
	Alk(CaCO3)	mg/l	390	250	290	300
	Total Hardness	mg/l	130	<5.0	58	62
	Anion-Cation Balance	meq/L:meq/L	13.1/13.1	7.62/7.00	8.36/8.07	8.69/7.99
3	Chloride	mg/l	67	47	37	36
	pH		6.7	6.7		6.9
	Specific Conductance	umho/cm	1400	850	810	840
	Total Dissolved Solids	mg/l	900	500	600	600
	Total Organic Carbon	mg/l	24.5	30.3	13.2	10.6
	Total Organic Carbon	mg/l	23.6	30.2	15.4	9.7
	Total Organic Carbon	mg/l	24	28.8	12.2	9.3
	Total Organic Carbon	mg/l	24.7	30.7	7.9	9.5
4	Dissolved Iron	mg/l	<0.05	<0.05	<0.05	0.29
	Dissolved Manganese	mg/l	<0.01	<0.03	<0.01	<0.03
	MSL Elevation	Ft.	275.96	275.78	276.24	276.49

8.1(cont.) HISTORICAL GROUND-WATER DATA - MW-4

- shaded values exceed MCLs

GROUP	PARAMETER	UNITS	8-16-92 LEVEL	11-17-92 LEVEL	4-21-93 LEVEL	1-17-94 LEVEL
1	Dissolved Arsenic	mg/l	<0 2	<0.1	<0.1	<0 1
	Dissolved Barium	mg/l -	0.08	0 06	0 04	0 058
	Dissolved Cadmium	mg/l	<0.01	<0.01	<0.01	<0 01
	Dissolved Chromium	mg/l	<0.02	<0.02	<0 02	<0 02
	Dissolved Copper	mg/l	<0 02	<0.02	<0.02	<0 02
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0.1
	Dissolved Mercury	mg/l	<0.001	<0.001	0.001	0.0012
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.1
	Dissolved Silver	mg/l	<0.01	<0.01	<0 01	<0 01
	Dissolved Zinc	mg/l	0.05	0.1	0.05	0 26
2	Dissolved Calcium	mg/l	600	630	620	660
	Dissolved Magnesium	mg/l	170	190	180	200
	Dissolved Sodium	mg/l	1100	1300	1100	1300
	Dissolved Potassium	mg/l	<1.0	3	2	2
	Carbonate	mg/l	<0.5	<0.5	<0.5	<0.5
	Bicarbonate	mg/l	520	400	380	380
	Sulfate	mg/l	650	1100	920	1100
	Flouride	mg/l	<1.0	<1.0	<1.0	0 44
	Nitrate(N)	mg/l	<0.1	<0.1	<0 1	<0.1
	P ALK(CaCO3)	mg/l	<1.0	<2.0	<2.0	<2.0
	Alk(CaCO3)	mg/l	520	400	380	380
	Total Hardness	mg/l	2200	2300	320	2400
	Anion-Cation Balance	meq/L:meq/L	92.44/91.77	103.74/101.71	93 64/99 71	105 98/107 05
3	Chloride	mg/l	2400	2400	2500	2600
	pH		6 5	6.6	6.7	6
	Specific Conductance	umho/cm	8900	8500	6100	9300
	Total Dissolved Solids	mg/l	5200	5700	5600	6100
	Total Organic Carbon	mg/l	28.9	14.8	6.1	6 9
	Total Organic Carbon	mg/l	28 8	14.7	6.1	7.4
	Total Organic Carbon	mg/l	28.9	14 9	6 2	7 5
	Total Organic Carbon	mg/l	28.8	14.6	6.3	7 5
4	Dissolved Iron	mg/l	<0 05	0.78	<0 05	<0 05
	Dissolved Manganese	mg/l	0.11	0.14	0.1	0 12
	MSL Elevation of Water	Ft.	260 14	259 54	262	260 85

- shaded values exceed MCLs

			9-16-92	11-17-92	4-21-93	1-17-94
GROUP	PARAMETER	UNITS	LEVEL	LEVEL	LEVEL	LEVEL
1	Dissolved Arsenic	mg/l	<0.2	<0.1	<0.1	<0.1
	Dissolved Barium	mg/l	0.06	0.05	0.04	<0.01
	Dissolved Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Chromium	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Copper	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0.1
	Dissolved Mercury	mg/l	<0.001	0.003	0.001	<0.0005
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.1
	Dissolved Silver	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Zinc	mg/l	<0.01	0.05	0.01	0.13
2	Dissolved Calcium	mg/l	290	280	300	300
	Dissolved Magnesium	mg/l	81	84	73	73
	Dissolved Sodium	mg/l	700	730	720	780
	Dissolved Potassium	mg/l	10	13	14	13
	Carbonate	mg/l	<0.5	<0.5	<0.5	<0.5
	Bicarbonate	mg/l	470	460	420	440
	Sulfate	mg/l	920	950	740	1000
	Flouride	mg/l	<1.0	<1.0	<1.0	<0.25
	Nitrate(N)	mg/l	<0.1	<0.1	<0.1	<0.1
	P ALK(CaCO3)	mg/l	<1.0	<5.0	<2.0	<2.0
	Alk(CaCO3)	mg/l	480	460	420	440
	Total Hardness	mg/l	1100	950	980	960
	Anion-Cation Balance	meq/L:meq/L	52.40/51.89	53.03/52.70	52.70/48.49	55.31/54.19
3	Chloride	mg/l	770	760	820	780
	pH		6.7	6.7	6.74	6.35
	Specific Conductance	umho/cm	4200	4900	4500	4500
	Total Dissolved Solids	mg/l	3000	3000	3100	3100
	Total Organic Carbon	mg/l	18.1	6.3	4.9	5.4
	Total Organic Carbon	mg/l	17.9	7.1	4.9	5.8
	Total Organic Carbon	mg/l	17.6	6.3	5.3	6.5
	Total Organic Carbon	mg/l	18.1	6.2	5.4	5.2
4	Dissolved Iron	mg/l	<0.05	<0.05	<0.05	0.29
	Dissolved Manganese	mg/l	0.79	0.88	0.74	0.85
	MSL Elevation of Water	Ft.	258.19	257.81	258.89	258.52

8.1(cont.) HISTORICAL GROUND-WATER DATA - MW-6

- shaded values exceed MCLs

GROUP	PARAMETER	UNITS	8-16-92 LEVEL	11-17-92 LEVEL	4-21-93 LEVEL	1-17-94 LEVEL
1	Dissolved Arsenic	mg/l	<0.2	<0.1	<0.1	<0.1
	Dissolved Barium	mg/l	0.05	0.31	0.04	0.055
	Dissolved Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Chromium	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Copper	mg/l	<0.02	<0.02	<0.01	<0.02
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0.1
	Dissolved Mercury	mg/l	<0.001	<0.001	0.001	0.0013
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.1
	Dissolved Silver	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Zinc	mg/l	<0.01	0.04	0.02	0.47
2	Dissolved Calcium	mg/l	280	250	280	270
	Dissolved Magnesium	mg/l	74	56	71	60
	Dissolved Sodium	mg/l	620	570	700	620
	Dissolved Potassium	mg/l	11	10	15	12
	Carbonate	mg/l	<0.5	<0.5	<0.5	<0.5
	Bicarbonate	mg/l	510	430	410	470
	Sulfate	mg/l	670	590	760	630
	Flouride	mg/l	<1.0	<1.0	<1.0	<0.25
	Nitrate(N)	mg/l	0.14	<0.1	<0.1	<0.1
	P ALK(CaCO3)	mg/l	<5.0	<5.0	<2.0	<2.0
	Alk(CaCO3)	mg/l	510	430	410	470
	Total Hardness	mg/l	900	880	920	940
	Anion-Cation Balance	meq/L:meq/L	46.25/47.40	42.20/43.78	50.69/46.57	45.81/46.00
3	Chloride	mg/l	750	780	740	800
	pH		6.7	7	6.74	6.31
	Specific Conductance	umho/cm	4000	4100	4500	4200
	Total Dissolved Solids	mg/l	2800	2800	2920	2700
	Total Organic Carbon	mg/l	18.1	21.2	5.3	7.3
	Total Organic Carbon	mg/l	19.2	21.8	5.3	6.1
	Total Organic Carbon	mg/l	18.5	21.6	5.4	5.7
	Total Organic Carbon	mg/l	19	22.1	5.2	6.3
4	Dissolved Iron	mg/l	0.94	0.36	<0.05	1.2
	Dissolved Manganese	mg/l	0.7	0.74	0.74	0.87
	MSL Elevation of Water	Ft.	257.79	257.14	251.37	257.5

- shaded values exceed MCLs

GROUP	PARAMETER	UNITS	9-16-92 LEVEL	11-17-92 LEVEL	4-21-93 LEVEL	1-17-94 LEVEL
1	Dissolved Arsenic	mg/l	<0 2	<0.1	<0 1	<0 1
	Dissolved Barium	mg/l	0.1	0.08	0 04	<0 01
	Dissolved Cadmium	mg/l	<0 01	<0 01	<0 01	<0 01
	Dissolved Chromium	mg/l	<0 02	<0.02	<0 02	<0 02
	Dissolved Copper	mg/l	<0 02	<0 02	<0 02	<0 02
	Dissolved Lead	mg/l	<0.10	<0.1	<0 1	<0.1
	Dissolved Mercury	mg/l	0.005	0 01	0 001	0 0011
	Dissolved Selenium	mg/l	<0 20	<0 1	<0.1	<0 1
	Dissolved Silver	mg/l	<0.01	<0 01	<0 01	<0 01
	Dissolved Zinc	mg/l	0 01	0.1	0.03	0 27
2	Dissolved Calcium	mg/l	280	350	400	380
	Dissolved Magnesium	mg/l	78	86	120	92
	Dissolved Sodium	mg/l	1200	1100	1200	1200
	Dissolved Potassium	mg/l	9	11	14	11
	Carbonate	mg/l	<0.5	<0.5	<0 5	<0 5
	Bicarbonate	mg/l	380	310	320	270
	Sulfate	mg/l	1600	1700	1800	1800
	Flouride	mg/l	<1.0	<1.0	<1.0	<0 25
	Nitrate(N)	mg/l	0.18	0.2	<0.1	<0 1
	P ALK(CaCO3)	mg/l	<1 0	<2.0	13	<2.0
	Alk(CaCO3)	mg/l	380	310	320	270
	Total Hardness	mg/l	1100	400	1400	1400
	Anion-Cation Balance	meq/L:meq/L	72.42/72.86	72.79/72.65	82.44/84 05	79 07/83 23
3	Chloride	mg/l	930	890	1200	1200
	pH		6.6	6.7	6 65	6.13
	Specific Conductance	umho/cm	6000	6800	6900	7000
	Total Dissolved Solids	mg/l	4100	4900	4900	5100
	Total Organic Carbon	mg/l	52.6	10.9	8	4 6
	Total Organic Carbon	mg/l	53 6	10 8	9 5	3 3
	Total Organic Carbon	mg/l	54.4	12.7	10 7	5
	Total Organic Carbon	mg/l	53 6	11.1	7 8	5 5
4	Dissolved Iron	mg/l	<0 05	1.3	<0 05	0 05
	Dissolved Manganese	mg/l	0.76	0.73	0 78	0 96
	MSL Elevation of Water	Ft.	250.16	250 54	251 37	250 87

8.1(cont.) HISTORICAL GROUND-WATER DATA - MW-8

- shaded values exceed MCLs

			9-16-92	11-17-92	4-21-93	1-17-94
GROUP	PARAMETER	UNITS	LEVEL	LEVEL	LEVEL	LEVEL
1	Dissolved Arsenic	mg/l	<0.2	<0.1	<0.1	<0.1
	Dissolved Barium	mg/l	0.03	0.03	0.03	0.018
	Dissolved Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Chromium	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Copper	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0.1
	Dissolved Mercury	mg/l	<0.001	<0.001	0.002	<0.005
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.1
	Dissolved Silver	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Zinc	mg/l	0.03	0.02	<0.01	0.16
2	Dissolved Calcium	mg/l	160	160	160	180
	Dissolved Magnesium	mg/l	35	32	38	35
	Dissolved Sodium	mg/l	580	600	600	650
	Dissolved Potassium	mg/l	11	12	15	14
	Carbonate	mg/l	<0.5	1	<0.5	<0.5
	Bicarbonate	mg/l	500	430	440	420
	Sulfate	mg/l	420	480	340	510
	Flouride	mg/l	<1.0	<1.0	<1.0	<0.25
	Nitrate(N)	mg/l	<0.1	<0.1	<0.1	<0.1
	P ALK(CaCO3)	mg/l	<1.0	<5.0	4	<2.0
	Alk(CaCO3)	mg/l	500	430	440	420
	Total Hardness	mg/l	520	580	580	590
	Anion-Cation Balance	meq/L:meq/L	37.58/36.40	37.05/38.78	37.62/36.01	40.53/39.93
3	Chloride	mg/l	670	670	720	720
	pH		7.1	7.5	7.13	6.84
	Specific Conductance	umho/cm	3400	3700	3600	3800
	Total Dissolved Solids	mg/l	2300	2350	2400	2400
	Total Organic Carbon	mg/l	20.1	7.7	4.8	5.9
	Total Organic Carbon	mg/l	21.2	7.6	5.3	4.7
	Total Organic Carbon	mg/l	22.2	7.5	4.7	6.7
	Total Organic Carbon	mg/l	21.1	7.6	5	7.1
4	Dissolved Iron	mg/l	<0.05	<0.05	<0.05	0.06
	Dissolved Manganese	mg/l	0.42	0.42	0.48	0.53
	MSL Elevation of Water	Ft.	252.26	252.79	253.9	254.4

8.1(cont.) HISTORICAL GROUND-WATER DATA - MW-9

- shaded values exceed MCLs

GROUP	PARAMETER	UNITS	8-18-92 LEVEL	11-18-92 LEVEL	4-21-93 LEVEL	1-17-94 LEVEL
1	Dissolved Arsenic	mg/l	<0.2	<0.1	<0.1	<0.1
	Dissolved Barium	mg/l	0.07	0.07	0.06	0.025
	Dissolved Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Chromium	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Copper	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0.1
	Dissolved Mercury	mg/l	<0.001	<0.001	0.001	0.0012
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.1
	Dissolved Silver	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Zinc	mg/l	<0.01	0.02	<0.01	0.27
2	Dissolved Calcium	mg/l	240	280	280	290
	Dissolved Magnesium	mg/l	71	76	79	77
	Dissolved Sodium	mg/l	530	580	620	620
	Dissolved Potassium	mg/l	11	14	12	12
	Carbonate	mg/l	<0.5	<0.5	<0.5	<0.5
	Bicarbonate	mg/l	400	430	440	420
	Sulfate	mg/l	530	590	670	550
	Flouride	mg/l	<1.0	<1.0	<1.0	0.54
	Nitrate(N)	mg/l	0.12	<0.1	<0.1	<0.1
	P ALK(CaCO3)	mg/l	<5.0	<5.0	9	<2.0
	Alk(CaCO3)	mg/l	540	430	440	420
	Total Hardness	mg/l	910	920	940	1000
	Anion-Cation Balance	meq/L:meq/L	40.95/41.30	45.98/44.06	48.08/47.35	48.24/45.47
3	Chloride	mg/l	750	790	830	880
	pH		6.6	6.7	6.57	6.21
	Specific Conductance	umho/cm	3800	4300	4100	4400
	Total Dissolved Solids	mg/l	2800	2700	3000	2900
	Total Organic Carbon	mg/l	23.4	22.2	7.6	3.2
	Total Organic Carbon	mg/l	23.2	19.7	7.3	4.6
	Total Organic Carbon	mg/l	22.6	21.6	6.5	4.9
	Total Organic Carbon	mg/l	23	20.5	7.4	5.6
4	Dissolved Iron	mg/l	0.16	0.35	<0.05	0.36
	Dissolved Manganese	mg/l	2	2.1	2.4	2
	MSL Elevation of Water	Ft.	256.3	254.86	257.26	255.76

8.1(cont.) HISTORICAL GROUND-WATER DATA - MW-10

- shaded values exceed MCLs

GROUP	PARAMETER	UNITS	9-16-92 LEVEL	11-18-92 LEVEL	4-21-93 LEVEL	1-19-94 LEVEL
1	Dissolved Arsenic	mg/l	<0.2	<0.1	<0.1	<0.1
	Dissolved Barium	mg/l	0.08	0.08	0.08	0.13
	Dissolved Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Chromium	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Copper	mg/l	<0.02	<0.02	<0.02	0.042
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0.1
	Dissolved Mercury	mg/l	<0.001	<0.001	<0.001	<0.0005
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.1
	Dissolved Silver	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Zinc	mg/l	<0.01	0.02	0.02	0.34
2	Dissolved Calcium	mg/l	410	330	350	370
	Dissolved Magnesium	mg/l	120	110	140	120
	Dissolved Sodium	mg/l	1000	1100	1000	1100
	Dissolved Potassium	mg/l	8	8	10	11
	Carbonate	mg/l	<0.5	<0.5	<0.5	<0.5
	Bicarbonate	mg/l	1100	1100	1100	810
	Sulfate	mg/l	880	380	670	840
	Flouride	mg/l	<1.0	<1.0	<1.0	0.52
	Nitrate(N)	mg/l	<0.10	<0.1	<0.1	<0.1
	P ALK(CaCO3)	mg/l	<1.0	<10	<10	<2.0
	Alk(CaCO3)	mg/l	1100	1100	1100	810
	Total Hardness	mg/l	1400	1400	1500	1400
	Anion-Cation Balance	meq/L:meq/L	76.67/74.13	73.68/67.00	72.88/74.25	76.68/70.95
3	Chloride	mg/l	1300	1400	1400	1300
	pH		6.4	6.8	6.45	6.46
	Specific Conductance	umho/cm	6800	6600	6600	7300
	Total Dissolved Solids	mg/l	4800	4500	4530	4500
	Total Organic Carbon	mg/l	24.3	29.7	36.9	25.6
	Total Organic Carbon	mg/l	23.9	32.2	38.5	25.4
	Total Organic Carbon	mg/l	25.1	31.6	37.5	25.9
	Total Organic Carbon	mg/l	24.8	30.3	36.7	25.2
4	Dissolved Iron	mg/l	<0.05	0.06	<0.05	0.53
	Dissolved Manganese	mg/l	1.4	1.8	2.1	2.7
	MSL Elevation of Water	Ft.	266.42	265.76	263.32	265.17

- shaded values exceed MCLs

			8-16-92	11-18-92	4-21-93	1-19-94
GROUP	PARAMETER	UNITS	LEVEL	LEVEL	LEVEL	LEVEL
1	Dissolved Arsenic	mg/l	<0 2	<0.1	<0 1	<0 1
	Dissolved Barium	mg/l	0.12	0 14	0.08	0 25
	Dissolved Cadmium	mg/l	<0 01	<0 01	<0 01	<0 01
	Dissolved Chromium	mg/l	<0 02	<0.02	<0 02	<0 02
	Dissolved Copper	mg/l	<0 02	<0.02	<0 02	<0 02
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0 1
	Dissolved Mercury	mg/l	<0 001	<0 001	<0 001	<0 0005
	Dissolved Selenium	mg/l	<0.20	<0 1	<0.1	<0.1
	Dissolved Silver	mg/l	<0.01	<0.01	<0 01	<0 01
	Dissolved Zinc	mg/l	<0 01	0.07	0 02	0 26
2	Dissolved Calcium	mg/l	200	200	220	200
	Dissolved Magnesium	mg/l	56	56	64	62
	Dissolved Sodium	mg/l	880	900	940	1000
	Dissolved Potassium	mg/l	4	5	7	5
	Carbonate	mg/l	<0 5	3	<0.5	<0 5
	Bicarbonate	mg/l	960	870	1200	1100
	Sulfate	mg/l	530	630	250	270
	Flouride	mg/l	1.4	<1.0	1.3	1 2
	Nitrate(N)	mg/l	<0.10	<0.1	<0.1	<0.1
	P ALK(CaCO3)	mg/l	<1.0	<5.0	4	<2 0
	Alk(CaCO3)	mg/l	960	870	1190	1100
	Total Hardness	mg/l	770	810	900	810
	Anion-Cation Balance	meq/L:meq/L	57.3/53.0	53.89/57.45	57 31/58 98	58.73/55 86
3	Chloride	mg/l	1000	970	1170	1100
	pH		6.9	7 5	7 02	6 88
	Specific Conductance	umho/cm	4900	5500	5700	5700
	Total Dissolved Solids	mg/l	3500	3400	3630	3600
	Total Organic Carbon	mg/l	28 8	29.5	35 8	27 4
	Total Organic Carbon	mg/l	33.3	31 3	33.1	27 2
	Total Organic Carbon	mg/l	29.7	32	34	26 6
	Total Organic Carbon	mg/l	33	32.2	33 9	26 8
4	Dissolved Iron	mg/l	<0 05	0 06	<0 05	<0 05
	Dissolved Manganese	mg/l	0 37	0.35	0.13	0 47
	MSL Elevation of Water	Ft.	266 94	266.78	266 68	265 48

- shaded values exceed MCLs

			9-16-92	11-18-92	4-22-93	1-19-94
GROUP	PARAMETER	UNITS	LEVEL	LEVEL	LEVEL	LEVEL
1	Dissolved Arsenic	mg/l	<0.2	<0.1	<0.1	<0.1
	Dissolved Barium	mg/l	0.03	0.03	0.03	0.049
	Dissolved Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Chromium	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Copper	mg/l	<0.02	<0.02	<0.02	0.025
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0.1
	Dissolved Mercury	mg/l	<0.001	<0.001	<0.001	<0.0005
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.1
	Dissolved Silver	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Zinc	mg/l	<0.01	0.12	0.13	0.55
2	Dissolved Calcium	mg/l	700	700	760	710
	Dissolved Magnesium	mg/l	190	210	220	220
	Dissolved Sodium	mg/l	1600	1500	1400	1500
	Dissolved Potassium	mg/l	13	19	26	18
	Carbonate	mg/l	<0.5	<0.5	<0.5	<0.5
	Bicarbonate	mg/l	63	53	48	38
	Sulfate	mg/l	2300	2100	2200	2100
	Flouride	mg/l	<1.0	<1.0	<1.0	0.26
	Nitrate(N)	mg/l	<0.10	<0.1	<0.1	<0.1
	P ALK(CaCO3)	mg/l	<1.0	<1.0	<2.0	<1.0
	Alk(CaCO3)	mg/l	63	53	48	38
	Total Hardness	mg/l	2600	2500	2700	3000
	Anion-Cation Balance	meq/L:meq/L	120.3/120.6	117.98/118.19	117.62/120.60	119.28/117.95
3	Chloride	mg/l	2200	2300	2300	2300
	pH		5.7	6	5.48	5.49
	Specific Conductance	umho/cm	8300	9800	9740	11000
	Total Dissolved Solids	mg/l	7200	6900	6800	7400
	Total Organic Carbon	mg/l	18.4	28.3	20.2	18.6
	Total Organic Carbon	mg/l	17.9	27	19.5	18.3
	Total Organic Carbon	mg/l	18.8	25.8	20	18
	Total Organic Carbon	mg/l	17.7	26.5	20.1	18.3
4	Dissolved Iron	mg/l	0.06	<0.05	<0.05	0.07
	Dissolved Manganese	mg/l	0.9	0.7	0.65	0.69
	MSL Elevation of Water	Ft.	279.03	278.92	277.83	278.38

8.1(cont.) HISTORICAL GROUND-WATER DATA - MW-12B

- shaded values exceed MCLs

			9-15-92	11-18-92	4-22-93	1-19-94
GROUP	PARAMETER	UNITS	LEVEL	LEVEL	LEVEL	LEVEL
1	Dissolved Arsenic	mg/l	<0.2	<0.1	<0.1	<0.1
	Dissolved Barium	mg/l	0.05	0.02	0.02	0.047
	Dissolved Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Chromium	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Copper	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0.1
	Dissolved Mercury	mg/l	<0.001	<0.001	<0.001	<0.0005
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.1
	Dissolved Silver	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Zinc	mg/l	<0.01	<0.01	0.02	0.14
2	Dissolved Calcium	mg/l	280	250	290	270
	Dissolved Magnesium	mg/l	68	68	64	62
	Dissolved Sodium	mg/l	530	540	510	520
	Dissolved Potassium	mg/l	14	21	22	18
	Carbonate	mg/l	<0.5	<0.5	<0.5	<0.5
	Bicarbonate	mg/l	320	240	250	240
	Sulfate	mg/l	710	820	670	710
	Flouride	mg/l	<1.0	<1.0	<1.0	<0.25
	Nitrate(N)	mg/l	<0.10	<0.1	<0.1	<0.1
	P ALK(CaCO3)	mg/l	<1.0	<1.0	<2.0	<1.0
	Alk(CaCO3)	mg/l	320	240	250	240
	Total Hardness	mg/l	940	860	920	930
	Anion-Cation Balance	meq/L:meq/L	41.59/43.11	42.38/42.46	42.77/40.85	41.98/41.69
3	Chloride	mg/l	660	640	710	710
	pH		6.6	6.8	6.48	6.57
	Specific Conductance	umho/cm	4000	3900	3800	4300
	Total Dissolved Solids	mg/l	2800	2500	2500	2600
	Total Organic Carbon	mg/l	2.4	5.8	8.8	4
	Total Organic Carbon	mg/l	2.5	5.4	7.8	3.9
	Total Organic Carbon	mg/l	2.5	5.9	8.8	3.9
	Total Organic Carbon	mg/l	2.4	6.1	8.4	4
4	Dissolved Iron	mg/l	<0.05	3	3.1	3.8
	Dissolved Manganese	mg/l	1.9	1.8	1.7	1.8
	MSL Elevation of Water	Ft.	269.26	269.51	269.47	268.97

8.1(cont.) HISTORICAL GROUND-WATER DATA - MW-13B

- shaded values exceed MCLs

GROUP	PARAMETER	UNITS	9-15-92 LEVEL	11-18-92 LEVEL	4-22-93 LEVEL	1-19-94 LEVEL
1	Dissolved Arsenic	mg/l	<0.2	<0.1	<0.1	<0.1
	Dissolved Barium	mg/l	0.23	0.22	0.19	0.25
	Dissolved Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Chromium	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Copper	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0.1
	Dissolved Mercury	mg/l	<0.001	<0.001	<0.001	<0.0005
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.1
	Dissolved Silver	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Zinc	mg/l	<0.01	<0.01	0.08	0.28
2	Dissolved Calcium	mg/l	220	180	230	210
	Dissolved Magnesium	mg/l	49	50	51	48
	Dissolved Sodium	mg/l	430	510	470	470
	Dissolved Potassium	mg/l	12	17	20	18
	Carbonate	mg/l	<0.5	<0.5	<0.5	<0.5
	Bicarbonate	mg/l	550	420	400	400
	Sulfate	mg/l	130	160	130	130
	Flouride	mg/l	<1.0	<1.0	<1.0	<0.25
	Nitrate(N)	mg/l	<0.10	<0.1	0.17	<0.1
	P ALK(CaCO3)	mg/l	<1.0	<5.0	4	<1.0
	Alk(CaCO3)	mg/l	550	420	400	400
	Total Hardness	mg/l	680	160	940	750
	Anion-Cation Balance	meq/L:meq/L	34.26/34.15	35.87/33.44	36.74/34.90	35.49/36.03
3	Chloride	mg/l	780	800	880	930
	pH		6.8	6.5	6.66	6.54
	Specific Conductance	umho/cm	3000	3100	3440	4100
	Total Dissolved Solids	mg/l	2000	2000	2200	2100
	Total Organic Carbon	mg/l	14.3	6.4	16.7	10.4
	Total Organic Carbon	mg/l	13.5	6.1	16.4	13.5
	Total Organic Carbon	mg/l	13.9	6.6	17.5	11.2
	Total Organic Carbon	mg/l	14.3	6.3	16.8	11.9
4	Dissolved Iron	mg/l	0.2	0.56	0.06	0.85
	Dissolved Manganese	mg/l	1.7	1.8	1.6	1.6
	MSL Elevation of Water	Ft.	268.36	263.16	268.82	270.92

8.1(cont.) HISTORICAL GROUND-WATER DATA - MW-14

- shaded values exceed MCLs

GROUP	PARAMETER	UNITS	9-15-92 LEVEL	11-18-92 LEVEL	4-22-93 LEVEL	1-19-94 LEVEL
1	Dissolved Arsenic	mg/l	<0.2	<0.1	<0.1	<0.1
	Dissolved Barium	mg/l	0.16	0.15	0.14	0.48
	Dissolved Cadmium	mg/l	<0.01	0.02	<0.01	0.023
	Dissolved Chromium	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Copper	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0.1
	Dissolved Mercury	mg/l	0.002	0.002	0.002	0.001
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.1
	Dissolved Silver	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Zinc	mg/l	0.14	0.18	0.23	0.54
2	Dissolved Calcium	mg/l	330	360	370	390
	Dissolved Magnesium	mg/l	94	99	98	110
	Dissolved Sodium	mg/l	610	740	670	700
	Dissolved Potassium	mg/l	11	16	18	15
	Carbonate	mg/l	<0.5	<0.5	<0.5	<0.5
	Bicarbonate	mg/l	13	9	9	11
	Sulfate	mg/l	50	40	55	51
	Flouride	mg/l	<1.0	<1.0	<1.0	<0.25
	Nitrate(N)	mg/l	0.41	0.41	0.39	0.38
	P ALK(CaCO3)	mg/l	<1.0	<1.0	<1.0	<1.0
	Alk(CaCO3)	mg/l	13	9	9	11
	Total Hardness	mg/l	1200	1200	1500	1300
	Anion-Cation Balance	meq/L:meq/L	52.23/51.07	58.76/57.55	56.18/60.74	59.40/57.86
3	Chloride	mg/l	1800	2000	2100	2000
	pH		5.4	5.1	5.22	5.18
	Specific Conductance	umho/cm	6000	6000	5560	7000
	Total Dissolved Solids	mg/l	3780	3200	4000	3800
	Total Organic Carbon	mg/l	2.6	8.4	9.6	7
	Total Organic Carbon	mg/l	2.8	8.8	9.2	6.5
	Total Organic Carbon	mg/l	2.7	9.3	8.3	6
	Total Organic Carbon	mg/l	2.6	9.4	7.7	7
4	Dissolved Iron	mg/l	0.09	<0.05	<0.05	0.07
	Dissolved Manganese	mg/l	0.75	0.83	0.84	0.86
	MSL Elevation of Water	Ft.	284.75	284.43	283.75	282.75

8.1(cont.) HISTORICAL GROUND-WATER DATA - MW-15A

- shaded values exceed MCLs

GROUP	PARAMETER	UNITS	9-15-92 LEVEL	11-18-92 LEVEL	4-22-93 LEVEL	1-19-94 LEVEL
1	Dissolved Arsenic	mg/l	<0 2	<0.1	<0 1	<0 1
	Dissolved Barium	mg/l	0 67	0.56	0.54	0 9
	Dissolved Cadmium	mg/l	0.02	0.02	0.04	0.034
	Dissolved Chromium	mg/l	<0.02	<0.02	<0 02	<0 02
	Dissolved Copper	mg/l	<0 02	<0 02	<0.02	0 03
	Dissolved Lead	mg/l	<0.10	<0.1	<0 1	<0.1
	Dissolved Mercury	mg/l	<0 001	<0.001	<0 001	0 0013
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.1
	Dissolved Silver	mg/l	<0 01	<0.01	<0 01	<0 01
	Dissolved Zinc	mg/l	0.1	0.1	0.13	0 62
2	Dissolved Calcium	mg/l	530	570	580	600
	Dissolved Magnesium	mg/l	140	150	150	150
	Dissolved Sodium	mg/l	630	740	660	710
	Dissolved Potassium	mg/l	13	20	33	19
	Carbonate	mg/l	<0 5	<0 5	<0 5	<0.5
	Bicarbonate	mg/l	18	13	13	8.4
	Sulfate	mg/l	38	29	29	41
	Flouride	mg/l	<1.0	<1.0	<1 0	<0.25
	Nitrate(N)	mg/l	0.38	0.34	0 52	0.47
	P ALK(CaCO3)	mg/l	<1.0	<1.0	<1 0	<1.0
	Alk(CaCO3)	mg/l	18	13	13	8 4
	Total Hardness	mg/l	2000	1900	2100	2000
	Anion-Cation Balance	meq/L:meq/L		73.53/71.44	71.37/71.44	73 70/68 85
3	Chloride	mg/l	2300	2500	2500	2400
	pH		4 8	5 4	5 2	5.14
	Specific Conductance	umho/cm	7000	7000	7020	7700
	Total Dissolved Solids	mg/l	4100	4300	4800	4500
	Total Organic Carbon	mg/l	9 3	17.4	16 5	8.1
	Total Organic Carbon	mg/l	9 3	15 8	14 8	8.1
	Total Organic Carbon	mg/l	9.1	16.4	11.6	7 8
	Total Organic Carbon	mg/l	9 3	17	15 3	8.1
4	Dissolved Iron	mg/l	<0.05	<0 05	<0 05	0 07
	Dissolved Manganese	mg/l	0.58	0 68	0 61	0 79
	MSL Elevation of Water	Ft.	277 57	277 37	277 78	277 28

8.1(cont.) HISTORICAL GROUND-WATER DATA - MW-15B

- shaded values exceed MCLs

GROUP	PARAMETER	UNITS	9-16-92 LEVEL	11-18-92 LEVEL	4-22-93 LEVEL	1-17-94 LEVEL
1	Dissolved Arsenic	mg/l	<0.2	<0.1	<0.1	DRY
	Dissolved Barium	mg/l	0.11	0.11	0.1	-
	Dissolved Cadmium	mg/l	<0.01	<0.01	<0.01	-
	Dissolved Chromium	mg/l	<0.02	<0.02	<0.02	-
	Dissolved Copper	mg/l	<0.02	<0.02	<0.02	-
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	-
	Dissolved Mercury	mg/l	<0.001	<0.001	<0.001	-
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	-
	Dissolved Silver	mg/l	<0.01	<0.01	<0.01	-
	Dissolved Zinc	mg/l	<0.01	<0.01	0.02	-
2	Dissolved Calcium	mg/l	270	250	300	-
	Dissolved Magnesium	mg/l	69	68	66	-
	Dissolved Sodium	mg/l	390	470	400	-
	Dissolved Potassium	mg/l	12	15	15	-
	Carbonate	mg/l	<0.5	<0.5	<0.5	-
	Bicarbonate	mg/l	65	66	57	-
	Sulfate	mg/l	84	110	110	-
	Flouride	mg/l	<1.0	<1.0	<1.0	-
	Nitrate(N)	mg/l	0.13	<0.1	<0.1	-
	P ALK(CaCO3)	mg/l	<1.0	<1.0	<1.0	-
	Alk(CaCO3)	mg/l	65	66	57	-
	Total Hardness	mg/l	960	900	1100	-
	Anion-Cation Balance	meq/L:meq/L	37.00/37.36	39.86/37.57	39.19/37.52	-
3	Chloride	mg/l	1200	1200	1200	-
	pH		6	7	5.93	-
	Specific Conductance	umho/cm	4000	3600	3830	-
	Total Dissolved Solids	mg/l	2600	2500	2700	-
	Total Organic Carbon	mg/l	9.6	9.6	7	-
	Total Organic Carbon	mg/l	9.7	10.4	6.4	-
	Total Organic Carbon	mg/l	9.6	10	5	-
	Total Organic Carbon	mg/l	10	10.1	28.9	-
4	Dissolved Iron	mg/l	15	15	16	-
	Dissolved Manganese	mg/l	2	2.2	2.1	-
	MSL Elevation of Water	Ft.	270.84	271.04	266.5	DRY

8.1(cont.) HISTORICAL GROUND-WATER DATA - MW-16

- shaded values exceed MCLs

GROUP	PARAMETER	UNITS	9-16-92 LEVEL	11-18-92 LEVEL	4-21-93 LEVEL	1-17-94 LEVEL
1	Dissolved Arsenic	mg/l	<0.2	<0.1	<0.1	<0.1
	Dissolved Barium	mg/l	0.08	0.09	0.07	0.039
	Dissolved Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Chromium	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Copper	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0.1
	Dissolved Mercury	mg/l	<0.001	<0.001	<0.001	0.0013
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.1
	Dissolved Silver	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Zinc	mg/l	<0.01	0.3	0.01	0.18
2	Dissolved Calcium	mg/l	140	150	150	170
	Dissolved Magnesium	mg/l	34	33	31	36
	Dissolved Sodium	mg/l	620	610	610	680
	Dissolved Potassium	mg/l	12	14	12	13
	Carbonate	mg/l	<0.5	2	<0.5	<0.5
	Bicarbonate	mg/l	680	580	610	620
	Sulfate	mg/l	600	570	630	550
	Flouride	mg/l	<1.0	<1.0	<1.0	<0.25
	Nitrate(N)	mg/l	<0.1	<0.1	<0.1	<0.1
	P ALK(CaCO3)	mg/l	<5.0	<1.0	<5.0	<2.0
	Alk(CaCO3)	mg/l	680	580	610	620
	Total Hardness	mg/l	380	490	460	540
	Anion-Cation Balance	meq/L:meq/L	37.13/37.19	37.22/35.09	37.04/37.01	41.53/38.56
3	Chloride	mg/l	390	400	400	520
	pH		7	7.5	7.03	6.51
	Specific Conductance	umho/cm	3100	3400	3300	3700
	Total Dissolved Solids	mg/l	2300	2200	2300	2400
	Total Organic Carbon	mg/l	32.6	26.7	9.7	7.6
	Total Organic Carbon	mg/l	31	28.5	9.3	9.1
	Total Organic Carbon	mg/l	32.9	29.3	9.7	8.3
	Total Organic Carbon	mg/l	31.8	27.8	11.2	9
4	Dissolved Iron	mg/l	<0.05	<0.05	<0.05	0.06
	Dissolved Manganese	mg/l	1.9	1.9	2.4	2.5
	MSL Elevation of Water	Ft.	260.01	261.97	259.44	261.69

- shaded values exceed MCLs

GROUP	PARAMETER	UNITS	8-16-92 LEVEL	11-18-92 LEVEL	4-21-93 LEVEL	1-17-94 LEVEL
1	Dissolved Arsenic	mg/l	<0.2	<0.1	<0.1	<0.1
	Dissolved Barium	mg/l	0.08	0.08	0.05	0.099
	Dissolved Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Chromium	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Copper	mg/l	<0.02	<0.02	<0.02	<0.02
	Dissolved Lead	mg/l	<0.10	<0.1	<0.1	<0.1
	Dissolved Mercury	mg/l	<0.001	<0.001	<0.001	<0.0005
	Dissolved Selenium	mg/l	<0.20	<0.1	<0.1	<0.1
	Dissolved Silver	mg/l	<0.01	<0.01	<0.01	<0.01
	Dissolved Zinc	mg/l	<0.01	<0.01	0.02	0.3
2	Dissolved Calcium	mg/l	200	200	220	230
	Dissolved Magnesium	mg/l	49	53	52	49
	Dissolved Sodium	mg/l	590	660	660	700
	Dissolved Potassium	mg/l	12	16	16	14
	Carbonate	mg/l	<0.5	<0.5	<0.5	<0.5
	Bicarbonate	mg/l	470	390	390	350
	Sulfate	mg/l	650	820	590	800
	Flouride	mg/l	<1.0	<1.0	<1.0	<0.25
	Nitrate(N)	mg/l	0.11	<0.1	<0.1	<0.1
	P ALK(CaCO3)	mg/l	<1.0	<5.0	<5.0	<1.0
	Alk(CaCO3)	mg/l	470	390	390	350
	Total Hardness	mg/l	720	650	780	740
	Anion-Cation Balance	meq/L:meq/L	41.42/40.04	43.54/44.92	44.44/40.30	46.39/44.61
3	Chloride	mg/l	620	640	680	670
	pH		6.7	7	6.74	6.68
	Specific Conductance	umho/cm	3300	3900	4000	4700
	Total Dissolved Solids	mg/l	2600	2600	2600	2700
	Total Organic Carbon	mg/l	7.4	17.7	10.4	6.1
	Total Organic Carbon	mg/l	7.5	18.1	10.6	5.2
	Total Organic Carbon	mg/l	7.4	16.9	10.8	6.8
	Total Organic Carbon	mg/l	7.4	17.4	10.9	5.6
4	Dissolved Iron	mg/l	<0.05	0.34	<0.05	0.12
	Dissolved Manganese	mg/l	0.85	0.92	0.94	1
	MSL Elevation of Water	Ft.	267.86	259.31	260.12	259.32

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-1B																
Date	Specific Conductance (umho/cm)	Temperature (deg C)	Dissolved Arsenic (ug/L)	Dissolved Barium (ug/L)	Dissolved Cadmium (ug/L)	Dissolved Chromium (ug/L)	Dissolved Copper (ug/L)	Dissolved Lead (ug/L)	Dissolved Nickel (ug/L)	Dissolved Selenium (ug/L)	Ammonia (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)
02/07/96	3020	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.80	187	860	<0.05	40.0	11.6
05/09/96	2890	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.87	179	688	0.09	43.2	13.6
08/14/96	3030	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.76	176	623	<0.05	39.8	15.2
11/06/96	2780	20.5	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.63	168	636	<0.05	42.6	10.3
02/06/97	2620	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.92	195	627	0.06	55.6	12.0
05/07/97	2550	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.77	190	656	0.21	44.1	15.4
08/06/97	2610	22.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	1.06	178	622	0.10	41.6	0.28
11/12/97	2170	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.81	238	632	0.28	50.3	13.8
05/06/98	1950	20.5	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.90	184	641	<0.05	41.6	16.7
11/10/98	2940	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.90	170	641	0.88	45.1	15.9
05/06/99	2990	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	1.10	204	651	0.85	53.7	12.4
11/03/99	2800	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.64	174	675	0.64	45.3	15.6
05/10/00	2850	23.0	<5.0	377	<1.0	<30	<20	<5.0	<20	<5.0	0.61	189	641	0.55	45.2	14.9
11/07/00	2940	23.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.65	176	618	0.09	41.4	13.5
05/09/01	3110	22.2	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.48	178	673	0.17	46.4	13.3
11/14/01	3220	20.8	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.36	192	672	0.14	58.5	14.6
05/14/02	3600	21.9	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.36	172	634	0.42	59.3	16.3
11/06/02	2790	19.9	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.57	170	665	<0.05	54.4	15.9
05/21/03	2790	20.7	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.68	204	640	0.08	52.9	14.0
11/11/03	3276	21.1	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.45	183	665	0.10	50.9	18.8
06/01/04	3200	22.6	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.23	192	632	1.84	44.1	16.3
11/08/04	3255	23.8	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.35	174	604	1.97	47.2	14.4
05/02/05	3311	23.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.11	200	670	2.04	55.5	15.4
11/07/05	3292	23.1	<5.00	<500	<1.00	<30	<20	<5.00	<20	<5.00	0.56	196	617	1.79	48.6	13.5
05/31/06	3326	21.5	<5.00	<500	<1.00	<30	<20	<5.00	<20.0	<5.00	0.68	220	689	2.00	53.3	15.0
08/14/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/06	2940	22.3	<5	<500	<1	<30	<20	<5	<5	<5	0.73	190	641	2.15	49.9	16.4
02/14/07	2925	16.6	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/02/07	2972	22.6	<5.00	63.0	<1	<1	<5	<1.00	<5	<5	0.54	204	639	2.41	51.9	18.0
08/27/07	3464	27.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/07	3437	21.3	<5	65.0	<1	<1	<5	<1	5.00	<5	0.85	180	660	2.30	45.0	15.0

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-1B																
Date	Nitrate (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Total Alkalinity as CaCO3 (mg/L)	pH (std units)	Antimony (ug/L)	Arsenic (ug/L)	Barium (ug/L)	Beryllium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Cobalt (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)
02/07/96	<0.05	507	328	1800	380	6.57	–	–	–	–	–	–	–	–	–	–
05/09/96	<0.05	501	380	1810	368	6.29	–	–	–	–	–	–	–	–	–	–
08/14/96	<0.05	416	334	1940	408	6.38	–	–	–	–	–	–	–	–	–	–
11/06/96	<0.05	449	233	1970	368	6.69	–	–	–	–	–	–	–	–	–	–
02/06/97	<0.05	446	380	2060	380	6.87	–	–	–	–	–	–	–	–	–	–
05/07/97	0.09	440	323	1970	376	6.81	–	–	–	–	–	–	–	–	–	–
08/06/97	0.13	421	313	1960	422	6.55	–	–	–	–	–	–	–	–	–	–
11/12/97	0.07	418	358	1920	386	6.63	–	–	–	–	–	–	–	–	–	–
05/06/98	0.09	408	349	2030	376	6.67	–	–	–	–	–	–	–	–	–	–
11/10/98	<0.05	456	360	2000	380	6.77	–	–	–	–	–	–	–	–	–	–
05/06/99	0.29	408	347	2010	392	6.85	–	–	–	–	–	–	–	–	–	–
11/03/99	<0.05	466	275	2150	332	6.95	–	–	–	–	–	–	–	–	–	–
05/10/00	0.08	457	324	1900	392	7.30	–	–	–	–	–	–	–	–	–	–
11/07/00	<0.05	413	323	1910	368	6.87	–	–	–	–	–	–	–	–	–	–
05/09/01	0.23	389	286	2000	336	7.25	–	–	–	–	–	–	–	–	–	–
11/14/01	<0.05	374	390	1990	374	6.49	–	–	–	–	–	–	–	–	–	–
05/14/02	<0.05	465	347	2010	376	6.95	–	–	–	–	–	–	–	–	–	–
11/06/02	0.19	488	458	1940	398	6.65	–	–	–	–	–	–	–	–	–	–
05/21/03	<0.05	407	380	2120	286	7.06	–	–	–	–	–	–	–	–	–	–
11/11/03	<0.05	454	325	1950	386	6.84	–	–	–	–	–	–	–	–	–	–
06/01/04	<0.05	472	364	2030	390	6.98	–	–	–	–	–	–	–	–	–	–
11/08/04	<0.05	481	373	1880	380	6.92	–	–	–	–	–	–	–	–	–	–
05/02/05	<0.05	490	340	2000	384	7.02	–	–	–	–	–	–	–	–	–	–
11/07/05	<0.05	455	350	1860	397	6.77	–	–	–	–	–	–	–	–	–	–
05/31/06	<0.05	456	387	2040	374	6.58	–	–	–	–	–	–	–	–	–	–
08/14/06	–	–	–	–	–	–	<5	<5.00	59.0	<1	<1	<1	<1	<5	<5	<5
11/07/06	<0.05	524	387	1970	398	6.41	<5	<5.00	62.0	<1	<1	1.00	<1	<5	<5	<5
02/14/07	–	–	–	–	–	8.48	<5	<5.00	59.0	<1	<1	1.00	<1	<5	<5	<5
05/02/07	<0.05	460	454	3020	381	6.63	<5	<5.00	62.0	<1	<1	<1	<1	<5	<1.00	<5
08/27/07	–	–	–	–	–	6.73	<5	<5.00	61.0	<1	<1	<1	<1	<5	<1.00	<5
11/07/07	<0.05	450	400	2000	380	6.64	<5	<5	66.0	<1	<1	1.00	1.00	<5	<1	5.90

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-1B					
Date	Selenium (ug/L)	Silver (ug/L)	Thallium (ug/L)	Vanadium (ug/L)	Zinc (ug/L)
02/07/96	--	--	--	--	--
05/09/96	--	--	--	--	--
08/14/96	--	--	--	--	--
11/06/96	--	--	--	--	--
02/06/97	--	--	--	--	--
05/07/97	--	--	--	--	--
08/06/97	--	--	--	--	--
11/12/97	--	--	--	--	--
05/06/98	--	--	--	--	--
11/10/98	--	--	--	--	--
05/06/99	--	--	--	--	--
11/03/99	--	--	--	--	--
05/10/00	--	--	--	--	--
11/07/00	--	--	--	--	--
05/09/01	--	--	--	--	--
11/14/01	--	--	--	--	--
05/14/02	--	--	--	--	--
11/06/02	--	--	--	--	--
05/21/03	--	--	--	--	--
11/11/03	--	--	--	--	--
06/01/04	--	--	--	--	--
11/08/04	--	--	--	--	--
05/02/05	--	--	--	--	--
11/07/05	--	--	--	--	--
05/31/06	--	--	--	--	--
08/14/06	<5	<5	<5	1.00	<5
11/07/06	<5	<5	<5	<1	<5
02/14/07	<5	<5	<1	<1	<5
05/02/07	<5	<5	<1	<1	<5
08/27/07	<5	<5	<1	<1	<5
11/07/07	<5	<5	<1	<1	6.50

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-1B																
Date	Acetone (ug/L)	Acrylonitrile (ug/L)	Benzene (ug/L)	Bromochloro methane (ug/L)	Bromodichloro methane (ug/L)	Bromoform (ug/L)	Carbon disulfide (ug/L)	Carbon tetrachloride (ug/L)	Chlorobenzene (ug/L)	Chloroethane (ug/L)	Chloroform (ug/L)	Dibromochloro methane (ug/L)	1,2-Dibromo-3-chloropropane (ug/L)	1,2-Dibromoethane (ug/L)	o-Dichlorobenzene (ug/L)	p-Dichlorobenzene (ug/L)
02/07/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/14/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
02/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/07/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/12/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/10/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/99	32.2	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/03/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/10/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/14/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/14/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/21/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/11/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
06/01/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/02/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/31/06	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
11/07/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

MW-1B																
Date	trans-1,4-Dichloro-2-butene (ug/L)	1,1-Dichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	1,1-Dichloroethylene (ug/L)	cis-1,2-Dichloro ethylene (ug/L)	trans-1,2-Dichloro ethylene (ug/L)	1,2-Dichloropropane (ug/L)	cis-1,3-Dichloro propene (ug/L)	trans-1,3-Dichloro propene (ug/L)	Ethylbenzene (ug/L)	2-Hexanone (ug/L)	Methyl bromide (ug/L)	Methyl chloride (ug/L)	Methylene bromide (ug/L)	Methylene chloride (ug/L)	Methyl ethyl ketone (ug/L)
02/07/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/09/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/14/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/06/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
02/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/12/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/10/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/03/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/10/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/09/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/14/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/14/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/06/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/21/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/11/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
06/01/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/02/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/31/06	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/06	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
05/02/07	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
11/07/07	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20

MW-1B

Date	Methyl Iodide (ug/L)	4-Methyl-2-pentanone (ug/L)	Styrene (ug/L)	1,1,1,2-Tetrachloroethane (ug/L)	1,1,2,2-Tetrachloroethane (ug/L)	Tetrachloroethylene (ug/L)	Toluene (ug/L)	1,1,1-Trichloroethane (ug/L)	1,1,2-Trichloroethane (ug/L)	Trichloroethylene (ug/L)	Trichlorofluoromethane (ug/L)	1,2,3-Trichloropropane (ug/L)	Vinyl acetate (ug/L)	Vinyl chloride (ug/L)	Total Xylenes (ug/L)
02/07/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/09/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/14/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/06/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
02/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/07/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/12/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/10/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/03/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/10/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/09/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/14/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/14/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/06/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/21/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/11/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
06/01/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/02/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/31/06	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
11/07/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-2																
Date	Specific Conductance (umho/cm)	Temperature (deg C)	Dissolved Arsenic (ug/L)	Dissolved Barium (ug/L)	Dissolved Cadmium (ug/L)	Dissolved Chromium (ug/L)	Dissolved Copper (ug/L)	Dissolved Lead (ug/L)	Dissolved Nickel (ug/L)	Dissolved Selenium (ug/L)	Ammonia (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)
02/07/96	814	20.0	6.17	<500	<1	<30	<20	<5.0	<20	<5.0	<0.10	20.0	34.0	<0.05	3.90	1.19
05/09/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
08/14/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/06/96	610	23.5	12.3	<500	<1.0	<30	<20	<5.0	<20	<2.0	–	12.0	30.0	<0.05	2.72	1.62
02/07/97	468	20.0	–	–	–	–	–	–	–	–	<0.10	–	–	–	–	–
05/07/97	533	20.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–
08/06/97	664	25.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/12/97	673	20.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/06/98	491	21.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/10/98	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/06/99	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/03/99	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/10/00	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/00	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/09/01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/14/01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/14/02	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/06/02	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/21/03	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/11/03	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
06/02/04	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/09/04	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/02/05	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/05	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/30/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
08/14/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
02/14/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/02/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
08/27/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

MW-2						
Date	Nitrate (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Total Alkalinity as CaCO3 (mg/L)	pH (std units)
02/07/96	0.18	165	93.2	550	282	6.57
05/09/96	–	–	–	–	–	–
08/14/96	–	–	–	–	–	–
11/06/96	<0.05	122	55.6	432	206	6.21
02/07/97	–	–	–	–	–	6.54
05/07/97	–	–	–	–	–	6.30
08/06/97	–	–	–	–	–	6.21
11/12/97	–	–	–	–	–	5.97
05/06/98	–	–	–	–	–	6.02
11/10/98	–	–	–	–	–	–
05/06/99	–	–	–	–	–	–
11/03/99	–	–	–	–	–	–
05/10/00	–	–	–	–	–	–
11/07/00	–	–	–	–	–	–
05/09/01	–	–	–	–	–	–
11/14/01	–	–	–	–	–	–
05/14/02	–	–	–	–	–	–
11/06/02	–	–	–	–	–	–
05/21/03	–	–	–	–	–	–
11/11/03	–	–	–	–	–	–
06/02/04	–	–	–	–	–	–
11/09/04	–	–	–	–	–	–
05/02/05	–	–	–	–	–	–
11/07/05	–	–	–	–	–	–
05/30/06	–	–	–	–	–	–
08/14/06	–	–	–	–	–	–
11/07/06	–	–	–	–	–	–
02/14/07	–	–	–	–	–	–
05/02/07	–	–	–	–	–	–
08/27/07	–	–	–	–	–	–
11/07/07	–	–	–	–	–	–

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-2																
Date	Acetone (ug/L)	Acrylonitrile (ug/L)	Benzene (ug/L)	Bromochloro methane (ug/L)	Bromodichloro methane (ug/L)	Bromoform (ug/L)	Carbon disulfide (ug/L)	Carbon tetrachloride (ug/L)	Chlorobenzene (ug/L)	Chloroethane (ug/L)	Chloroform (ug/L)	Dibromochloro methane (ug/L)	1,2-Dibromo-3-chloropropane (ug/L)	1,2-Dibromoethane (ug/L)	o-Dichlorobenzene (ug/L)	p-Dichlorobenzene (ug/L)
02/07/96	<20	<10	<5	<5	<5	<5	<5	<5	<5	<20	<5	<5	<5	<5.0	<5	<5
11/06/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
02/07/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/07/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/12/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/98	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/10/98	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/06/99	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/03/99	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/10/00	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/00	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/09/01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/14/01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/14/02	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/06/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/21/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/11/03	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
06/02/04	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/09/04	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/02/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/05	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/30/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/02/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

MW-2																
Date	trans-1,4-Dichloro-2-butene (ug/L)	1,1-Dichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	1,1-Dichloroethylene (ug/L)	cis-1,2-Dichloro ethylene (ug/L)	trans-1,2-Dichloro ethylene (ug/L)	1,2-Dichloropropane (ug/L)	cis-1,3-Dichloro propene (ug/L)	trans-1,3-Dichloro propene (ug/L)	Ethylbenzene (ug/L)	2-Hexanone (ug/L)	Methyl bromide (ug/L)	Methyl chloride (ug/L)	Methylene bromide (ug/L)	Methylene chloride (ug/L)	Methyl ethyl ketone (ug/L)
02/07/96	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<20	<50	<5	<5	<20
11/06/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
02/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/12/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/98	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/10/98	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/06/99	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/03/99	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/10/00	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/00	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/09/01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/14/01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/14/02	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/06/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/21/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/11/03	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
06/02/04	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/09/04	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/02/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/05	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/30/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/02/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

MW-2															
Date	Methyl iodide (ug/L)	4-Methyl-2-pentanone (ug/L)	Styrene (ug/L)	1,1,1,2-Tetrachloroethane (ug/L)	1,1,2,2-Tetrachloroethane (ug/L)	Tetrachloroethylene (ug/L)	Toluene (ug/L)	1,1,1-Trichloroethane (ug/L)	1,1,2-Trichloroethane (ug/L)	Trichloroethylene (ug/L)	Trichlorofluoromethane (ug/L)	1,2,3-Trichloropropane (ug/L)	Vinyl acetate (ug/L)	Vinyl chloride (ug/L)	Total Xylenes (ug/L)
02/07/96	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10
11/06/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
02/07/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/07/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/12/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/98	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/10/98	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/06/99	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/03/99	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/10/00	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/00	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/09/01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/14/01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/14/02	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/06/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/21/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/11/03	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
06/02/04	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/09/04	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/02/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/05	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/30/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/02/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

MW-3																
Date	Specific Conductance (umho/cm)	Temperature (deg C)	Dissolved Arsenic (ug/L)	Dissolved Barium (ug/L)	Dissolved Cadmium (ug/L)	Dissolved Chromium (ug/L)	Dissolved Copper (ug/L)	Dissolved Lead (ug/L)	Dissolved Nickel (ug/L)	Dissolved Selenium (ug/L)	Ammonia (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)
02/07/96	2950	20	<5.0	<500	<1.0	<30	<20	<5.0	<20	6.93	0.22	114	437	<0.05	26.0	3.60
05/09/96	2820	20	<5.0	<500	<1.0	<30	<20	<5.0	<20	7.30	<0.10	113	405	<0.05	29.2	5.10
08/14/96	2920	21	5.30	<500	<1.0	<30	<20	<5.0	<20	12.3	<0.10	88.0	393	<0.05	27.0	6.10
11/06/96	2660	23	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	99.2	316	<0.05	25.5	3.86
02/06/97	2540	20	<5.0	<500	<1.0	<30	<20	<5.0	<20	5.30	<0.10	131	412	<0.05	37.1	4.40
05/07/97	2310	20	<5.0	<500	<1.0	<30	<20	<5.0	<20	14.4	<0.10	99.0	406	<0.05	24.4	5.20
08/06/97	2300	26	<5.0	<500	<1.0	<30	<20	<5.0	<20	15.3	<0.10	99.0	415	<0.05	24.7	3.81
11/12/97	2210	20	5.20	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	118	410	<0.05	29.3	5.30
05/06/98	1847	20	8.30	<500	<1.0	<30	<20	<5.0	<20	8.70	<0.10	104	410	<0.05	24.8	4.90
11/10/98	2870	24	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	114	395	<0.05	27.4	6.01
05/06/99	2890	19	5.35	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.16	107	410	<0.05	31.1	5.18
11/03/99	2668	24	5.03	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	102	437	0.08	27.6	6.01
05/10/00	2670	22	6.20	414	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	107	394	<0.03	26.2	5.38
11/07/00	2840	25	6.60	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	99.2	348	<0.05	32.4	5.90
05/09/01	2930	21.2	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	102	426	<0.05	28.4	5.24
11/14/01	3030	22.5	5.68	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	126	384	<0.05	35.8	6.07
05/14/02	3100	20.1	<5.0	<500	<1.0	<30	<20	<5.0	<20	8.56	<0.05	84.8	404	<0.05	24.6	5.57
11/06/02	2570	22.4	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	102	396	<0.05	30.4	5.92
05/21/03	2570	19.7	<5.00	<500	<1.0	<30	<20	<5.0	<20	5.48	<0.05	108	393	<0.05	26.3	5.16
11/11/03	2775	23	6.42	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	99.4	366	<0.05	26.5	6.27
06/01/04	2814	21.6	6.00	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	88.2	406	<0.05	23.9	4.97
11/09/04	2752	21.38	5.14	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	86.6	413	0.10	22.7	5.36
05/03/05	2710	17.38	7.56	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	91.4	447	<0.05	25.6	4.56
11/08/05	2711	24.17	<5.00	<500	<1.00	<30	<20	<5.00	<20	<5.00	<0.05	85.8	384	<0.05	23.5	5.37
05/31/06	2755	22.32	5.62	<500	<1.00	<30	<20	<5.00	<20.0	<5.00	<0.05	92.2	413	<0.05	29.2	5.79
08/14/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/06	2428	22.81	<5	<500	<1	<30	<20	<5	<5	<5	<0.05	86.1	382	<0.05	24.2	7.54
02/14/07	2400	15.59	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/02/07	2421	23.33	<5.00	73.0	<1	<1	<5	<1.00	10.0	<5	<0.05	106	374	0.01	25.4	5.96
08/27/07	2772	27.45	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/07	2749	21.26	6.00	74.0	<1	<1	<5	<1	7.00	<5	<0.05	80.0	370	<0.05	22.0	5.20

MW-3

Date	Nitrate (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Total Alkalinity as CaCO3 (mg/L)	pH (std units)	Antimony (ug/L)	Arsenic (ug/L)	Barium (ug/L)	Beryllium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Cobalt (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)
02/07/96	0.41	621	560	1830	546	6.55	–	–	–	–	–	–	–	–	–	–
05/09/96	<0.05	598	483	1760	546	6.24	–	–	–	–	–	–	–	–	–	–
08/14/96	0.19	494	314	1766	540	6.23	–	–	–	–	–	–	–	–	–	–
11/06/96	<0.05	528	327	1740	582	6.67	–	–	–	–	–	–	–	–	–	–
02/06/97	<0.05	540	415	2030	541	6.78	–	–	–	–	–	–	–	–	–	–
05/07/97	0.16	483	349	1710	544	6.43	–	–	–	–	–	–	–	–	–	–
08/06/97	0.22	452	267	1670	564	6.81	–	–	–	–	–	–	–	–	–	–
11/12/97	0.18	491	421	1750	550	6.57	–	–	–	–	–	–	–	–	–	–
05/06/98	0.25	490	301	1880	548	6.68	–	–	–	–	–	–	–	–	–	–
11/10/98	<0.05	556	443	1930	538	6.79	–	–	–	–	–	–	–	–	–	–
05/06/99	0.18	495	374	2020	570	6.73	–	–	–	–	–	–	–	–	–	–
11/03/99	<0.05	568	353	1890	476	6.77	–	–	–	–	–	–	–	–	–	–
05/10/00	0.08	556	384	1900	574	7.48	–	–	–	–	–	–	–	–	–	–
11/07/00	<0.05	586	459	1990	526	6.98	–	–	–	–	–	–	–	–	–	–
05/09/01	0.20	509	378	1960	528	7.17	–	–	–	–	–	–	–	–	–	–
11/14/01	<0.05	450	500	1880	536	7.53	–	–	–	–	–	–	–	–	–	–
05/14/02	<0.05	494	334	1730	540	6.99	–	–	–	–	–	–	–	–	–	–
11/06/02	0.28	559	456	1650	542	6.62	–	–	–	–	–	–	–	–	–	–
05/21/03	0.05	498	286	1660	548	7.35	–	–	–	–	–	–	–	–	–	–
11/11/03	0.11	539	377	1680	550	6.84	–	–	–	–	–	–	–	–	–	–
06/01/04	<0.05	553	300	1750	530	6.82	–	–	–	–	–	–	–	–	–	–
11/09/04	<0.05	509	243	1590	512	6.81	–	–	–	–	–	–	–	–	–	–
05/03/05	<0.05	524	205	1630	516	6.07	–	–	–	–	–	–	–	–	–	–
11/08/05	<0.05	509	120	1560	553	6.74	–	–	–	–	–	–	–	–	–	–
05/31/06	<0.05	513	309	1740	534	6.52	–	–	–	–	–	–	–	–	–	–
08/14/06	–	–	–	–	–	–	<5	<5.00	72.0	<1	<1	<1	<1	<5	<5	<5
11/08/06	<0.05	574	329	1700	560	6.54	<5	<5.00	75.0	<1	<1	1.00	<1	<5	<5	5.00
02/14/07	–	–	–	–	–	7.50	<5	6.69	71.0	<1	<1	1.00	<1	<5	<5	5.00
05/02/07	<0.05	500	393	1720	548	6.67	<5	6.74	73.0	<1	<1	<1	5.00	<5	<1.00	10.0
08/27/07	–	–	–	–	–	6.64	<5	6.33	71.0	<1	<1	<1	<1	<5	<1.00	<5
11/07/07	<0.05	510	300	1600	540	6.55	<5	6.00	75.0	<1	<1	1.60	1.10	<5	<1	7.50

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-3					
Date	Selenium (ug/L)	Silver (ug/L)	Thallium (ug/L)	Vanadium (ug/L)	Zinc (ug/L)
02/07/96	–	–	–	–	–
05/09/96	–	–	–	–	–
08/14/96	–	–	–	–	–
11/06/96	–	–	–	–	–
02/06/97	–	–	–	–	–
05/07/97	–	–	–	–	–
08/06/97	–	–	–	–	–
11/12/97	–	–	–	–	–
05/06/98	–	–	–	–	–
11/10/98	–	–	–	–	–
05/06/99	–	–	–	–	–
11/03/99	–	–	–	–	–
05/10/00	–	–	–	–	–
11/07/00	–	–	–	–	–
05/09/01	–	–	–	–	–
11/14/01	–	–	–	–	–
05/14/02	–	–	–	–	–
11/06/02	–	–	–	–	–
05/21/03	–	–	–	–	–
11/11/03	–	–	–	–	–
06/01/04	–	–	–	–	–
11/09/04	–	–	–	–	–
05/03/05	–	–	–	–	–
11/08/05	–	–	–	–	–
05/31/06	–	–	–	–	–
08/14/06	6.00	<5	<5	1.00	29.0
11/08/06	<5	<5	<5	1.00	12.0
02/14/07	6.00	<5	<1	<1	18.0
05/02/07	<5	<5	<1	<1	11.0
08/27/07	<5	<5	<1	1.00	29.0
11/07/07	<5	<5	<1	2.70	14.0

MW-3																
Date	Acetone (ug/L)	Acrylonitrile (ug/L)	Benzene (ug/L)	Bromochloro methane (ug/L)	Bromodichloro methane (ug/L)	Bromoform (ug/L)	Carbon disulfide (ug/L)	Carbon tetrachloride (ug/L)	Chlorobenzene (ug/L)	Chloroethane (ug/L)	Chloroform (ug/L)	Dibromochloro methane (ug/L)	1,2-Dibromo-3-chloropropane (ug/L)	1,2-Dibromoethane (ug/L)	o-Dichlorobenzene (ug/L)	p-Dichlorobenzene (ug/L)
02/07/96	<20	<10	<5	<5	<5	<5	<5	<5	<5	<20	<5	<5	<5	<5.0	<5	<5
05/09/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/14/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
02/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/07/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/12/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/10/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/03/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/10/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/14/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/14/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/21/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/11/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
06/01/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/09/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/03/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/31/06	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
11/07/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

MW-3																
Date	trans-1,4-Dichloro-2-butene (ug/L)	1,1-Dichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	1,1-Dichloroethylene (ug/L)	cis-1,2-Dichloro ethylene (ug/L)	trans-1,2-Dichloro ethylene (ug/L)	1,2-Dichloropropane (ug/L)	cis-1,3-Dichloro propene (ug/L)	trans-1,3-Dichloro propene (ug/L)	Ethylbenzene (ug/L)	2-Hexanone (ug/L)	Methyl bromide (ug/L)	Methyl chloride (ug/L)	Methylene bromide (ug/L)	Methylene chloride (ug/L)	Methyl ethyl ketone (ug/L)
02/07/96	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<20	<50	<5	<5	<20
05/09/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/14/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/06/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
02/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/12/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/10/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/03/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/10/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/09/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/14/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/14/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/06/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/21/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/11/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
06/01/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/09/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/03/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/31/06	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/06	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
05/02/07	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
11/07/07	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20

MW-3

Date	Methyl iodide (ug/L)	4-Methyl-2-pentanone (ug/L)	Styrene (ug/L)	1,1,1,2-Tetrachloroethane (ug/L)	1,1,2,2-Tetrachloroethane (ug/L)	Tetrachloroethylene (ug/L)	Toluene (ug/L)	1,1,1-Trichloroethane (ug/L)	1,1,2-Trichloroethane (ug/L)	Trichloroethylene (ug/L)	Trichlorofluoromethane (ug/L)	1,2,3-Trichloropropane (ug/L)	Vinyl acetate (ug/L)	Vinyl chloride (ug/L)	Total Xylenes (ug/L)
02/07/96	<5	<10	<5	<5	<5	<5	7.09	<5	<5	<5	<5	<5	<5	<5	<10
05/09/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/14/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/06/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
02/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/07/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/12/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/10/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/03/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/10/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/09/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/14/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/14/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/06/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/21/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/11/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
06/01/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/09/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/03/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/31/06	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
11/07/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-4																	
Date	Specific Conductance (umho/cm)	Temperature (deg C)	Dissolved Arsenic (ug/L)	Dissolved Barium (ug/L)	Dissolved Cadmium (ug/L)	Dissolved Chromium (ug/L)	Dissolved Copper (ug/L)	Dissolved Lead (ug/L)	Dissolved Nickel (ug/L)	Dissolved Selenium (ug/L)	Ammonia (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)
02/07/96	7630	19.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	587	2380	<0.05	153	3.30
05/09/96	6990	19.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	644	2330	<0.05	154	5.20
08/14/96	8160	23.0	<5.0	<500	<1.0	50.0	<20	<5.0	<20	<5.0	<0.10	581	2350	0.07	168	7.70
11/06/96	7230	22.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	588	2360	<0.05	159	4.63
02/07/97	5170	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	562	2140	<0.05	180	3.79
05/08/97	4240	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	504	1940	<0.05	112	3.52
08/06/97	5260	23.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	683	2080	<0.05	122	1.80
11/12/97	6160	21.5	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	426	2170	<0.05	154	5.20
05/06/98	3040	20.0	<5.0	<500	<1.0	<30	<20	<5.0	33.0	<5.0	<0.10	515	1910	<0.05	114	2.70
11/10/98	6850	23.5	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.12	500	2060	<0.05	155	5.68
05/06/99	5950	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.11	500	1810	<0.05	118	3.55
11/03/99	6040	24.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	592	1890	0.08	167	6.32
05/10/00	6000	19.0	<5.0	227	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	566	2010	<0.03	153	2.27
11/07/00	6510	26.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	536	1930	0.06	146	5.49
05/09/01	5520	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	440	1810	<0.05	141	3.12
11/14/01	7800	22.6	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	528	1970	<0.05	211	5.82
05/14/02	7910	19.5	<5.0	<500	<1.0	34.0	<20	<5.0	29.6	<5.0	<0.05	480	2010	<0.05	180	5.08
11/06/02	6240	22.7	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	464	1840	0.07	174	5.31
05/21/03	6240	19.0	<5.0	624	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	568	1760	<0.05	197	4.90
11/11/03	6929	23.3	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	549	1790	0.07	155	6.30
06/02/04	7165	20.2	<5.0	807	<1.0	<30	<20	<5.0	<20	12.0	<0.05	489	1780	<0.05	140	4.50
11/09/04	7195	21.6	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	449	1650	0.06	98.6	6.50
05/03/05	7085	20.4	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	526	1740	<0.05	170	5.10
11/08/05	7199	25.2	<5.00	<500	<1.00	<30	<20	<5.00	<20	<5.00	<0.05	521	1870	<0.05	139	7.04
05/31/06	7084	22.4	<5.00	<500	<1.00	<30	<20	<5.00	<20.0	<5.00	<0.05	569	1840	<0.05	180	6.51
08/15/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/06	6344	24.5	<5	<500	<1	<30	<20	<5	8.00	<5	<0.05	505	1950	<0.05	150	9.65
02/14/07	6018	15.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/03/07	5994	20.3	<5.00	37.0	<1	<1	<5	<1.00	11.0	<5	<0.05	443	1620	0.01	155	5.87
08/28/07	6913	23.4	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/07	7236	20.5	<5	40.0	<1	<1	5.10	<1	17.0	<5	<0.05	470	1800	0.23	140	6.60

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-4																
Date	Nitrate (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Total Alkalinity as CaCO3 (mg/L)	pH (std units)	Antimony (ug/L)	Arsenic (ug/L)	Barium (ug/L)	Beryllium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Cobalt (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)
02/07/96	0.17	1360	895	5610	390	6.31	–	–	–	–	–	–	–	–	–	–
05/09/96	0.31	1130	1100	5380	390	6.02	–	–	–	–	–	–	–	–	–	–
08/14/96	0.22	1040	1190	6360	344	6.32	–	–	–	–	–	–	–	–	–	–
11/06/96	0.11	1100	818	5910	368	6.45	–	–	–	–	–	–	–	–	–	–
02/07/97	0.10	925	868	5320	402	6.57	–	–	–	–	–	–	–	–	–	–
05/08/97	0.32	880	623	4870	436	6.71	–	–	–	–	–	–	–	–	–	–
08/06/97	0.29	891	753	5340	462	6.41	–	–	–	–	–	–	–	–	–	–
11/12/97	0.25	1070	950	5270	338	6.61	–	–	–	–	–	–	–	–	–	–
05/06/98	0.16	860	740	4820	462	6.57	–	–	–	–	–	–	–	–	–	–
11/10/98	0.06	1040	876	5660	420	6.67	–	–	–	–	–	–	–	–	–	–
05/06/99	0.22	851	727	4620	460	6.64	–	–	–	–	–	–	–	–	–	–
11/03/99	<0.05	1000	731	4990	368	6.55	–	–	–	–	–	–	–	–	–	–
05/10/00	<0.05	1020	772	5350	430	–	–	–	–	–	–	–	–	–	–	–
11/07/00	<0.05	847	831	5110	366	6.79	–	–	–	–	–	–	–	–	–	–
05/09/01	0.18	875	554	4700	406	7.02	–	–	–	–	–	–	–	–	–	–
11/14/01	<0.05	935	841	5650	394	7.79	–	–	–	–	–	–	–	–	–	–
05/14/02	<0.05	942	709	5070	444	6.74	–	–	–	–	–	–	–	–	–	–
11/06/02	0.35	989	958	3660	458	6.30	–	–	–	–	–	–	–	–	–	–
05/21/03	<0.05	937	839	5890	500	6.81	–	–	–	–	–	–	–	–	–	–
11/11/03	<0.05	1050	860	4410	506	6.57	–	–	–	–	–	–	–	–	–	–
06/02/04	<0.05	925	872	4870	518	6.60	–	–	–	–	–	–	–	–	–	–
11/09/04	<0.05	978	885	4350	500	6.54	–	–	–	–	–	–	–	–	–	–
05/03/05	<0.05	1000	822	4510	512	6.58	–	–	–	–	–	–	–	–	–	–
11/08/05	<0.05	820	885	4460	513	6.50	–	–	–	–	–	–	–	–	–	–
05/31/06	<0.05	775	831	4830	512	6.25	–	–	–	–	–	–	–	–	–	–
08/15/06	–	–	–	–	–	–	<5	<5.00	36	<1	<1	<1	<1	8.00	<5	8.00
11/08/06	<0.05	912	861	4530	516	6.21	<5	<5.00	40	<1	1.00	1.00	<1	<5	<5	8.00
02/14/07	–	–	–	–	–	6.72	<5	<5.00	35	<1	1.00	1.00	<1	<5	<5	7.00
05/03/07	0.06	986	893	4860	556	6.51	<5	<5.00	36	<1	<1	<1	<1	<5	<1.00	8.00
08/28/07	–	–	–	–	–	6.13	<5	<5.00	40	<1	1.00	<1	<1	<5	<1.00	8.00
11/08/07	<0.05	900	940	4500	400	6.37	<5	5.20	41	<1	<1	1.50	2.50	<5	<1	19.0

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-4					
Date	Selenium (ug/L)	Silver (ug/L)	Thallium (ug/L)	Vanadium (ug/L)	Zinc (ug/L)
02/07/96	--	--	--	--	--
05/09/96	--	--	--	--	--
08/14/96	--	--	--	--	--
11/06/96	--	--	--	--	--
02/07/97	--	--	--	--	--
05/08/97	--	--	--	--	--
08/06/97	--	--	--	--	--
11/12/97	--	--	--	--	--
05/06/98	--	--	--	--	--
11/10/98	--	--	--	--	--
05/06/99	--	--	--	--	--
11/03/99	--	--	--	--	--
05/10/00	--	--	--	--	--
11/07/00	--	--	--	--	--
05/09/01	--	--	--	--	--
11/14/01	--	--	--	--	--
05/14/02	--	--	--	--	--
11/06/02	--	--	--	--	--
05/21/03	--	--	--	--	--
11/11/03	--	--	--	--	--
06/02/04	--	--	--	--	--
11/09/04	--	--	--	--	--
05/03/05	--	--	--	--	--
11/08/05	--	--	--	--	--
05/31/06	--	--	--	--	--
08/15/06	<5	44.0	<5	4.00	21.0
11/08/06	<5	<5	<5	2.00	12.0
02/14/07	8.00	<5	<1	<1	13.0
05/03/07	<5	<5	<1	<1	13.0
08/28/07	<5	<5	<1	2.00	12.0
11/08/07	<5	<5	<1	<1	12.0

MW-4

Date	Acetone (ug/L)	Acrylonitrile (ug/L)	Benzene (ug/L)	Bromochloro methane (ug/L)	Bromodichloro methane (ug/L)	Bromoform (ug/L)	Carbon disulfide (ug/L)	Carbon tetrachloride (ug/L)	Chlorobenzene (ug/L)	Chloroethane (ug/L)	Chloroform (ug/L)	Dibromochloro methane (ug/L)	1,2-Dibromo-3-chloropropane (ug/L)	1,2-Dibromoethane (ug/L)	o-Dichlorobenzene (ug/L)	p-Dichlorobenzene (ug/L)
02/07/96	<20	<10	<5	<5	<5	<5	<5	<5	<5	<20	<5	<5	<5	<5.0	<5	<5
05/09/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/14/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
02/07/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/08/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/12/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/10/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/03/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/10/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/14/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/14/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/21/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/11/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
06/02/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/09/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/03/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/31/06	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
11/08/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-4																
Date	trans-1,4-Dichloro-2-butene (ug/L)	1,1-Dichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	1,1-Dichloroethylene (ug/L)	cis-1,2-Dichloro ethylene (ug/L)	trans-1,2-Dichloro ethylene (ug/L)	1,2-Dichloropropane (ug/L)	cis-1,3-Dichloro propene (ug/L)	trans-1,3-Dichloro propene (ug/L)	Ethylbenzene (ug/L)	2-Hexanone (ug/L)	Methyl bromide (ug/L)	Methyl chloride (ug/L)	Methylene bromide (ug/L)	Methylene chloride (ug/L)	Methyl ethyl ketone (ug/L)
02/07/96	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<20	<50	<5	<5	<20
05/09/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/14/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/06/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
02/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/08/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/12/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/10/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/03/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/10/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/09/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/14/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/14/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/06/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/21/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/11/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
06/02/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/09/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/03/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/31/06	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/06	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
05/02/07	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
11/08/07	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20

MW-4

Date	Methyl iodide (ug/L)	4-Methyl-2-pentanone (ug/L)	Styrene (ug/L)	1,1,1,2-Tetrachloroethane (ug/L)	1,1,2,2-Tetrachloroethane (ug/L)	Tetrachloroethylene (ug/L)	Toluene (ug/L)	1,1,1-Trichloroethane (ug/L)	1,1,2-Trichloroethane (ug/L)	Trichloroethylene (ug/L)	Trichlorofluoromethane (ug/L)	1,2,3-Trichloropropane (ug/L)	Vinyl acetate (ug/L)	Vinyl chloride (ug/L)	Total Xylenes (ug/L)
02/07/96	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10
05/09/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/14/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/06/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
02/07/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/08/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/12/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/10/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/03/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/10/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/09/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/14/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/14/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/06/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/21/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/11/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
06/02/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/09/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/03/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/31/06	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
11/08/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-5																
Date	Specific Conductance (umho/cm)	Temperature (deg C)	Dissolved Arsenic (ug/L)	Dissolved Barium (ug/L)	Dissolved Cadmium (ug/L)	Dissolved Chromium (ug/L)	Dissolved Copper (ug/L)	Dissolved Lead (ug/L)	Dissolved Nickel (ug/L)	Dissolved Selenium (ug/L)	Ammonia (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)
02/07/96	4190	20.5	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.32	251	760	<0.05	66.0	11.2
05/09/96	4090	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.10	262	773	<0.05	65.7	13.4
08/14/96	4150	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.22	253	750	0.05	70.8	16.3
11/06/96	3990	20.5	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.15	263	755	<0.05	67.3	10.3
02/07/97	3020	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.44	269	717	<0.05	81.4	11.4
05/08/97	3220	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.25	259	758	<0.05	68.0	14.7
08/06/97	3220	22.0	<5.0	<500	2.50	<30	<20	<5.0	<20	<5.0	0.18	314	762	<0.05	58.4	8.30
11/12/97	3270	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.49	314	767	<0.05	77.7	14.5
05/06/98	3800	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.43	253	767	0.29	62.7	15.1
11/10/98	4220	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.54	259	757	<0.05	71.8	14.8
05/06/99	3780	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	272	773	0.32	75.1	12.2
11/03/99	3730	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.31	251	774	0.46	76.3	15.9
05/10/00	3750	22.0	<5.0	319	<1.0	<30	<20	<5.0	<20	<5.0	0.20	256	789	0.30	69.9	14.1
11/07/00	3840	22.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.32	244	734	0.33	78.5	14.8
05/09/01	4070	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.13	251	792	0.29	69.7	12.1
11/14/01	4560	20.4	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.16	256	741	0.33	84.7	13.9
05/14/02	4800	19.4	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.07	248	758	0.38	78.8	15.6
11/06/02	4060	20.2	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.24	232	802	0.46	79.3	15.3
05/21/03	4060	19.8	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.21	288	741	0.32	86.2	13.1
11/11/03	4547	20.8	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.14	263	779	0.48	83.0	18.4
06/02/04	4635	22.2	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	306	773	0.11	76.0	15.2
11/09/04	4678	20.9	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.09	248	746	0.82	82.0	13.4
05/03/05	4781	21.3	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	301	750	<0.05	88.8	13.9
11/08/05	4917	24.6	<5.00	<500	<1.00	<30	<20	<5.00	<20	<5.00	0.15	305	676	0.37	89.4	13.7
05/31/06	4808	23.7	<5.00	<500	<1.00	<30	<20	<5.00	<20.0	<5.00	<0.05	319	727	<0.05	93.0	14.7
08/15/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/06	4275	22.8	<5	<500	<1	<30	<20	<5	<5	<5	0.10	293	750	0.15	84.7	15.8
02/14/07	4116	17.2	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/03/07	4112	21.2	<5.00	19.0	<1	<1	<5	<1.00	<5	<5	<0.05	281	630	0.02	78.0	17.1
08/28/07	4785	22.1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/07	4947	19.6	<5	22.0	<1	<1	5.80	<1	8.50	<5	0.31	270	740	0.78	80.0	15.0

MW-5																
Date	Nitrate (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Total Alkalinity as CaCO3 (mg/L)	pH (std units)	Antimony (ug/L)	Arsenic (ug/L)	Barium (ug/L)	Beryllium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Cobalt (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)
02/07/96	0.30	736	935	2780	436	6.53	–	–	–	–	–	–	–	–	–	–
05/09/96	0.32	753	1150	2880	432	6.70	–	–	–	–	–	–	–	–	–	–
08/14/96	0.27	636	957	3200	416	6.65	–	–	–	–	–	–	–	–	–	–
11/06/96	0.13	718	794	3040	410	6.68	–	–	–	–	–	–	–	–	–	–
02/07/97	0.13	642	953	3120	422	6.76	–	–	–	–	–	–	–	–	–	–
05/08/97	0.19	633	882	3090	414	6.82	–	–	–	–	–	–	–	–	–	–
08/06/97	0.23	570	940	3030	448	6.50	–	–	–	–	–	–	–	–	–	–
11/12/97	0.19	604	934	3070	362	6.29	–	–	–	–	–	–	–	–	–	–
05/06/98	0.23	609	908	3130	426	6.55	–	–	–	–	–	–	–	–	–	–
11/10/98	<0.05	699	955	3210	432	6.73	–	–	–	–	–	–	–	–	–	–
05/06/99	0.19	604	879	3120	440	6.77	–	–	–	–	–	–	–	–	–	–
11/03/99	0.05	732	743	3260	386	6.87	–	–	–	–	–	–	–	–	–	–
05/10/00	0.17	677	823	2910	432	6.86	–	–	–	–	–	–	–	–	–	–
11/07/00	0.16	673	812	3200	422	6.77	–	–	–	–	–	–	–	–	–	–
05/09/01	0.21	615	711	2960	432	7.12	–	–	–	–	–	–	–	–	–	–
11/14/01	0.09	571	909	3040	424	6.25	–	–	–	–	–	–	–	–	–	–
05/14/02	0.09	609	811	3070	422	6.92	–	–	–	–	–	–	–	–	–	–
11/06/02	0.45	749	978	3130	444	6.55	–	–	–	–	–	–	–	–	–	–
05/21/03	0.09	672	913	3120	436	7.06	–	–	–	–	–	–	–	–	–	–
11/11/03	<0.05	669	978	2990	440	6.88	–	–	–	–	–	–	–	–	–	–
06/02/04	0.14	728	986	3120	410	6.93	–	–	–	–	–	–	–	–	–	–
11/09/04	<0.05	750	1080	3220	396	6.71	–	–	–	–	–	–	–	–	–	–
05/03/05	0.14	782	1100	3240	376	7.17	–	–	–	–	–	–	–	–	–	–
11/08/05	<0.05	759	1290	3280	404	6.78	–	–	–	–	–	–	–	–	–	–
05/31/06	0.06	770	1140	3320	400	6.80	–	–	–	–	–	–	–	–	–	–
08/15/06	–	–	–	–	–	–	<5	<5.00	20.0	<1	<1	<1	<1	<5	<5	<5
11/08/06	<0.05	777	1280	3290	410	6.71	<5	<5.00	21.0	<1	<1	1.00	<1	<5	<5	<5
02/14/07	–	–	–	–	–	7.78	<5	<5.00	20.0	<1	<1	2.00	<1	<5	<5	<5
05/03/07	0.20	822	1190	3500	409	6.58	<5	<5.00	19.0	<1	<1	3.00	<1	<5	<1.00	<5
08/28/07	–	–	–	–	–	6.41	<5	<5.00	22.0	<1	<1	1.00	<1	<5	<1.00	<5
11/08/07	<0.05	740	1200	3400	460	6.54	<5	<5	23.0	<1	<1	3.10	2.70	5.90	<1	8.00

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-5					
Date	Selenium (ug/L)	Silver (ug/L)	Thallium (ug/L)	Vanadium (ug/L)	Zinc (ug/L)
02/07/96	–	–	–	–	–
05/09/96	–	–	–	–	–
08/14/96	–	–	–	–	–
11/06/96	–	–	–	–	–
02/07/97	–	–	–	–	–
05/08/97	–	–	–	–	–
08/06/97	–	–	–	–	–
11/12/97	–	–	–	–	–
05/06/98	–	–	–	–	–
11/10/98	–	–	–	–	–
05/06/99	–	–	–	–	–
11/03/99	–	–	–	–	–
05/10/00	–	–	–	–	–
11/07/00	–	–	–	–	–
05/09/01	–	–	–	–	–
11/14/01	–	–	–	–	–
05/14/02	–	–	–	–	–
11/06/02	–	–	–	–	–
05/21/03	–	–	–	–	–
11/11/03	–	–	–	–	–
06/02/04	–	–	–	–	–
11/09/04	–	–	–	–	–
05/03/05	–	–	–	–	–
11/08/05	–	–	–	–	–
05/31/06	–	–	–	–	–
08/15/06	<5	<5	<5	2.00	15.0
11/08/06	<5	<5	<5	1.00	–
02/14/07	12.0	<5	<1	<1	12.0
05/03/07	<5	<5	<1	<1	–
08/28/07	<5	<5	<1	1.00	<5
11/08/07	<5	<5	<1	<1	7.80

MW-5

Date	Acetone (ug/L)	Acrylonitrile (ug/L)	Benzene (ug/L)	Bromochloro methane (ug/L)	Bromodichloro methane (ug/L)	Bromoform (ug/L)	Carbon disulfide (ug/L)	Carbon tetrachloride (ug/L)	Chlorobenzene (ug/L)	Chloroethane (ug/L)	Chloroform (ug/L)	Dibromochloro methane (ug/L)	1,2-Dibromo-3-chloropropane (ug/L)	1,2-Dibromoethane (ug/L)	o-Dichlorobenzene (ug/L)	p-Dichlorobenzene (ug/L)
02/07/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/14/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
02/07/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/08/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/12/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/10/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/03/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/10/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/14/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/14/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/21/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/11/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
06/02/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/09/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/03/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/31/06	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
11/08/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

MW-5																
Date	trans-1,4-Dichloro-2-butene (ug/L)	1,1-Dichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	1,1-Dichloroethylene (ug/L)	cis-1,2-Dichloro ethylene (ug/L)	trans-1,2-Dichloro ethylene (ug/L)	1,2-Dichloropropane (ug/L)	cis-1,3-Dichloro propene (ug/L)	trans-1,3-Dichloro propene (ug/L)	Ethylbenzene (ug/L)	2-Hexanone (ug/L)	Methyl bromide (ug/L)	Methyl chloride (ug/L)	Methylene bromide (ug/L)	Methylene chloride (ug/L)	Methyl ethyl ketone (ug/L)
02/07/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/09/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/14/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/06/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
02/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/08/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/12/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/10/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/03/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/10/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/09/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/14/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/14/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/06/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/21/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/11/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
06/02/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/09/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/03/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/31/06	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/06	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
05/02/07	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
11/08/07	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20

MW-5															
Date	Methyl iodide (ug/L)	4-Methyl-2-pentanone (ug/L)	Styrene (ug/L)	1,1,1,2-Tetrachloroethane (ug/L)	1,1,2,2-Tetrachloroethane (ug/L)	Tetrachloroethylene (ug/L)	Toluene (ug/L)	1,1,1-Trichloroethane (ug/L)	1,1,2-Trichloroethane (ug/L)	Trichloroethylene (ug/L)	Trichlorofluoromethane (ug/L)	1,2,3-Trichloropropane (ug/L)	Vinyl acetate (ug/L)	Vinyl chloride (ug/L)	Total Xylenes (ug/L)
02/07/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/09/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/14/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/06/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
02/07/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/08/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/12/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/10/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/03/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/10/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/09/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/14/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/14/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/06/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/21/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/11/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
06/02/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/09/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/03/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/31/06	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
11/08/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10

MW-12A

Date	Specific Conductance (umho/cm)	Temperature (deg C)	Dissolved Arsenic (ug/L)	Dissolved Barium (ug/L)	Dissolved Cadmium (ug/L)	Dissolved Chromium (ug/L)	Dissolved Copper (ug/L)	Dissolved Lead (ug/L)	Dissolved Nickel (ug/L)	Dissolved Selenium (ug/L)	Ammonia (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)
02/07/96	9170	20.0	<5.0	<500	3.86	36.0	<20	<5.0	76.1	<5.0	<0.10	835	2480	<0.05	209	21.0
05/09/96	8590	20.5	<5.0	<500	2.30	<30	24.0	<5.0	80.0	<5.0	<0.10	798	2400	<0.05	199	23.6
08/14/96	9670	22.0	<5.0	<500	3.80	66.0	28.0	<5.0	80.0	<5.0	<0.10	721	2560	0.12	223	26.9
11/06/96	8340	23.0	<5.0	<500	6.93	<30	22.0	<5.0	90.0	<5.0	<0.10	768	2430	<0.05	191	18.6
02/06/97	6970	20.0	<5.0	<500	7.10	<30	27.0	<5.0	100	<5.0	<0.10	782	2570	0.12	218	21.3
05/07/97	5570	20.0	<5.0	<500	3.50	<30	22.0	<5.0	50.0	<5.0	<0.10	834	2700	<0.05	186	24.7
08/06/97	6750	22.0	<5.0	<500	9.90	<30	25.0	<5.0	80.0	<5.0	<0.10	928	2560	0.09	147	20.1
11/12/97	5605	21.0	<5.0	<500	10.9	<30	<20	<5.0	80.0	<5.0	<0.10	722	2410	0.09	226	24.3
05/06/98	8280	20.0	<5.0	<500	16.0	<30	<20	<5.0	84.0	<5.0	0.24	780	2560	0.07	220	25.6
11/10/98	8910	23.0	<5.0	<500	10.6	<30	23.0	<5.0	80.0	<5.0	0.12	728	2590	<0.05	238	25.6
05/06/99	7440	21.0	<5.0	<500	13.4	<30	<20	<5.0	73.8	<5.0	<0.10	800	2520	0.09	213	22.5
11/03/99	8570	21.0	<5.0	<500	15.2	<30	<20	<5.0	92.8	<5.0	<0.05	864	2400	0.13	242	25.2
05/10/00	8190	22.0	<5.0	203	14.0	<30	24.0	<5.0	98.0	<5.0	<0.05	720	2830	<0.03	225	24.3
11/07/00	8750	25.0	<5.0	<500	<1.0	32.0	<20	<5.0	87.5	<5.0	<0.05	676	2380	0.09	220	24.6
05/09/01	8490	21.2	<5.0	<500	15.0	<30	<20	<5.0	40.1	<5.0	<0.05	740	2580	0.07	213	22.0
11/14/01	10660	16.0	<5.0	<500	12.9	40.0	<20	<5.0	82.6	<5.0	<0.05	740	2530	0.10	286	23.7
05/14/02	1120	19.8	<5.0	<500	1.30	53.0	<20	<5.0	81.9	<5.0	<0.05	724	2720	<0.05	264	25.6
11/06/02	9730	22.5	<5.0	<500	4.81	<30	<20	<5.0	95.3	<5.0	<0.05	728	2710	0.10	281	26.1
05/21/03	9730	19.1	<5.0	1100	2.61	<30	<20	<5.0	67.3	<5.0	<0.05	812	2460	0.11	247	20.2
11/11/03	10830	23.1	<5.0	1230	13.7	<30	24.0	<5.0	31.4	<5.0	<0.05	713	2520	0.16	249	28.1
06/01/04	11260	22.1	<5.0	1530	5.94	<30	<20	<5.0	37.3	<5.0	<0.05	681	2590	0.18	175	22.4
11/08/04	11273	22.3	<5.0	<500	14.4	<30	<20	<5.0	119	<5.0	<0.05	774	2810	0.20	246	23.5
05/02/05	11126	21.4	<5.0	<500	14.7	<30	<20	<5.0	79.9	<5.0	<0.05	838	2680	0.16	278	24.6
11/07/05	11525	26.1	<5.00	<500	6.80	36.0	<20	<5.00	119	<5.00	0.05	854	2840	0.23	255	24.5
05/30/06	11483	23.9	<5.00	<500	<1.00	<30	<20	<5.00	101	<5.00	<0.05	677	2990	0.20	289	24.9
08/14/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/06	10217	21.5	<5	<500	4.00	<30	<20	<5	98.0	8.00	<0.05	741	3060	0.28	258	28.6
02/14/07	9798	13.6	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/02/07	9807	19.9	<5.00	21.0	32.0	<1	<5	1.70	96.0	<5	<0.05	820	2520	0.21	277	30.8
08/27/07	11477	24.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/07	11941	18.6	8.80	23.0	6.40	1.50	11.0	<1	130	<5	0.11	790	3000	0.23	240	28.0

MW-12A																
Date	Nitrate (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Total Alkalinity as CaCO3 (mg/L)	pH (std units)	Antimony (ug/L)	Arsenic (ug/L)	Barium (ug/L)	Beryllium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Cobalt (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)
02/07/96	0.37	1690	2360	6840	36.0	5.07	–	–	–	–	–	–	–	–	–	–
05/09/96	0.06	1650	2700	7000	30.0	4.85	–	–	–	–	–	–	–	–	–	–
08/14/96	0.08	1300	1570	8120	32.0	5.13	–	–	–	–	–	–	–	–	–	–
11/06/96	<0.05	1370	2130	7250	34.0	4.97	–	–	–	–	–	–	–	–	–	–
02/06/97	0.06	1280	2030	8100	28.0	5.24	–	–	–	–	–	–	–	–	–	–
05/07/97	0.09	1280	2280	7870	26.0	5.17	–	–	–	–	–	–	–	–	–	–
08/06/97	0.15	1270	2370	8070	74.0	5.18	–	–	–	–	–	–	–	–	–	–
11/12/97	0.10	1420	2530	7660	26.0	5.20	–	–	–	–	–	–	–	–	–	–
05/06/98	0.09	1310	2530	7590	32.0	4.99	–	–	–	–	–	–	–	–	–	–
11/10/98	<0.05	1500	2400	8490	32.0	5.42	–	–	–	–	–	–	–	–	–	–
05/06/99	0.23	1330	2510	7490	70.0	5.28	–	–	–	–	–	–	–	–	–	–
11/03/99	<0.05	1400	2110	7710	40.0	5.22	–	–	–	–	–	–	–	–	–	–
05/10/00	0.06	1500	2300	7750	50.0	–	–	–	–	–	–	–	–	–	–	–
11/07/00	0.07	1390	2080	8000	32.0	5.88	–	–	–	–	–	–	–	–	–	–
05/09/01	0.16	1250	1690	7380	52.0	6.02	–	–	–	–	–	–	–	–	–	–
11/14/01	<0.05	1370	2540	8430	38.0	4.82	–	–	–	–	–	–	–	–	–	–
05/14/02	<0.05	1390	2080	7810	58.0	6.17	–	–	–	–	–	–	–	–	–	–
11/06/02	0.05	1560	2570	8070	46.0	5.12	–	–	–	–	–	–	–	–	–	–
05/21/03	0.09	1470	2940	8470	80.0	5.96	–	–	–	–	–	–	–	–	–	–
11/11/03	0.06	1640	2300	7610	56.0	5.54	–	–	–	–	–	–	–	–	–	–
06/01/04	0.17	1440	1920	7100	196.0	5.44	–	–	–	–	–	–	–	–	–	–
11/08/04	<0.05	1600	2480	7680	76.0	5.27	–	–	–	–	–	–	–	–	–	–
05/02/05	<0.05	1650	2290	7706	84.0	5.89	–	–	–	–	–	–	–	–	–	–
11/07/05	0.57	1440	2290	8140	25.0	5.60	–	–	–	–	–	–	–	–	–	–
05/30/06	<0.05	1320	2240	8300	36.0	5.98	–	–	–	–	–	–	–	–	–	–
08/14/06	–	–	–	–	–	–	<5	<5.00	21.0	1.00	10.0	1.00	4.00	<5	6.00	103
11/07/06	<0.05	1640	2300	8450	40.0	5.20	<5	<5.00	23.0	1.00	6.00	1.00	5.00	<5	5.00	103
02/14/07	–	–	–	–	–	7.32	<5	<5.00	20.0	1.00	3.00	1.00	6.00	<5	8.00	81.0
05/02/07	<0.05	1660	2560	8680	37.2	6.22	<5	<5.00	21.0	1.00	27.0	1.00	5.00	<5	3.04	89.0
08/27/07	–	–	–	–	–	4.96	<5	<5.00	21.0	1.00	8.00	<1	4.00	<5	<1.00	101
11/07/07	<0.05	1600	2600	8200	22.0	4.87	<5	9.80	22.0	1.00	8.40	2.30	9.70	11.0	<1	140

MW-12A					
Date	Selenium (ug/L)	Silver (ug/L)	Thallium (ug/L)	Vanadium (ug/L)	Zinc (ug/L)
02/07/96	–	–	–	–	–
05/09/96	–	–	–	–	–
08/14/96	–	–	–	–	–
11/06/96	–	–	–	–	–
02/06/97	–	–	–	–	–
05/07/97	–	–	–	–	–
08/06/97	–	–	–	–	–
11/12/97	–	–	–	–	–
05/06/98	–	–	–	–	–
11/10/98	–	–	–	–	–
05/06/99	–	–	–	–	–
11/03/99	–	–	–	–	–
05/10/00	–	–	–	–	–
11/07/00	–	–	–	–	–
05/09/01	–	–	–	–	–
11/14/01	–	–	–	–	–
05/14/02	–	–	–	–	–
11/06/02	–	–	–	–	–
05/21/03	–	–	–	–	–
11/11/03	–	–	–	–	–
06/01/04	–	–	–	–	–
11/08/04	–	–	–	–	–
05/02/05	–	–	–	–	–
11/07/05	–	–	–	–	–
05/30/06	–	–	–	–	–
08/14/06	<5	<5	<5	6.00	215
11/07/06	5.00	<5	<5	3.00	209
02/14/07	13.0	5.00	<1	<1	175
05/02/07	<5	<5	3.00	<1	190
08/27/07	<5	<5	<1	6.00	203
11/07/07	<5	<5	<1	<1	210

MW-12A																
Date	Acetone (ug/L)	Acrylonitrile (ug/L)	Benzene (ug/L)	Bromochloro methane (ug/L)	Bromodichloro methane (ug/L)	Bromoform (ug/L)	Carbon disulfide (ug/L)	Carbon tetrachloride (ug/L)	Chlorobenzene (ug/L)	Chloroethane (ug/L)	Chloroform (ug/L)	Dibromochloro methane (ug/L)	1,2-Dibromo-3-chloropropane (ug/L)	1,2-Dibromoethane (ug/L)	o-Dichlorobenzene (ug/L)	p-Dichlorobenzene (ug/L)
02/07/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/14/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
02/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/07/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/12/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/10/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/03/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/10/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/14/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/14/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/21/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/11/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
06/01/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/02/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/30/06	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
11/07/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

MW-12A

Date	trans-1,4-Dichloro-2-butene (ug/L)	1,1-Dichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	1,1-Dichloroethylene (ug/L)	cis-1,2-Dichloro ethylene (ug/L)	trans-1,2-Dichloro ethylene (ug/L)	1,2-Dichloropropane (ug/L)	cis-1,3-Dichloro propene (ug/L)	trans-1,3-Dichloro propene (ug/L)	Ethylbenzene (ug/L)	2-Hexanone (ug/L)	Methyl bromide (ug/L)	Methyl chloride (ug/L)	Methylene bromide (ug/L)	Methylene chloride (ug/L)	Methyl ethyl ketone (ug/L)
02/07/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/09/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/14/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/06/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
02/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/12/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/10/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/03/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/10/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/09/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/14/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/14/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/06/02	<5.0	<5.0	<5.0	<5.0	28.8	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/21/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/11/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
06/01/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/02/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/30/06	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/06	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
05/02/07	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
11/07/07	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20

MW-12A															
Date	Methyl Iodide (ug/L)	4-Methyl-2-pentanone (ug/L)	Styrene (ug/L)	1,1,1,2-Tetrachloroethane (ug/L)	1,1,2,2-Tetrachloroethane (ug/L)	Tetrachloroethylene (ug/L)	Toluene (ug/L)	1,1,1-Trichloroethane (ug/L)	1,1,2-Trichloroethane (ug/L)	Trichloroethylene (ug/L)	Trichlorofluoromethane (ug/L)	1,2,3-Trichloropropane (ug/L)	Vinyl acetate (ug/L)	Vinyl chloride (ug/L)	Total Xylenes (ug/L)
02/07/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/09/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/14/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/06/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
02/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/07/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/12/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/10/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/03/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/10/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/09/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/14/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/14/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/06/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/21/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/11/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
06/01/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/02/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/30/06	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
11/07/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-13B																
Date	Specific Conductance (umho/cm)	Temperature (deg C)	Dissolved Arsenic (ug/L)	Dissolved Barium (ug/L)	Dissolved Cadmium (ug/L)	Dissolved Chromium (ug/L)	Dissolved Copper (ug/L)	Dissolved Lead (ug/L)	Dissolved Nickel (ug/L)	Dissolved Selenium (ug/L)	Ammonia (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)
02/07/96	3380	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.74	213	760	<0.05	52.0	13.2
05/09/96	3270	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.76	225	877	2.38	56.6	15.4
08/14/96	3390	22.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.72	216	850	1.67	60.9	18.9
11/06/96	3170	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.68	210	888	1.60	56.4	12.1
02/06/97	2920	20.0	5.60	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.82	240	770	1.53	72.5	13.2
05/07/97	2790	21.0	5.50	<500	14.8	<30	<20	<5.0	<20	<5.0	0.75	230	850	1.99	57.5	17.5
08/06/97	2930	22.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.94	238	844	0.57	40.8	8.30
11/12/97	2240	19.5	5.95	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.93	254	849	1.74	67.2	15.6
05/06/98	3110	21.0	5.50	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.99	261	853	0.95	54.8	15.5
11/10/98	3410	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.85	238	863	0.53	63.1	18.3
05/06/99	3200	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	229	868	0.54	67.1	15.3
11/03/99	3170	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.49	235	923	0.47	64.6	18.1
05/10/00	3240	23.0	<5.0	512	<1.0	<30	<20	<5.0	<20	<5.0	0.48	240	893	0.80	60.3	16.9
11/07/00	3290	23.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.41	228	845	1.49	69.3	15.7
05/09/01	3360	21.8	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.26	230	871	0.17	61.8	15.1
11/14/01	3680	20.6	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.18	252	887	0.13	77.5	16.6
05/14/02	4000	20.7	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.12	228	815	0.10	71.5	18.4
11/06/02	3430	19.2	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.30	248	896	0.27	69.9	18.0
05/21/03	3430	21.2	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.62	256	832	0.86	73.4	15.4
11/11/03	3467	20.7	5.69	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.25	233	827	1.87	62.7	19.7
06/02/04	2824	21.9	5.69	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.27	148	551	8.68	41.6	8.40
11/09/04	3346	23.3	<5.00	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.13	204	771	5.75	60.0	13.6
05/03/05	3832	24.7	<5.0	<500	<1.0	<30	<20	<5.0	<20.0	<5.0	0.09	253	902	4.82	71.8	16.4
11/08/05	3951	26.7	<5.00	<500	<1.00	<30	<20	<5.00	<20	<5.00	0.23	249	905	3.76	70.7	16.7
05/31/06	3960	27.0	<5.00	<500	<1.00	<30	<20	<5.00	<20.0	<5.00	0.31	253	904	3.06	83.0	15.1
08/15/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/06	3543	24.3	<5	<500	<1	<30	<20	<5	<5	<5	0.30	258	952	3.65	71.0	18.2
02/14/07	3570	12.6	<5.00	89	<1	<1	<5	<5	<5	<5	0.39	265	1010	5.45	76.6	15.9
05/03/07	3635	22.8	<5.00	93	<1	<1	<5	<1.00	17.0	<5	0.35	270	936	6.77	74.8	21.1
08/28/07	4236	29.5	6.40	105	<1	<1	<5	<1.00	<5	<5	0.36	280	992	6.62	73.0	17.4
11/08/07	4277	21.3	8.50	120	<1	<1	<5	<1	6.60	<5	0.56	260	980	7.60	72.0	17.0

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-13B																
Date	Nitrate (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Total Alkalinity as CaCO3 (mg/L)	pH (std units)	Antimony (ug/L)	Arsenic (ug/L)	Barium (ug/L)	Beryllium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Cobalt (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)
02/07/96	<0.05	494	144	1870	442	6.35	—	—	—	—	—	—	—	—	—	—
05/09/96	<0.05	508	151	2060	412	6.06	—	—	—	—	—	—	—	—	—	—
08/14/96	<0.05	443	178	2150	424	6.23	—	—	—	—	—	—	—	—	—	—
11/06/96	<0.05	476	146	2146	438	6.67	—	—	—	—	—	—	—	—	—	—
02/06/97	<0.05	443	198	2190	426	6.64	—	—	—	—	—	—	—	—	—	—
05/07/97	0.07	441	160	2190	430	6.71	—	—	—	—	—	—	—	—	—	—
08/06/97	0.09	394	138	2170	454	6.42	—	—	—	—	—	—	—	—	—	—
11/12/97	0.09	475	175	2150	448	6.40	—	—	—	—	—	—	—	—	—	—
05/06/98	0.08	382	201	2190	450	6.33	—	—	—	—	—	—	—	—	—	—
11/10/98	<0.05	481	208	2560	452	6.44	—	—	—	—	—	—	—	—	—	—
05/06/99	0.10	432	196	2120	450	6.55	—	—	—	—	—	—	—	—	—	—
11/03/99	<0.05	476	183	2190	404	6.68	—	—	—	—	—	—	—	—	—	—
05/10/00	0.07	468	195	2500	450	6.58	—	—	—	—	—	—	—	—	—	—
11/07/00	<0.05	471	187	2260	436	6.73	—	—	—	—	—	—	—	—	—	—
05/09/01	0.21	379	157	2340	436	6.57	—	—	—	—	—	—	—	—	—	—
11/14/01	<0.05	382	208	2340	460	6.69	—	—	—	—	—	—	—	—	—	—
05/14/02	<0.05	434	253	2210	440	6.57	—	—	—	—	—	—	—	—	—	—
11/06/02	0.41	521	204	5440	454	6.30	—	—	—	—	—	—	—	—	—	—
05/21/03	<0.05	470	281	2490	630	6.71	—	—	—	—	—	—	—	—	—	—
11/11/03	<0.05	453	177	1990	392	6.46	—	—	—	—	—	—	—	—	—	—
06/02/04	<0.05	355	105	1480	210	6.67	—	—	—	—	—	—	—	—	—	—
11/09/04	<0.05	437	169	2000	374	6.67	—	—	—	—	—	—	—	—	—	—
05/03/05	<0.05	494	189	2260	404	6.89	—	—	—	—	—	—	—	—	—	—
11/08/05	<0.05	467	202	2200	456	6.72	—	—	—	—	—	—	—	—	—	—
05/31/06	<0.05	476	199	2310	466	6.86	—	—	—	—	—	—	—	—	—	—
08/15/06	—	—	—	—	—	—	<5	<5.00	87.0	<1	<1	<1	<1	11.0	<5	<5
11/08/06	<0.05	548	219	2330	466	6.78	<5	<5.00	91.0	<1	<1	1.00	<1	<5	<5	<5
02/14/07	<0.05	502	215	2320	477	7.61	<5	<5.00	91.0	<1	<1	<1	<1	<5	<5	<5
05/03/07	<0.05	468	227	2940	483	7.16	<5	<5.00	95.0	<1	<1	<1	<1	<5	<1.00	<5
08/28/07	<0.05	527	204	2440	475	6.09	<5	10.0	105	<1	<1	<1	<1	<5	<1.00	<5
11/08/07	0.05	480	200	2400	12.0	6.11	<5	9.00	120	<1	<1	1.20	1.70	<5	<1	7.90

MW-13B					
Date	Selenium (ug/L)	Silver (ug/L)	Thallium (ug/L)	Vanadium (ug/L)	Zinc (ug/L)
02/07/96	–	–	–	–	–
05/09/96	–	–	–	–	–
08/14/96	–	–	–	–	–
11/06/96	–	–	–	–	–
02/06/97	–	–	–	–	–
05/07/97	–	–	–	–	–
08/06/97	–	–	–	–	–
11/12/97	–	–	–	–	–
05/06/98	–	–	–	–	–
11/10/98	–	–	–	–	–
05/06/99	–	–	–	–	–
11/03/99	–	–	–	–	–
05/10/00	–	–	–	–	–
11/07/00	–	–	–	–	–
05/09/01	–	–	–	–	–
11/14/01	–	–	–	–	–
05/14/02	–	–	–	–	–
11/06/02	–	–	–	–	–
05/21/03	–	–	–	–	–
11/11/03	–	–	–	–	–
06/02/04	–	–	–	–	–
11/09/04	–	–	–	–	–
05/03/05	–	–	–	–	–
11/08/05	–	–	–	–	–
05/31/06	–	–	–	–	–
08/15/06	<5	174	<5	2.00	54.0
11/08/06	<5	<5	<5	1.00	<5
02/14/07	<5	5.00	<1	<1	36.0
05/03/07	<5	<5	3.00	<1	
08/28/07	<5	<5	<1	2.00	<5
11/08/07	<5	<5	<1	<1	8.50

MW-13B																
Date	Acetone (ug/L)	Acrylonitrile (ug/L)	Benzene (ug/L)	Bromochloro methane (ug/L)	Bromodichloro methane (ug/L)	Bromoform (ug/L)	Carbon disulfide (ug/L)	Carbon tetrachloride (ug/L)	Chlorobenzene (ug/L)	Chloroethane (ug/L)	Chloroform (ug/L)	Dibromochloro methane (ug/L)	1,2-Dibromo-3-chloropropane (ug/L)	1,2-Dibromoethane (ug/L)	o-Dichlorobenzene (ug/L)	p-Dichlorobenzene (ug/L)
02/07/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/14/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
02/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/07/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/12/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/10/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/03/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/10/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/14/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/14/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/21/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/11/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
06/02/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/09/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/03/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/31/06	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/15/06	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
02/15/07	<20	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
08/28/07	<20	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
11/08/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

MW-13B

Date	trans-1,4-Dichloro-2-butene (ug/L)	1,1-Dichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	1,1-Dichloroethylene (ug/L)	cis-1,2-Dichloro ethylene (ug/L)	trans-1,2-Dichloro ethylene (ug/L)	1,2-Dichloropropane (ug/L)	cis-1,3-Dichloro propene (ug/L)	trans-1,3-Dichloro propene (ug/L)	Ethylbenzene (ug/L)	2-Hexanone (ug/L)	Methyl bromide (ug/L)	Methyl chloride (ug/L)	Methylene bromide (ug/L)	Methylene chloride (ug/L)	Methyl ethyl ketone (ug/L)
02/07/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/09/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/14/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/06/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
02/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/12/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/10/98	<5.0	<5.0	<5.0	<5.0	12.8	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/99	<5.0	<5.0	<5.0	<5.0	18.6	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/03/99	<5.0	<5.0	<5.0	<5.0	24.7	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/10/00	<5.0	<5.0	<5.0	<5.0	6.3	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/00	<5.0	<5.0	<5.0	<5.0	16.4	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/09/01	<5.0	<5.0	<5.0	<5.0	16.7	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/14/01	<5.0	<5.0	<5.0	<5.0	17.8	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/14/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/06/02	<5.0	<5.0	<5.0	<5.0	28.8	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/21/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/11/03	<5.0	<5.0	<5.0	<5.0	58.4	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
06/02/04	<5.0	<5.0	<5.0	<5.0	146	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/09/04	<5.0	<5.0	<5.0	<5.0	47.3	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/03/05	<5.0	<5.0	<5.0	<5.0	13.1	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/05	<5.0	<5.0	<5.0	<5.0	5.48	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/31/06	<5.0	<5.0	<5.0	<5.0	9.45	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
08/15/06	<5.0	<5.0	<5.0	<5.0	34.5	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/06	<5	<5	<5	<5	31.4	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
02/15/07	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
05/02/07	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
08/28/07	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
11/08/07	<5.0	<5.0	<5.0	<5.0	5	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20

MW-13B

Date	Methyl iodide (ug/L)	4-Methyl-2-pentanone (ug/L)	Styrene (ug/L)	1,1,1,2-Tetrachloroethane (ug/L)	1,1,2,2-Tetrachloroethane (ug/L)	Tetrachloroethylene (ug/L)	Toluene (ug/L)	1,1,1-Trichloroethane (ug/L)	1,1,2-Trichloroethane (ug/L)	Trichloroethylene (ug/L)	Trichlorofluoromethane (ug/L)	1,2,3-Trichloropropane (ug/L)	Vinyl acetate (ug/L)	Vinyl chloride (ug/L)	Total Xylenes (ug/L)
02/07/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/09/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/14/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/06/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
02/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/07/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/12/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/10/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/03/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/10/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/09/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/14/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/14/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/06/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/21/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/11/03	<5.0	<10	<5.0	<5.0	<5.0	7.13	<5.0	<5.0	<5.0	12.2	<5.0	<5.0	<5.0	<2.0	<10
06/02/04	<5.0	<10	<5.0	<5.0	<5.0	9.09	<5.0	<5.0	<5.0	15.4	<5.0	<5.0	<5.0	<2.0	<10
11/09/04	<5.0	<10	<5.0	<5.0	<5.0	5.72	<5.0	<5.0	<5.0	6.62	<5.0	<5.0	<5.0	<2.0	<10
05/03/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/31/06	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
08/15/06	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
02/15/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
08/28/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
11/08/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10

MW-14																
Date	Specific Conductance (umho/cm)	Temperature (deg C)	Dissolved Arsenic (ug/L)	Dissolved Barium (ug/L)	Dissolved Cadmium (ug/L)	Dissolved Chromium (ug/L)	Dissolved Copper (ug/L)	Dissolved Lead (ug/L)	Dissolved Nickel (ug/L)	Dissolved Selenium (ug/L)	Ammonia (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)
02/07/96	5320	21.0	<5.0	<500	13.5	<30	<20	<5.0	79.1	<5.0	<0.10	448	2030	<0.05	107	14.8
05/09/96	4940	22.0	<5.0	<500	12.8	<30	<20	<5.0	70.0	<5.0	<0.10	377	2190	<0.05	116	14.0
08/14/96	5410	22.0	<5.0	<500	14.6	35.0	<20	<5.0	80.0	<5.0	<0.10	362	1920	0.08	111	15.0
11/06/96	4820	21.0	<5.0	<500	19.7	<30	<20	<5.0	90.0	<5.0	<0.10	365	2190	<0.05	110	14.0
02/06/97	4360	20.0	<5.0	<500	17.5	<30	<20	<5.0	80.0	<5.0	<0.10	419	2050	<0.05	129	14.3
05/07/97	3740	20.5	<5.0	<500	15.1	<30	<20	<5.0	90.0	<5.0	<0.10	462	2100	<0.05	109	16.9
08/06/97	4700	22.0	<5.0	<500	17.8	<30	<20	<5.0	60.0	<5.0	<0.10	491	1980	<0.05	89.7	10.0
11/12/97	3350	19.0	<5.0	<500	21.1	<30	<20	<5.0	60.0	<5.0	<0.10	464	1950	<0.05	125	17.1
05/06/98	3440	22.0	<5.0	<500	19.6	<30	<20	<5.0	90.0	<5.0	0.11	404	1990	<0.05	98.9	18.8
11/10/98	5140	21.0	<5.0	<500	19.2	<30	<20	<5.0	75.0	<5.0	0.18	372	1980	<0.05	108	18.1
05/06/99	4360	23.0	<5.0	<500	22.2	<30	<20	<5.0	64.9	<5.0	<0.10	388	1910	0.07	103	15.6
11/03/99	4730	22.0	<5.0	<500	26.3	<30	<20	<5.0	83.9	<5.0	<0.05	400	1500	0.05	100	18.1
05/10/00	4870	23.0	<5.0	570	21.9	<30	<20	<5.0	67.0	<5.0	<0.05	432	1880	<0.03	101	16.8
11/07/00	4840	23.0	<5.0	<500	27.4	<30	<20	<5.0	79.4	<5.0	<0.05	363	1890	0.06	112	15.5
05/09/01	5150	22.8	<5.0	<500	14.1	<30	<20	<5.0	30.4	<5.0	<0.05	388	1990	<0.05	112	15.0
11/14/01	6340	19.9	<5.0	<500	24.7	<30	<20	<5.0	83.7	<5.0	<0.05	404	1920	0.08	157	17.2
05/14/02	6400	21.0	<5.0	<500	1.39	<30	<20	<5.0	75.2	<5.0	<0.05	376	2040	0.25	137	18.8
11/06/02	5550	19.4	<5.0	<500	4.46	<30	<20	<5.0	78.5	<5.0	<0.05	408	2170	0.09	159	18.5
05/21/03	5490	20.8	<5.0	682	<1.00	<30	<20	<5.0	77.0	5.47	<0.05	424	2170	0.06	167	16.3
11/11/03	6340	21.0	<5.0	704	33.4	<30	<20	<5.0	108	7.38	<0.05	413	2160	0.14	134	22.2
06/01/04	6659	22.9	<5.0	771	21.7	<30	<20	<5.0	83.2	8.84	<0.05	361	2140	0.05	120	19.7
11/08/04	6343	21.2	<5.00	<500	<1.0	<30	<20	<5.00	122	<5.00	<0.05	317	1860	0.26	114	16.1
05/02/05	6585	22.7	<5.0	<500	10.6	<30	<20	<5.0	111	<5.0	<0.05	411	2050	0.17	140	16.8
11/07/05	6807	23.9	<5.00	<500	<1.00	<30	<20	<5.00	130	<5.00	0.08	430	2060	1.78	119	20.4
05/30/06	6962	22.3	<5.00	<500	11.7	<30	<20	<5.00	134	<5.00	<0.05	537	2300	<0.05	162	18.9
08/14/06	6957	25.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–
08/17/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/06	5945	20.5	<5	<500	26.0	<30	<20	<5	108	5.00	<0.05	402	2290	<0.05	128	18.9
12/07/06	5930	15.2	<5.00	124	38.0	5.00	<5	<5	106	<5	<0.05	403	2150	0.02	110	19.5
02/14/07	6382	17.6	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/03/07	6541	22.8	<5.00	117	24.0	3.00	<5	1.87	146	<5	<0.05	442	2230	0.02	153	22.0
08/28/07	6503	24.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/07	7267	21.1	<5	180	26.0	2.40	<5	<1	100	5.40	<0.05	400	2300	<0.05	120	19.0

MW-14																
Date	Nitrate (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Total Alkalinity as CaCO3 (mg/L)	pH (std units)	Antimony (ug/L)	Arsenic (ug/L)	Barium (ug/L)	Beryllium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Cobalt (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)
02/07/96	0.09	681	63.0	3720	42.0	4.94	–	–	–	–	–	–	–	–	–	–
05/09/96	0.28	740	78.4	3730	20.0	4.64	–	–	–	–	–	–	–	–	–	–
08/14/96	0.40	672	67.5	4450	14.0	5.07	–	–	–	–	–	–	–	–	–	–
11/06/96	0.28	698	40.8	4090	14.0	4.95	–	–	–	–	–	–	–	–	–	–
02/06/97	0.13	592	55.6	4200	14.0	5.17	–	–	–	–	–	–	–	–	–	–
05/07/97	0.20	613	71.8	4360	12.0	5.28	–	–	–	–	–	–	–	–	–	–
08/06/97	0.20	520	107	4910	24.0	–	–	–	–	–	–	–	–	–	–	–
11/12/97	0.27	586	70.9	3830	30.0	5.54	–	–	–	–	–	–	–	–	–	–
05/06/98	0.20	643	91.0	4900	14.0	5.27	–	–	–	–	–	–	–	–	–	–
11/10/98	<0.05	681	80.2	3960	12.0	4.9	–	–	–	–	–	–	–	–	–	–
05/06/99	0.26	627	73.4	5120	40.0	5.01	–	–	–	–	–	–	–	–	–	–
11/03/99	0.09	600	52.0	4780	20.0	5.09	–	–	–	–	–	–	–	–	–	–
05/10/00	0.17	651	66.6	4340	18.0	5.64	–	–	–	–	–	–	–	–	–	–
11/07/00	0.21	636	60.6	4270	18.0	5.21	–	–	–	–	–	–	–	–	–	–
05/09/01	0.21	595	47.0	4810	22.0	5.29	–	–	–	–	–	–	–	–	–	–
11/14/01	0.17	638	79.4	4680	10.0	–	–	–	–	–	–	–	–	–	–	–
05/14/02	0.07	644	80.2	4650	82.0	5.2	–	–	–	–	–	–	–	–	–	–
11/06/02	0.56	756	78.7	4720	20.0	4.55	–	–	–	–	–	–	–	–	–	–
05/21/03	0.12	700	62.5	6090	16.0	5.28	–	–	–	–	–	–	–	–	–	–
11/11/03	0.27	789	79.8	4910	12.0	5.11	–	–	–	–	–	–	–	–	–	–
06/01/04	0.84	733	96.1	5060	14.0	5.1	–	–	–	–	–	–	–	–	–	–
11/08/04	<0.05	767	137	3940	16.0	5.17	–	–	–	–	–	–	–	–	–	–
05/02/05	<0.05	825	140	4710	16.0	5.04	–	–	–	–	–	–	–	–	–	–
11/07/05	<0.05	787	151	4960	24.3	5.16	–	–	–	–	–	–	–	–	–	–
05/30/06	<0.05	1010	165	4960	16.0	4.28	–	–	–	–	–	–	–	–	–	–
08/14/06	–	–	–	–	–	4.39	<5	<5.00	112	5.00	18.0	17.0	84.0	5.00	<5	136
08/17/06	–	–	–	–	–	–	<5	<5.00	112	5.00	18.0	17.0	84.0	5.00	<5	136
11/07/06	<0.05	816	143	4320	16.0	4.14	<5	<5.00	137	4.00	25.0	7.00	44.0	<5	<5	104
12/07/06	0.07	1010	180	5180	20.0	4.73	–	–	–	–	–	–	–	–	–	–
02/14/07	–	–	–	–	–	6.14	<5	<5.00	103	6.00	33.0	6.00	93.0	<5	<5	131
05/03/07	0.06	954	209	6380	43.9	5.02	<5	<5.00	110	6.00	21.0	6.00	88.0	<5	2.42	128
08/28/07	–	–	–	–	–	5.07	<5	9.03	119	6.00	29.0	11	86.0	<5	<1.00	128
11/08/07	0.20	730	130	3900	12.0	4.93	<5	<5	180	1.90	27.0	6.40	19.0	<5	<1	110

MW-14						
Date	Selenium (ug/L)	Silver (ug/L)	Thallium (ug/L)	Vanadium (ug/L)	Zinc (ug/L)	
02/07/96	–	–	–	–	–	–
05/09/96	–	–	–	–	–	–
08/14/96	–	–	–	–	–	–
11/06/96	–	–	–	–	–	–
02/06/97	–	–	–	–	–	–
05/07/97	–	–	–	–	–	–
08/06/97	–	–	–	–	–	–
11/12/97	–	–	–	–	–	–
05/06/98	–	–	–	–	–	–
11/10/98	–	–	–	–	–	–
05/06/99	–	–	–	–	–	–
11/03/99	–	–	–	–	–	–
05/10/00	–	–	–	–	–	–
11/07/00	–	–	–	–	–	–
05/09/01	–	–	–	–	–	–
11/14/01	–	–	–	–	–	–
05/14/02	–	–	–	–	–	–
11/06/02	–	–	–	–	–	–
05/21/03	–	–	–	–	–	–
11/11/03	–	–	–	–	–	–
06/01/04	–	–	–	–	–	–
11/08/04	–	–	–	–	–	–
05/02/05	–	–	–	–	–	–
11/07/05	–	–	–	–	–	–
05/30/06	–	–	–	–	–	–
08/14/06	<5	8.00	<5	3.00	333	–
08/17/06	<5	8.00	<5	3.00	333	–
11/07/06	<5	<5	<5	1.00	286	–
12/07/06	–	–	–	–	–	1.80
02/14/07	9.00	17.0	<1	<1	409	2.77
05/03/07	<5	<5	3.00	<1	372	2.40
08/28/07	<5	<5	<1	2.00	362	1.94
11/08/07	6.30	<5	<1	<1	250	2.30

MW-14																
Date	Acetone (ug/L)	Acrylonitrile (ug/L)	Benzene (ug/L)	Bromochloro methane (ug/L)	Bromodichloro methane (ug/L)	Bromoform (ug/L)	Carbon disulfide (ug/L)	Carbon tetrachloride (ug/L)	Chlorobenzene (ug/L)	Chloroethane (ug/L)	Chloroform (ug/L)	Dibromochloro methane (ug/L)	1,2-Dibromo-3-chloropropane (ug/L)	1,2-Dibromoethane (ug/L)	o-Dichlorobenzene (ug/L)	p-Dichlorobenzene (ug/L)
02/07/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5	<5	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/14/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
02/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/07/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/12/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/10/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/03/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/10/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/14/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/14/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/21/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/11/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
06/01/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/02/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
01/03/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/30/06	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/17/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
12/07/06	<20	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
11/08/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

MW-14

Date	trans-1,4-Dichloro-2-butene (ug/L)	1,1-Dichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	1,1-Dichloroethylene (ug/L)	cis-1,2-Dichloro ethylene (ug/L)	trans-1,2-Dichloro ethylene (ug/L)	1,2-Dichloropropane (ug/L)	cis-1,3-Dichloro propene (ug/L)	trans-1,3-Dichloro propene (ug/L)	Ethylbenzene (ug/L)	2-Hexanone (ug/L)	Methyl bromide (ug/L)	Methyl chloride (ug/L)	Methylene bromide (ug/L)	Methylene chloride (ug/L)	Methyl ethyl ketone (ug/L)
02/07/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/09/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/14/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/06/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
02/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/12/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/10/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/03/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/10/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/09/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/14/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/14/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/06/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/21/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/11/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
06/01/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/02/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/05	<5.0	6.10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
01/03/06	–	<5	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/30/06	<5.0	6.78	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
08/17/06	–	7.92	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/06	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
12/07/06	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
05/02/07	<5	6.03	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
11/08/07	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20

MW-14															
Date	Methyl iodide (ug/L)	4-Methyl-2-pentanone (ug/L)	Styrene (ug/L)	1,1,1,2-Tetrachloroethane (ug/L)	1,1,2,2-Tetrachloroethane (ug/L)	Tetrachloroethylene (ug/L)	Toluene (ug/L)	1,1,1-Trichloroethane (ug/L)	1,1,2-Trichloroethane (ug/L)	Trichloroethylene (ug/L)	Trichlorofluoromethane (ug/L)	1,2,3-Trichloropropane (ug/L)	Vinyl acetate (ug/L)	Vinyl chloride (ug/L)	Total Xylenes (ug/L)
02/07/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/09/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/14/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/06/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
02/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/07/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/12/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/10/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/03/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/10/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/09/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/14/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/14/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/06/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/21/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/11/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
06/01/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/02/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
01/03/06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
05/30/06	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
08/17/06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11/07/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
12/07/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
11/08/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-15A																
Date	Specific Conductance (umho/cm)	Temperature (deg C)	Dissolved Arsenic (ug/L)	Dissolved Barium (ug/L)	Dissolved Cadmium (ug/L)	Dissolved Chromium (ug/L)	Dissolved Copper (ug/L)	Dissolved Lead (ug/L)	Dissolved Nickel (ug/L)	Dissolved Selenium (ug/L)	Ammonia (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)
02/07/96	6390	21.0	<5.0	680	23.3	<30	<20	<5.0	30.4	<5.0	<0.10	573	2460	<0.05	125	15.3
05/09/96	6040	22.0	<5.0	<500	17.7	<30	<20	<5.0	30.0	<5.0	<0.10	590	2300	<0.05	147	18.6
08/14/96	6560	22.0	<5.0	570	16.7	50.0	<20	<5.0	40.0	<5.0	<0.10	537	2350	0.06	140	20.5
11/06/96	5760	21.0	<5.0	710	26.3	<30	<20	<5.0	50.0	<5.0	<0.10	532	2350	<0.05	125	14
02/06/97	5250	20.0	<5.0	<500	20.8	<30	<20	<5.0	30.0	<5.0	<0.10	552	2320	0.06	153	16.2
05/07/97	4430	21.5	<5.0	<500	14.8	<30	<20	<5.0	40.0	<5.0	<0.10	638	2410	<0.05	130	20
08/06/97	4870	23.0	<5.0	<500	24.4	<30	<20	<5.0	40.0	<5.0	<0.10	704	2430	<0.05	118	12.4
11/12/97	3410	20.0	<5.0	<500	12.5	<30	<20	<5.0	20.0	<5.0	<0.10	633	2400	<0.05	150	19.2
05/06/98	3040	22.0	<5.0	<500	23.2	<30	<20	<5.0	57.0	<5.0	0.30	572	2400	<0.05	112	22.2
11/10/98	6330	21.0	<5.0	685	27.0	<30	<20	<5.0	26.0	<5.0	0.13	508	2350	<0.05	143	20.4
05/06/99	6220	23.0	<5.0	555	26.1	<30	<20	<5.0	26.8	<5.0	<0.10	596	2400	0.07	160	18
11/03/99	5570	21.0	<5.0	597	28.0	<30	<20	<5.0	34.6	<5.0	<0.05	572	2100	0.06	150	20.6
05/10/00	5840	22.0	<5.0	1100	24.8	<30	<20	<5.0	33.0	<5.0	<0.05	613	2330	0.06	139	19.8
11/07/00	5790	22.0	<5.0	<500	<1.0	<30	<20	<5.0	32.2	<5.0	<0.05	544	2650	0.27	130	17.7
05/09/01	5850	22.0	<5.0	632	17.0	<30	<20	<5.0	<20	<5.0	<0.05	518	2360	0.11	134	18
11/14/01	7210	20.0	<5.0	1090	26.8	<30	<20	<5.0	33.0	<5.0	<0.05	584	2520	0.12	186	18.8
05/14/02	7100	21.3	<5.0	<500	3.00	<30	<20	<5.0	33.7	<5.0	<0.05	480	2550	0.08	178	20.9
11/06/02	6100	19.6	<5.0	587	8.09	<30	<20	<5.0	24.6	<5.0	<0.05	512	2380	0.2	188	20.8
05/21/03	6100	21.4	<5.0	1430	2.20	<30	<20	<5.0	32.9	6.05	<0.05	584	2220	0.17	189	17.9
11/11/03	7001	21.8	<5.0	1550	39.4	<30	<20	<5.0	35.6	5.12	<0.05	529	2420	0.14	152	24
06/01/04	7177	22.6	<5.0	1980	17.4	<30	<20	<5.0	32.2	6.75	<0.05	497	2550	0.164	140	23
11/08/04	7111	23.1	<5.00	711	23.5	<30	<20	<5.00	41.3	<5.00	<0.05	493	2340	0.184	145	19.3
05/02/05	7198	22.8	<5.0	914	18.3	<30	<20	<5.0	27.1	<5.0	<0.05	585	2350	<0.05	167	21.3
11/07/05	7173	26.1	<5.00	<500	20.2	<30	<20	<5.00	41.0	<5.00	<0.05	545	2240	0.352	127	18.5
05/30/06	7214	27.6	<5.00	651	12.4	<30	<20	<5.00	33.9	<5.00	<0.05	585	2410	0.495	167	22.9
08/14/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/06	6536	24.3	<5	1190	1.00	<30	<20	<5	34.0	<5	<0.05	589	2570	1.69	156	22.1
02/14/07	6542	16.6	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/02/07	6575	22.9	<5.00	715	<1	2.00	<5	1.66	42.0	<5	0.11	586	2390	3.52	165	26.6
08/27/07	7592	27.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/07	7306	19.2	<5	670	26.0	<1	<5	<1	34.0	<5	<0.05	460	2400	<0.05	130	20

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-15A																	
Date	Nitrate (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Total Alkalinity as CaCO3 (mg/L)	pH (std units)	Antimony (ug/L)	Arsenic (ug/L)	Barium (ug/L)	Beryllium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Cobalt (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)
02/07/96	0.09	683	16.8	4290	16.0	5.02	–	–	–	–	–	–	–	–	–	–
05/09/96	0.16	738	28.0	4590	14.0	4.68	–	–	–	–	–	–	–	–	–	–
08/14/96	0.23	641	21.5	5350	16.0	5.31	–	–	–	–	–	–	–	–	–	–
11/06/96	0.59	659	16.3	5130	18.0	5.14	–	–	–	–	–	–	–	–	–	–
02/06/97	0.05	632	17.5	5390	16.0	5.24	–	–	–	–	–	–	–	–	–	–
05/07/97	0.2	607	20.8	4840	12.0	5.24	–	–	–	–	–	–	–	–	–	–
08/06/97	0.13	597	21.5	5850	20.0	5.13	–	–	–	–	–	–	–	–	–	–
11/12/97	0.24	673	17.6	4300	50.0	5.36	–	–	–	–	–	–	–	–	–	–
05/06/98	0.21	582	24.2	5570	14.0	5.41	–	–	–	–	–	–	–	–	–	–
11/10/98	<0.05	670	26.1	5060	12.0	5.19	–	–	–	–	–	–	–	–	–	–
05/06/99	0.25	605	24.0	6450	36.0	5.23	–	–	–	–	–	–	–	–	–	–
11/03/99	0.06	687	19.5	6180	20.0	5.48	–	–	–	–	–	–	–	–	–	–
05/10/00	<0.05	660	21.5	6020	16.0	5.49	–	–	–	–	–	–	–	–	–	–
11/07/00	0.09	650	20.9	4610	16.0	5.53	–	–	–	–	–	–	–	–	–	–
05/09/01	0.25	595	18.0	5120	14.0	5.66	–	–	–	–	–	–	–	–	–	–
11/14/01	0.06	607	25.9	5110	12.0	5.62	–	–	–	–	–	–	–	–	–	–
05/14/02	0.06	596	21.3	4990	16.0	5.06	–	–	–	–	–	–	–	–	–	–
11/06/02	0.51	729	27.0	5150	16.0	4.74	–	–	–	–	–	–	–	–	–	–
05/21/03	<0.05	647	28.0	7100	14.0	5.52	–	–	–	–	–	–	–	–	–	–
11/11/03	0.07	569	20.3	4360	14.0	5.42	–	–	–	–	–	–	–	–	–	–
06/01/04	0.1	667	22.6	4890	16.0	5.04	–	–	–	–	–	–	–	–	–	–
11/08/04	0.1	713	21.5	4620	16.0	7.06	–	–	–	–	–	–	–	–	–	–
05/02/05	0.16	723	16.8	4730	12.0	5.04	–	–	–	–	–	–	–	–	–	–
11/07/05	<0.05	666	21.8	5620	16.9	4.84	–	–	–	–	–	–	–	–	–	–
05/30/06	<0.05	618	20.8	5470	15.0	4.84	–	–	–	–	–	–	–	–	–	–
08/14/06	–	–	–	–	–	–	<5	<5.00	625	<1	8.00	<1	<1	<5	<5	33.0
11/07/06	<0.05	723	25.4	4990	16.0	4.96	<5	<5.00	680	<1	16.0	1.00	1.00	<5	<5	33.0
02/14/07	–	–	–	–	–	7.46	<5	<5.00	645	<1	12.0	2.00	1.00	<5	6.00	37.0
05/02/07	<0.05	479	26.2	6200	63.8	6.02	<5	<5.00	678	<1	10.0	2.00	1.00	<5	1.43	36.0
08/27/07	–	–	–	–	–	4.88	<5	7.22	675	<1	3.00	2.00	2.00	<5	<1.00	35.0
11/07/07	0.11	660	32.0	4200	13.0	4.89	<5	<5	660	<1	27.0	1.40	1.30	<5	<1	34.0

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-15A					
Date	Selenium (ug/L)	Silver (ug/L)	Thallium (ug/L)	Vanadium (ug/L)	Zinc (ug/L)
02/07/96	–	–	–	–	–
05/09/96	–	–	–	–	–
08/14/96	–	–	–	–	–
11/06/96	–	–	–	–	–
02/06/97	–	–	–	–	–
05/07/97	–	–	–	–	–
08/06/97	–	–	–	–	–
11/12/97	–	–	–	–	–
05/06/98	–	–	–	–	–
11/10/98	–	–	–	–	–
05/06/99	–	–	–	–	–
11/03/99	–	–	–	–	–
05/10/00	–	–	–	–	–
11/07/00	–	–	–	–	–
05/09/01	–	–	–	–	–
11/14/01	–	–	–	–	–
05/14/02	–	–	–	–	–
11/06/02	–	–	–	–	–
05/21/03	–	–	–	–	–
11/11/03	–	–	–	–	–
06/01/04	–	–	–	–	–
11/08/04	–	–	–	–	–
05/02/05	–	–	–	–	–
11/07/05	–	–	–	–	–
05/30/06	–	–	–	–	–
08/14/06	<5	<5	<5	4.00	65.0
11/07/06	<5	<5	<5	2.00	62.0
02/14/07	<5	<5	<1	<1	32.0
05/02/07	<5	<5	<1	1.00	21.0
08/27/07	<5	<5	<1	4.00	9.00
11/07/07	<5	<5	<1	4.20	85.0

MW-15A																
Date	Acetone (ug/L)	Acrylonitrile (ug/L)	Benzene (ug/L)	Bromochloro methane (ug/L)	Bromodichloro methane (ug/L)	Bromoform (ug/L)	Carbon disulfide (ug/L)	Carbon tetrachloride (ug/L)	Chlorobenzene (ug/L)	Chloroethane (ug/L)	Chloroform (ug/L)	Dibromochloro methane (ug/L)	1,2-Dibromo-3-chloropropane (ug/L)	1,2-Dibromoethane (ug/L)	o-Dichlorobenzene (ug/L)	p-Dichlorobenzene (ug/L)
02/07/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/14/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
02/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/07/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/12/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/10/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/03/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/10/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/14/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/14/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/21/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/11/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
06/01/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/02/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/30/06	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
11/07/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

MW-15A

Date	trans-1,4-Dichloro-2-butene (ug/L)	1,1-Dichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	1,1-Dichloroethylene (ug/L)	cis-1,2-Dichloro ethylene (ug/L)	trans-1,2-Dichloro ethylene (ug/L)	1,2-Dichloropropane (ug/L)	cis-1,3-Dichloro propene (ug/L)	trans-1,3-Dichloro propene (ug/L)	Ethylbenzene (ug/L)	2-Hexanone (ug/L)	Methyl bromide (ug/L)	Methyl chloride (ug/L)	Methylene bromide (ug/L)	Methylene chloride (ug/L)	Methyl ethyl ketone (ug/L)
02/07/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/09/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/14/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/06/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
02/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/12/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/10/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/03/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/10/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/09/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/14/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/14/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/06/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/21/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/11/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
06/01/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/02/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/30/06	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/06	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
05/02/07	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
11/07/07	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-15A															
Date	Methyl iodide (ug/L)	4-Methyl-2-pentanone (ug/L)	Styrene (ug/L)	1,1,1,2-Tetrachloroethane (ug/L)	1,1,2,2-Tetrachloroethane (ug/L)	Tetrachloroethylene (ug/L)	Toluene (ug/L)	1,1,1-Trichloroethane (ug/L)	1,1,2-Trichloroethane (ug/L)	Trichloroethylene (ug/L)	Trichlorofluoromethane (ug/L)	1,2,3-Trichloropropane (ug/L)	Vinyl acetate (ug/L)	Vinyl chloride (ug/L)	Total Xylenes (ug/L)
02/07/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/09/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/14/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/06/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
02/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/07/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/12/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/10/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/03/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/10/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/09/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/14/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/14/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/06/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/21/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/11/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
06/01/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/02/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/30/06	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
11/07/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10

MW-15B

Date	Specific Conductance (umho/cm)	Temperature (deg C)	Dissolved Arsenic (ug/L)	Dissolved Barium (ug/L)	Dissolved Cadmium (ug/L)	Dissolved Chromium (ug/L)	Dissolved Copper (ug/L)	Dissolved Lead (ug/L)	Dissolved Nickel (ug/L)	Dissolved Selenium (ug/L)	Ammonia (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)
02/07/96	3710	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.33	245	1060	13.5	71.0	11.3
05/09/96	3490	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.34	244	1240	11.2	67.9	13.6
08/14/96	3770	21.5	<5.0	<500	<1.0	<30	<20	<5.0	30.0	<5.0	0.35	261	1180	12.5	71.7	16.4
11/06/96	3420	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.36	250	1160	11.8	72.2	11.5
02/06/97	3170	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.51	267	1200	11.6	88.5	11.8
05/07/97	2870	22.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.40	258	1230	11.1	70.2	15.3
08/06/97	3700	22.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.46	325	1220	9.00	51.6	11.7
11/12/97	2390	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.46	263	1190	10.9	80.9	14.1
05/06/98	2600	22.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.46	267	1210	15.2	66.3	16.5
11/10/98	3690	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.44	268	1200	11.7	69.9	15.7
05/06/99	3300	23.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	296	1210	11.0	76.2	15.1
11/03/99	3400	21.0	<5.0	517	<1.0	<30	<20	<5.0	<20	<5.0	0.28	272	1280	10.5	72.3	16.3
05/10/00	3420	23.0	<5.0	519	<1.0	<30	<20	<5.0	<20	<5.0	0.26	280	1260	11.5	68.8	15.7
11/07/00	3660	23.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.29	260	1170	9.53	82.8	14.6
05/09/01	3800	22.5	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.20	277	1340	8.71	74.8	13.2
11/14/01	4050	25.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.17	264	1130	9.90	94.2	15.1
05/14/02	4320	21.1	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.11	276	1200	8.69	85.6	16.8
11/06/02	3720	19.6	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.29	276	1270	10.5	86.0	16.5
05/21/03	3720	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.32	296	1240	10.7	102	14.4
11/11/03	4189	22.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.15	277	1310	11.0	83.3	20.0
06/01/04	4222	22.0	6.20	546	<1.0	<30	<20	<5.0	<20	7.31	0.08	273	1340	11.9	75.1	10.7
11/08/04	4227	22.3	5.92	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.13	279	1240	13.9	76.0	15.3
05/02/05	4242	23.7	5.92	<500	<1.0	<30	<20	<5.0	<20.0	<5.0	<0.05	275	1300	13.2	83.3	16.6
11/07/05	4229	22.7	5.24	<500	<1.00	<30	<20	<5.00	<20	<5.00	0.22	289	1210	12.6	79.1	15.4
05/30/06	4196	22.9	6.00	<500	<1.00	<30	<20	<5.00	<20.0	<5.00	0.33	285	1380	14.0	85.6	18.5
08/14/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/06	3706	22.6	<5	<500	<1	<30	<20	<5	<5	<5	0.33	276	1390	14.9	74.0	17.2
02/14/07	3689	19.4	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/02/07	3703	22.2	<5.00	123	<1	<1	<5	<1.00	<5	<5	0.25	300	1260	16.0	76.7	20.5
08/27/07	4273	23.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/07	4293	22.0	6.50	120	<1	<1	<5	<1	6.00	<5	0.36	260	1300	14.0	68.0	15.0

MW-15B

Date	Nitrate (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Total Alkalinity as CaCO3 (mg/L)	pH (std units)	Antimony (ug/L)	Arsenic (ug/L)	Barium (ug/L)	Beryllium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Cobalt (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)
02/07/96	<0.05	422	91.6	2400	114	5.80	–	–	–	–	–	–	–	–	–	–
05/09/96	<0.05	433	121	2580	76.0	5.46	–	–	–	–	–	–	–	–	–	–
08/14/96	<0.05	386	90.0	1960	56.0	6.13	–	–	–	–	–	–	–	–	–	–
11/06/96	<0.05	422	121	2880	80.0	5.90	–	–	–	–	–	–	–	–	–	–
02/06/97	<0.05	382	105	3020	84.0	6.05	–	–	–	–	–	–	–	–	–	–
05/07/97	0.07	380	92.0	3060	72.0	5.96	–	–	–	–	–	–	–	–	–	–
08/06/97	0.11	317	100	3310	90.0	6.01	–	–	–	–	–	–	–	–	–	–
11/12/97	0.09	448	94.1	2370	74.0	5.67	–	–	–	–	–	–	–	–	–	–
05/06/98	0.08	370	113	3550	74.0	5.88	–	–	–	–	–	–	–	–	–	–
11/10/98	<0.05	413	109	3130	70.0	6.20	–	–	–	–	–	–	–	–	–	–
05/06/99	0.08	404	109	3400	86.0	5.98	–	–	–	–	–	–	–	–	–	–
11/03/99	<0.05	431	75.0	3070	54.0	6.11	–	–	–	–	–	–	–	–	–	–
05/10/00	<0.05	420	83.6	3150	60.0	6.32	–	–	–	–	–	–	–	–	–	–
11/07/00	0.08	424	80.8	3030	58.0	6.08	–	–	–	–	–	–	–	–	–	–
05/09/01	0.20	353	67.7	3460	52.0	6.21	–	–	–	–	–	–	–	–	–	–
11/14/01	<0.05	326	104	3340	68.0	5.33	–	–	–	–	–	–	–	–	–	–
05/14/02	<0.05	383	90.1	3050	58.0	5.89	–	–	–	–	–	–	–	–	–	–
11/06/02	0.38	454	93.6	3230	64.0	5.60	–	–	–	–	–	–	–	–	–	–
05/21/03	0.06	374	89.7	3900	60.0	6.16	–	–	–	–	–	–	–	–	–	–
11/11/03	<0.05	432	109	2410	52.0	6.01	–	–	–	–	–	–	–	–	–	–
06/01/04	<0.05	433	94.3	3310	68.0	6.17	–	–	–	–	–	–	–	–	–	–
11/08/04	0.07	455	81.5	2820	68.0	6.01	–	–	–	–	–	–	–	–	–	–
05/02/05	<0.05	440	78.4	3410	70.0	6.12	–	–	–	–	–	–	–	–	–	–
11/07/05	<0.05	447	74.5	3540	69.8	5.78	–	–	–	–	–	–	–	–	–	–
05/30/06	0.05	384	91.6	3100	73.5	5.96	–	–	–	–	–	–	–	–	–	–
08/14/06	–	–	–	–	–	–	<5	5.47	114	<1	1.00	<1	1.00	<5	<5	<5
11/07/06	0.18	462	94.0	2660	74.0	5.58	<5	<5.00	120	<1	1.00	<1	1.00	<5	<5	<5
02/14/07	–	–	–	–	–	7.51	<5	<5.00	109	<1	1.00	<1	1.00	<5	<5	<5
05/02/07	<0.05	422	99.1	3360	70.1	6.19	<5	5.21	119	<1	<1	<1	1.00	<5	<1.00	<5
08/27/07	–	–	–	–	–	5.78	<5	9.93	113	<1	1.00	<1	<1	<5	<1.00	<5
11/07/07	<0.05	420	100	2500	68.0	5.73	<5	5.70	110	<1	<1	<1	<1	<5	<1	6.20

MW-15B					
Date	Selenium (ug/L)	Silver (ug/L)	Thallium (ug/L)	Vanadium (ug/L)	Zinc (ug/L)
02/07/96	–	–	–	–	–
05/09/96	–	–	–	–	–
08/14/96	–	–	–	–	–
11/06/96	–	–	–	–	–
02/06/97	–	–	–	–	–
05/07/97	–	–	–	–	–
08/06/97	–	–	–	–	–
11/12/97	–	–	–	–	–
05/06/98	–	–	–	–	–
11/10/98	–	–	–	–	–
05/06/99	–	–	–	–	–
11/03/99	–	–	–	–	–
05/10/00	–	–	–	–	–
11/07/00	–	–	–	–	–
05/09/01	–	–	–	–	–
11/14/01	–	–	–	–	–
05/14/02	–	–	–	–	–
11/06/02	–	–	–	–	–
05/21/03	–	–	–	–	–
11/11/03	–	–	–	–	–
06/01/04	–	–	–	–	–
11/08/04	–	–	–	–	–
05/02/05	–	–	–	–	–
11/07/05	–	–	–	–	–
05/30/06	–	–	–	–	–
08/14/06	<5	<5	<5	2.00	<5
11/07/06	<5	<5	<5	1.00	<5
02/14/07	<5	<5	<1	<1	<5
05/02/07	<5	<5	3.00	<1	<5
08/27/07	<5	<5	<1	2.00	9.00
11/07/07	<5	<5	<1	2.40	<5

MW-15B

Date	Acetone (ug/L)	Acrylonitrile (ug/L)	Benzene (ug/L)	Bromochloro methane (ug/L)	Bromodichloro methane (ug/L)	Bromoform (ug/L)	Carbon disulfide (ug/L)	Carbon tetrachloride (ug/L)	Chlorobenzene (ug/L)	Chloroethane (ug/L)	Chloroform (ug/L)	Dibromochloro methane (ug/L)	1,2-Dibromo-3-chloropropane (ug/L)	1,2-Dibromoethane (ug/L)	o-Dichlorobenzene (ug/L)	p-Dichlorobenzene (ug/L)
02/07/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/14/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
02/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/07/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/12/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/10/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/03/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/10/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/14/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/14/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/21/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/11/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
06/01/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/02/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/30/06	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
11/07/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

MW-15B																
Date	trans-1,4-Dichloro-2-butene (ug/L)	1,1-Dichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	1,1-Dichloroethylene (ug/L)	cis-1,2-Dichloro ethylene (ug/L)	trans-1,2-Dichloro ethylene (ug/L)	1,2-Dichloropropane (ug/L)	cis-1,3-Dichloro propene (ug/L)	trans-1,3-Dichloro propene (ug/L)	Ethylbenzene (ug/L)	2-Hexanone (ug/L)	Methyl bromide (ug/L)	Methyl chloride (ug/L)	Methylene bromide (ug/L)	Methylene chloride (ug/L)	Methyl ethyl ketone (ug/L)
02/07/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/09/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/14/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/06/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
02/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/12/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/10/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/03/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/10/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/09/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/14/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/14/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/06/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/21/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/11/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
06/01/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/02/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/30/06	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/06	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
05/02/07	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
11/07/07	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20

MW-15B

Date	Methyl iodide (ug/L)	4-Methyl-2-pentanone (ug/L)	Styrene (ug/L)	1,1,1,2-Tetrachloroethane (ug/L)	1,1,2,2-Tetrachloroethane (ug/L)	Tetrachloroethylene (ug/L)	Toluene (ug/L)	1,1,1-Trichloroethane (ug/L)	1,1,2-Trichloroethane (ug/L)	Trichloroethylene (ug/L)	Trichlorofluoromethane (ug/L)	1,2,3-Trichloropropane (ug/L)	Vinyl acetate (ug/L)	Vinyl chloride (ug/L)	Total Xylenes (ug/L)
02/07/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/09/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/14/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/06/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
02/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/07/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/12/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/10/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/03/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/10/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/09/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/14/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/14/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/06/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/21/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/11/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
06/01/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/02/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/30/06	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
11/07/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10

MW-18

Date	Specific Conductance (umho/cm)	Temperature (deg C)	Dissolved Arsenic (ug/L)	Dissolved Barium (ug/L)	Dissolved Cadmium (ug/L)	Dissolved Chromium (ug/L)	Dissolved Copper (ug/L)	Dissolved Lead (ug/L)	Dissolved Nickel (ug/L)	Dissolved Selenium (ug/L)	Ammonia (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)
11/06/96	2850	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.50	173	598	6.40	48.2	11.4
02/06/97	1896	19.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.53	190	566	3.68	59.5	11.7
05/08/97	2330	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.50	178	622	0.94	46.7	15.6
08/06/97	2570	22.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.32	197	612	0.74	37.5	8.3
11/12/97	2140	19.5	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.50	197	622	2.82	52.5	13.3
02/10/98	2010	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	1.00	179	617	1.39	35.2	17.5
05/06/98	1952	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.55	179	622	1.06	45.0	16.3
08/05/98	2890	24.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.46	178	627	1.44	51.3	16.3
11/10/98	2700	19.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.45	168	622	<0.05	46.9	15.1
05/06/99	3080	18.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.42	174	627	0.94	53.2	13.3
11/03/99	2720	22.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.35	170	655	1.53	51.5	15.4
05/10/00	2830	23.0	<5.0	380	<1.0	<30	<20	<5.0	<20	<5.0	0.41	180	627	2.06	48.3	14.5
11/07/00	2750	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.33	156	604	2.17	57.3	14.0
05/09/01	2950	21.9	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.15	182	643	1.83	49.8	12.4
11/14/01	3060	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.11	216	613	1.59	63.1	14.6
05/14/02	3280	20.9	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.12	200	639	1.45	59.4	16.1
11/06/02	2890	20.1	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.32	171	651	3.15	57.9	15.5
05/21/03	2890	20.8	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.30	204	604	1.29	57.5	13.8
11/11/03	3251	21.2	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.17	207	632	0.47	55.7	19.3
06/01/04	3278	23.4	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.14	180	618	3.39	49.3	15.8
11/09/04	3255	20.2	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.27	186	604	3.36	53.7	14.1
05/02/05	3245	22.3	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.07	183	643	3.30	56.9	14.8
11/07/05	3253	23.0	<5.00	<500	<1.00	<30	<20	<5.00	<20	<5.00	<0.05	186	659	3.54	51.8	13.6
05/31/06	3224	22.1	<5.00	<500	<1.00	<30	<20	<5.00	<20.0	<5.00	0.57	195	636	3.04	53.0	17.2
08/14/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/06	2855	20.3	<5	<500	<1	<30	<20	<5	<5	<5	0.49	178	632	3.35	48.5	15.6
02/14/07	2695	15.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/02/07	2739	24.4	<5.00	102	<1	<1	<5	<1.00	14.0	<5	0.54	181	576	3.40	50.4	17.9
08/27/07	3213	28.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/07/07	3205	21.7	<5	110	<1	<1	<5	<1	<5	<5	0.76	160	580	3.10	43.0	13.0

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-18																	
Date	Nitrate (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Total Alkalinity as CaCO3 (mg/L)	pH (std units)	Antimony (ug/L)	Arsenic (ug/L)	Barium (ug/L)	Beryllium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Cobalt (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)
11/06/96	<0.05	449	321	1930	370	6.60	–	–	–	–	–	–	–	–	–	–
02/06/97	<0.05	396	381	1870	336	6.62	–	–	–	–	–	–	–	–	–	–
05/08/97	0.13	400	359	1850	338	6.63	–	–	–	–	–	–	–	–	–	–
08/06/97	0.31	345	262	1900	366	6.42	–	–	–	–	–	–	–	–	–	–
11/12/97	0.20	444	410	1970	346	6.70	–	–	–	–	–	–	–	–	–	–
02/10/98	0.29	403	423	1910	346	6.57	–	–	–	–	–	–	–	–	–	–
05/06/98	0.30	390	350	1830	338	6.45	–	–	–	–	–	–	–	–	–	–
08/05/98	0.28	406	328	1880	354	6.52	–	–	–	–	–	–	–	–	–	–
11/10/98	0.07	436	355	1910	342	6.61	–	–	–	–	–	–	–	–	–	–
05/06/99	0.41	390	337	2050	362	6.68	–	–	–	–	–	–	–	–	–	–
11/03/99	0.13	454	259	2050	346	6.62	–	–	–	–	–	–	–	–	–	–
05/10/00	0.26	432	293	1960	342	7.24	–	–	–	–	–	–	–	–	–	–
11/07/00	0.08	440	301	1940	336	6.91	–	–	–	–	–	–	–	–	–	–
05/09/01	0.20	386	263	1980	342	7.16	–	–	–	–	–	–	–	–	–	–
11/14/01	<0.05	339	381	1890	346	6.78	–	–	–	–	–	–	–	–	–	–
05/14/02	0.12	386	350	1970	360	6.78	–	–	–	–	–	–	–	–	–	–
11/06/02	<0.05	466	375	2020	356	6.47	–	–	–	–	–	–	–	–	–	–
05/21/03	0.18	439	354	2030	366	7.08	–	–	–	–	–	–	–	–	–	–
11/11/03	0.12	456	373	1940	362	6.80	–	–	–	–	–	–	–	–	–	–
06/01/04	<0.05	460	340	1960	372	7.06	–	–	–	–	–	–	–	–	–	–
11/09/04	<0.05	450	330	1920	372	6.90	–	–	–	–	–	–	–	–	–	–
05/02/05	0.05	464	302	1890	372	7.07	–	–	–	–	–	–	–	–	–	–
11/07/05	<0.05	445	316	1960	378	6.89	–	–	–	–	–	–	–	–	–	–
05/31/06	<0.05	473	294	1890	404	7.05	–	–	–	–	–	–	–	–	–	–
08/14/06	–	–	–	–	–	–	<5	<5.00	98.0	<1	<1	1.00	<1	10.0	<5	<5
11/08/06	<0.05	491	345	1910	382	7.03	<5	<5.00	100	<1	<1	1.00	<1	<5	<5	<5
02/14/07	–	–	–	–	–	9.02	<5	<5.00	103	<1	<1	1.00	<1	<5	<5	<5
05/02/07	<0.05	401	312	1840	420	7.60	<5	<5.00	101	<1	<1	<1	<1	<5	<1.00	<5
08/27/07	–	–	–	–	–	6.62	<5	<5.00	104	<1	<1	1.00	<1	<5	<1.00	<5
11/07/07	<0.05	390	310	1900	390	6.62	<5	<5	130	<1	<1	4.70	1.80	5.10	2.00	7.20

MW-18					
Date	Selenium (ug/L)	Silver (ug/L)	Thallium (ug/L)	Vanadium (ug/L)	Zinc (ug/L)
11/06/96	–	–	–	–	–
02/06/97	–	–	–	–	–
05/08/97	–	–	–	–	–
08/06/97	–	–	–	–	–
11/12/97	–	–	–	–	–
02/10/98	–	–	–	–	–
05/06/98	–	–	–	–	–
08/05/98	–	–	–	–	–
11/10/98	–	–	–	–	–
05/06/99	–	–	–	–	–
11/03/99	–	–	–	–	–
05/10/00	–	–	–	–	–
11/07/00	–	–	–	–	–
05/09/01	–	–	–	–	–
11/14/01	–	–	–	–	–
05/14/02	–	–	–	–	–
11/06/02	–	–	–	–	–
05/21/03	–	–	–	–	–
11/11/03	–	–	–	–	–
06/01/04	–	–	–	–	–
11/09/04	–	–	–	–	–
05/02/05	–	–	–	–	–
11/07/05	–	–	–	–	–
05/31/06	–	–	–	–	–
08/14/06	<5	<5	<5	1.00	91.0
11/08/06	<5	<5	<5	<1	11.0
02/14/07	<5	<5	<1	<1	31.0
05/02/07	<5	<5	<1	<1	–
08/27/07	<5	<5	<1	1.00	21.0
11/07/07	<5	<5	<1	2.20	41.0

MW-18																
Date	Acetone (ug/L)	Acrylonitrile (ug/L)	Benzene (ug/L)	Bromochloro methane (ug/L)	Bromodichloro methane (ug/L)	Bromoform (ug/L)	Carbon disulfide (ug/L)	Carbon tetrachloride (ug/L)	Chlorobenzene (ug/L)	Chloroethane (ug/L)	Chloroform (ug/L)	Dibromochloro methane (ug/L)	1,2-Dibromo-3-chloropropane (ug/L)	1,2-Dibromoethane (ug/L)	o-Dichlorobenzene (ug/L)	p-Dichlorobenzene (ug/L)
11/06/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
02/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/08/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/12/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/05/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/10/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/03/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/10/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/14/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/14/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/21/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/11/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
06/01/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/09/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/02/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/31/06	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
11/07/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

MW-18																
Date	trans-1,4-Dichloro-2-butene (ug/L)	1,1-Dichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	1,1-Dichloroethylene (ug/L)	cis-1,2-Dichloro ethylene (ug/L)	trans-1,2-Dichloro ethylene (ug/L)	1,2-Dichloropropane (ug/L)	cis-1,3-Dichloro propene (ug/L)	trans-1,3-Dichloro propene (ug/L)	Ethylbenzene (ug/L)	2-Hexanone (ug/L)	Methyl bromide (ug/L)	Methyl chloride (ug/L)	Methylene bromide (ug/L)	Methylene chloride (ug/L)	Methyl ethyl ketone (ug/L)
11/06/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
02/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/08/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/12/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/05/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/10/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/03/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/10/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/09/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/14/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/14/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/06/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/21/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/11/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
06/01/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/09/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/02/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/31/06	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/06	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
05/02/07	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
11/07/07	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20

MW-18															
Date	Methyl iodide (ug/L)	4-Methyl-2-pentanone (ug/L)	Styrene (ug/L)	1,1,1,2-Tetrachloroethane (ug/L)	1,1,2,2-Tetrachloroethane (ug/L)	Tetrachloroethylene (ug/L)	Toluene (ug/L)	1,1,1-Trichloroethane (ug/L)	1,1,2-Trichloroethane (ug/L)	Trichloroethylene (ug/L)	Trichlorofluoromethane (ug/L)	1,2,3-Trichloropropane (ug/L)	Vinyl acetate (ug/L)	Vinyl chloride (ug/L)	Total Xylenes (ug/L)
11/06/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
02/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/08/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/12/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/05/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/10/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/03/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/10/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/09/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/14/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/14/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/06/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/21/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/11/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
06/01/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/09/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/02/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/31/06	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
05/02/07	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
11/07/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-20

Date	Specific Conductance (umho/cm)	Temperature (deg C)	Dissolved Arsenic (ug/L)	Dissolved Barium (ug/L)	Dissolved Cadmium (ug/L)	Dissolved Chromium (ug/L)	Dissolved Copper (ug/L)	Dissolved Lead (ug/L)	Dissolved Nickel (ug/L)	Dissolved Selenium (ug/L)	Ammonia (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)
11/06/96	5240	21.0	6.70	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.10	340	1240	<0.05	90.1	11.9
02/07/97	3970	20.0	5.80	<500	<1.0	<30	<20	<5.0	30.0	<5.0	0.20	387	1110	<0.05	106	11.7
05/08/97	3980	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	12.2	0.10	347	1290	<0.05	93.2	14.3
08/06/97	4630	22.0	<5.0	<500	1.04	<30	<20	<5.0	<20	7.13	<0.10	373	1300	<0.05	90.4	8.10
11/12/97	3730	20.0	5.68	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	316	1340	<0.05	107	13.2
02/10/98	3050	20.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	0.40	356	1260	<0.05	93.7	15.3
05/06/98	3410	21.0	5.30	<500	<1.0	<30	<20	<5.0	29.0	<5.0	<0.10	358	1240	<0.05	88.3	14.3
08/05/98	5150	23.0	<5.0	<500	<1.0	<30	<20	<5.0	26.0	<5.0	<0.10	364	1280	<0.05	102	14.2
11/10/98	5190	20.5	<5.0	<500	<1.0	<30	<20	<5.0	<20	6.79	<0.10	304	1300	<0.05	95.4	12.7
05/06/99	4510	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.10	376	1230	<0.05	97.9	11.4
11/03/99	5130	23.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	6.96	<0.05	356	1450	<0.05	93.6	12.3
05/10/00	4990	21.0	<5.0	317	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	357	1260	0.09	92.8	12.3
11/07/00	4960	22.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	377	1150	<0.05	88.1	11.8
05/09/01	5290	21.7	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	332	1250	<0.05	95.0	11.1
11/14/01	5880	21.6	<5.0	<500	<1.0	<30	<20	<5.0	<20	7.70	<0.05	340	1270	<0.05	114	11.4
05/14/02	6100	20.8	<5.0	<500	<1.0	<30	<20	<5.0	<20	11.9	<0.05	320	1340	<0.05	103	11.5
11/06/02	5320	21.0	<5.0	<500	<1.0	<30	<20	<5.0	<20	11.4	<0.05	313	1240	<0.05	100	9.56
05/21/03	5320	18.9	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	356	1190	<0.05	114	9.43
11/11/03	5827	22.2	<5.0	<500	<1.0	<30	<20	<5.0	<20	13.8	<0.05	373	1310	0.06	106	9.76
06/02/04	5840	20.6	<5.0	639	<1.0	<30	<20	<5.0	<20	13.9	<0.05	285	1260	<0.05	103	9.45
11/09/04	5759	23.1	<5.0	<500	<1.0	<30	<20	<5.0	28.1	11.6	<0.05	277	1170	0.09	90.0	9.90
05/03/05	5203	18.5	<5.0	<500	<1.0	<30	<20	<5.0	<20	<5.0	<0.05	281	1070	0.11	88.0	8.01
11/08/05	5391	24.9	<5.00	<500	<1.00	<30	<20	<5.00	39.3	<5.00	<0.05	283	1010	0.21	84.8	10.2
05/30/06	5730	20.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–
08/15/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/06	4953	23.2	<5	<500	<1	<30	<20	<5	10.0	<5	<0.05	314	1290	<0.05	90.1	12.6
02/14/07	4924	13.4	–	–	–	–	–	–	–	–	–	–	–	–	–	–
05/03/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
08/27/07	5982	31.2	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/07	5797	17.1	6.50	33.0	<1	2.70	5.50	<1	18.0	5.80	<0.05	300	1200	<0.05	88.0	12.0

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Analytical Data

MW-20																
Date	Nitrate (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Total Alkalinity as CaCO3 (mg/L)	pH (std units)	Antimony (ug/L)	Arsenic (ug/L)	Barium (ug/L)	Beryllium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Cobalt (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)
11/06/96	0.07	882	498	3800	742	6.85	–	–	–	–	–	–	–	–	–	–
02/07/97	0.07	768	494	3590	684	6.96	–	–	–	–	–	–	–	–	–	–
05/08/97	0.22	827	657	3950	672	7.10	–	–	–	–	–	–	–	–	–	–
08/06/97	0.39	807	695	3950	758	7.01	–	–	–	–	–	–	–	–	–	–
11/12/97	0.54	917	676	3900	592	6.52	–	–	–	–	–	–	–	–	–	–
02/10/98	0.22	802	939	3980	726	7.05	–	–	–	–	–	–	–	–	–	–
05/06/98	0.23	782	773	3940	700	7.13	–	–	–	–	–	–	–	–	–	–
08/05/98	0.41	838	708	3980	748	6.93	–	–	–	–	–	–	–	–	–	–
11/10/98	0.25	943	736	3880	742	7.01	–	–	–	–	–	–	–	–	–	–
05/06/99	0.32	799	719	3770	674	7.06	–	–	–	–	–	–	–	–	–	–
11/03/99	0.39	956	487	4220	776	7.02	–	–	–	–	–	–	–	–	–	–
05/10/00	0.13	901	670	3600	726	7.11	–	–	–	–	–	–	–	–	–	–
11/07/00	0.34	865	689	3860	710	7.26	–	–	–	–	–	–	–	–	–	–
05/09/01	0.27	799	417	3910	708	7.16	–	–	–	–	–	–	–	–	–	–
11/14/01	0.51	783	635	3800	710	7.81	–	–	–	–	–	–	–	–	–	–
05/14/02	0.38	878	419	3830	736	7.28	–	–	–	–	–	–	–	–	–	–
11/06/02	0.64	966	766	3940	790	6.81	–	–	–	–	–	–	–	–	–	–
05/21/03	0.64	861	761	3860	824	7.28	–	–	–	–	–	–	–	–	–	–
11/11/03	0.53	979	683	3640	768	7.03	–	–	–	–	–	–	–	–	–	–
06/02/04	0.67	1030	662	3830	752	6.96	–	–	–	–	–	–	–	–	–	–
11/09/04	0.47	917	571	3600	776	6.98	–	–	–	–	–	–	–	–	–	–
05/03/05	0.51	878	479	3350	796	6.98	–	–	–	–	–	–	–	–	–	–
11/08/05	0.13	826	514	3160	845	7.02	–	–	–	–	–	–	–	–	–	–
05/30/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
08/15/06	–	–	–	–	–	–	<5	5.86	35.0	<1	<1	64.0	<1	<5	<5	47.0
11/08/06	<0.05	874	631	3460	796	6.62	<5	<5.00	35.0	<1	<1	5.00	<1	<5	<5	8.00
02/14/07	–	–	–	–	–	7.40	<5	6.65	28.0	<1	<1	1.00	<1	<5	<5	5.00
05/03/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
08/27/07	–	–	–	–	–	7.09	<5	9.79	33.0	<1	<1	9.00	<1	<5	<1.00	7.00
11/08/07	0.07	850	730	3700	430	6.86	<5	6.90	33.0	<1	<1	7.60	1.50	5.70	<1	16.0

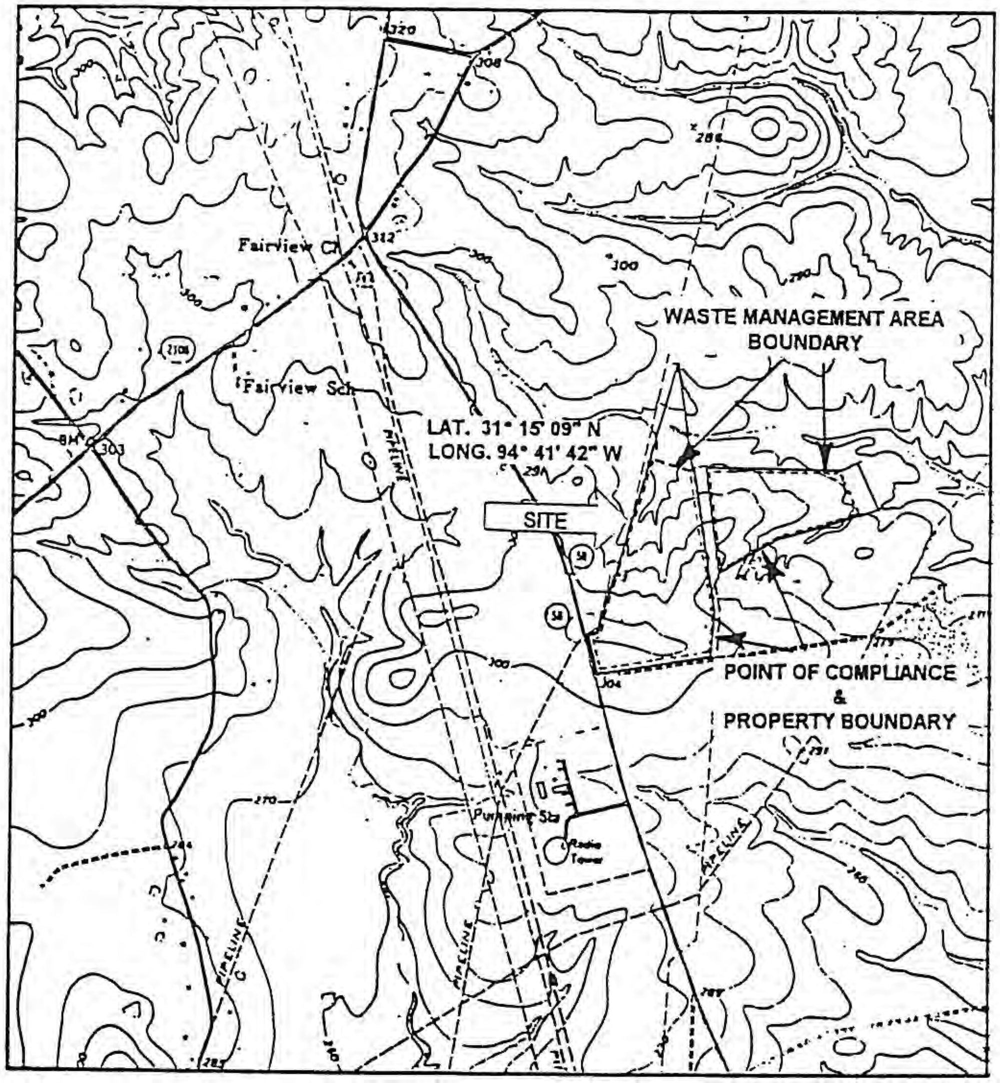
MW-20					
Date	Selenium (ug/L)	Silver (ug/L)	Thallium (ug/L)	Vanadium (ug/L)	Zinc (ug/L)
11/06/96	–	–	–	–	–
02/07/97	–	–	–	–	–
05/08/97	–	–	–	–	–
08/06/97	–	–	–	–	–
11/12/97	–	–	–	–	–
02/10/98	–	–	–	–	–
05/06/98	–	–	–	–	–
08/05/98	–	–	–	–	–
11/10/98	–	–	–	–	–
05/06/99	–	–	–	–	–
11/03/99	–	–	–	–	–
05/10/00	–	–	–	–	–
11/07/00	–	–	–	–	–
05/09/01	–	–	–	–	–
11/14/01	–	–	–	–	–
05/14/02	–	–	–	–	–
11/06/02	–	–	–	–	–
05/21/03	–	–	–	–	–
11/11/03	–	–	–	–	–
06/02/04	–	–	–	–	–
11/09/04	–	–	–	–	–
05/03/05	–	–	–	–	–
11/08/05	–	–	–	–	–
05/30/06	–	–	–	–	–
08/15/06	11.0	<5	<5	2.00	23.0
11/08/06	<5	<5	<5	1.00	24.0
02/14/07	11.0	<5	<1	<1	32.0
05/03/07	–	–	–	–	–
08/27/07	10.0	<5	<1	<1	13.0
11/08/07	5.80	<5	<1	2.50	26.0

MW-20																
Date	Acetone (ug/L)	Acrylonitrile (ug/L)	Benzene (ug/L)	Bromochloro methane (ug/L)	Bromodichloro methane (ug/L)	Bromoform (ug/L)	Carbon disulfide (ug/L)	Carbon tetrachloride (ug/L)	Chlorobenzene (ug/L)	Chloroethane (ug/L)	Chloroform (ug/L)	Dibromochloro methane (ug/L)	1,2-Dibromo-3-chloropropane (ug/L)	1,2-Dibromoethane (ug/L)	o-Dichlorobenzene (ug/L)	p-Dichlorobenzene (ug/L)
11/06/96	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
02/07/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/08/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
08/06/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/12/97	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/10/98	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/06/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/03/99	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/10/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/07/00	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/09/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/14/01	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/14/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/06/02	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/21/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/11/03	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
06/02/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/09/04	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/03/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/08/05	<20	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
05/30/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
05/03/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

MW-20																
Date	trans-1,4-Dichloro-2-butene (ug/L)	1,1-Dichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	1,1-Dichloroethylene (ug/L)	cis-1,2-Dichloro ethylene (ug/L)	trans-1,2-Dichloro ethylene (ug/L)	1,2-Dichloropropane (ug/L)	cis-1,3-Dichloro propene (ug/L)	trans-1,3-Dichloro propene (ug/L)	Ethylbenzene (ug/L)	2-Hexanone (ug/L)	Methyl bromide (ug/L)	Methyl chloride (ug/L)	Methylene bromide (ug/L)	Methylene chloride (ug/L)	Methyl ethyl ketone (ug/L)
11/06/96	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
02/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/08/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
08/06/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/12/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/10/98	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/06/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
11/03/99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<20	<50	<5.0	<5.0	<20
05/10/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/07/00	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/09/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/14/01	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/14/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/06/02	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/21/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/11/03	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
06/02/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/09/04	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/03/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
11/08/05	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20
05/30/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/06	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<5	<20
05/03/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/07	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<20

MW-20

Date	Methyl iodide (ug/L)	4-Methyl-2-pentanone (ug/L)	Styrene (ug/L)	1,1,1,2-Tetrachloroethane (ug/L)	1,1,2,2-Tetrachloroethane (ug/L)	Tetrachloroethylene (ug/L)	Toluene (ug/L)	1,1,1-Trichloroethane (ug/L)	1,1,2-Trichloroethane (ug/L)	Trichloroethylene (ug/L)	Trichlorofluoromethane (ug/L)	1,2,3-Trichloropropane (ug/L)	Vinyl acetate (ug/L)	Vinyl chloride (ug/L)	Total Xylenes (ug/L)
11/06/96	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
02/07/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/08/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
08/06/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/12/97	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/10/98	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
05/06/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
11/03/99	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/10/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/07/00	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/09/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/14/01	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/14/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/06/02	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/21/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/11/03	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
06/02/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/09/04	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/03/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
11/08/05	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10
05/30/06	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/06	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<10
05/03/07	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11/08/07	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10



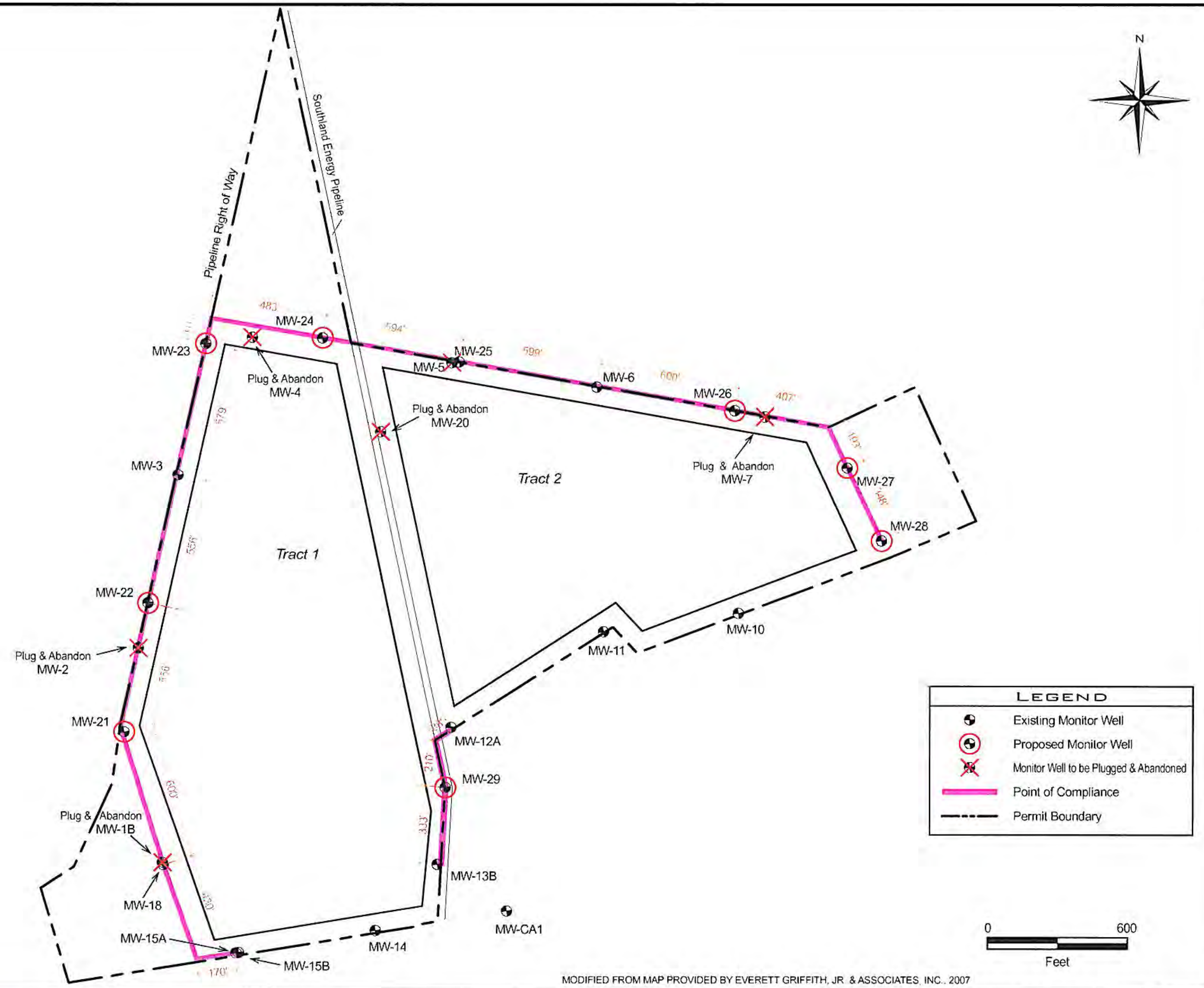
N

SCALE
FEET
0 2000

TAKEN FROM USGS TOPOGRAPHIC QUADRANGLE, LUFKIN AND BALD HILL SHEETS

Hydrex Environmental, Inc. 117 North Street, Suite 8 Nacogdoches, Texas 75961 (409) 568 - 9461 Fax (409) 568 - 9527	ANGELINA COUNTY LANDFILL PERMIT No. MSW 2106	EXHIBIT 8.2 TOPOGRAPHIC MAP LOCATION OF WASTE MGMT AREA, PROPERTY BOUNDARY AN POINT OF COMPLIANCE	DRAWN BY: SCALE AS SHOWN

AMERICAN INSTITUTE OF PROFESSIONAL GEOLOGISTS
CERTIFICATE NUMBER
9215
AIPG
GLEN A. COLLIER
CERTIFIED PROFESSIONAL GEOLOGIST

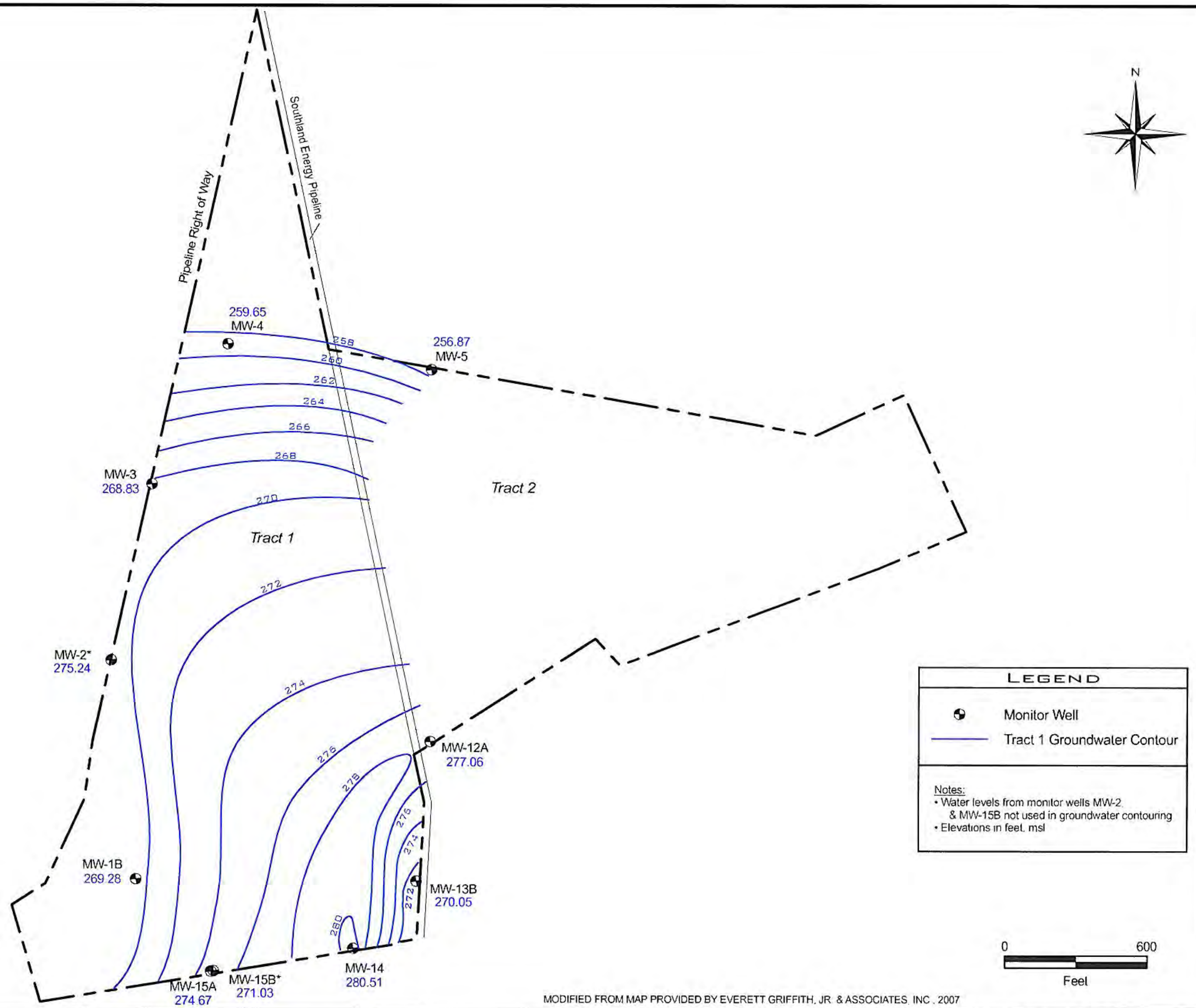


Hydrex ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Site Map Showing Proposed Groundwater Monitoring System

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3 Page No. III-5-30
Project No. L-01-649
Revision No. 0, August 1996
Revision No. 1, March 2008
Revision No. 2, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR & ASSOCIATES, INC., 2007

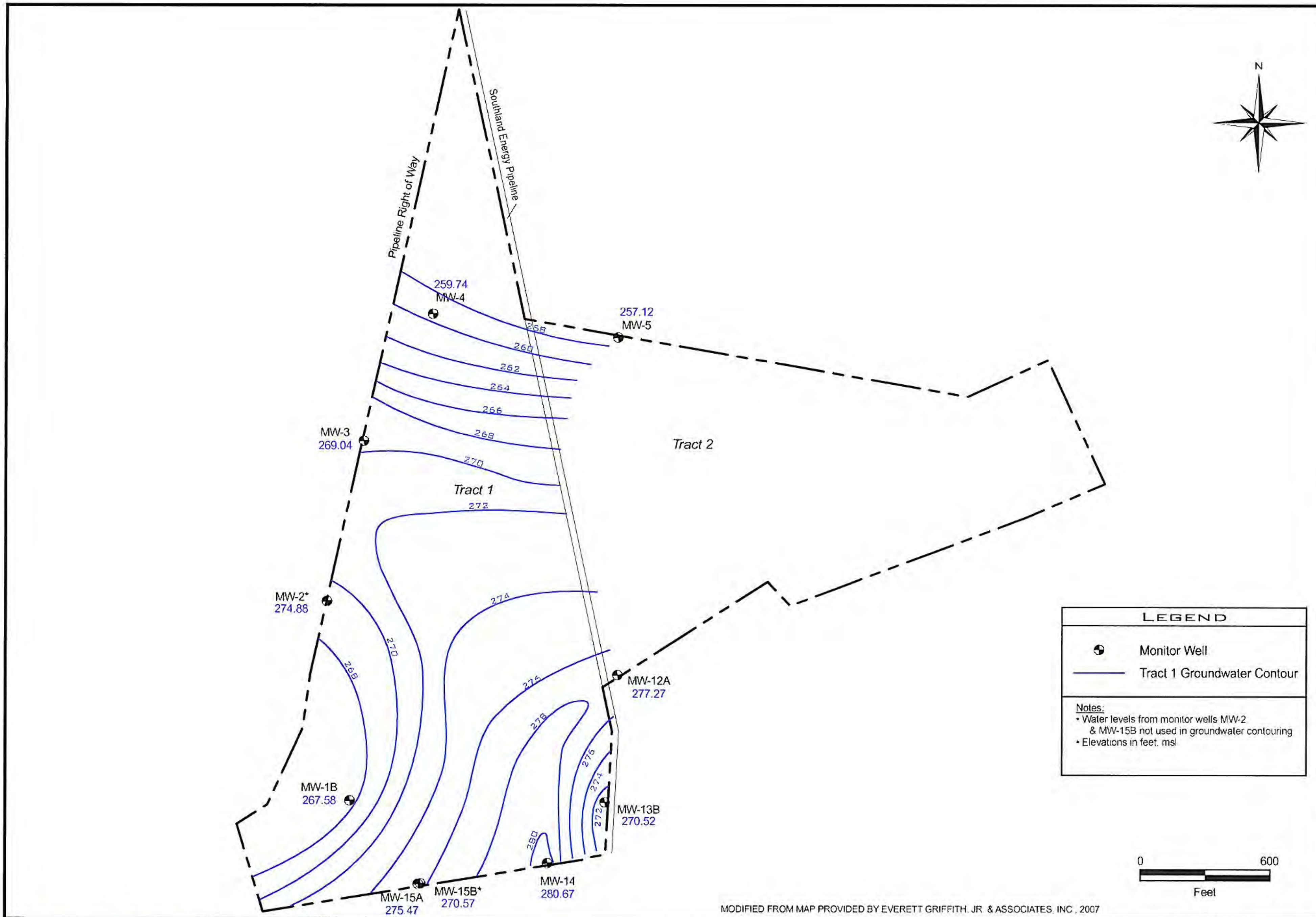
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

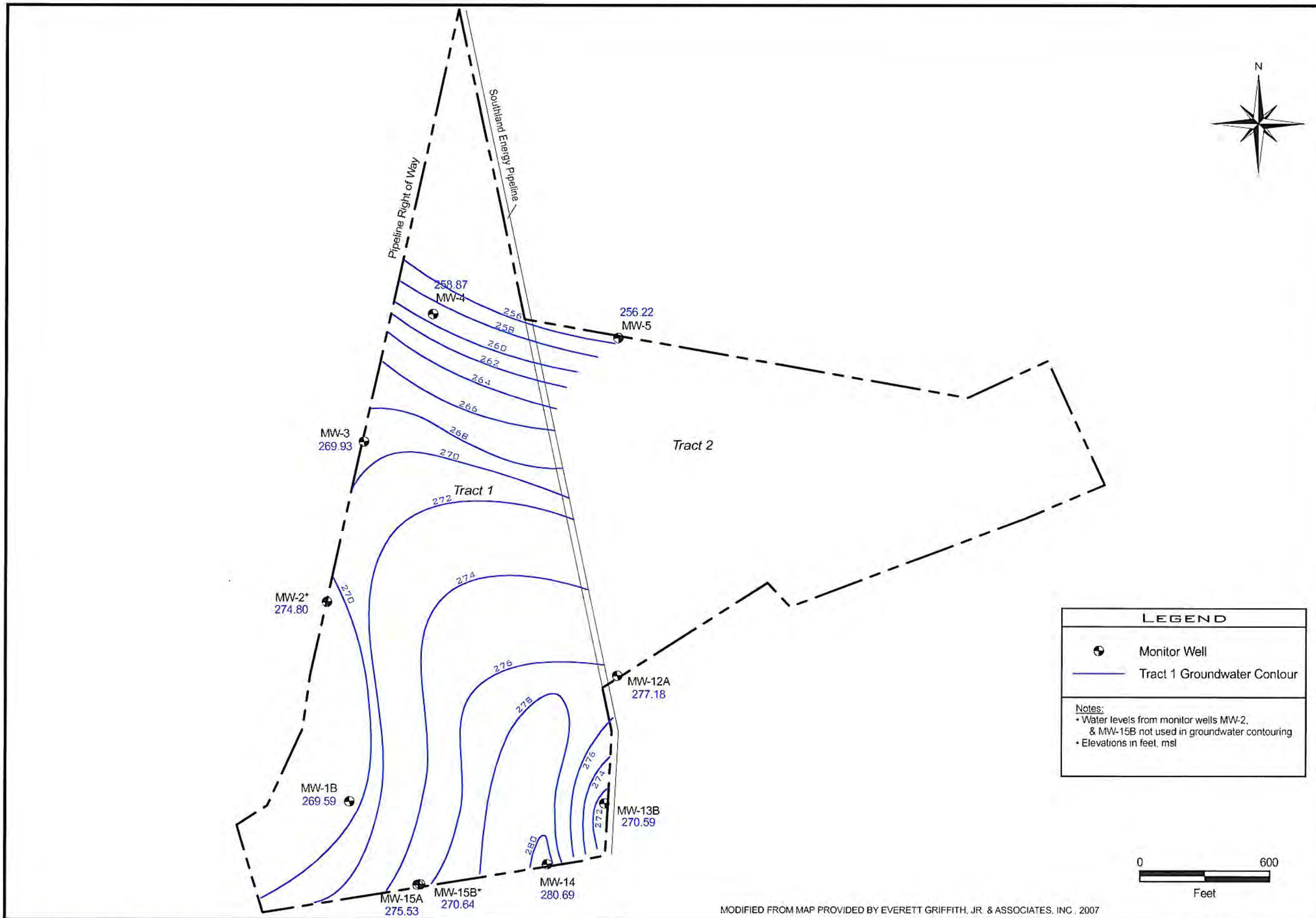
Water Levels Measured 02/07/1996

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.1.1
Page No. III-5-30A
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



Hydrex ENVIRONMENTAL, INC. 1120 NW Stallings Drive Nacogdoches, Texas 75964 (936) 568-9451 Fax: (936) 568-9527	Groundwater Contour Map Uppermost Aquifer Water Levels Measured 05/09/1996	Angelina County Waste Management Center Permit No. MSW 2105A Angelina County, Texas	Exhibit 8.3.1.2 Page No. III-5-30B Project No. L-01-649 Revision No. 0, March 2008 Revision No. 1, February 2010



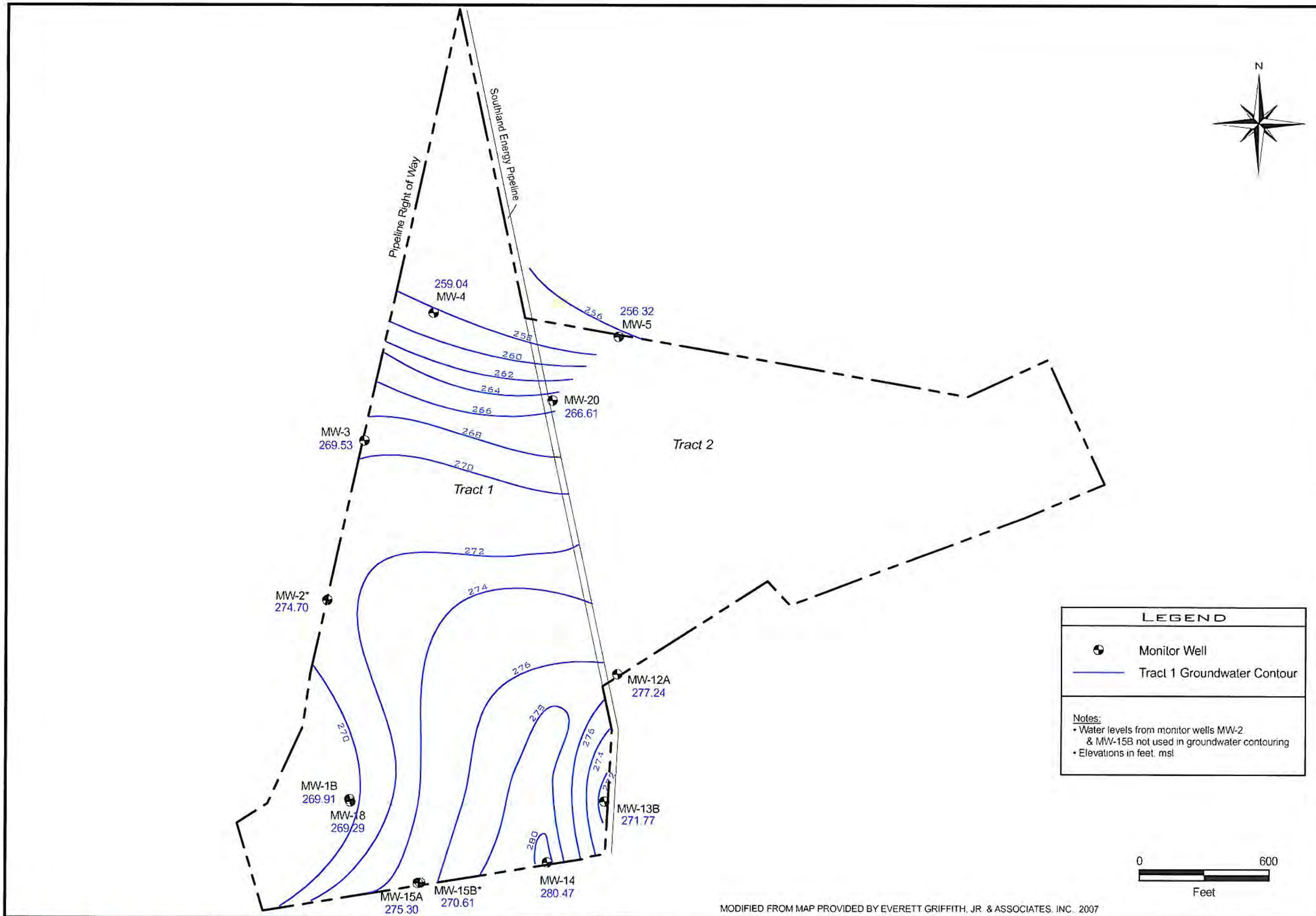
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 08/12/1996

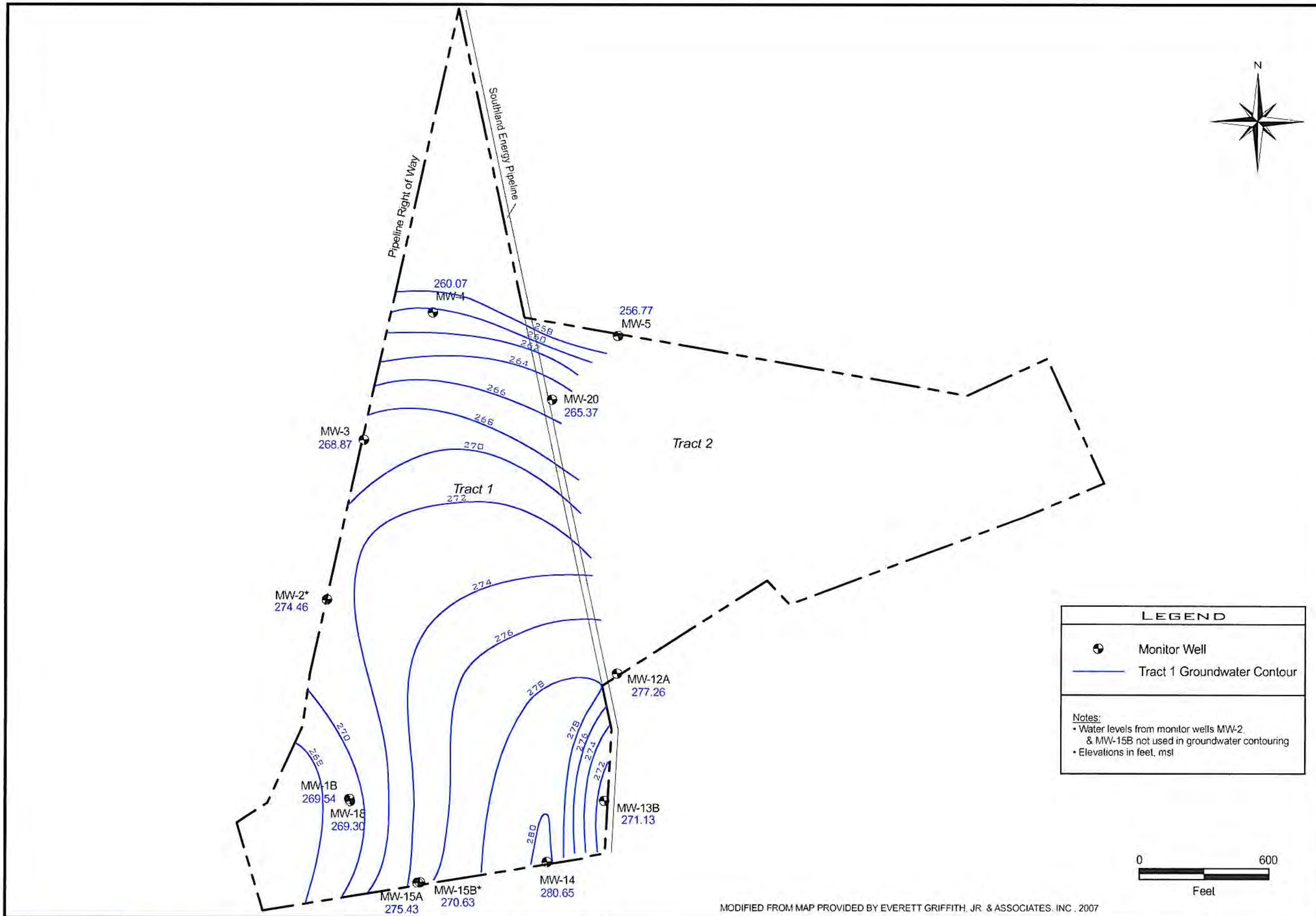
Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.1.3
Page No. III-5-30C
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR & ASSOCIATES, INC. 2007

Hydrex ENVIRONMENTAL, INC. 1120 NW Stallings Drive Nacogdoches, Texas 75964 (936) 568-9451 Fax: (936) 568-9527	Groundwater Contour Map Uppermost Aquifer Water Levels Measured 11/07/1996	Angelina County Waste Management Center Permit No. MSW 2105A Angelina County, Texas	Exhibit 8.3.1.4 Page No. III-5-30D Project No. L-01-649 Revision No. 0, March 2008 Revision No. 1, February 2010



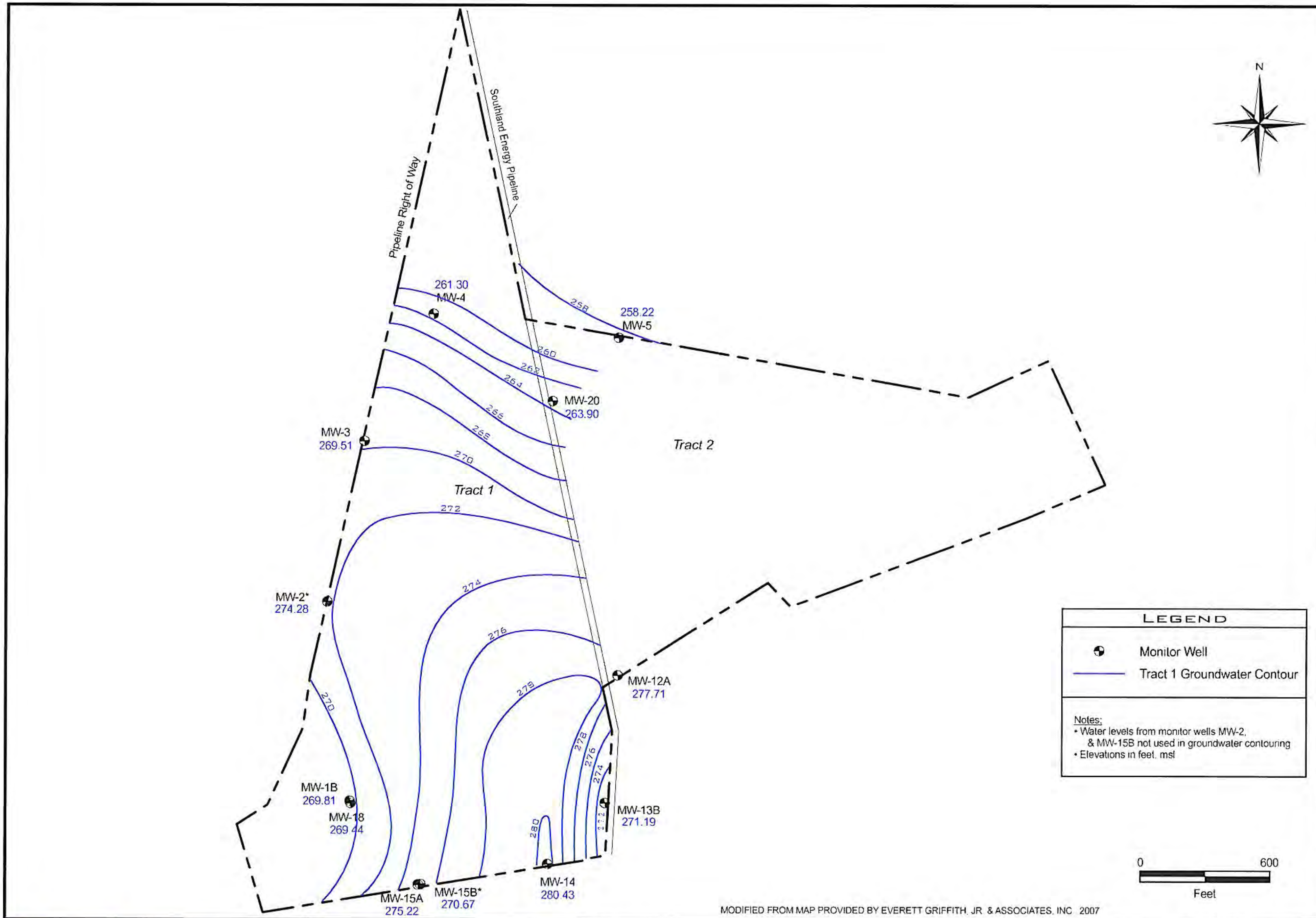
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 02/05/1997

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.2.1
Page No. III-5-30E
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR. & ASSOCIATES, INC. 2007

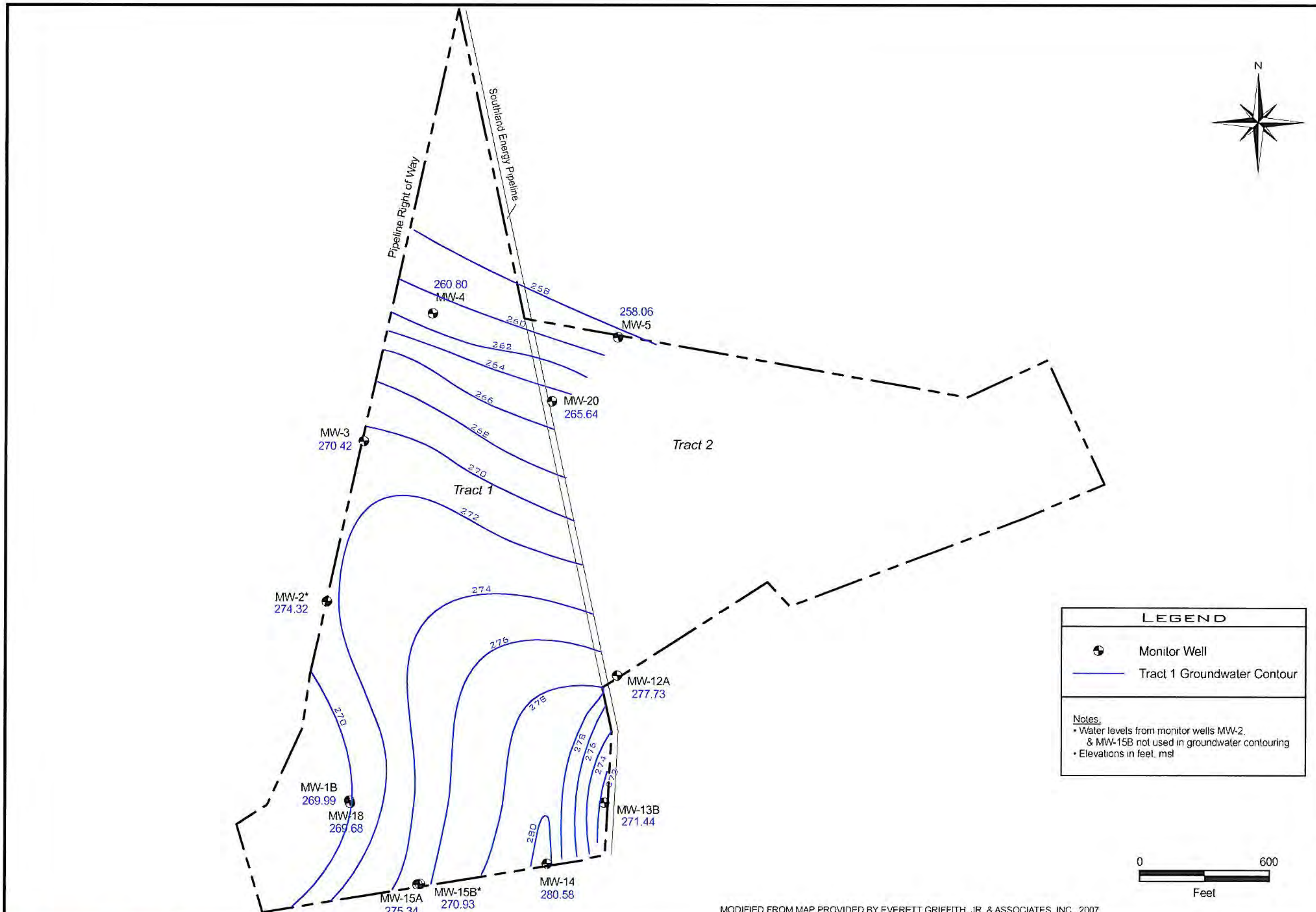
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 05/07/1997

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.2.2
Page No. III-5-30F
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



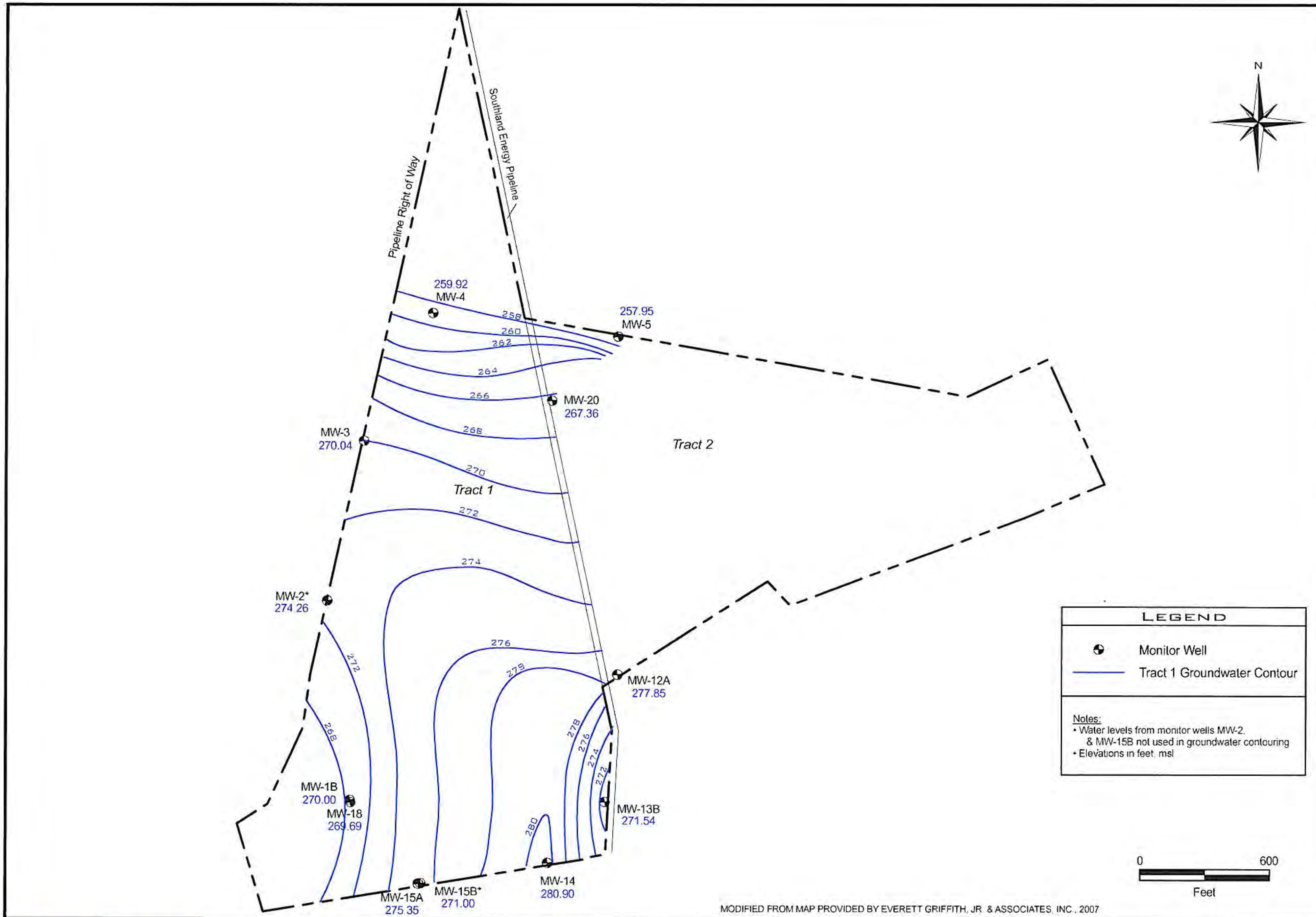
Hydrex ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 08/04/1997

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.2.3
Page No. III-5-30G
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



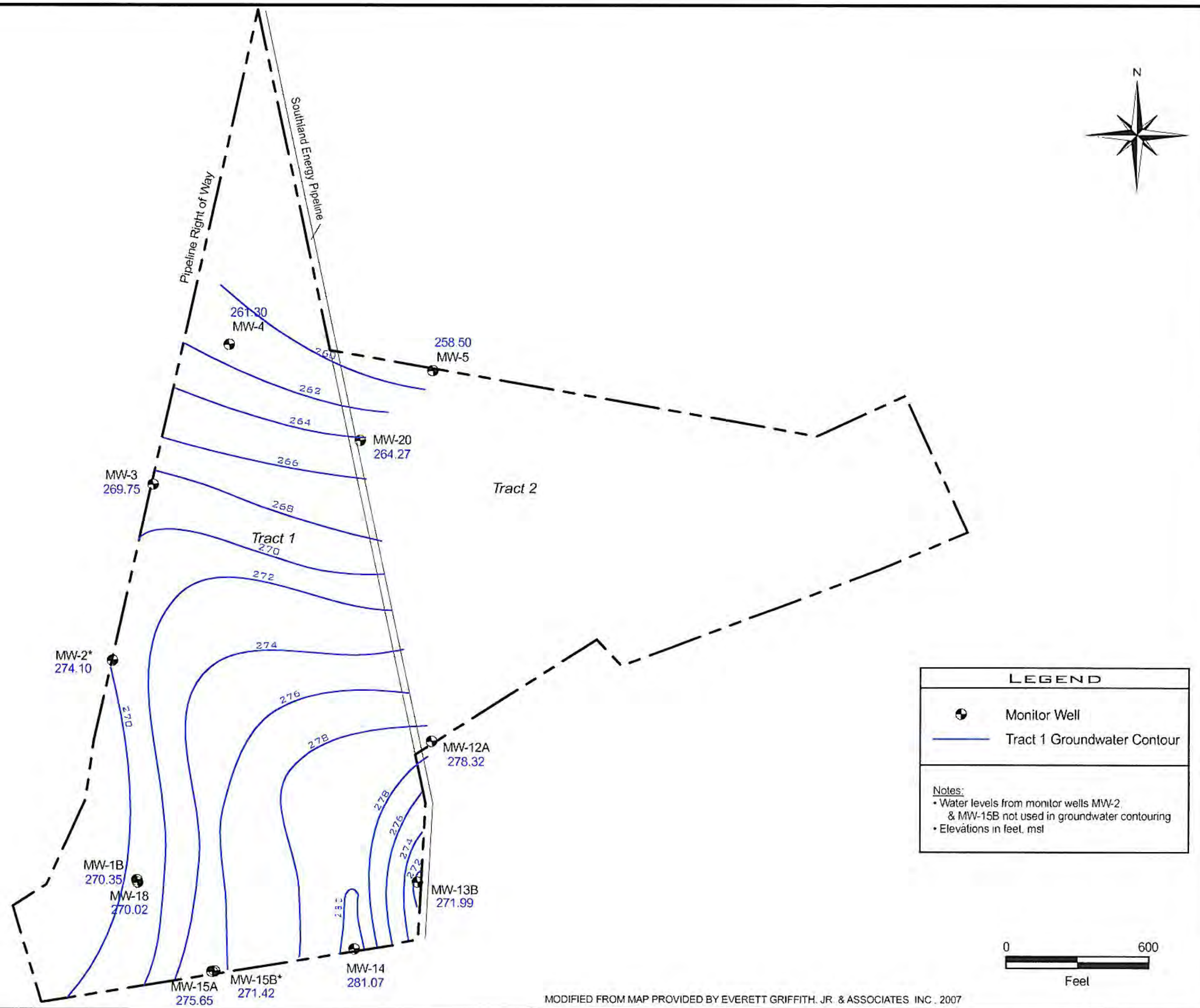
HYDREX ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 11/10/1997

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.2.4
Page No. III-5-30H
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



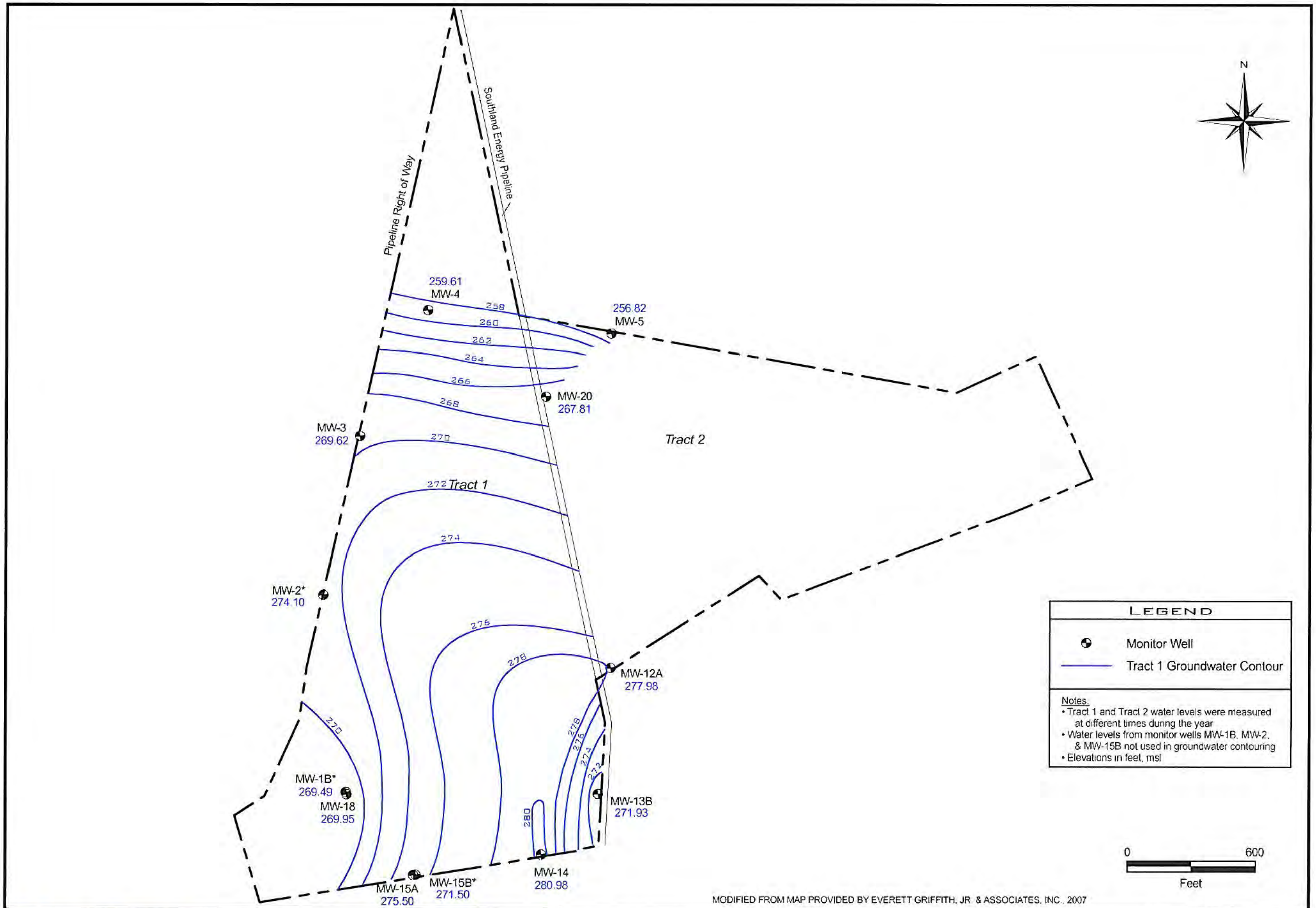
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

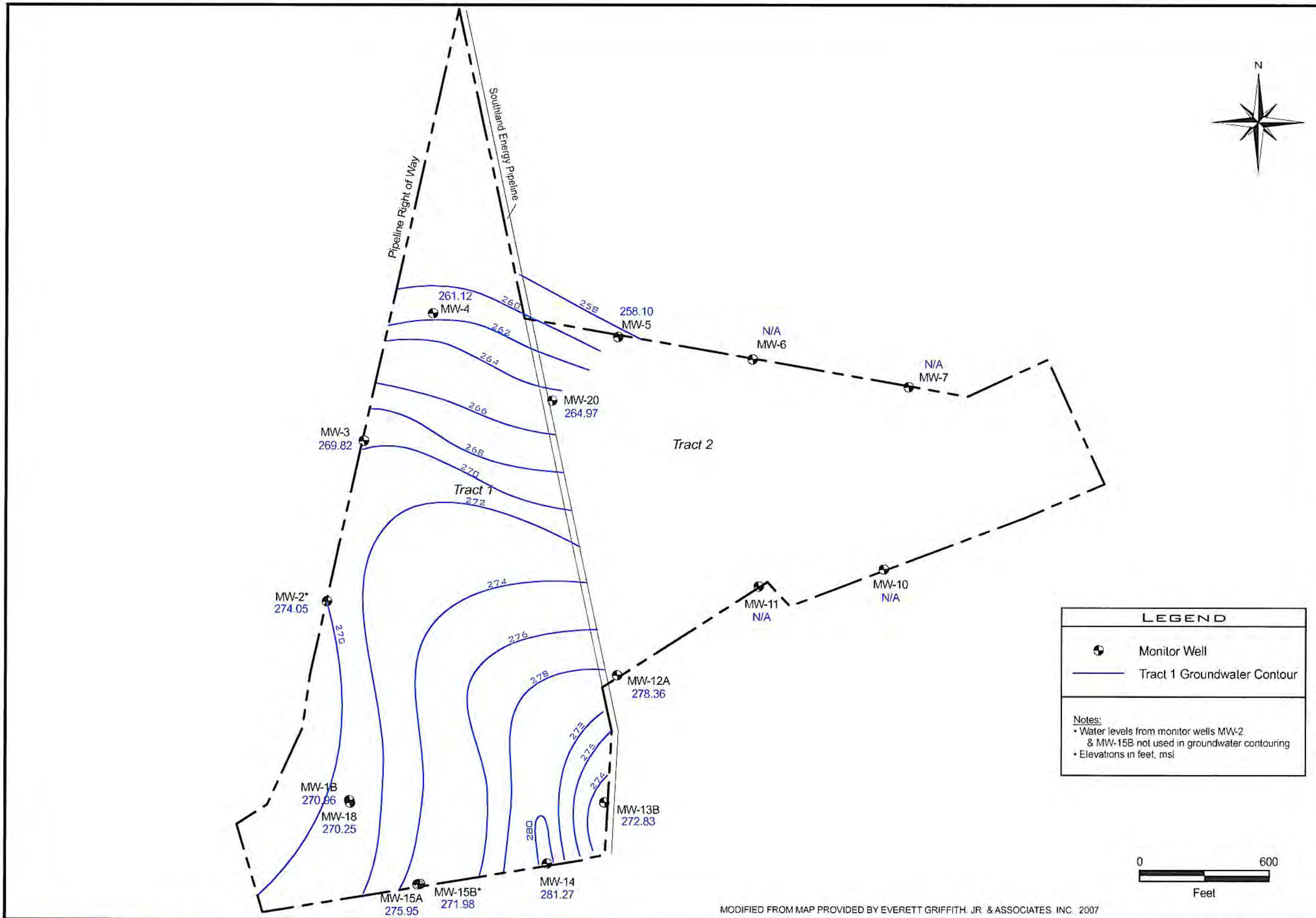
Water Levels Measured 05/05/1998

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.3.1
Page No. III-5-301
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



Hydrex ENVIRONMENTAL, INC. 1120 NW Stallings Drive Nacogdoches, Texas 75964 (936) 568-9451 Fax: (936) 568-9527	Groundwater Contour Map Uppermost Aquifer Water Levels Measured 11/09/1998	Angelina County Waste Management Center Permit No. MSW 2105A Angelina County, Texas	Exhibit 8.3.3.2 Page No. III-5-30J Project No. L-01-649 Revision No. 0, March 2008 Revision No. 1, February 2010



Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 05/05/1999

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

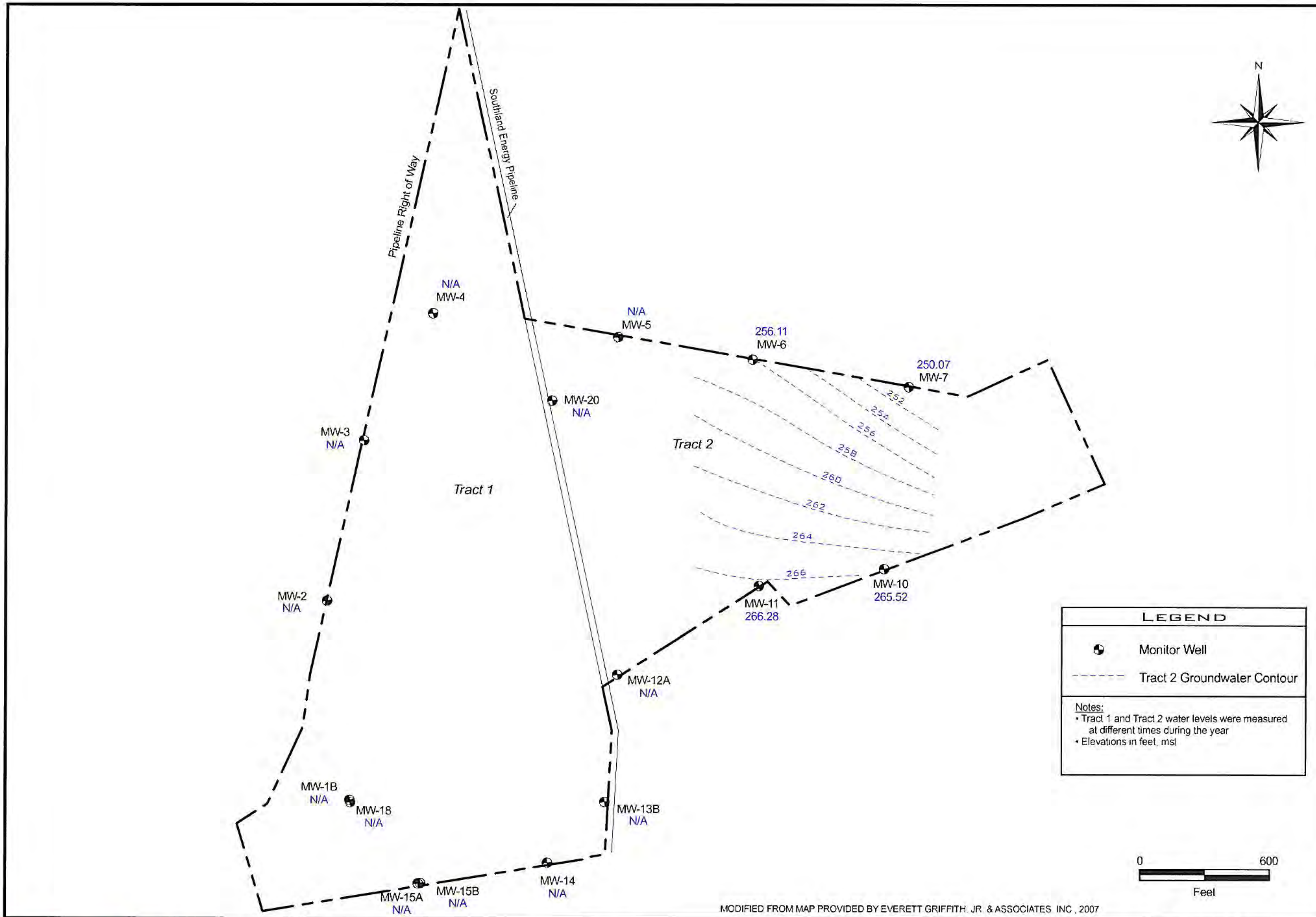
Exhibit 8.3.4.1

Page No. III-5-30K

Project No. L-01-649

Revision No. 0, March 2008

Revision No. 1, February 2010



Hydrex ENVIRONMENTAL, INC.

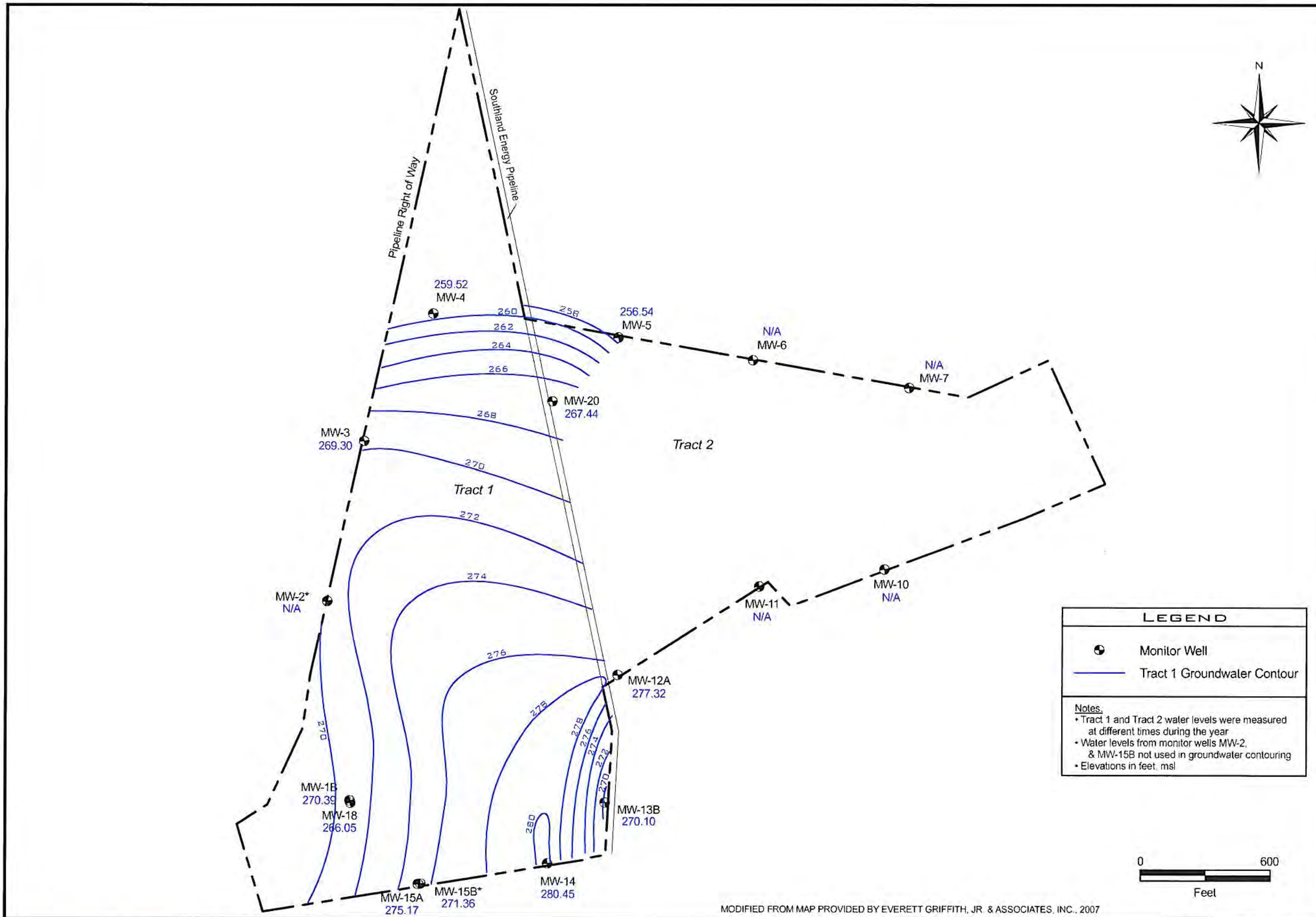
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 10/20/1999

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.4.2
Page No. III-5-30L
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



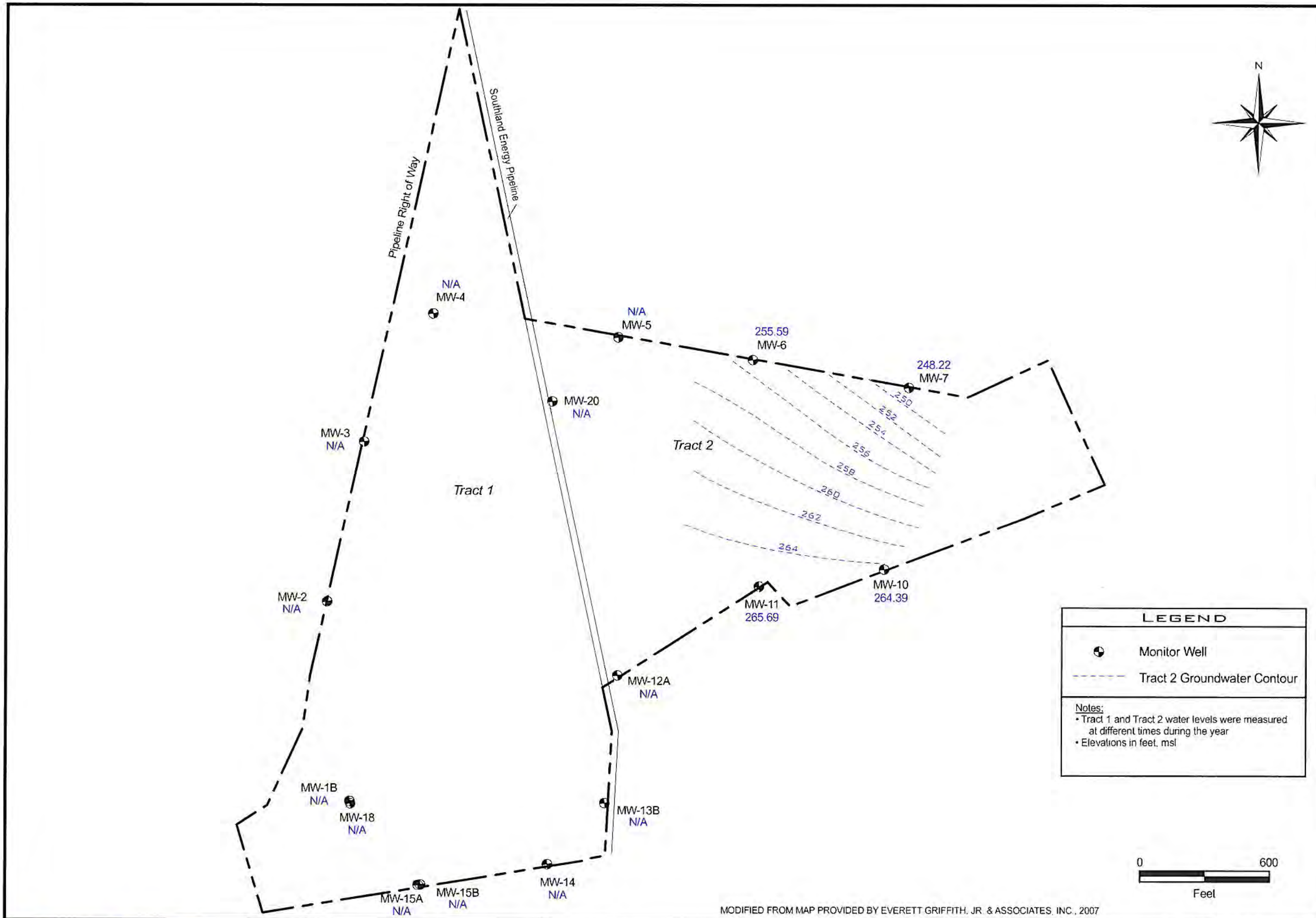
Hydrex ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 11/02/1999

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.4.3
Page No. III-5-30M
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



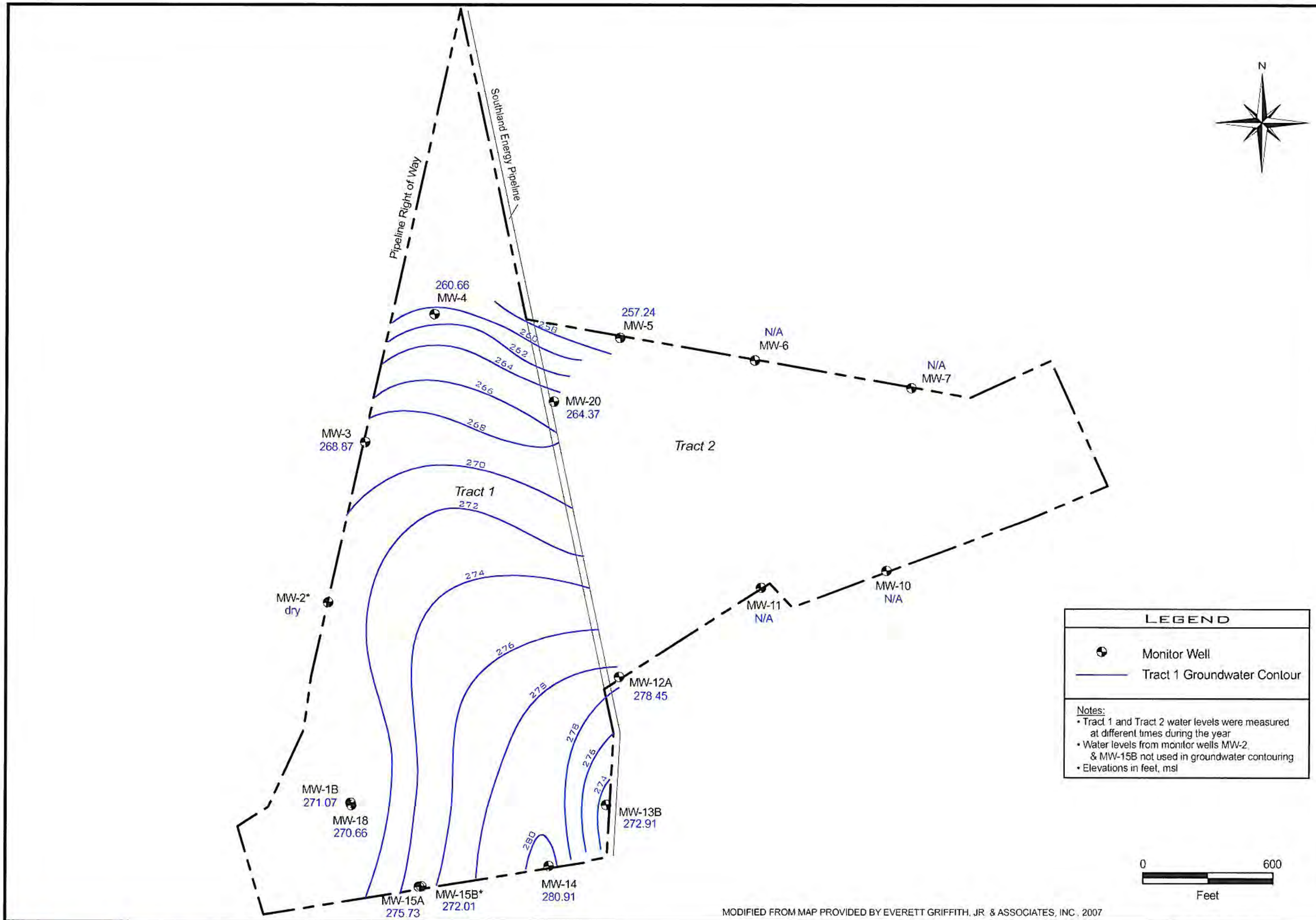
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 04/04/2000

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.5.1
Page No. III-5-30N
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR. & ASSOCIATES, INC., 2007

Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 05/09/2000

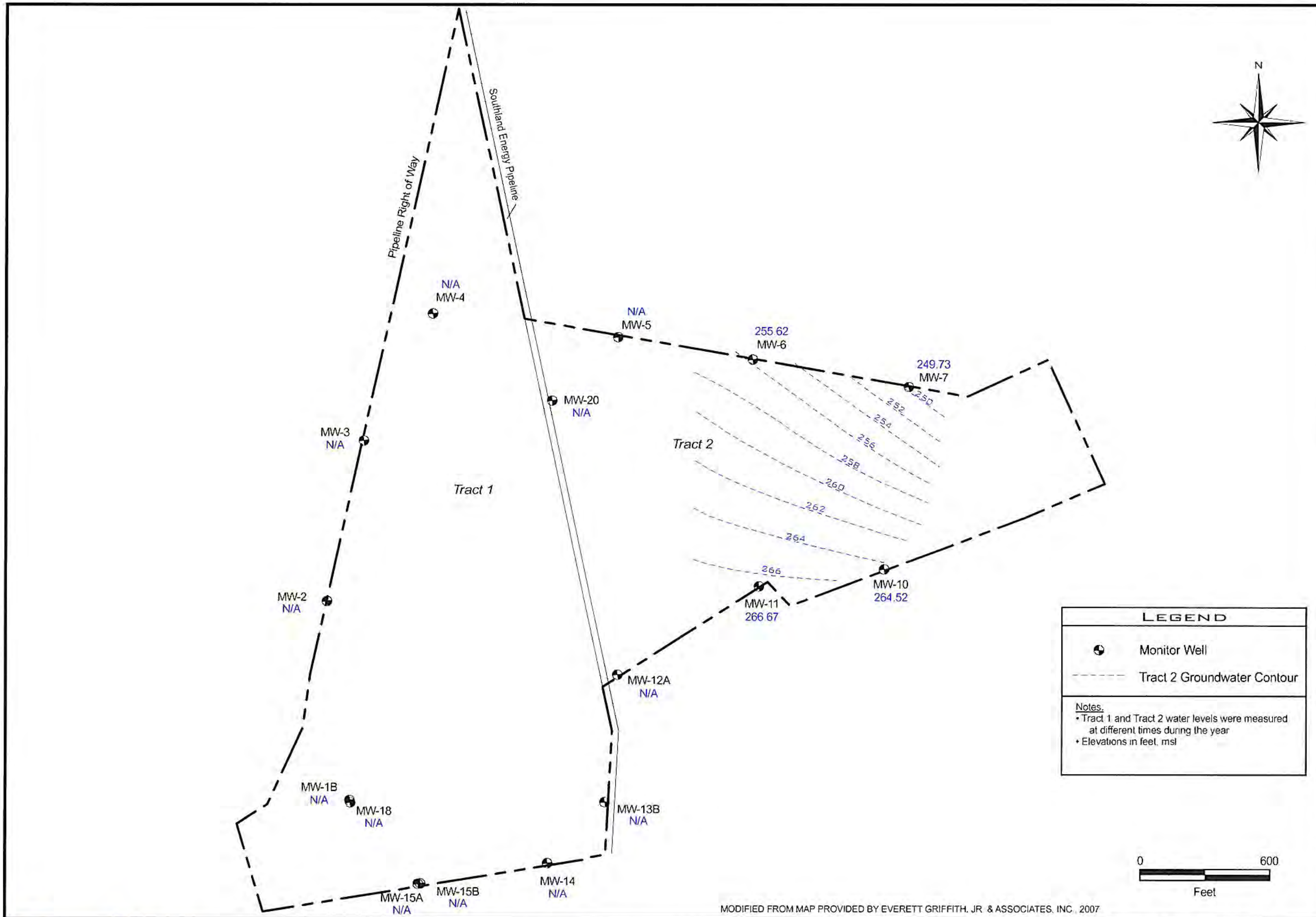
Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.5.2

Project No. L-01-649

Revision No. 0, March 2008

Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR & ASSOCIATES, INC., 2007

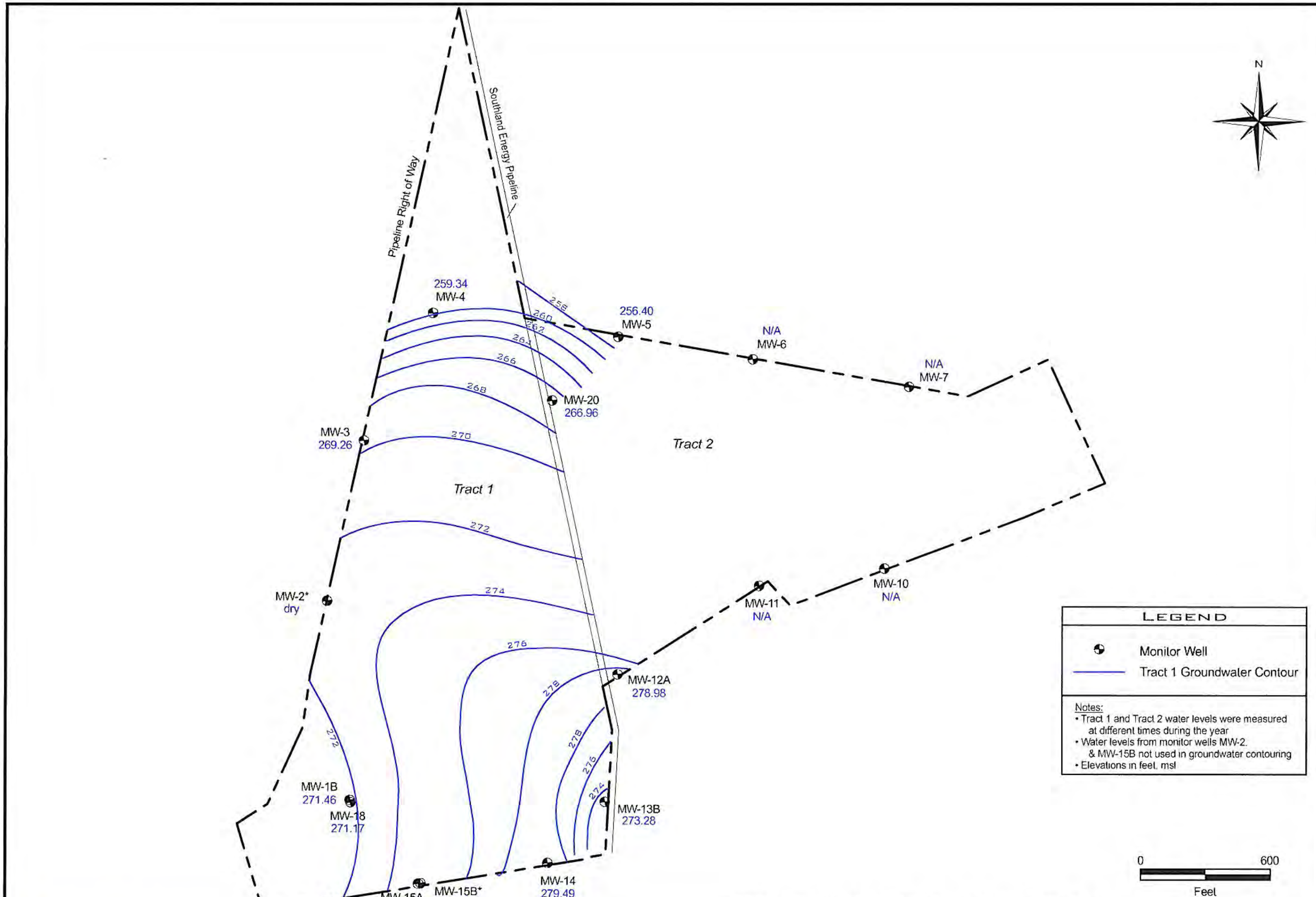
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 10/25/2000

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.5.3
Page No. III-5-30P
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR. & ASSOCIATES, INC., 2007

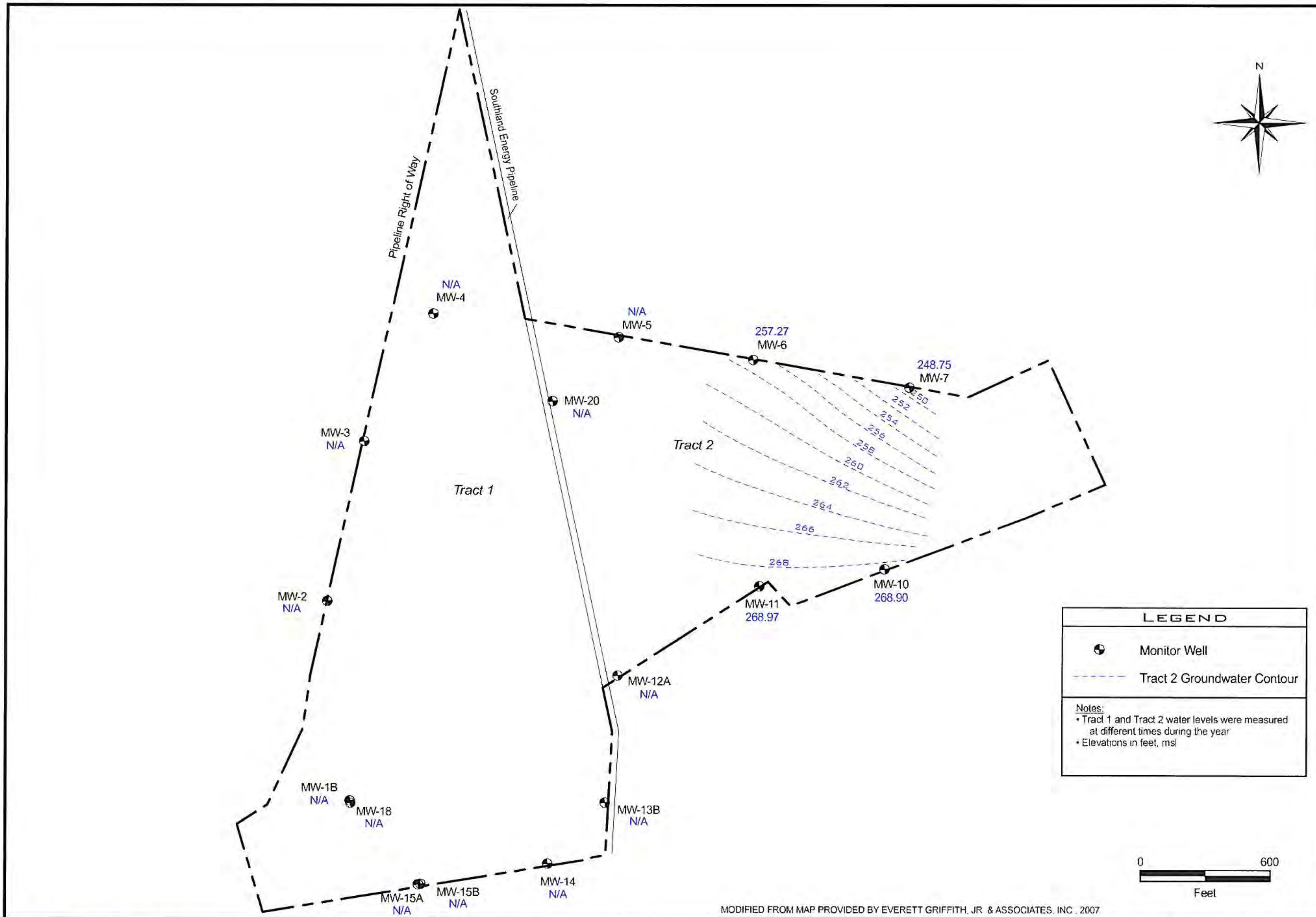
Hydrex ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 11/06/2000

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.5.4
Page No. III-5-30Q
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



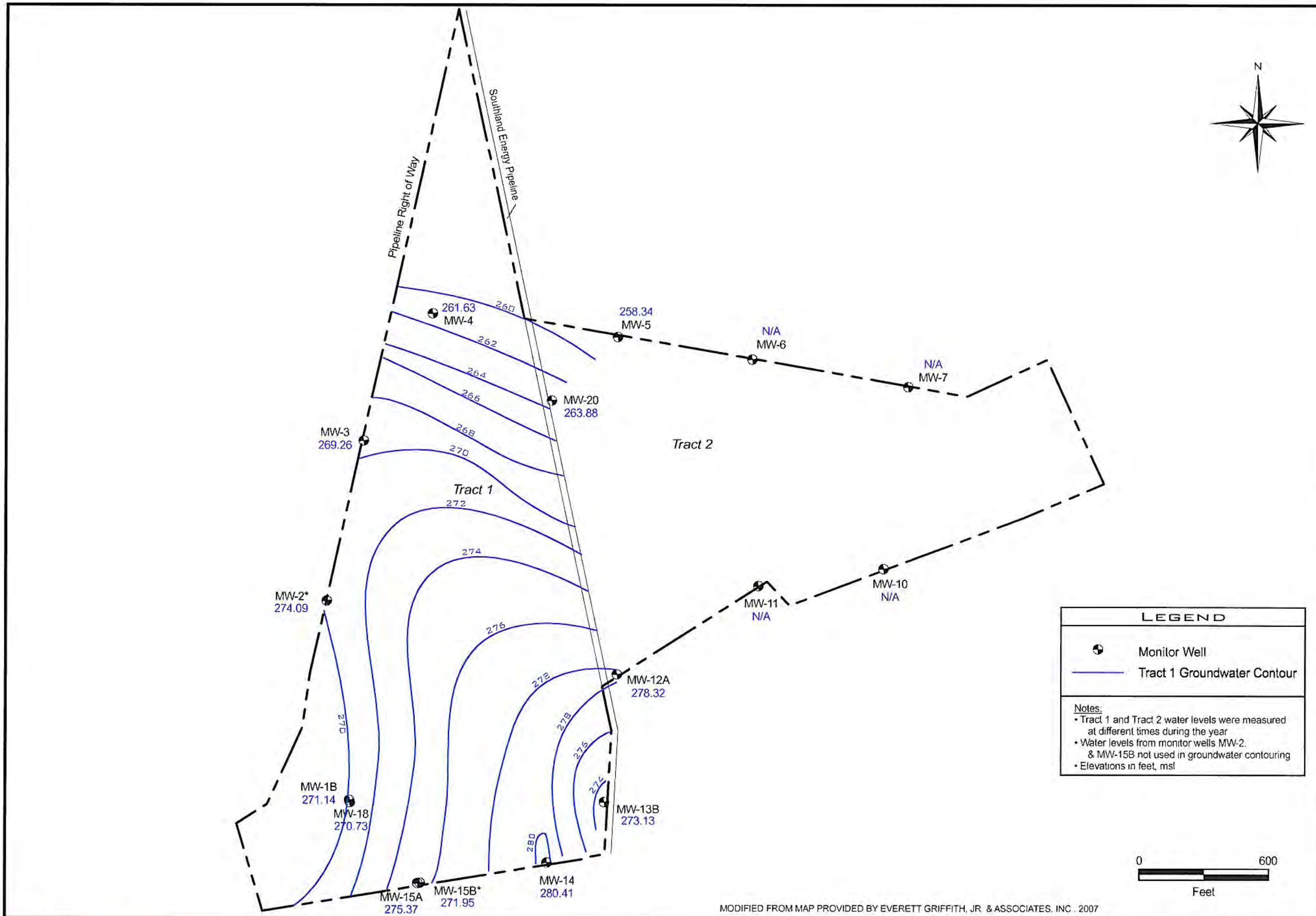
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 04/19/2001

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.6.1
Page No. III-5-30R
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



Hydrex ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 05/08/2001

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

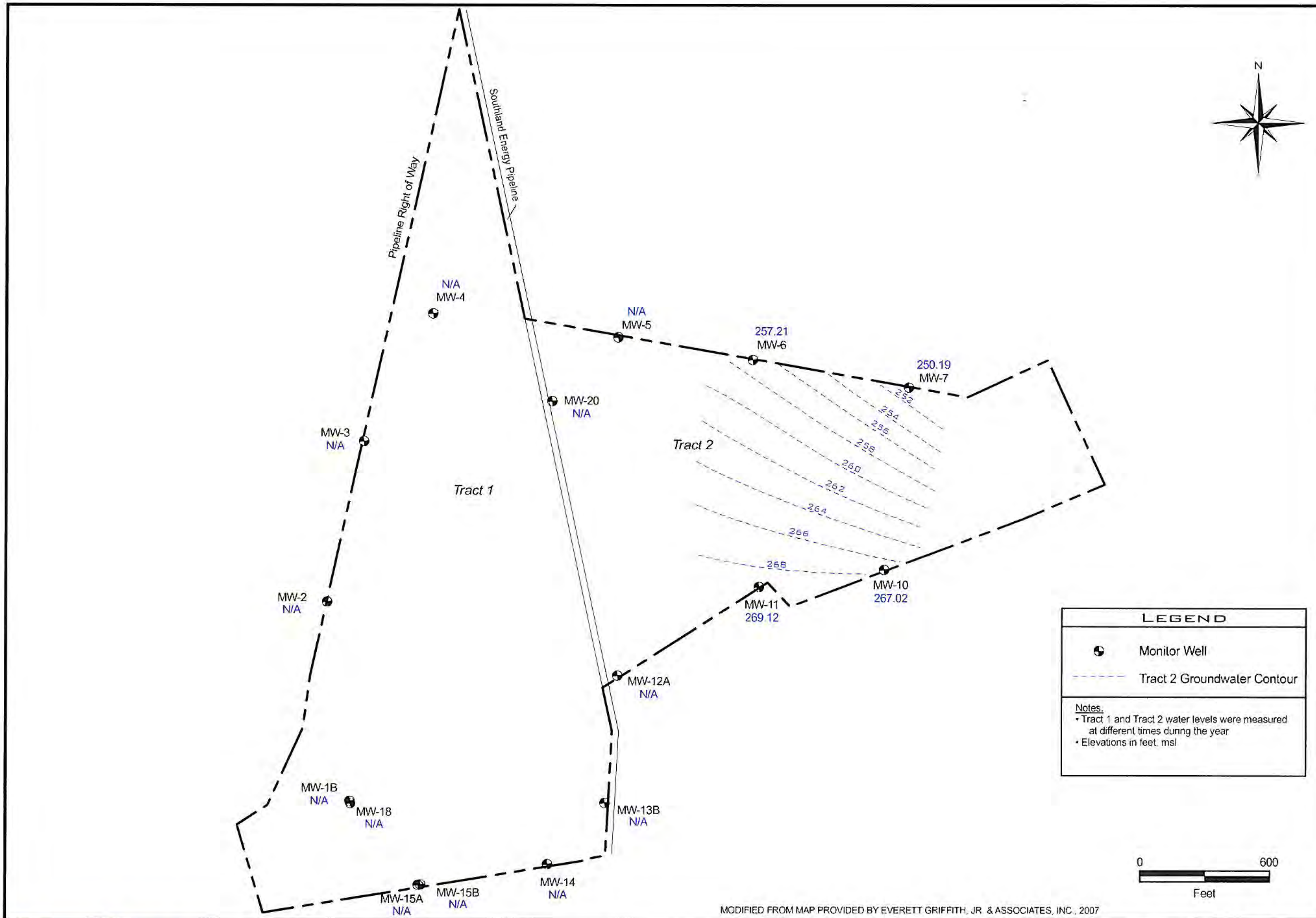
Exhibit 8.3.6.2

Page No. III-5-30S

Project No. L-01-649

Revision No. 0, March 2008

Revision No. 1, February 2010



Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 10/08/2001

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

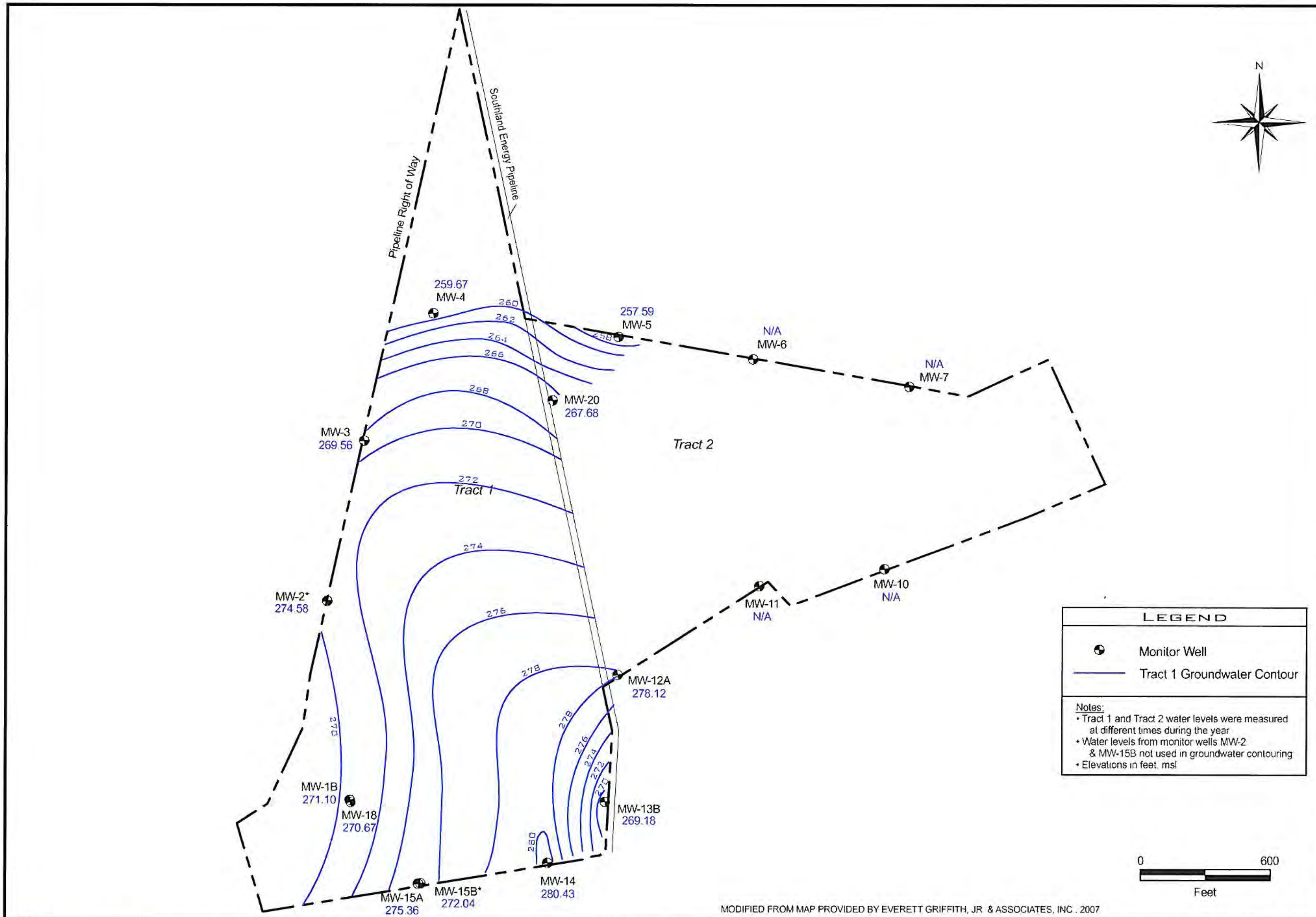
Exhibit 8.3.6.3

Page No. III-5-30T

Project No. L-01-649

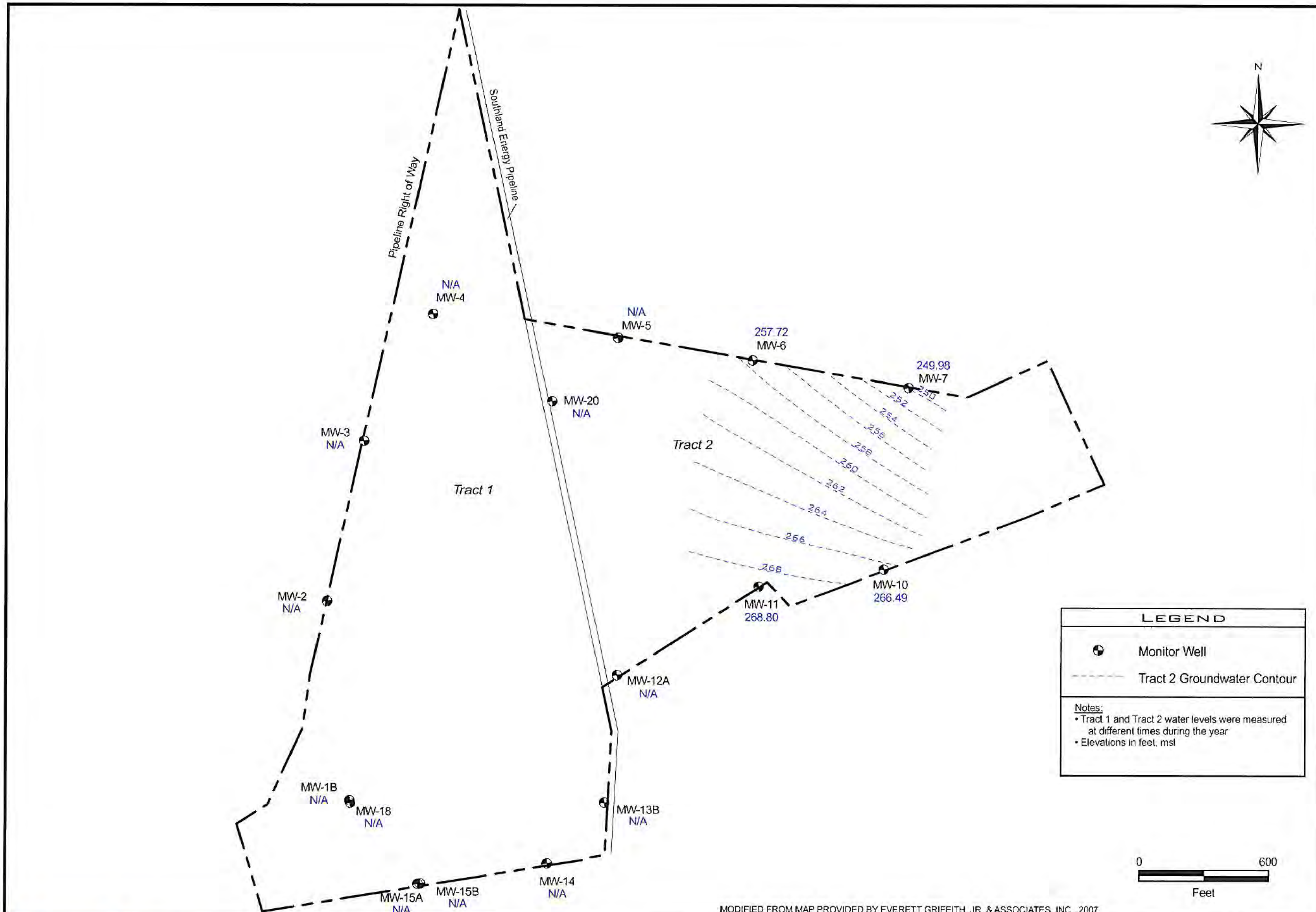
Revision No. 0, March 2008

Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR & ASSOCIATES, INC . 2007

Hydrex ENVIRONMENTAL, INC. 1120 NW Stallings Drive Nacogdoches, Texas 75964 (936) 568-9451 Fax: (936) 568-9527	Groundwater Contour Map Uppermost Aquifer Water Levels Measured 11/13/2001	Angelina County Waste Management Center Permit No. MSW 2105A Angelina County, Texas	Exhibit 8.3.6.4 Page No. III-5-30U Project No. L-01-649 Revision No. 0, March 2008 Revision No. 1, February 2010



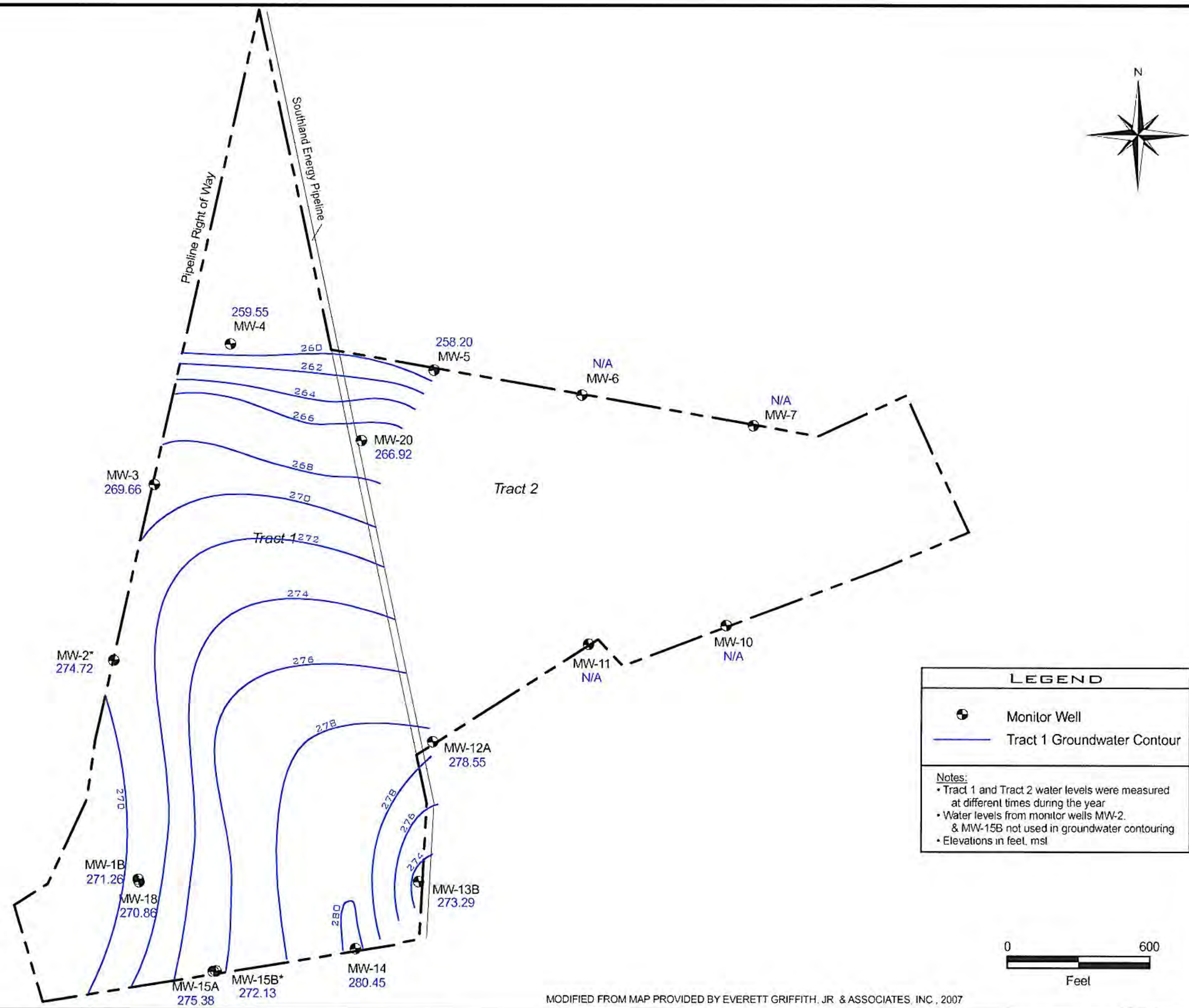
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 04/02/2002

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.7.1
Page No. III-5-30V
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



LEGEND

- Monitor Well
- Tract 1 Groundwater Contour

Notes:
- Tract 1 and Tract 2 water levels were measured at different times during the year
- Water levels from monitor wells MW-2, & MW-15B not used in groundwater contouring
- Elevations in feet, msl

MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR & ASSOCIATES, INC., 2007

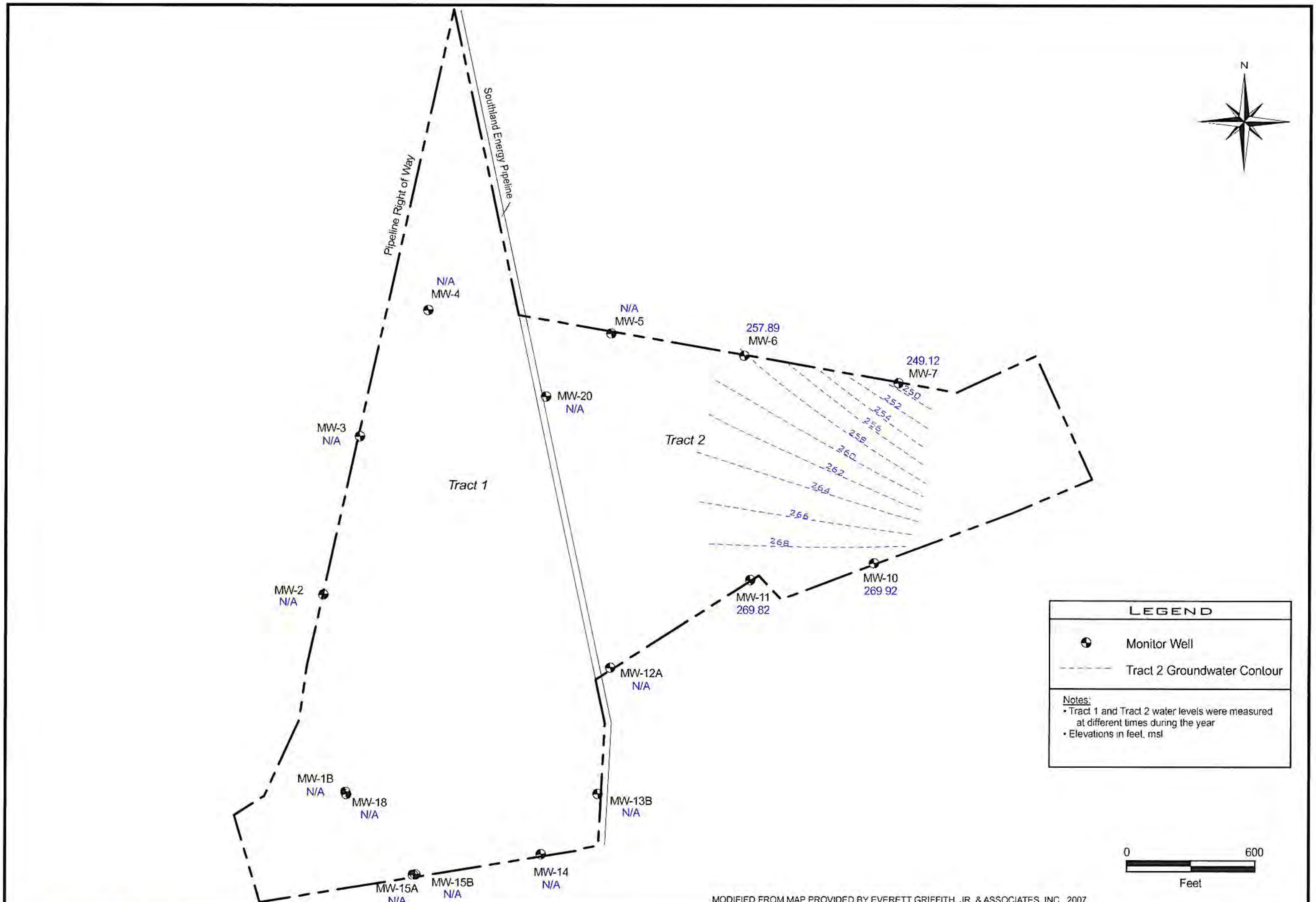
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 05/13/2002

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.7.2
Page No. III-5-30W
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR. & ASSOCIATES, INC., 2007

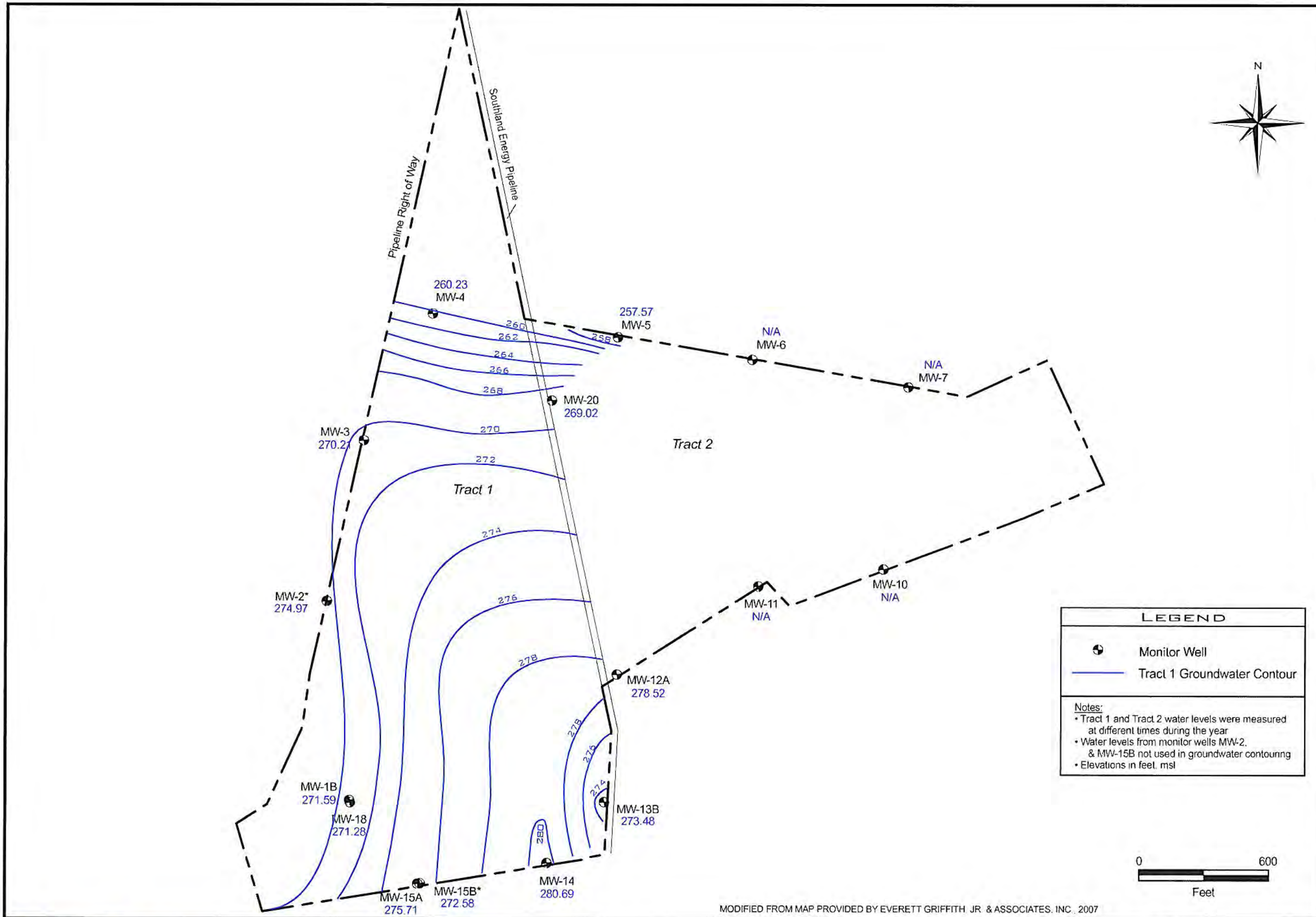
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 10/10/2002

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.7.3
Page No. III-5-30X
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH JR & ASSOCIATES, INC., 2007

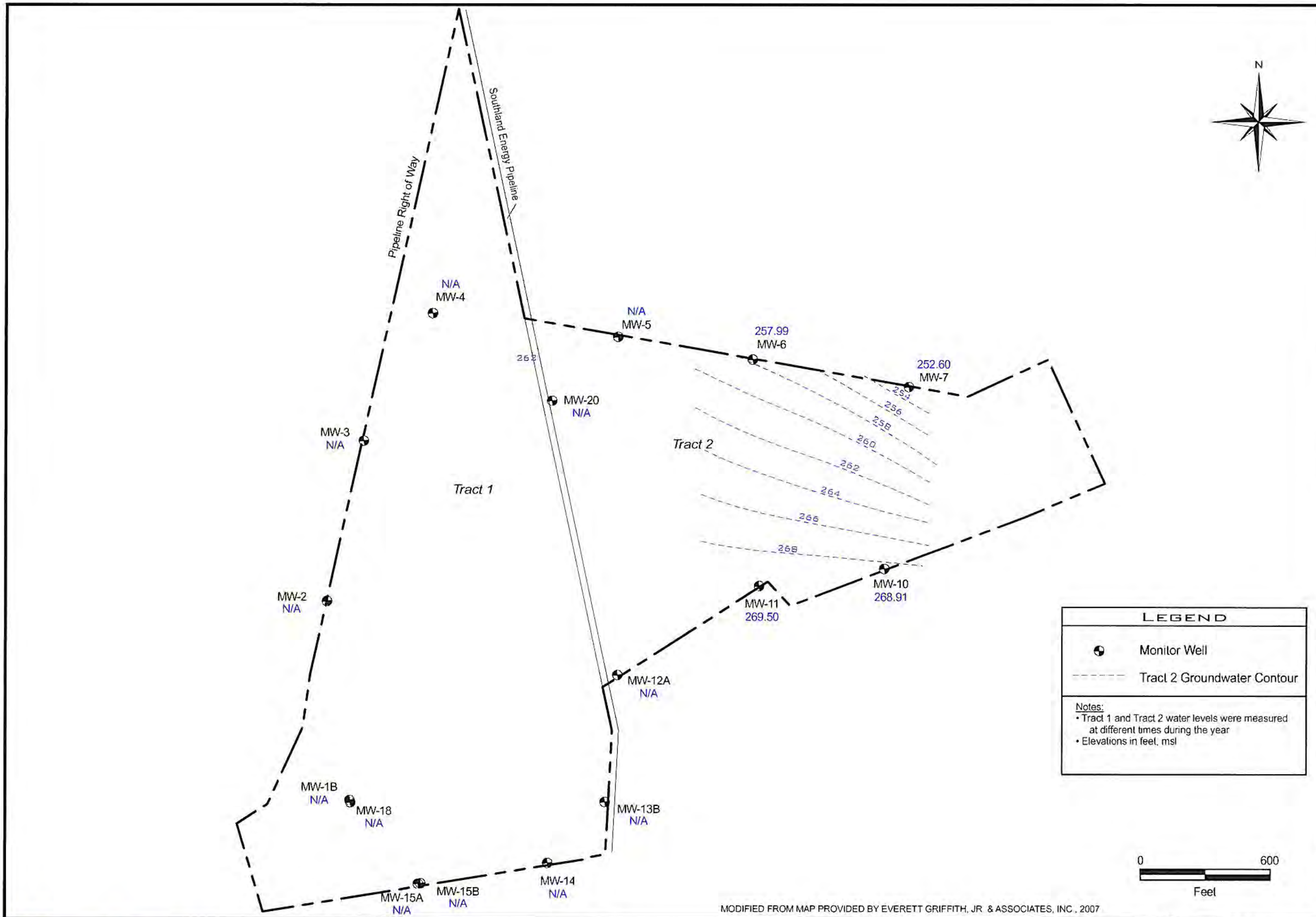
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 11/05/2002

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.7.4
Page No. III-5-30Y
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR & ASSOCIATES, INC., 2007

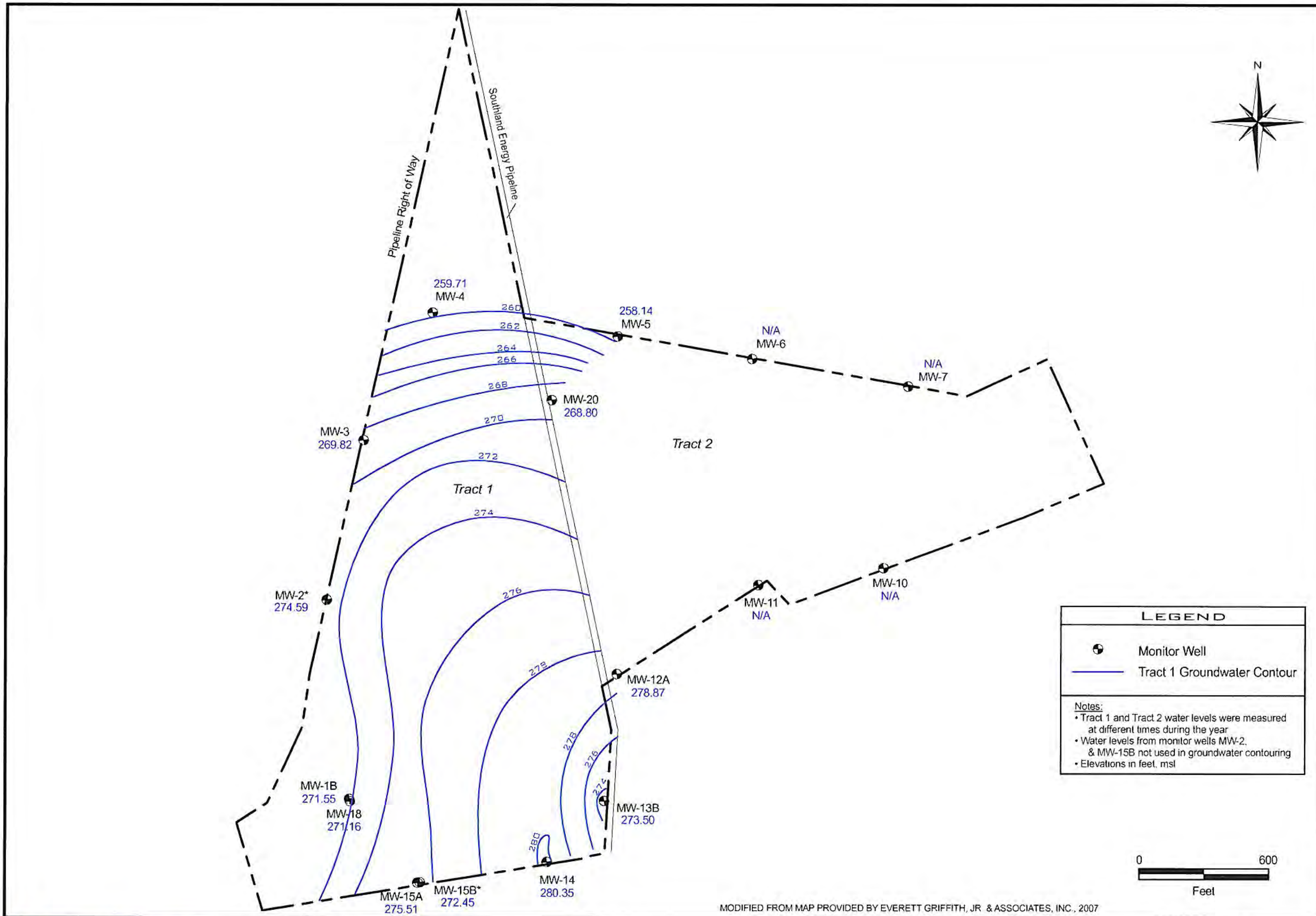
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 05/07/2003

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.8.1
Page No. III-5-30Z
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR & ASSOCIATES, INC., 2007

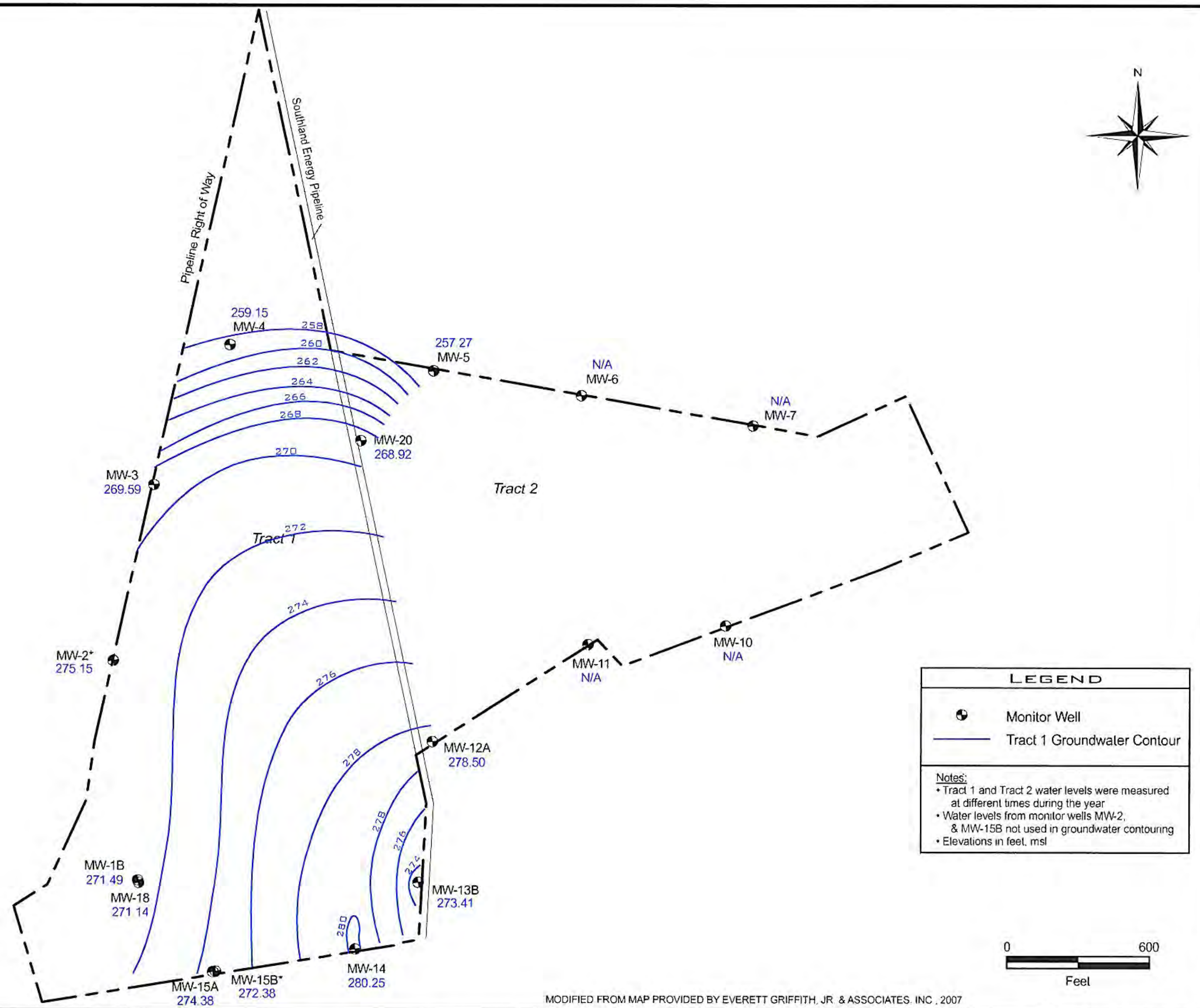
Hydrex ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 05/20/2003

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.8.2
Page No. III-5-30AA
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 11/10/2003

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

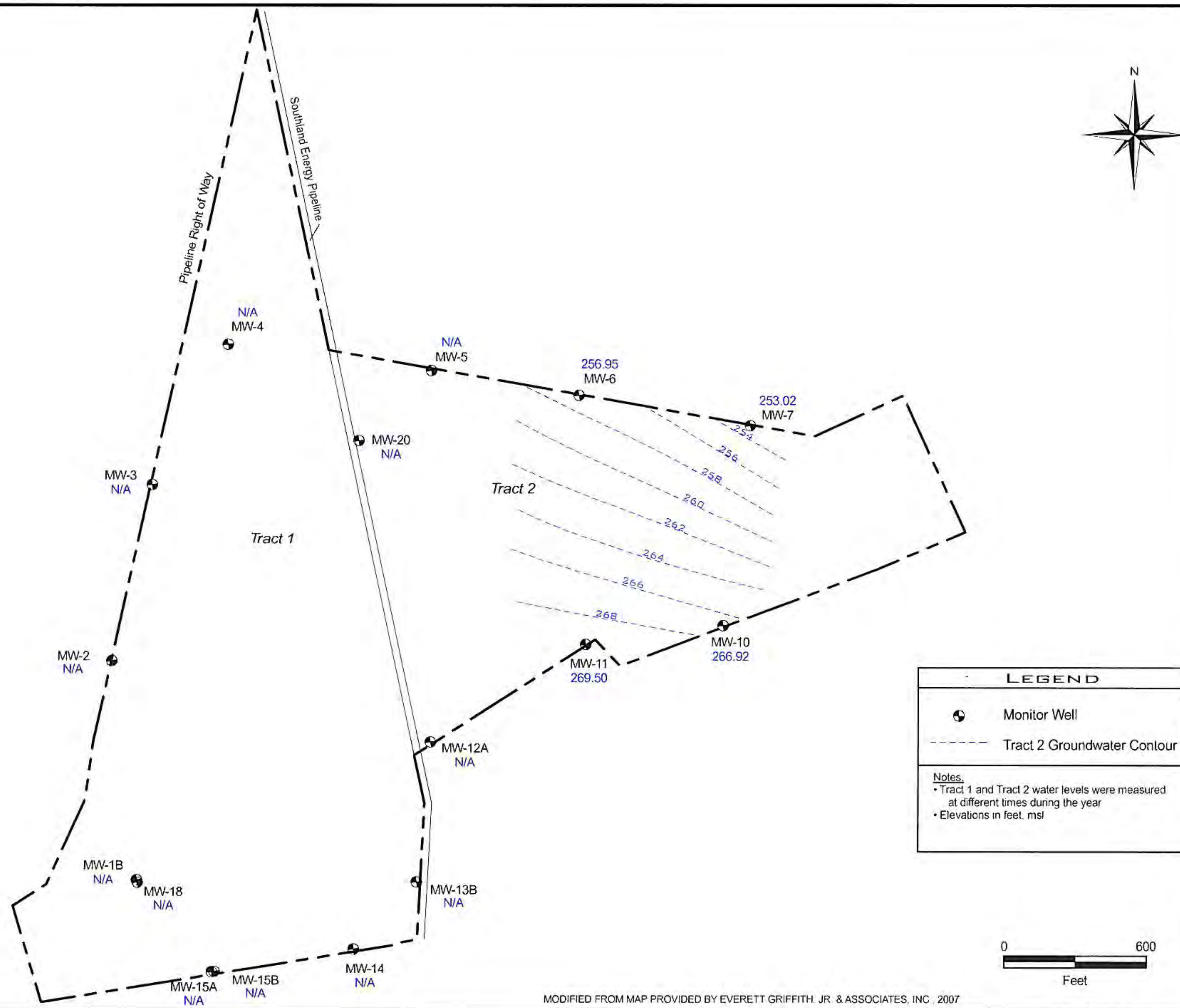
Exhibit 8.3.8.3

Page No. III-5-30AB

Project No. L-01-649

Revision No. 0, March 2008

Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR. & ASSOCIATES, INC., 2007

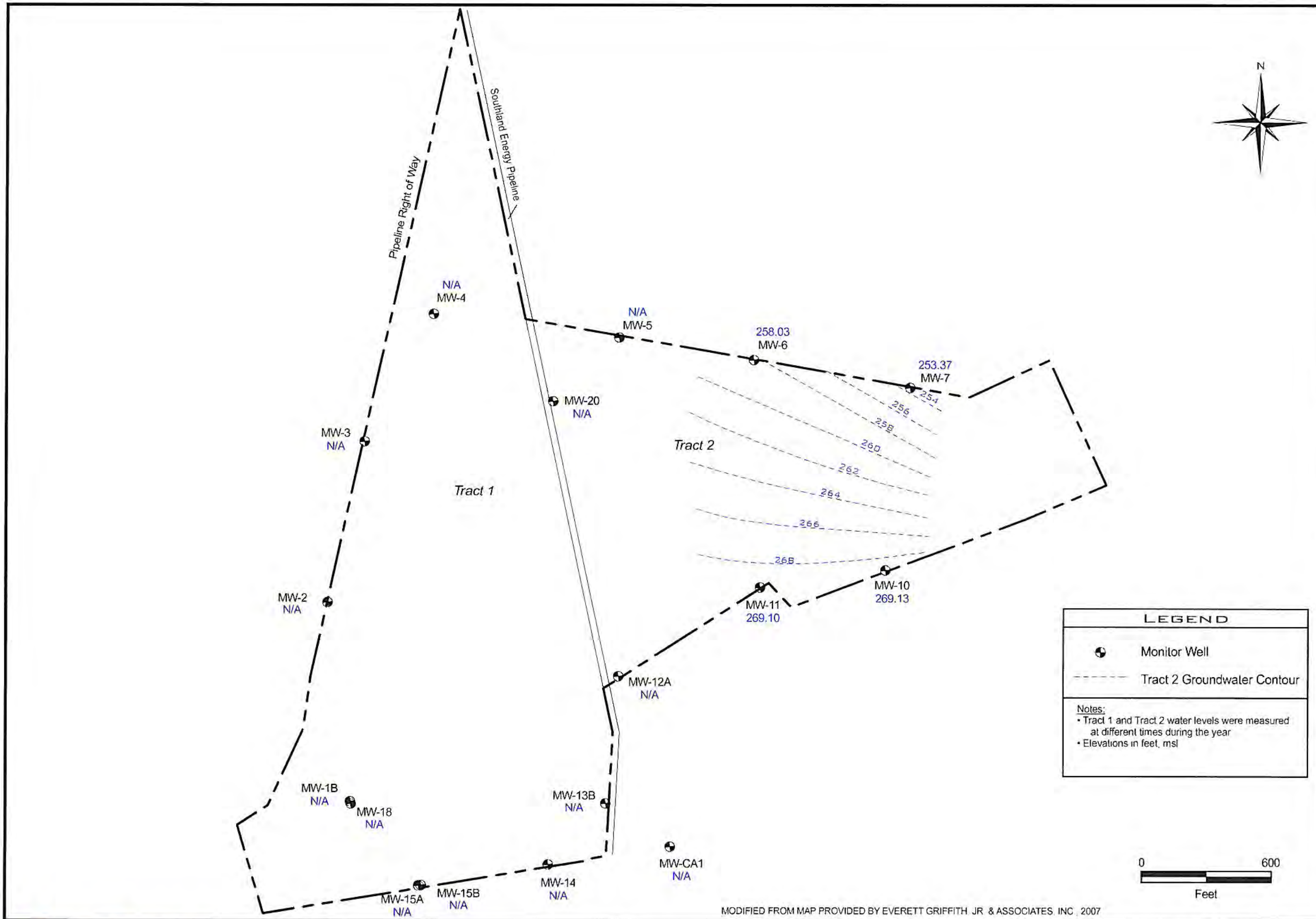
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 11/26/2003

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.8.4
Page No. III-5-30AC
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



Hydrex ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 05/03/2004

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

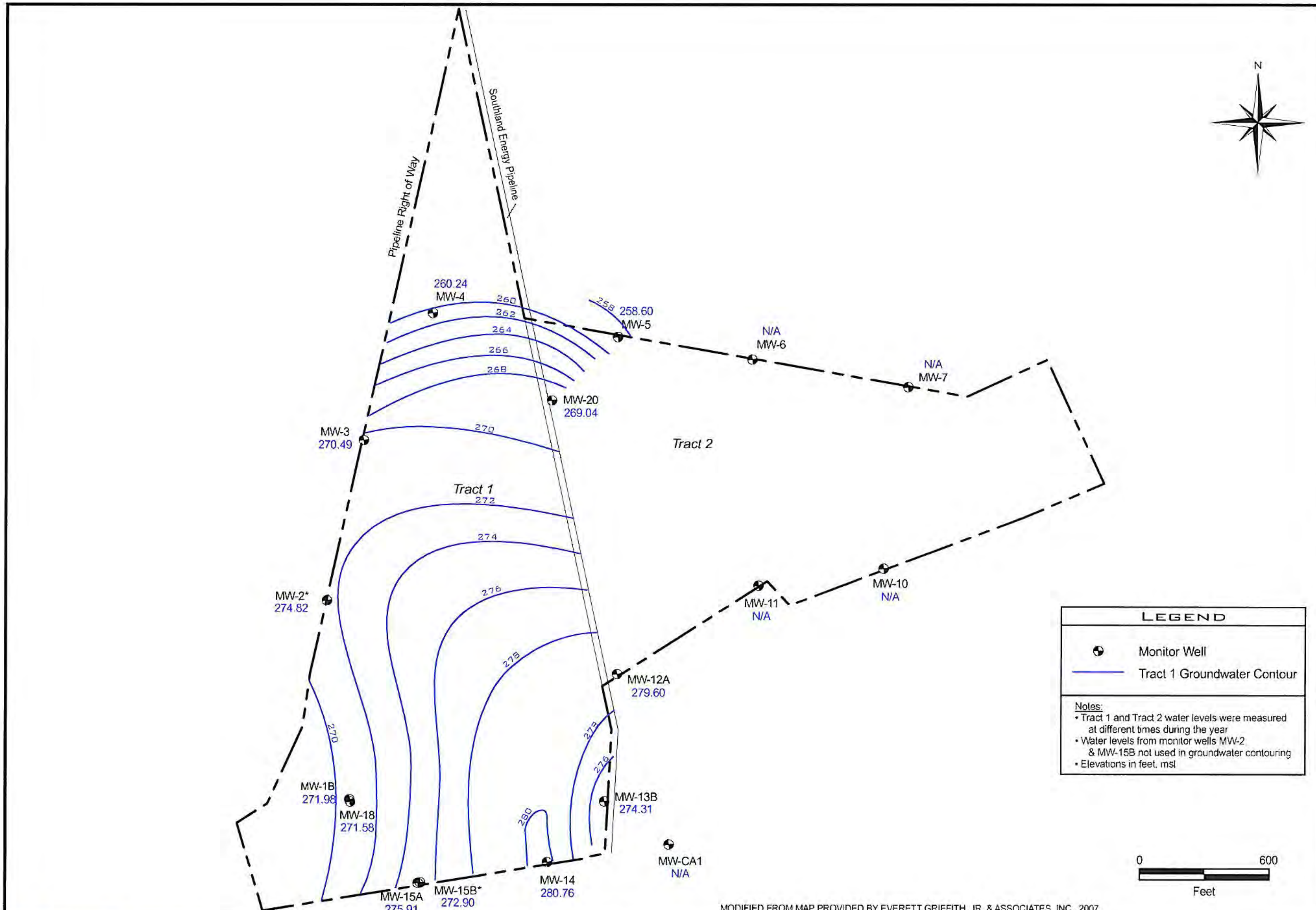
Exhibit 8.3.9.1

Page No. III-5-30AD

Project No. L-01-649

Revision No. 0, March 2008

Revision No. 1, February 2010



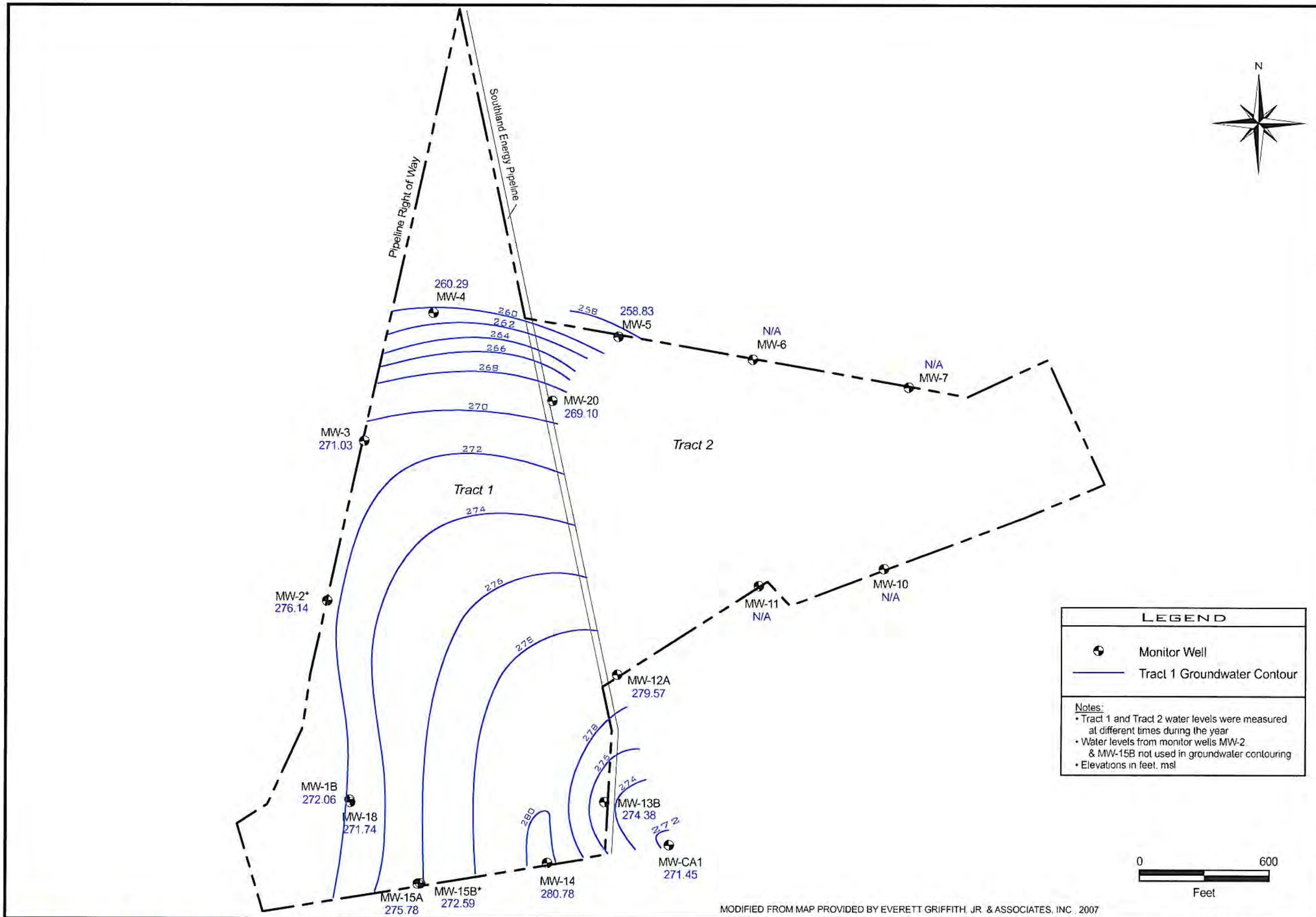
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 06/01/2004

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.9.2
Page No. III-5-30AE
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



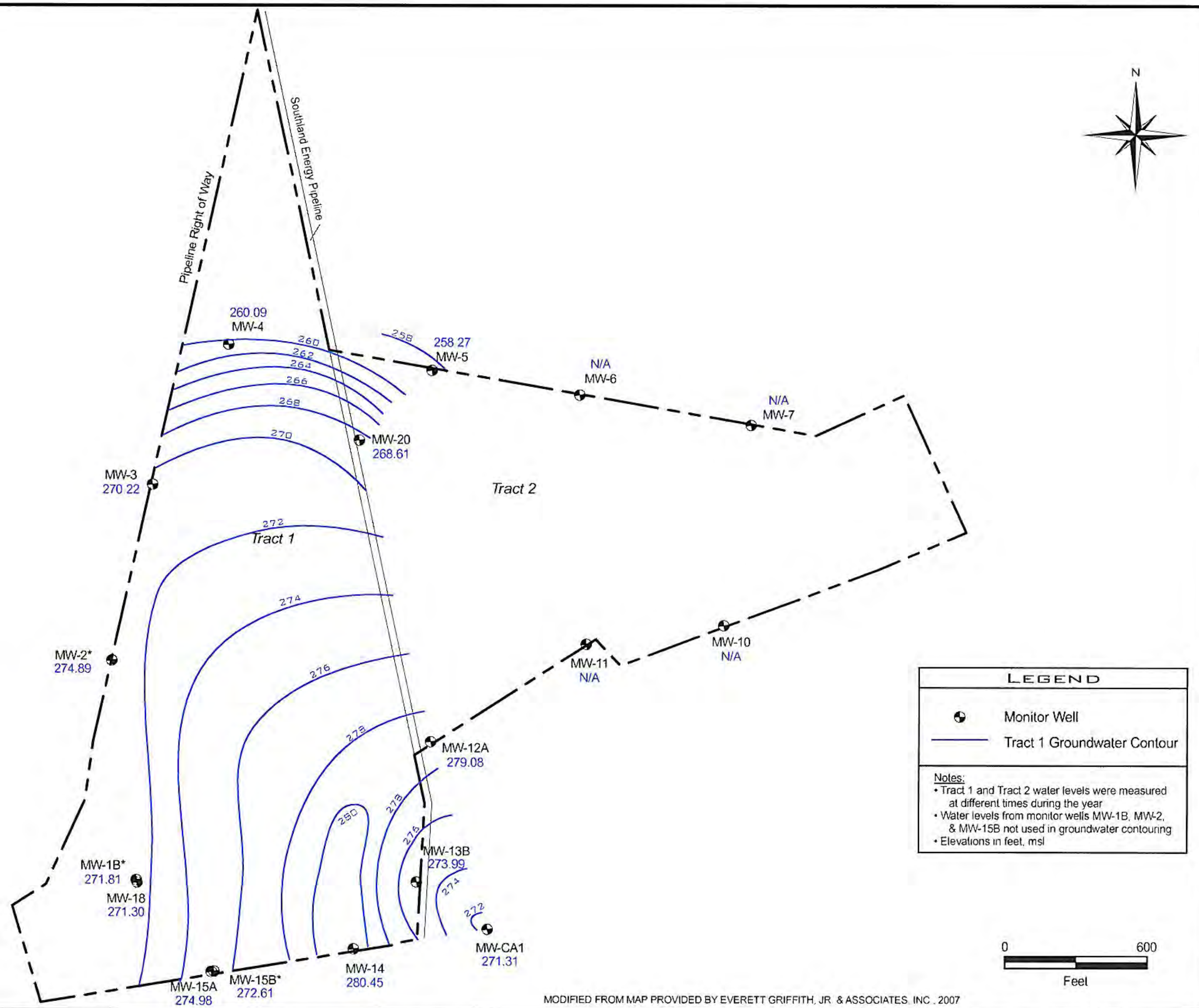
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 09/07/2004

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.9.3
Page No. III-5-30AF
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR. & ASSOCIATES, INC., 2007

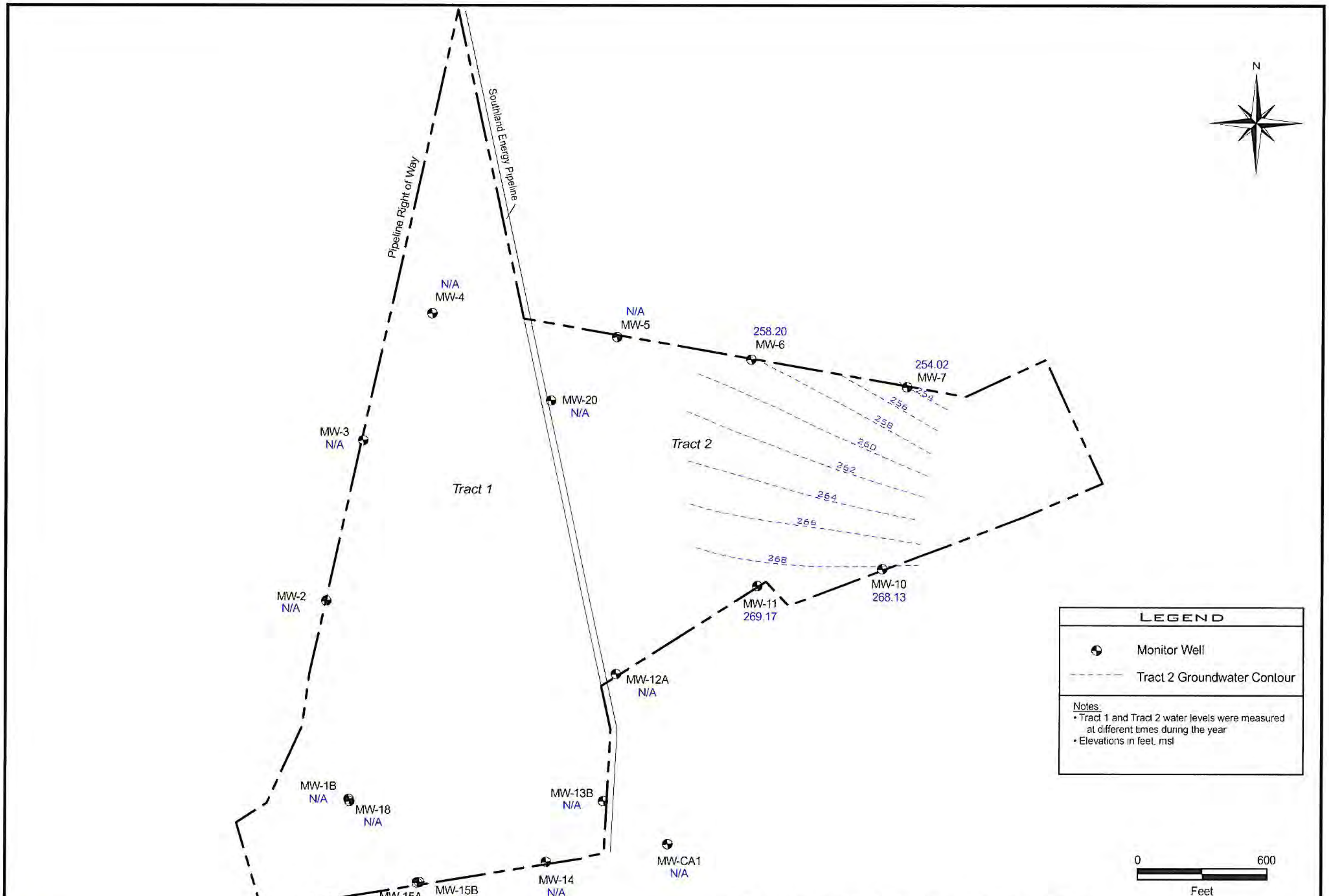
Hydrex ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 11/08/2004

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.9.4
Page No. III-5-30AG
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR. & ASSOCIATES, INC., 2007

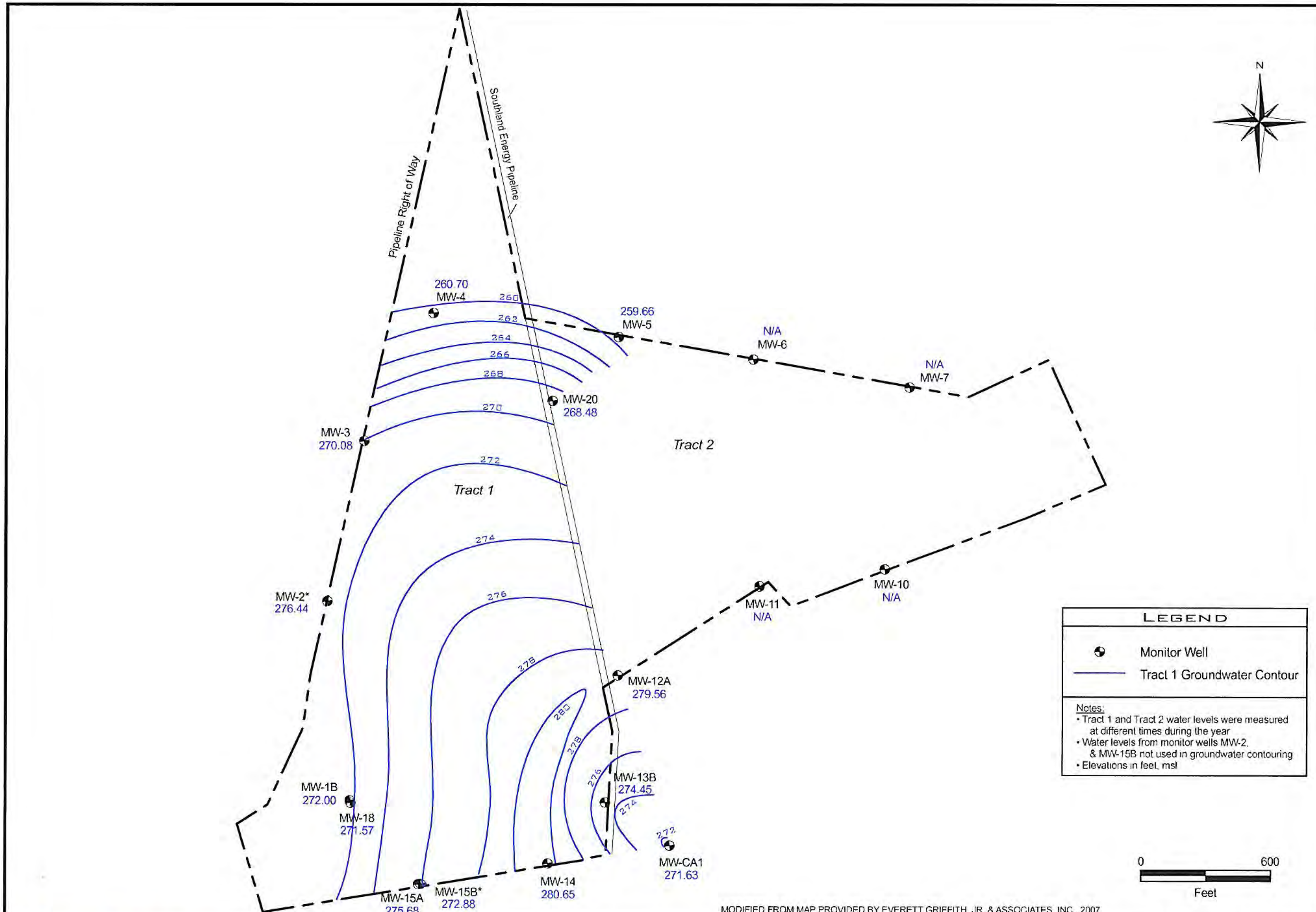
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 11/10/2004

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.9.5
Page No. III-5-30AH
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH JR & ASSOCIATES INC, 2007

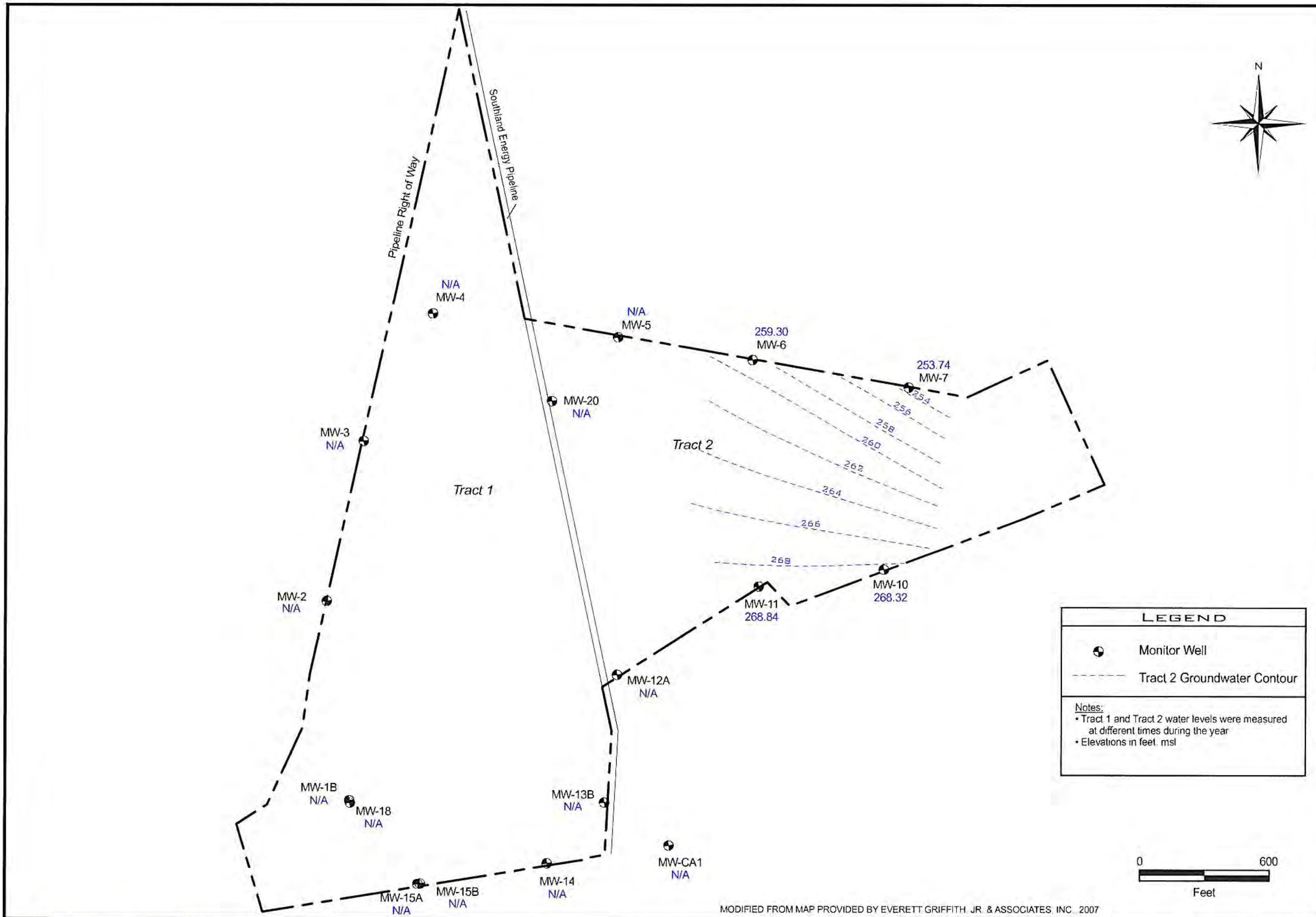
Hydrex ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 05/02/2005

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.10.1
Page No. III-5-30AI
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



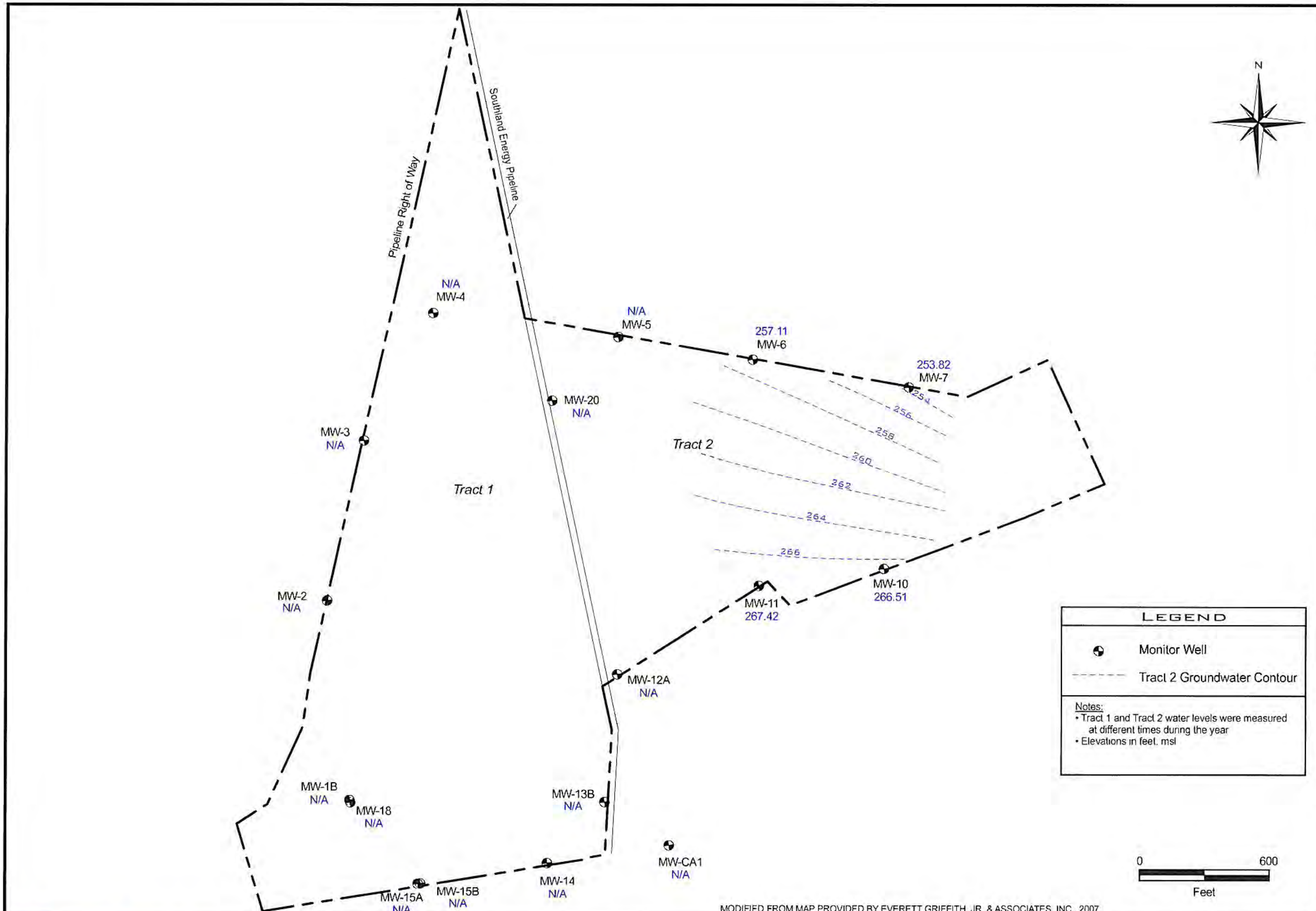
Hydrex ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 05/26/2005

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.10.2
Page No. III-5-30AJ
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



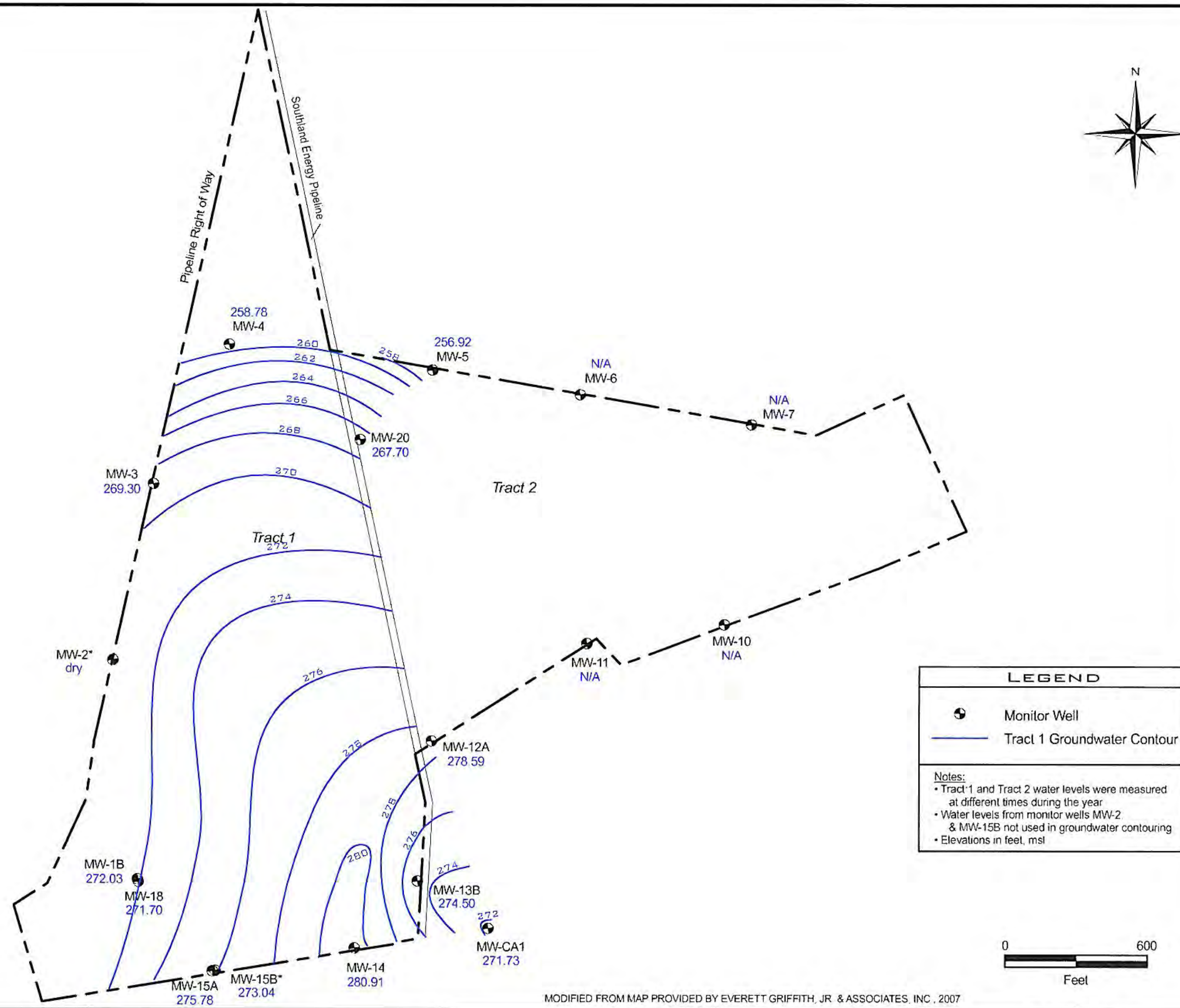
Hydrex ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 11/03/2005

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.10.3
Page No. III-5-30AK
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



LEGEND

- Monitor Well
- Tract 1 Groundwater Contour

Notes:
- Tract 1 and Tract 2 water levels were measured at different times during the year
- Water levels from monitor wells MW-2 & MW-15B not used in groundwater contouring
- Elevations in feet, msl

MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR. & ASSOCIATES, INC., 2007

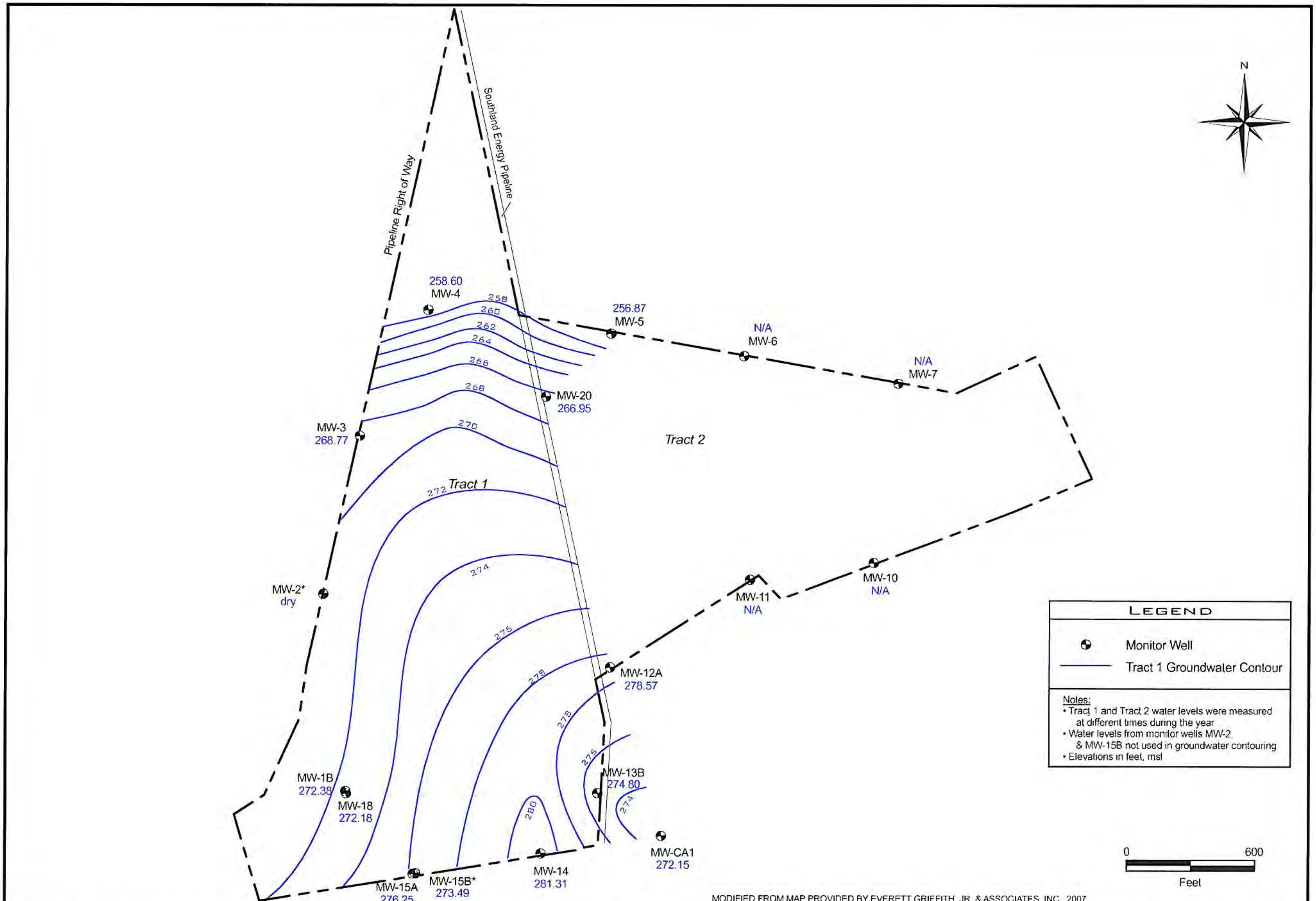
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 11/07/2005

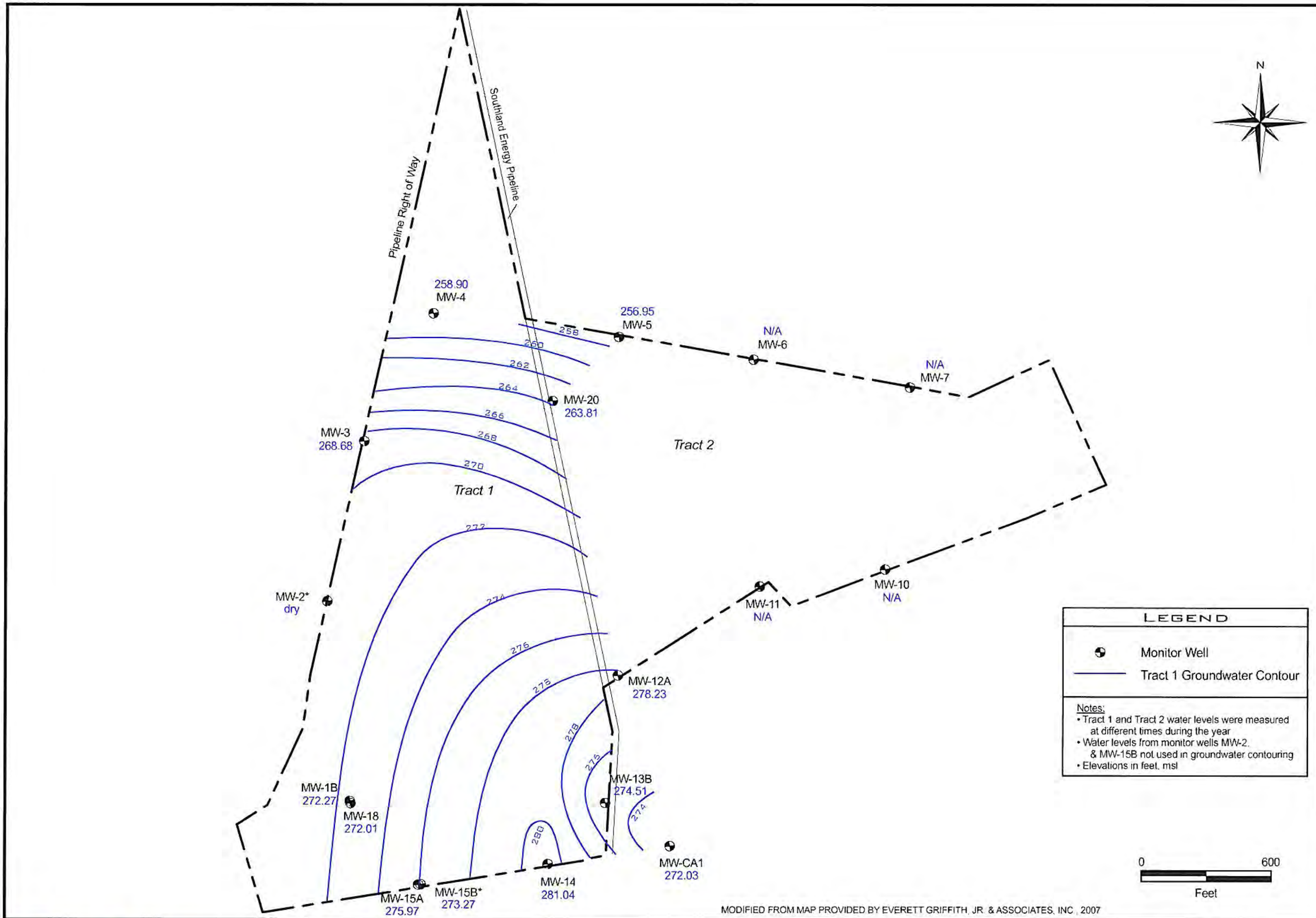
Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.10.4
Page No. III-5-30AL
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR & ASSOCIATES, INC., 2007

Hydrex ENVIRONMENTAL, INC. 1120 NW Stallings Drive Nacogdoches, Texas 75964 (936) 568-9451 Fax: (936) 568-9527	Groundwater Contour Map Uppermost Aquifer Water Levels Measured 01/03/2006	Angelina County Waste Management Center Permit No. MSW 2105A Angelina County, Texas	Exhibit 8.3.11.1 Page No. III-5-30AM Project No. L-01-649 Revision No. 0, March 2008 Revision No. 1, February 2010



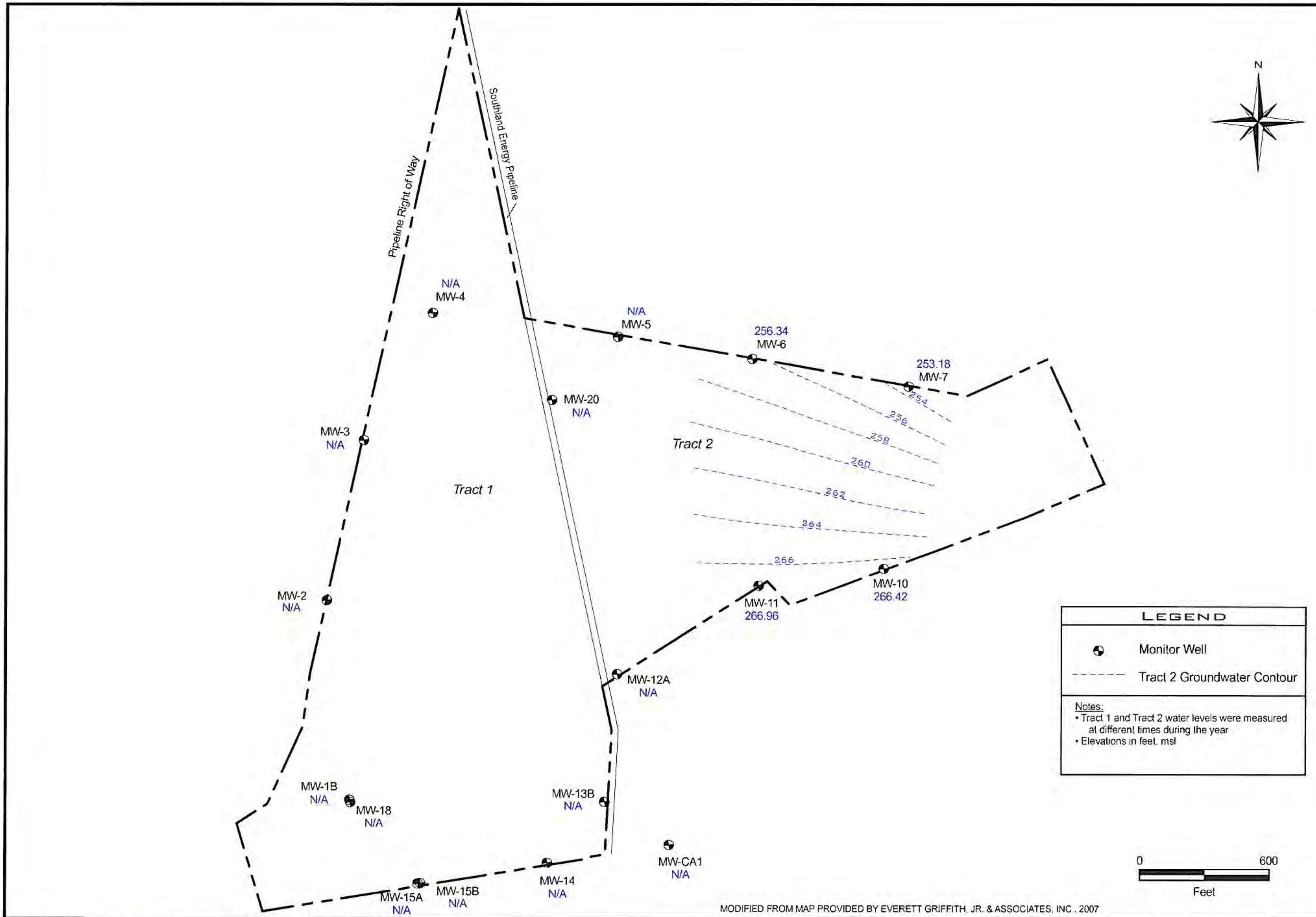
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 05/31/2006

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.11.2
Page No. III-5-30AN
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 06/29/2006

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

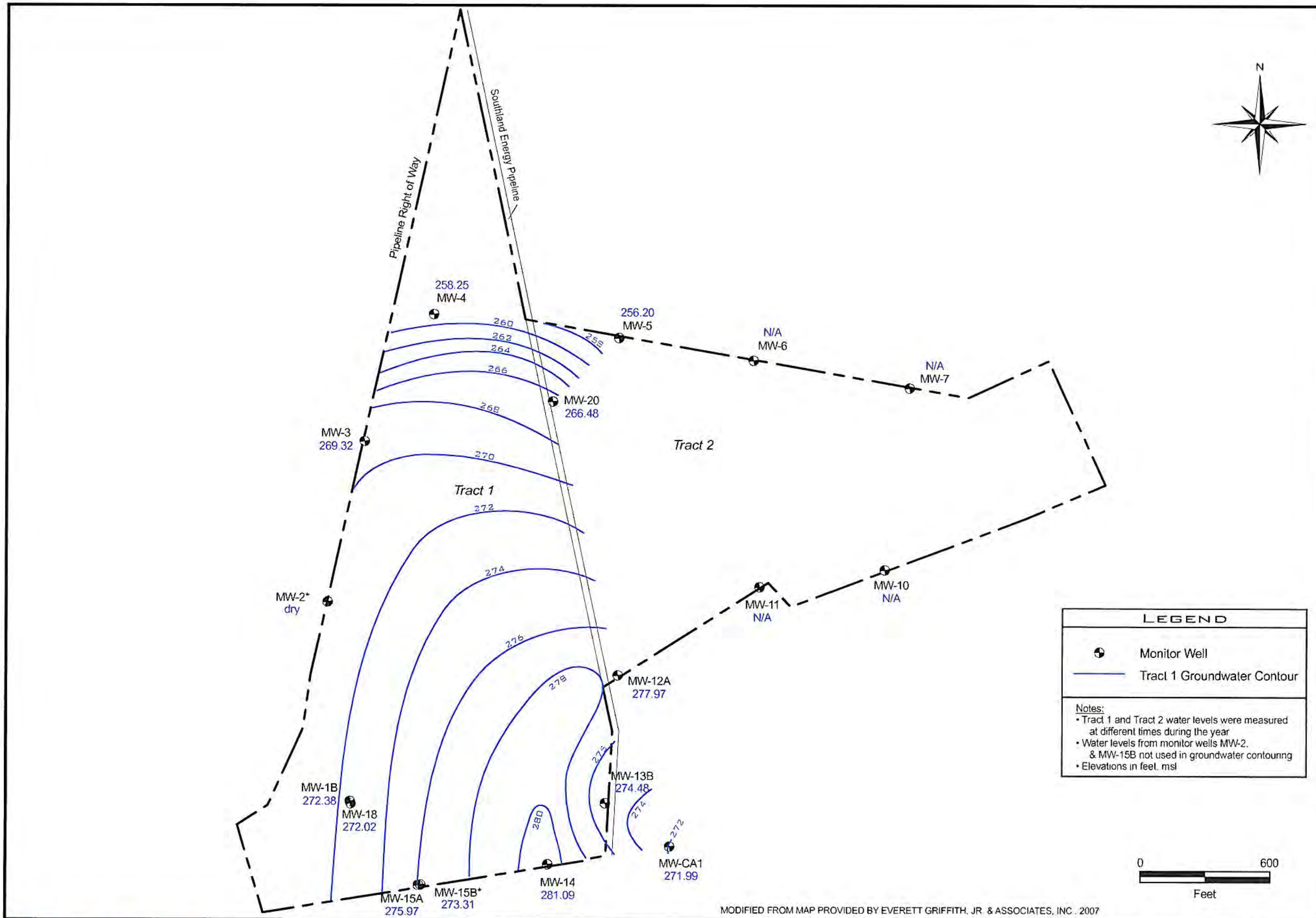
Exhibit 8.3.11.3

Page No. III-5-30AO

Project No. L-01-649

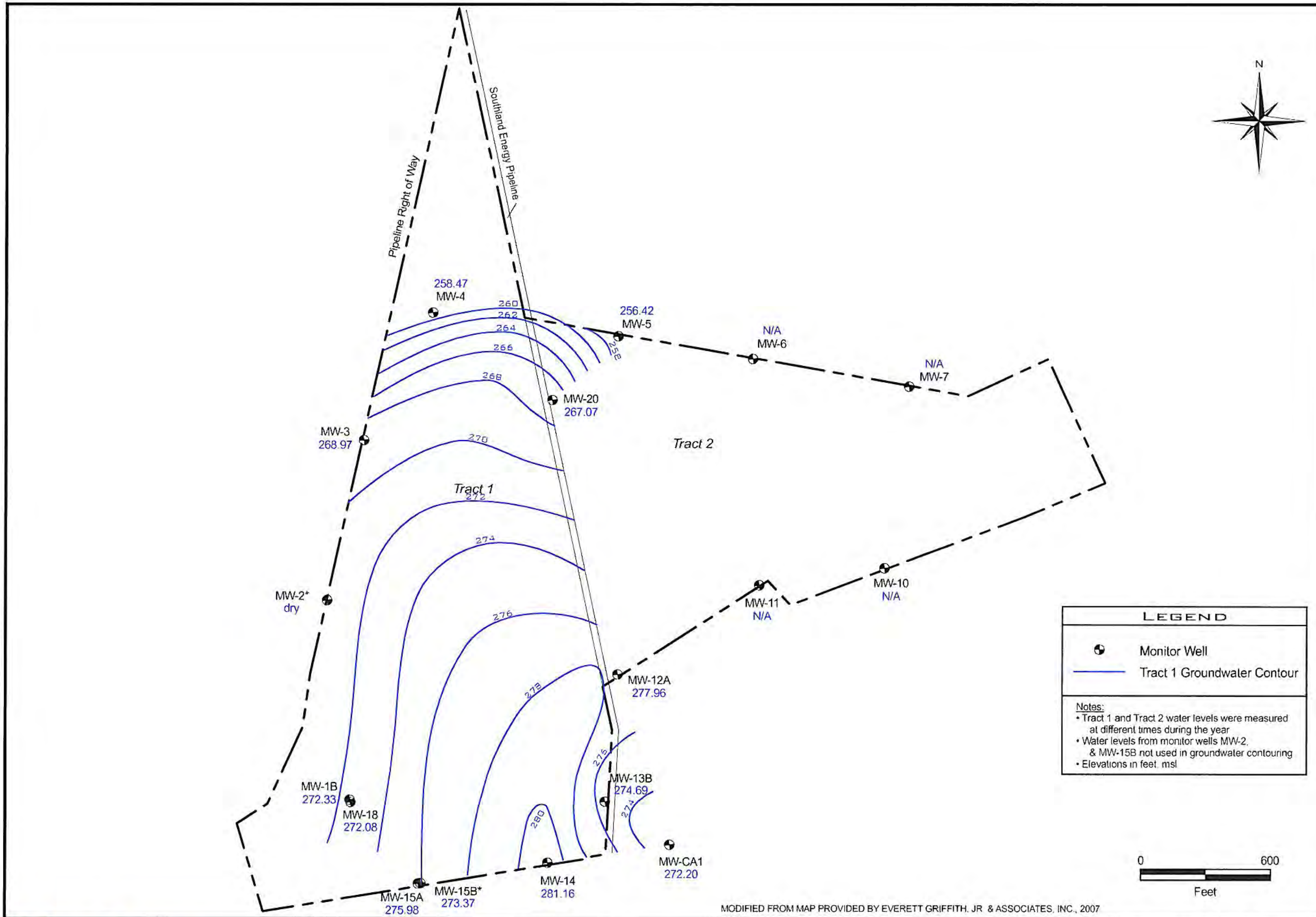
Revision No. 0, March 2008

Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR & ASSOCIATES, INC. 2007

Hydrex ENVIRONMENTAL, INC. 1120 NW Stallings Drive Nacogdoches, Texas 75964 (936) 568-9451 Fax: (936) 568-9527	Groundwater Contour Map Uppermost Aquifer Water Levels Measured 08/14/2006	Angelina County Waste Management Center Permit No. MSW 2105A Angelina County, Texas	Exhibit 8.3.11.4 Page No. III-5-30AP Project No. L-01-649 Revision No. 0, March 2008 Revision No. 1, February 2010



MODIFIED FROM MAP PROVIDED BY EVERETT GRIFFITH, JR & ASSOCIATES, INC., 2007

Hydrex ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 11/07/2006

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

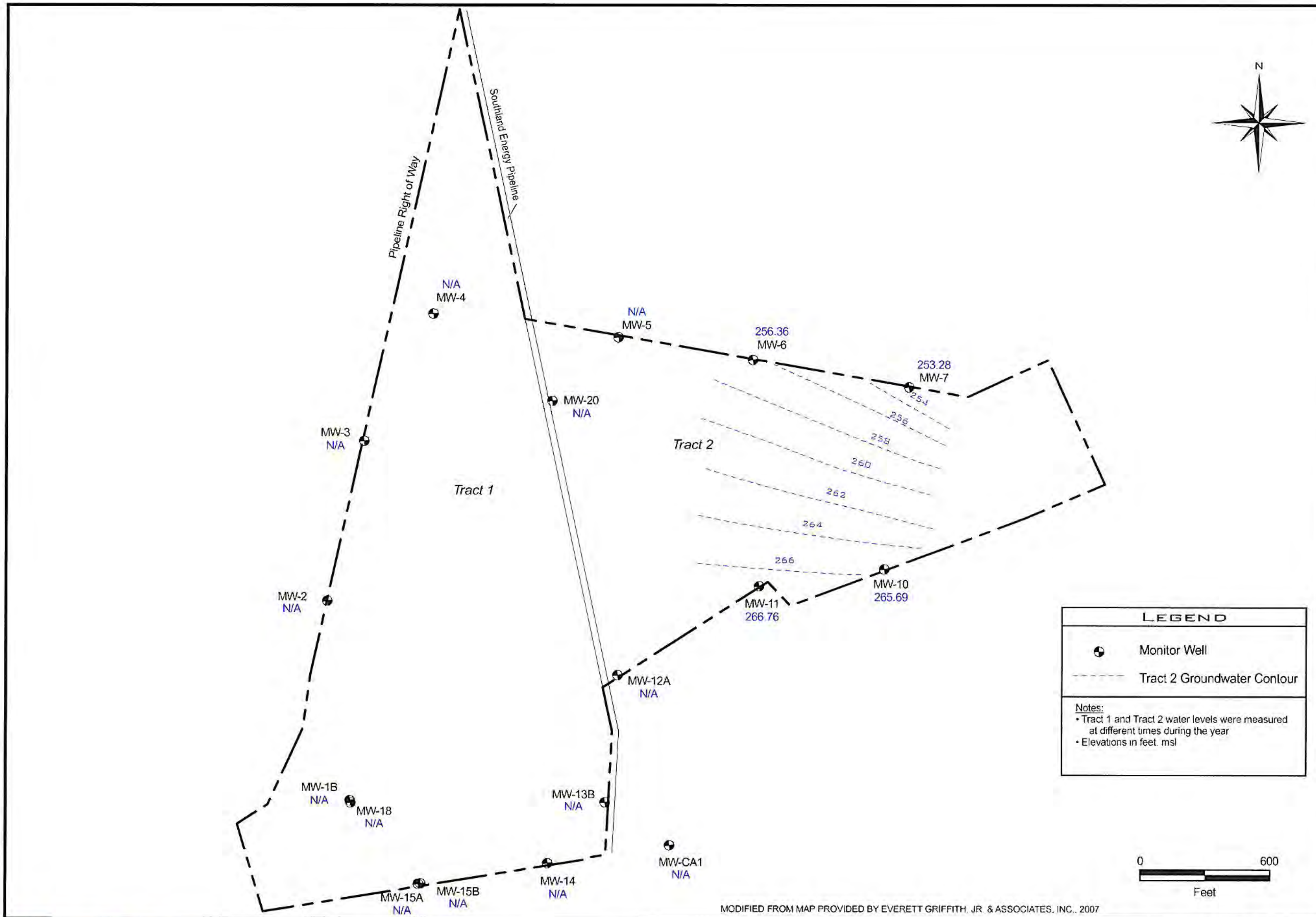
Exhibit 8.3.11.5

Page No. III-5-30AQ

Project No. L-01-649

Revision No. 0, March 2008

Revision No. 1, February 2010



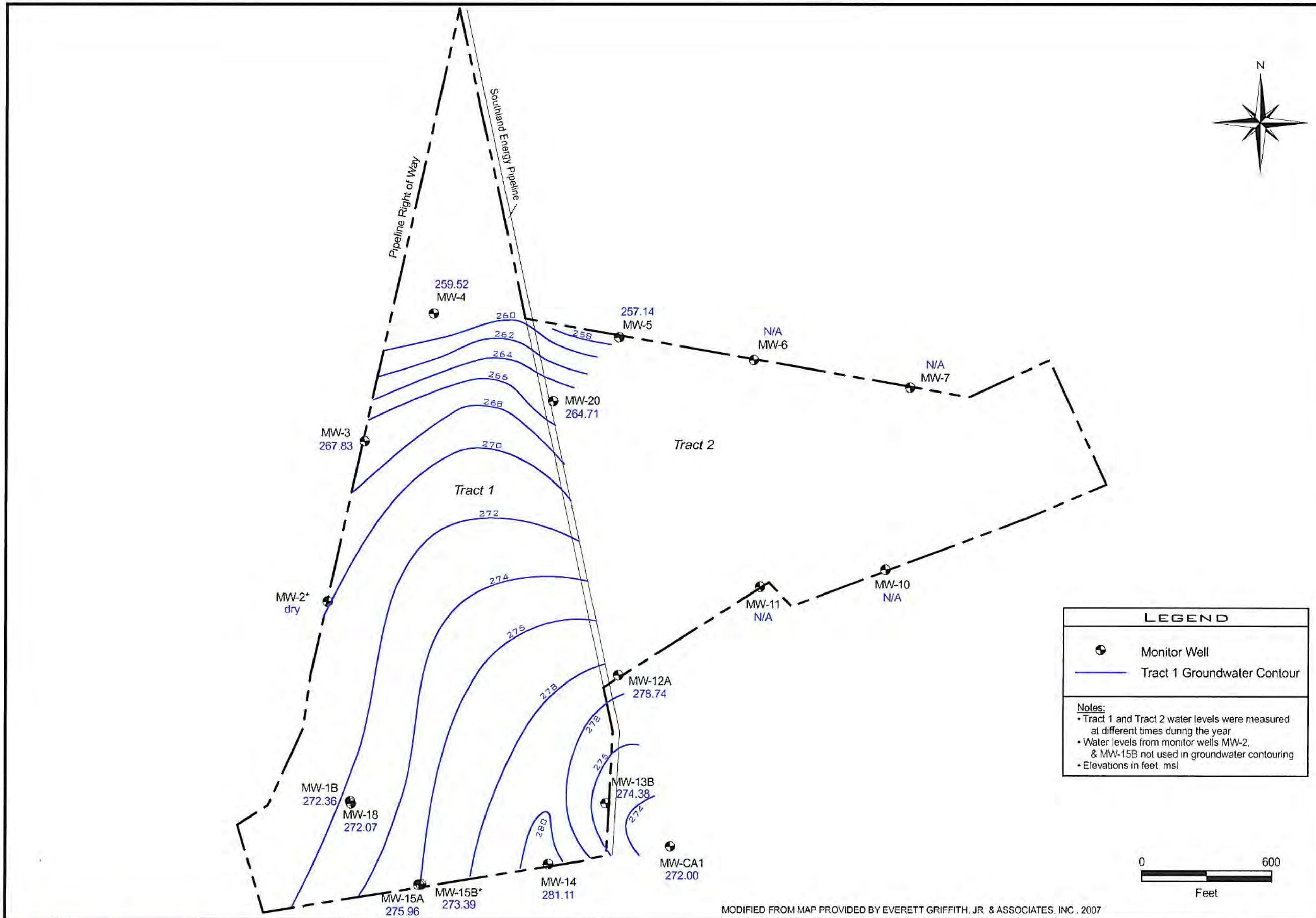
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 11/09/2006

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.11.6
Page No. III-5-30AR
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 02/14/2007

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

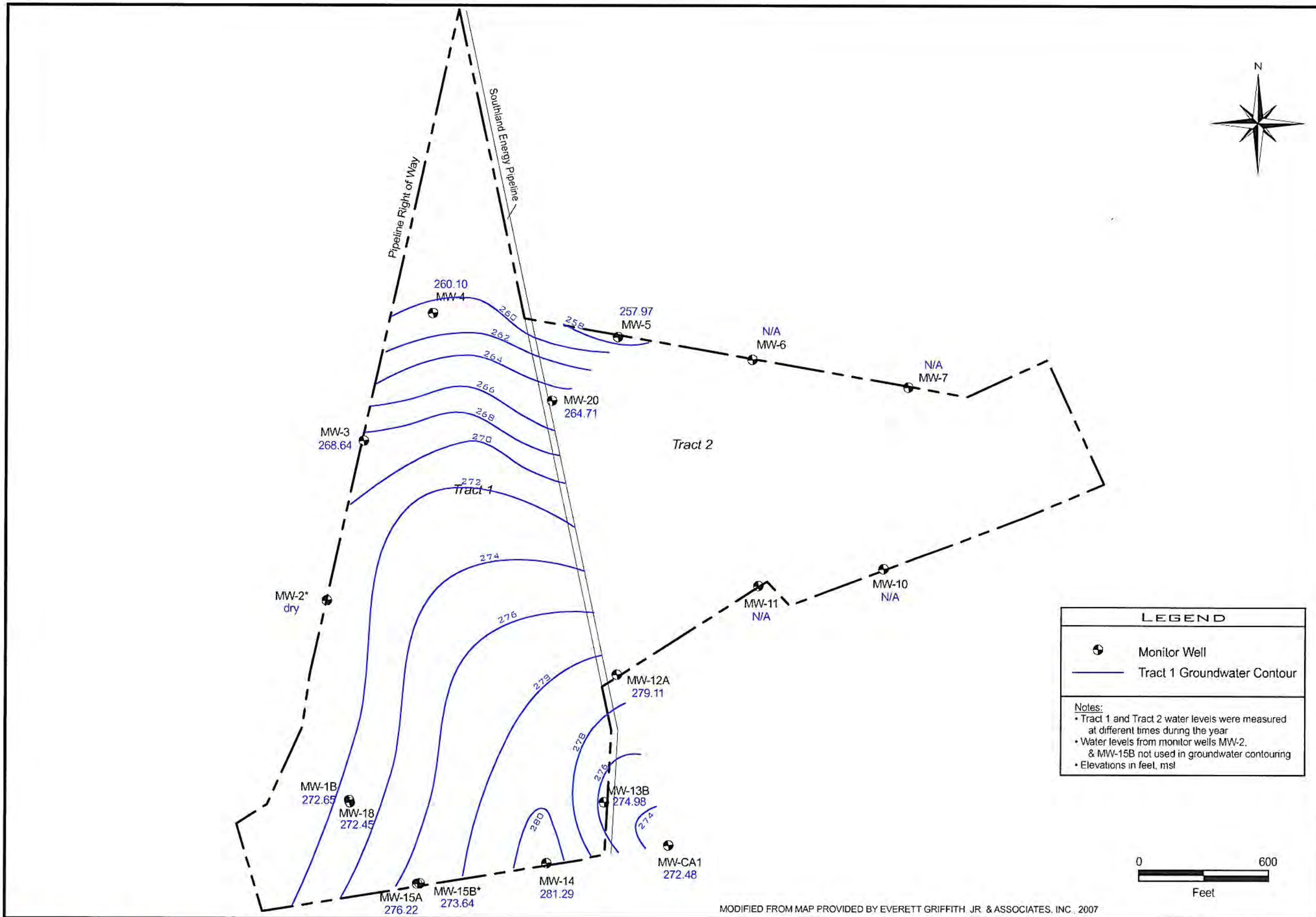
Exhibit 8.3.12.1

Page No. III-5-30AS

Project No. L-01-649

Revision No. 0, March 2008

Revision No. 1, February 2010



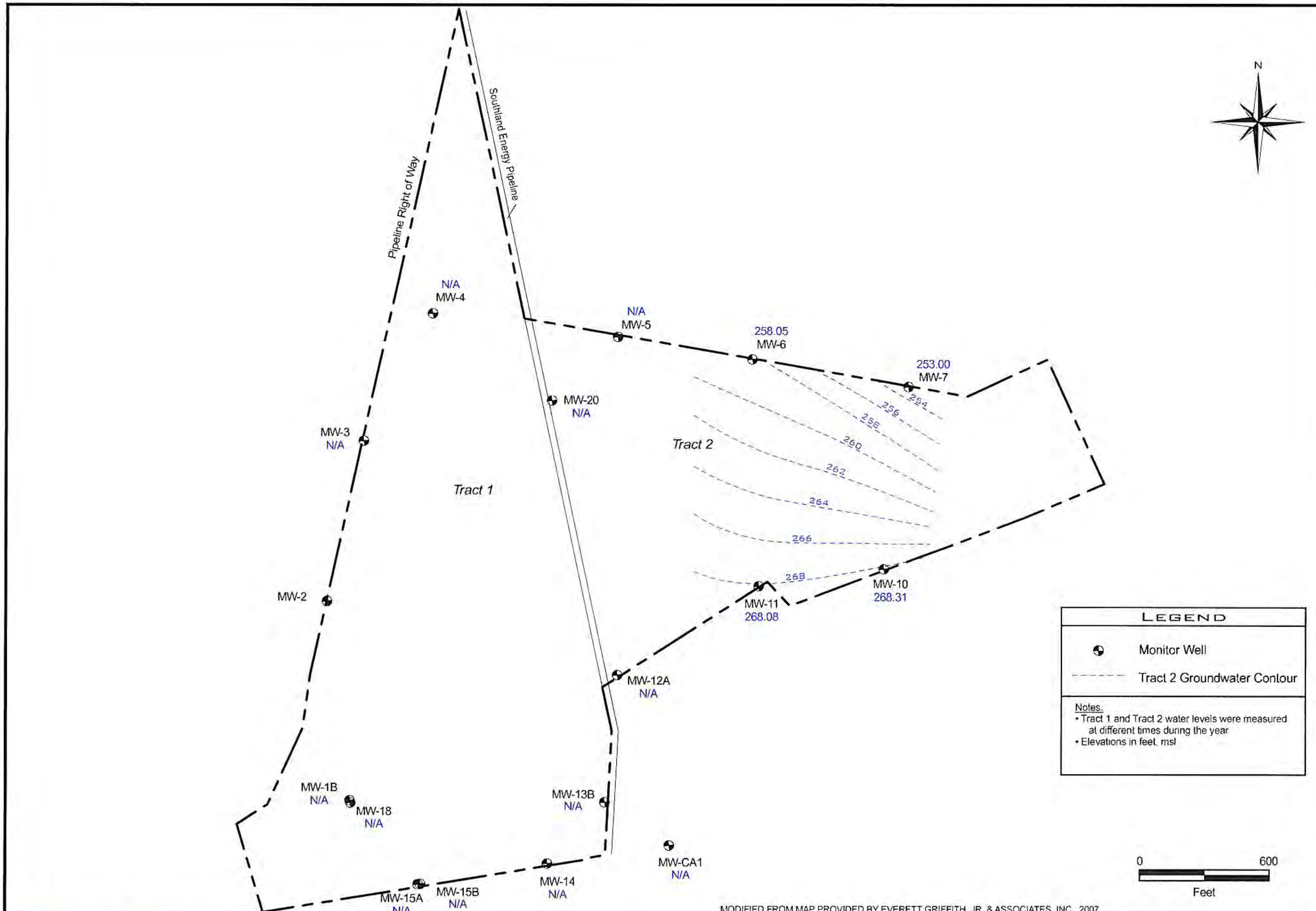
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 05/02/2007

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.12.2
Page No. III-5-30AT
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



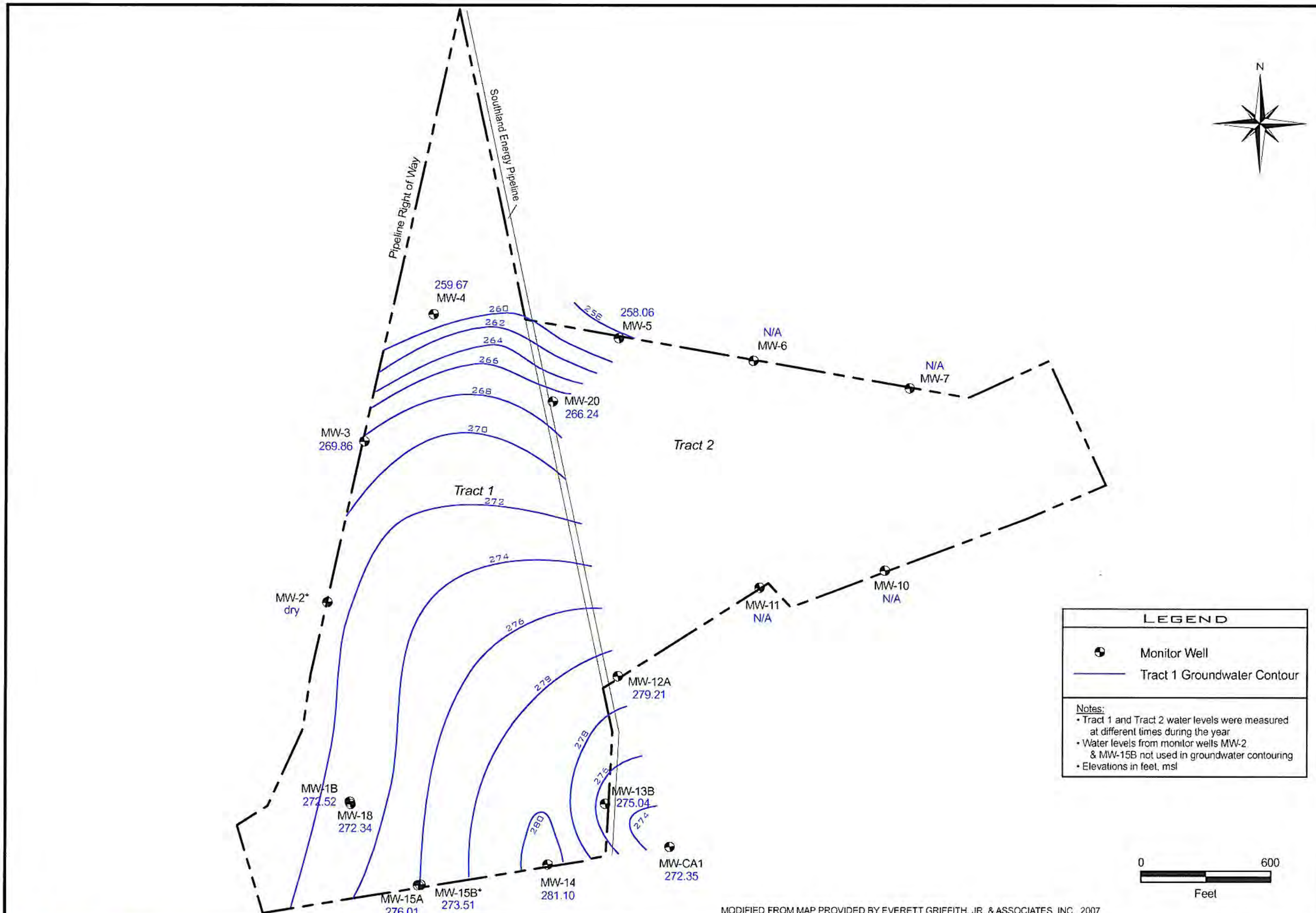
Hydrex ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 07/05/2007

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.12.3
Page No. III-5-30AU
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



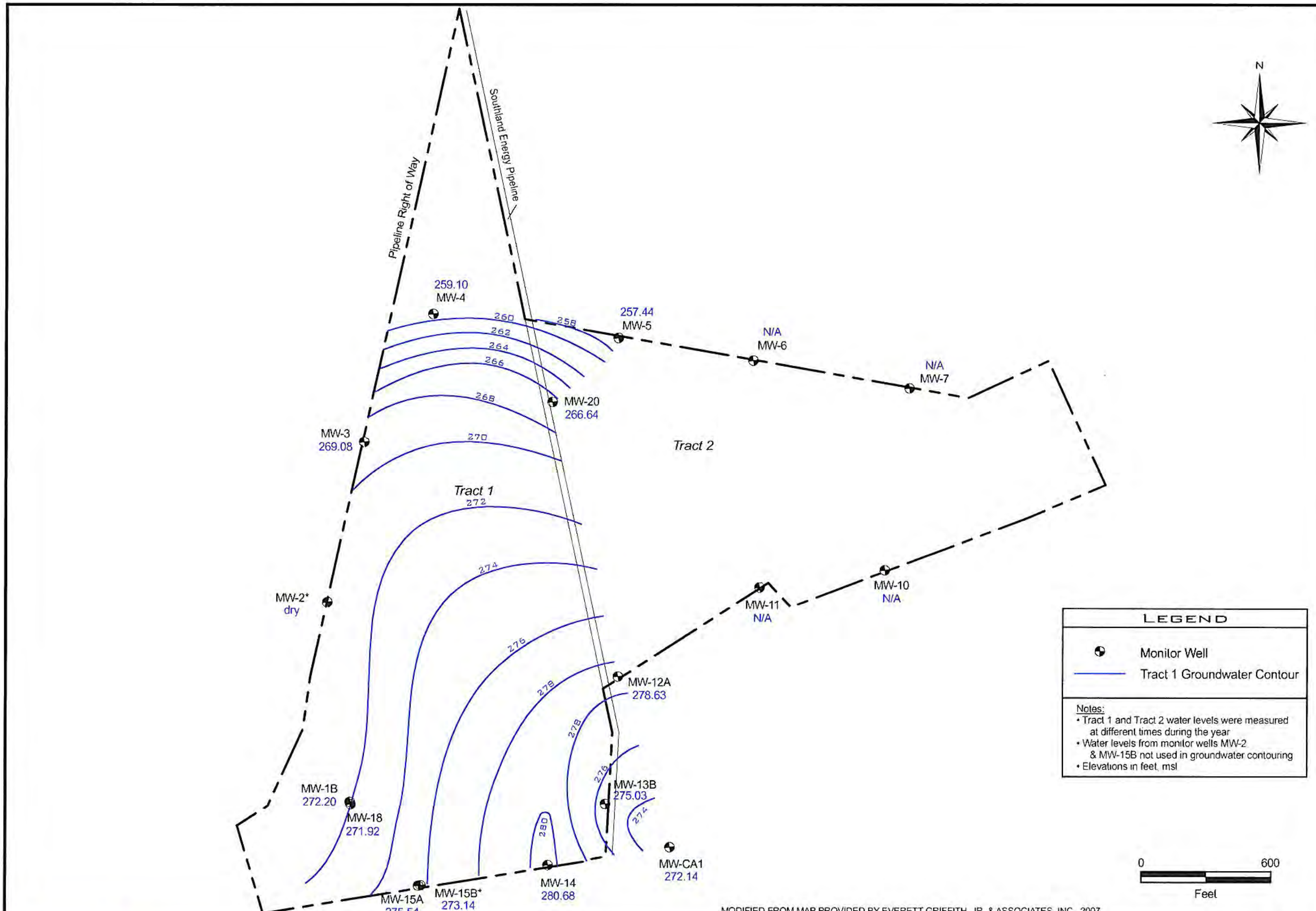
Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 08/27/2007

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.12.4
Page No. III-5-30AV
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010



Hydrex
ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964
(936) 568-9451 Fax: (936) 568-9527

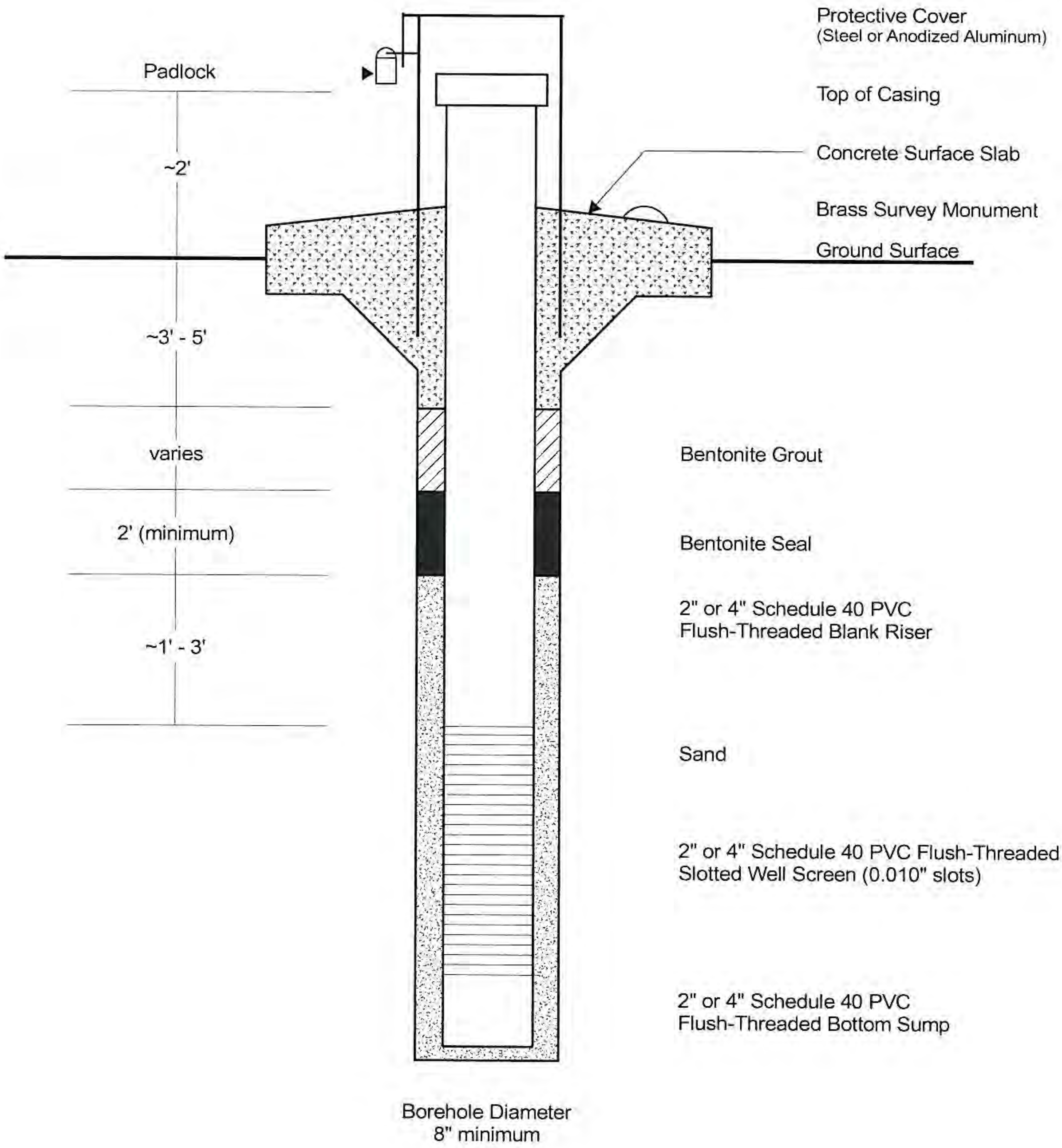
Groundwater Contour Map
Uppermost Aquifer

Water Levels Measured 11/07/2007

Angelina County Waste Management Center
Permit No. MSW 2105A
Angelina County, Texas

Exhibit 8.3.12.5
Page No. III-5-30AW
Project No. L-01-649
Revision No. 0, March 2008
Revision No. 1, February 2010

Monitor Well Construction Details



NOT TO SCALE

Hydrex ENVIRONMENTAL, INC.
1120 NW Stallings Drive
Nacogdoches, Texas 75964-3428
(936) 568-9451 Fax: (936) 568-9527

Monitor Well Construction Details

Exhibit 8.3.13	Job No. L-01-649	
Angelina County Waste Management Center Permit No. MSW 2105A Angelina County, Texas		
Page No. III-5-30AX	Revision No. 0, March 2008	Revision No. 1, February 2010

8.4 Cadmium and Mercury in Groundwater

Well	Date	Parameter	Reported Concentration	MCL	Detection Limit
MW-1	01-94	Mercury	0.0022	0.002	0.0005
MW-5	11-92	Mercury	0.003	0.002	0.001
MW-7	09-92	Mercury	0.005	0.002	0.001
MW-8	04-93	Mercury	0.002	0.002	0.001
MW-14	09-92	Cadmium	0.01	0.01	0.01
	09-92	Mercury	0.002	0.002	0.001
	11-92	Cadmium	0.02	0.01	0.01
	11-92	Mercury	0.002	0.002	0.001
	04-93	Mercury	0.002	0.002	0.001
	01-94	Cadmium	0.023	0.01	0.01
MW-15A	09-92	Cadmium	0.02	0.01	0.01
	11-92	Cadmium	0.02	0.01	0.01
	04-93	Cadmium	0.04	0.01	0.01
	01-94	Cadmium	0.034	0.01	0.01

concentrations in mg/L

8.5 Summary of Detected Cadmium and Mercury in Groundwater

Well	09-92		11-92		04-93		01-94	
	Hg	Cd	Hg	Cd	Hg	Cd	Hg	Cd
MW-1							X	
MW-5			X					
MW-7	X							
MW-8					=			
MW-14	=	=	=	X	=			X
MW-15A		X		X		X		X

X - reported concentration greater than the MCL; = - reported concentration equal to the MCL

8.6 Range of Standard, Duplicate, & Spike Recovery (%)

Parameter	Monitoring Event			
	09-92	11-92	04-93	01-94
Mercury	100 to 115	84 to 140	91 to 111	100 to 150
Cadmium	94 to 105	94 to 167	100 to 300	97 to 108

* Ranges shown are taken from laboratory QA/QC reports for those samples reported to contain elevated mercury or cadmium.

8.7 Tabulation of Water Level measurements

Angelina County Waste Management Center, Permit No. MSW 2105A, Angelina County, TX - Water Level Elevations (feet, msl)

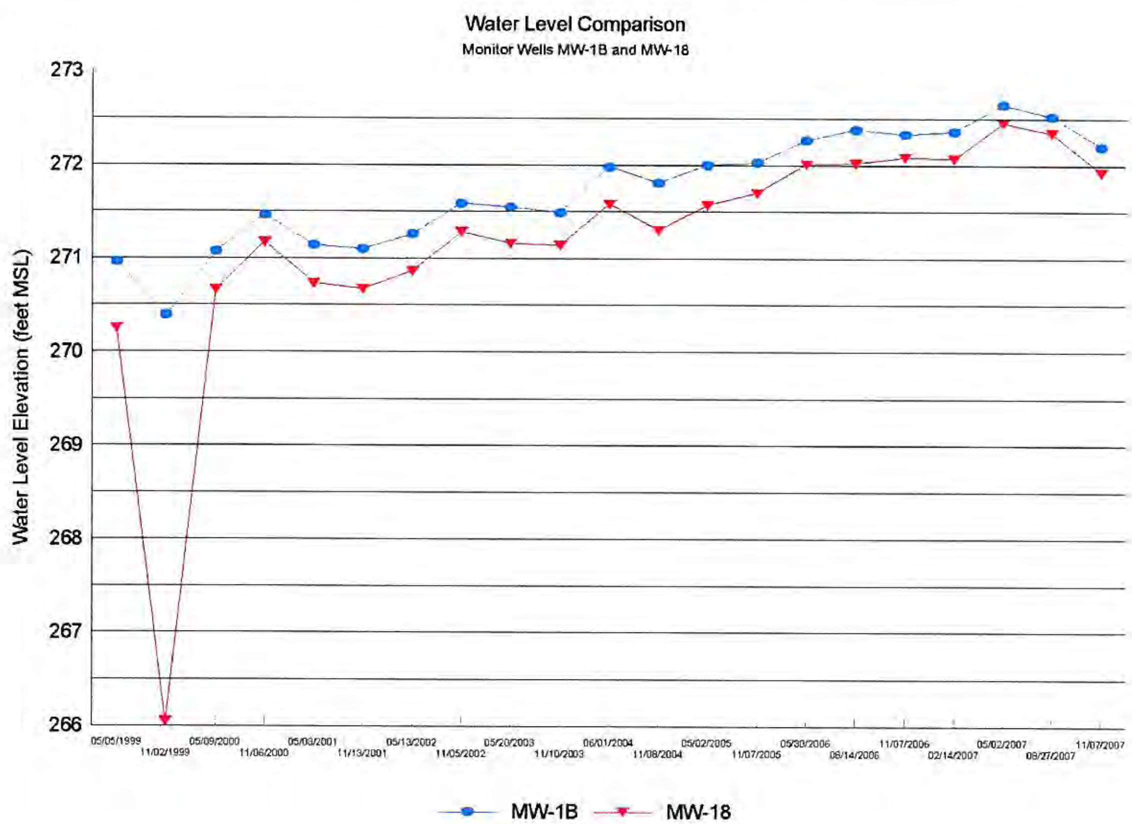
Monitor Well	02/07/96	05/09/96	08/12/96	11/07/96	02/05/97	05/07/97	08/04/97	11/10/97	05/05/98	11/09/98	05/05/99	11/02/99	05/09/00	11/06/00	05/08/01	11/13/01	05/13/02
MW-1B	269.28	267.58	269.59	269.91	269.54	269.81	269.99	270.00	270.35	269.49	270.96	270.39	271.07	271.46	271.14	271.10	271.26
MW-2	275.24	274.88	274.80	274.70	274.46	274.28	274.32	274.26	274.10	274.10	274.05	–	–	–	274.09	274.58	274.72
MW-3	268.83	269.04	269.93	269.53	268.87	269.51	270.42	270.04	269.75	269.62	269.82	269.30	268.87	269.26	269.26	269.56	269.66
MW-4	259.65	259.74	258.87	259.04	260.07	261.30	260.80	259.92	261.30	259.61	261.12	259.52	260.66	259.34	261.63	259.67	259.55
MW-5	256.87	257.12	256.22	256.32	256.77	258.22	258.06	257.95	258.50	256.82	258.10	256.54	257.24	256.40	258.34	257.59	258.20
MW-12A	277.06	277.27	277.18	277.24	277.26	277.71	277.73	277.85	278.32	277.98	278.36	277.32	278.45	278.98	278.32	278.12	278.55
MW-13B	270.05	270.52	270.59	271.77	271.13	271.19	271.44	271.54	271.99	271.93	272.83	270.10	272.91	273.28	273.13	269.18	273.29
MW-14	280.51	280.67	280.69	280.47	280.65	280.43	280.58	280.90	281.07	280.98	281.27	280.45	280.91	279.49	280.41	280.43	280.45
MW-15A	274.67	275.47	275.53	275.30	275.43	275.22	275.34	275.35	275.65	275.50	275.95	275.17	275.73	274.31	275.37	275.36	275.38
MW-15B	271.03	270.57	270.64	270.61	270.63	270.67	270.93	271.00	271.42	271.50	271.98	271.36	272.01	271.38	271.95	272.04	272.13
MW-18	–	–	–	269.29	269.30	269.44	269.68	269.69	270.02	269.95	270.25	266.05	270.66	271.17	270.73	270.67	270.86
MW-20	–	–	–	266.61	265.37	263.90	265.64	267.36	264.27	267.81	264.97	267.44	264.37	266.96	263.88	267.68	266.92
MW-CA1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Monitor Well	11/05/02	05/20/03	11/10/03	06/01/04	09/07/04	11/08/04	05/02/05	11/07/05	01/03/06	05/31/06	08/14/06	11/07/06	02/14/07	05/02/07	08/27/07	11/07/07	
MW-1B	271.59	271.55	271.49	271.98	272.06	271.81	272.00	272.03	272.38	272.27	272.38	272.33	272.36	272.65	272.52	272.20	
MW-2	274.97	274.59	275.15	274.82	276.14	274.89	276.44	–	–	–	–	–	–	–	–	–	
MW-3	270.21	269.82	269.59	270.49	271.03	270.22	270.08	269.30	268.77	268.68	269.32	268.97	267.83	268.64	269.86	269.08	
MW-4	260.23	259.71	259.15	260.24	260.29	260.09	260.70	258.78	258.60	258.90	258.25	258.47	259.52	260.10	259.67	259.10	
MW-5	257.57	258.14	257.27	258.60	258.83	258.27	259.66	256.92	256.87	256.95	256.20	256.42	257.14	257.97	258.06	257.44	
MW-12A	278.52	278.87	278.50	279.60	279.57	279.08	279.56	278.59	278.57	278.23	277.97	277.96	278.74	279.11	279.21	278.63	
MW-13B	273.48	273.50	273.41	274.31	274.38	273.99	274.45	274.50	274.80	274.51	274.48	274.69	274.38	274.98	275.04	275.03	
MW-14	280.69	280.35	280.25	280.76	280.78	280.45	280.65	280.91	281.31	281.04	281.09	281.16	281.11	281.29	281.10	280.68	
MW-15A	275.71	275.51	274.38	275.91	275.78	274.98	275.68	275.76	276.25	275.97	275.97	275.98	275.96	276.22	276.01	275.54	
MW-15B	272.56	272.45	272.38	272.90	272.59	272.61	272.88	273.04	273.49	273.27	273.31	273.37	273.39	273.64	273.51	273.14	
MW-18	271.28	271.16	271.14	271.58	271.74	271.30	271.57	271.70	272.18	272.01	272.02	272.08	272.07	272.45	272.34	271.92	
MW-20	269.02	268.80	268.92	269.04	269.10	268.61	268.48	267.70	266.95	263.81	266.48	267.07	264.71	264.71	266.24	266.64	
MW-CA1	–	–	–	–	271.45	271.31	271.63	271.73	272.15	272.03	271.99	272.20	272.00	272.48	272.35	272.14	

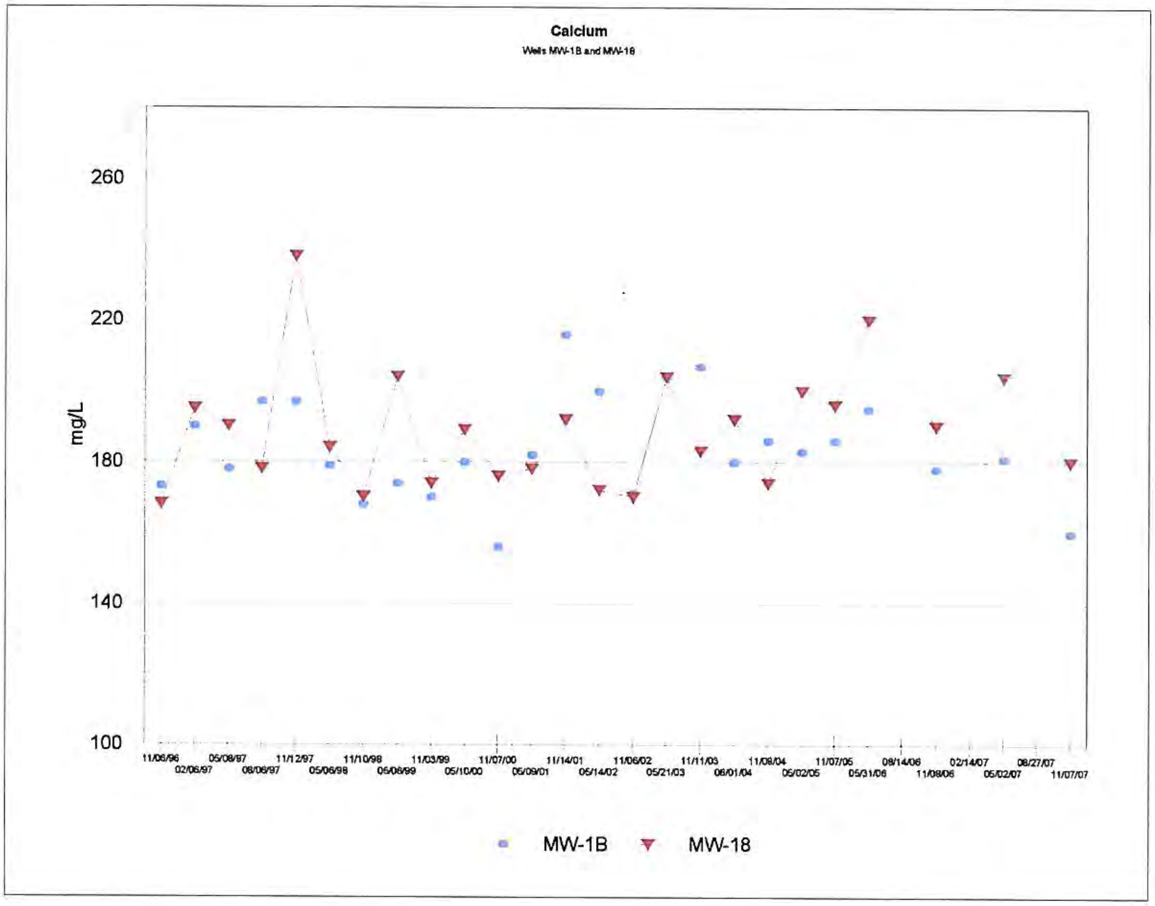
8.8 Demonstration of Interconnectivity Between Wells MW-1B and MW-18

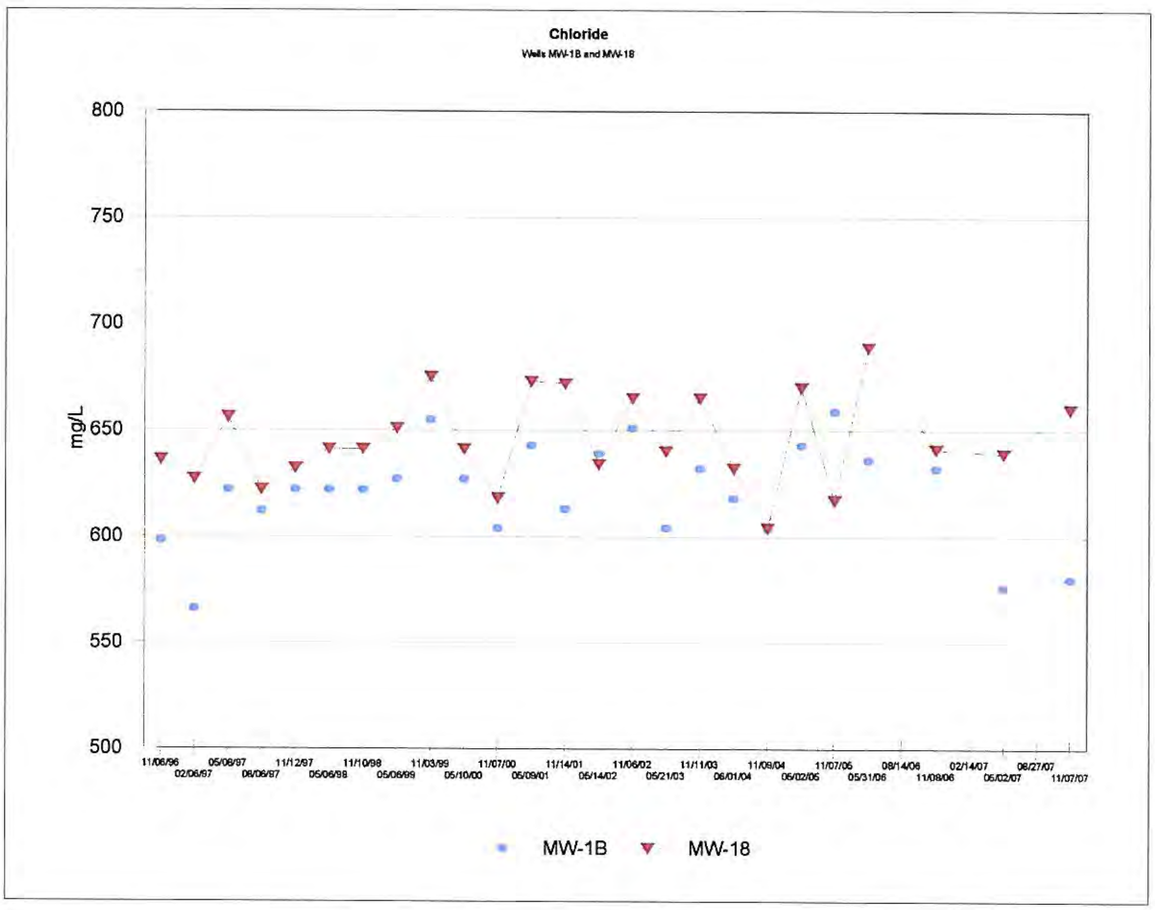
As described in the *Initial Groundwater Characterization Report* (Attachment 9.1), the uppermost groundwater bearing zone is made up of a number of hydraulically connected channel sands incised by other channel sands. Interbedded silty sand and clay units flanking the channel sands lessen hydraulic connectivity between water bearing units in both vertical and lateral directions. Although the interbedded silty sand and clay units limit flow between the sand bodies, distinct evidence of interconnectivity remains. Water levels in monitor wells installed in close proximity, such as wells MW-1B and MW-18, demonstrate the interconnectivity of vertically separated channel sands. Comparisons of historical water level data for monitor wells MW-1B and MW-18 show pronounced correlation between changes in water levels during successive events since 1999.

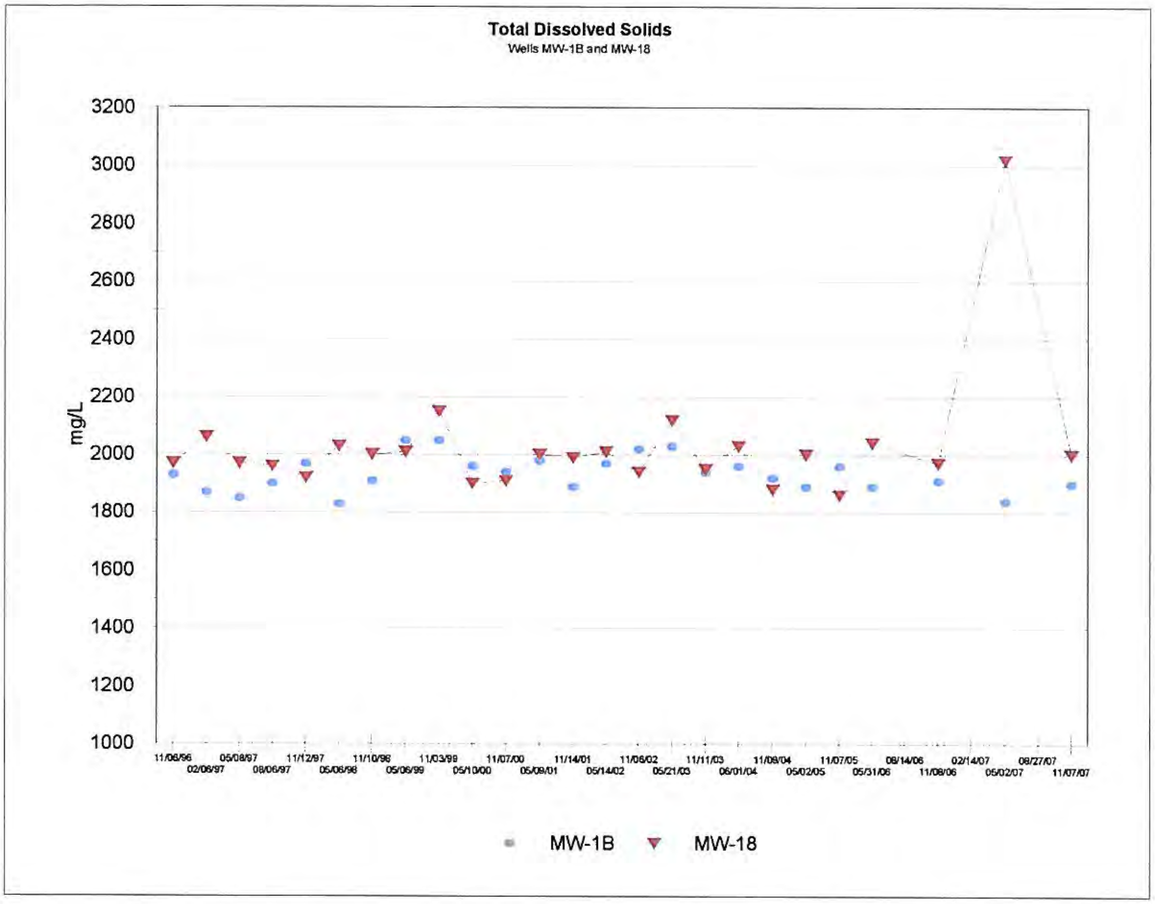
In order to demonstrate the interconnectivity of monitor wells MW-1B and MW-18 an evaluation of water levels was performed. Regression analysis of water levels from monitor wells MW-1B and MW-18 produced a correlation coefficient (r-squared value) of 0.9849. Based on their limited separation, the calculated r-squared value indicates excellent interconnectivity between the two wells. Additionally, the change in water level for successive monitoring events for each well was calculated. Regression analysis of the resulting values for wells MW-1B and MW-18 yielded an r-squared value of 0.9370 with a geometric mean of 0.0992 feet, further demonstrating the interconnectivity of the two closely spaced wells. The following graph illustrates the correlation of the water level measurements.

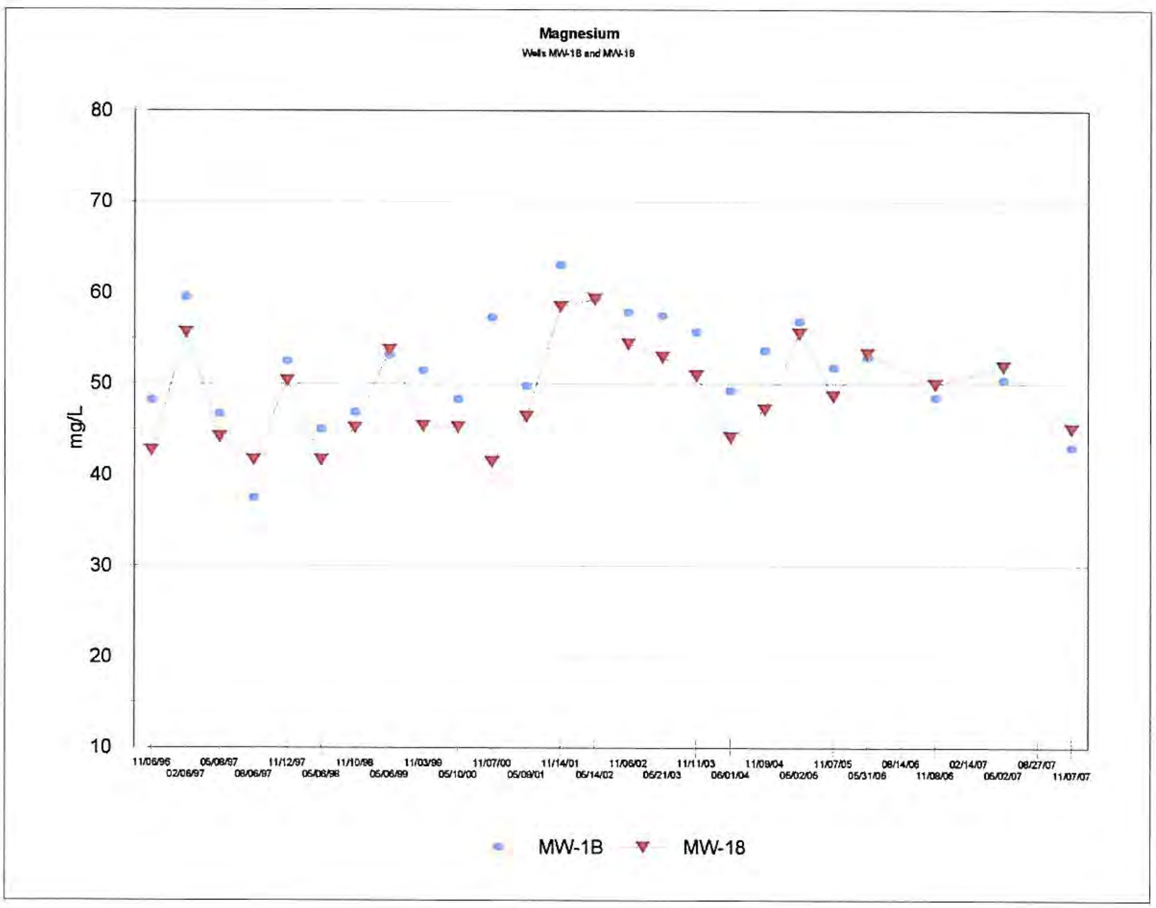


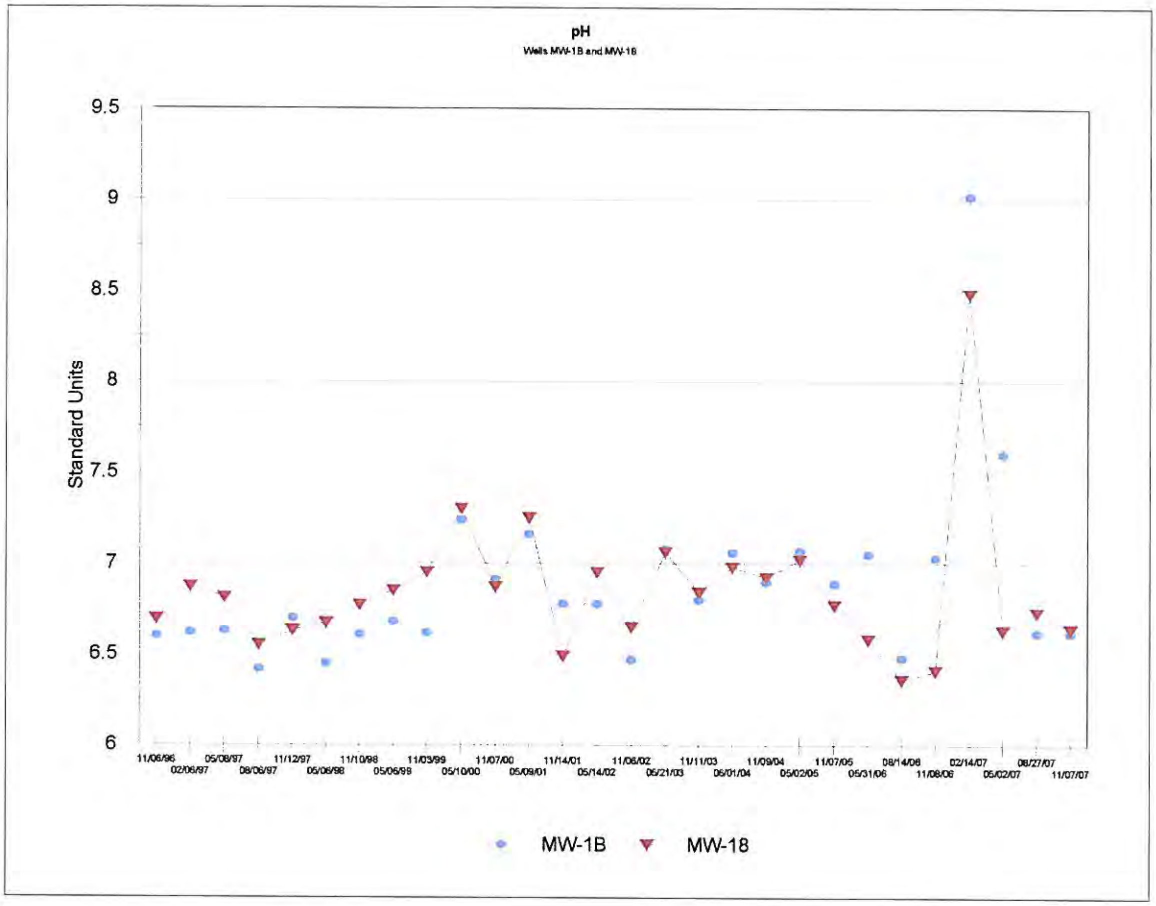
Additionally, parallels with respect to analytical data further indicate the wells monitor the same zone. The following graphs illustrate the correlation of analytical results from multiple sampling events.

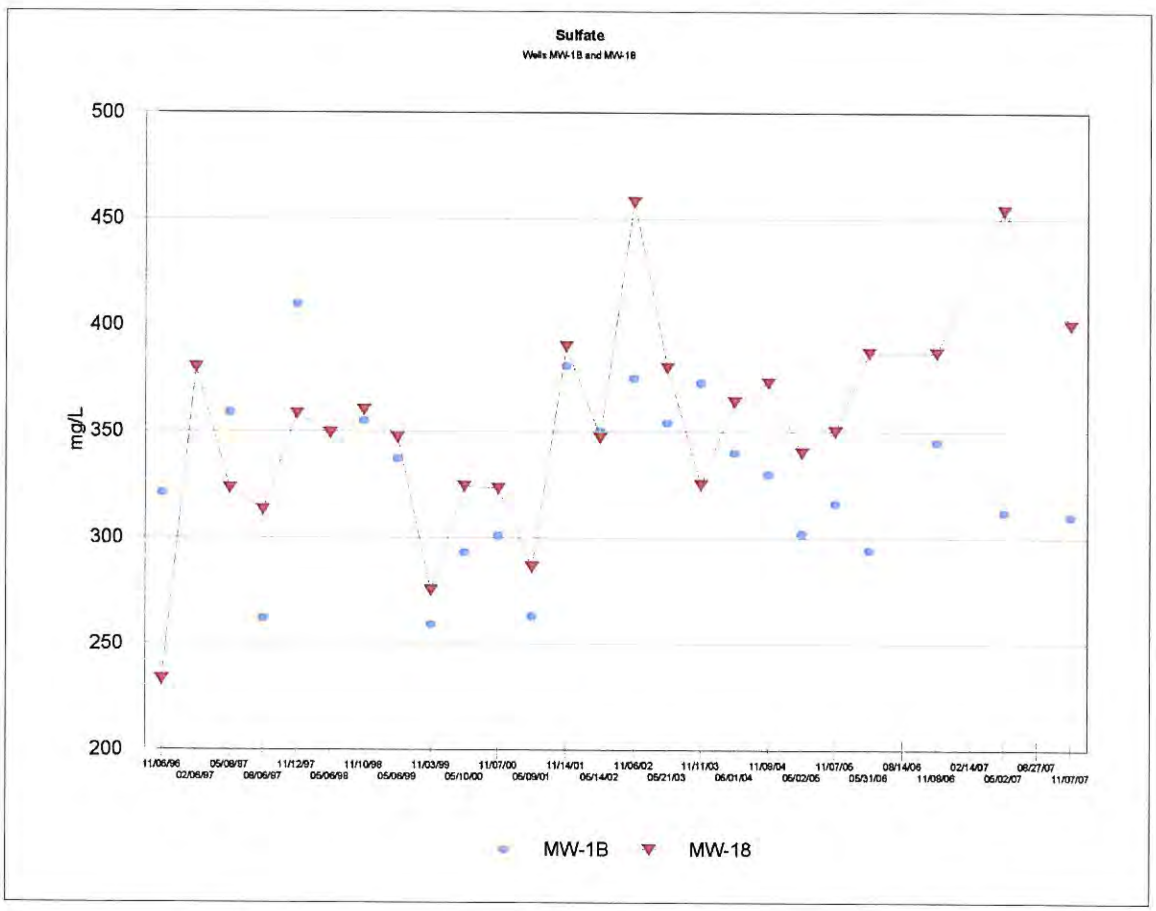

Calcium
Wells MW-1B and MW-18
260
220
180
140
100
mg/L
MW-1B
MW-18

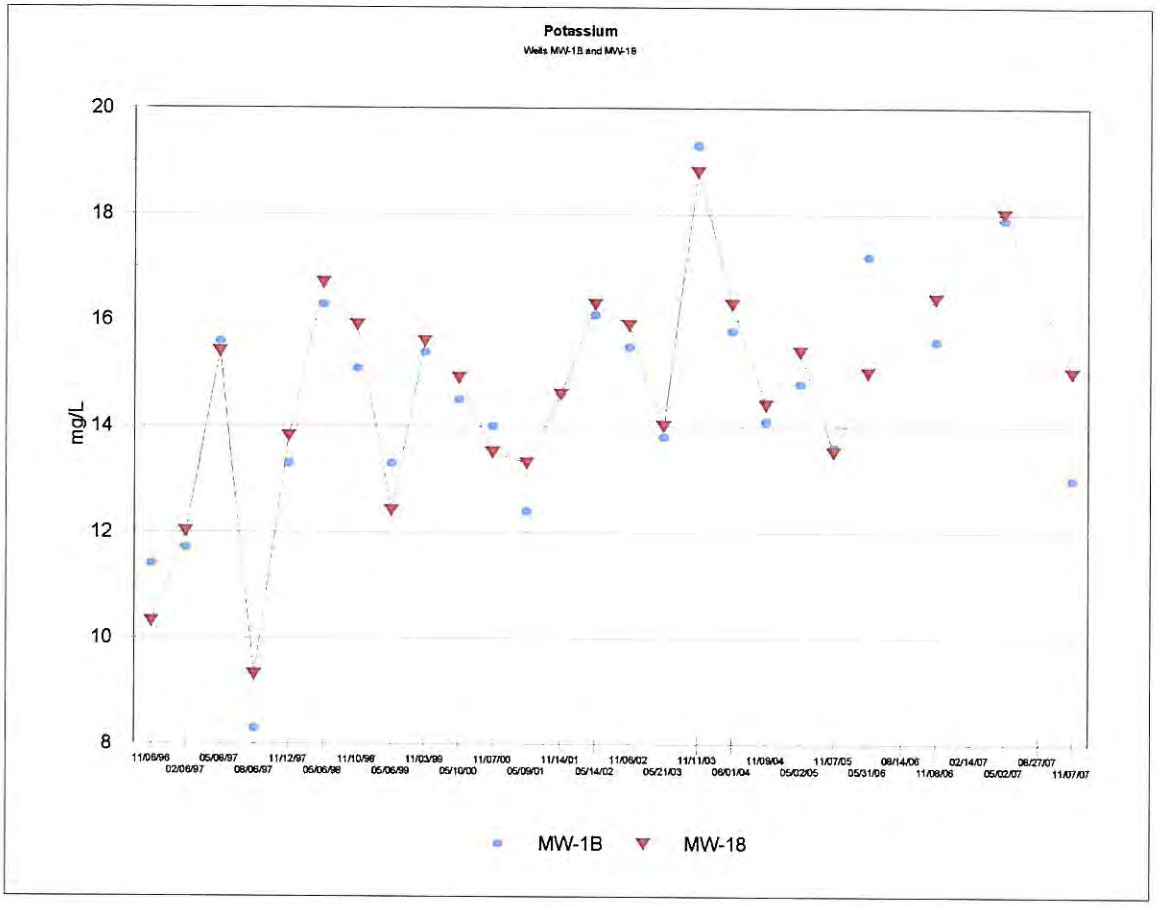

Chloride
Wells MW-1B and MW-18
800
750
700
650
600
550
500
mg/L
MW-1B
MW-18

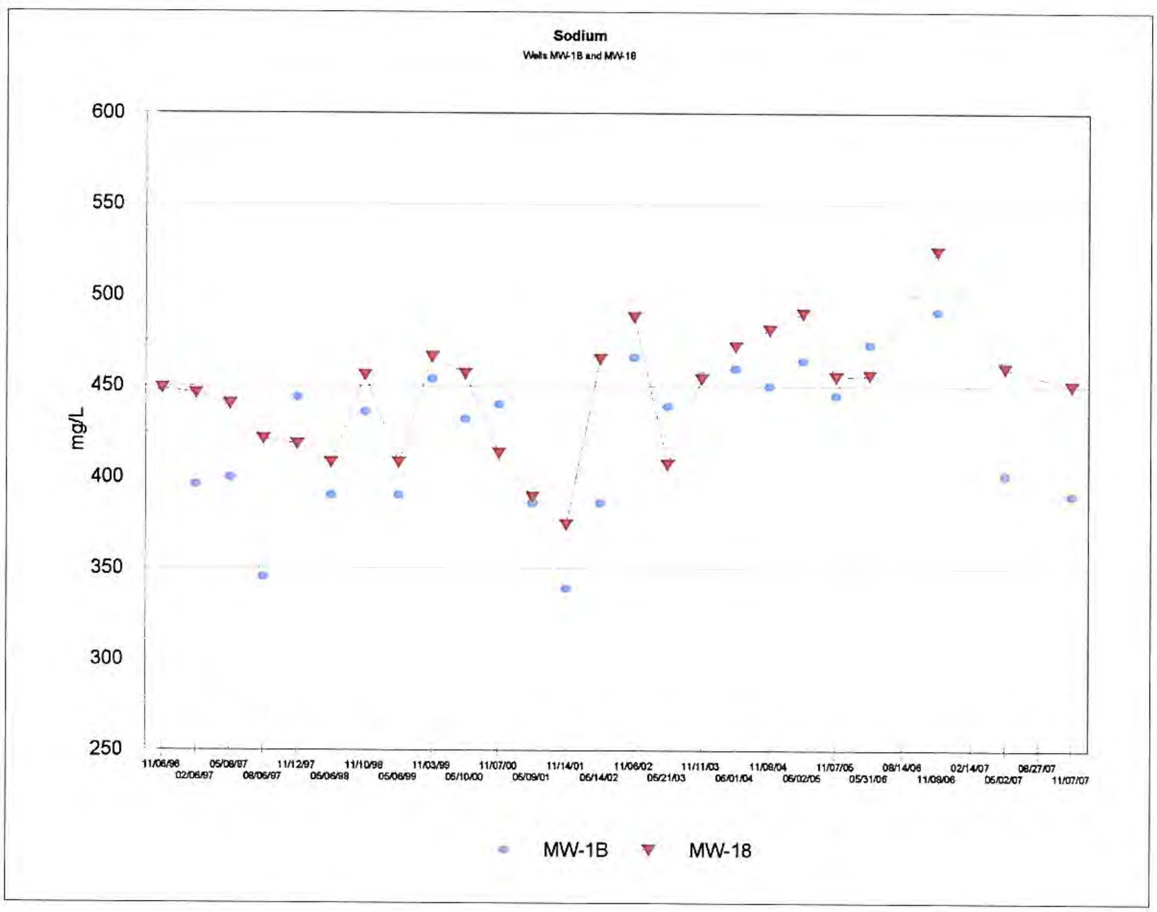

Total Dissolved Solids
Wells MW-1B and MW-18
mg/L
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
11/06/96 02/06/97 05/08/97 08/06/97 11/12/97 05/06/98 11/10/98 05/06/99 11/03/99 05/10/00 11/07/00 05/09/01 11/14/01 05/14/02 11/06/02 05/21/03 11/11/03 06/01/04 11/09/04 05/02/05 11/07/05 05/31/06 08/14/06 11/08/06 02/14/07 05/02/07 08/27/07 11/07/07
MW-1B
MW-18

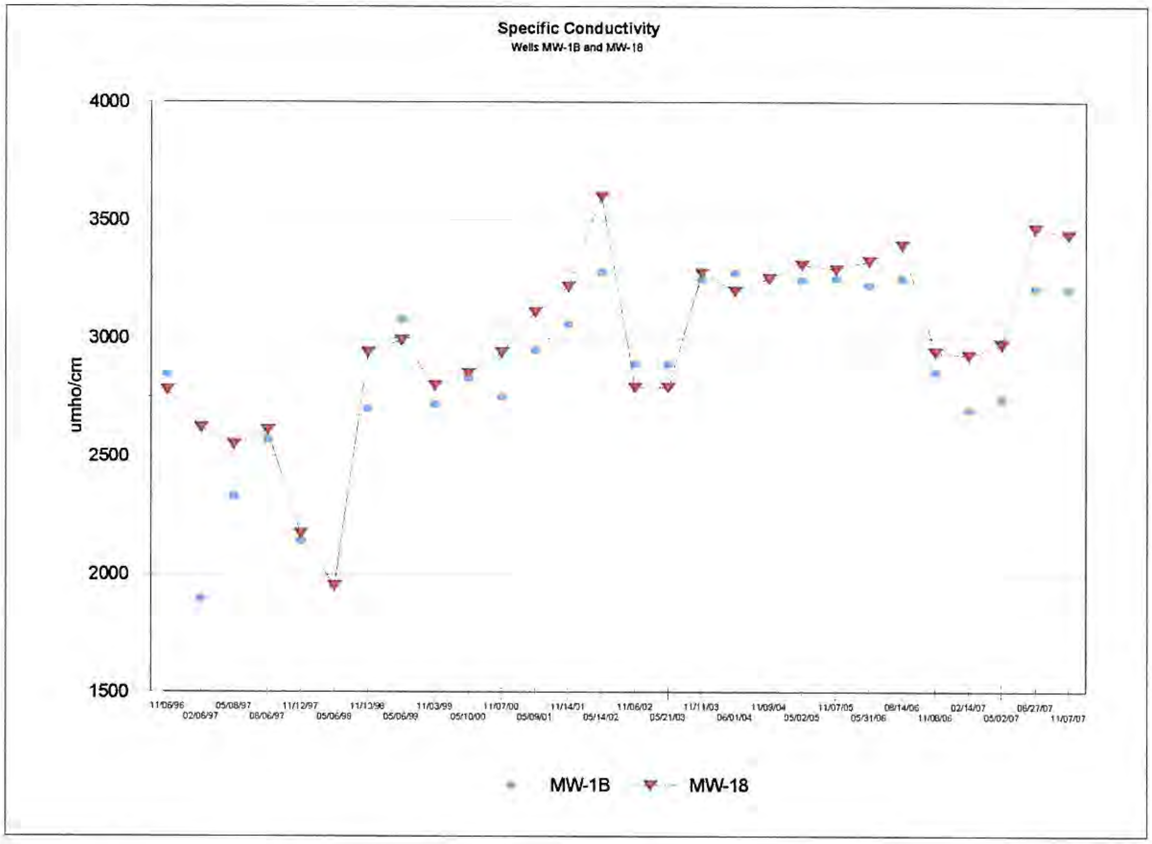

Magnesium
Wells MW-1B and MW-18
mg/L
80
70
60
50
40
30
20
10
11/06/96 02/06/97 05/08/97 08/06/97 11/12/97 05/06/98 11/10/98 05/06/99 11/03/99 05/10/00 11/07/00 05/09/01 11/14/01 05/14/02 11/06/02 05/21/03 11/11/03 06/01/04 11/09/04 05/02/05 11/07/05 05/31/06 08/14/06 11/08/06 02/14/07 05/02/07 08/27/07 11/07/07
MW-1B
MW-18


pH
Wells MW-1B and MW-18
9.5
9
8.5
8
7.5
7
6.5
6
Standard Units
11/06/96
02/06/97
05/08/97
08/06/97
11/12/97
05/06/98
11/10/98
05/06/99
11/03/99
05/10/00
11/07/00
05/09/01
11/14/01
05/14/02
11/06/02
05/21/03
11/11/03
06/01/04
11/09/04
05/02/05
11/07/05
05/31/06
08/14/06
11/08/06
02/14/07
05/02/07
08/27/07
11/07/07
MW-1B
MW-18


Sulfate
Wells MW-1B and MW-18
500
450
400
350
300
250
200
mg/L
11/06/96
02/06/97
05/08/97
08/06/97
11/12/97
05/06/98
11/10/98
05/06/99
11/03/99
05/10/00
11/07/00
05/09/01
11/14/01
05/14/02
11/06/02
05/21/03
11/11/03
06/01/04
11/09/04
05/02/05
11/07/05
05/31/06
08/14/06
11/08/06
02/14/07
05/02/07
08/27/07
11/07/07
MW-1B
MW-18


Potassium
Wells MW-1B and MW-18
20
18
16
14
12
10
8
mg/L
11/06/96
02/06/97
05/08/97
08/06/97
11/12/97
05/06/98
11/10/98
05/06/99
11/03/99
05/10/00
11/07/00
05/09/01
11/14/01
05/14/02
11/06/02
05/21/03
11/11/03
06/01/04
11/09/04
05/02/05
11/07/05
05/31/06
08/14/06
11/08/06
02/14/07
05/02/07
08/27/07
11/07/07
MW-1B
MW-18


Sodium
Wells MW-1B and MW-18
600
550
500
450
400
350
300
250
mg/L
11/06/96
02/06/97
05/08/97
08/06/97
11/12/97
05/06/98
11/10/98
05/06/99
11/03/99
05/10/00
11/07/00
05/09/01
11/14/01
05/14/02
11/06/02
05/21/03
11/11/03
06/01/04
11/09/04
05/02/05
11/07/05
05/31/06
08/14/06
11/08/06
02/14/07
05/02/07
08/27/07
11/07/07
MW-1B
MW-18



Both the water level and analytical data demonstrate the interconnected nature of these two monitor wells. As the wells monitor the same groundwater bearing unit and are approximately 11 feet apart only one well is necessary to monitor this portion of the point of compliance. Therefore, monitor well MW-1A will be plugged and abandoned and monitor MW-18 will remain part of the point of compliance monitoring system. Data used for this demonstration are included in Exhibits 8.1 and 8.7.

Appendix No.

INITIAL GROUND-WATER CHARACTERIZATION REPORT

ANGELINA COUNTY WASTE MANAGEMENT CENTER
PERMIT NO. MSW 2105

ANGELINA COUNTY, TEXAS
Job No. L-03-70

Report For:

Mr. James Mays, Manager

Prepared by

Hydrex Environmental, Inc.
Nacogdoches, Texas

INITIAL
GROUND-WATER
CHARACTERIZATION REPORT

ANGELINA COUNTY WASTE MANAGEMENT CENTER

Report For:

Mr. James Mays, Manager
Angelina County Waste Management Center
Lufkin (Angelina County), Texas
Permit No. MSW 2105

December 1, 1995

John M. Wilson ______________________________
Geologist

Glen A. Collier, C.P.G. ______________________________
Hydrogeologist

Prepared by:
Hydrex Environmental, Inc.
117 North Street, Suite 8
Nacogdoches, Texas 75961
(409) 568-9451 FAX (409) 568-9527

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

INTRODUCTION

Hydrex Environmental, Inc. was contracted to conduct an initial ground-water characterization study at the Angelina County Waste Management Center (ACWMC) Landfill, Permit No. MSW 2105, Angelina County, Texas. The work was authorized by Mr. James Mays, Manager of ACWMC.

The purpose of the investigation was to more completely describe ground-water conditions of the uppermost aquifer at the site. Data was obtained from numerous prior geological and hydrogeological studies and from recent field investigative activities which included a limited soil boring program.

PREVIOUS WORK

In July 1987, Pickett-Jacobs Consultants, Inc. initiated a geotechnical investigation to determine subsurface materials and ground-water conditions at the site. The investigation was implemented in four stages, the initial stage consisted of 13 soil borings (B-1 through B-13) drilled during the period from July 6, 1987 to August 25, 1987. The second stage of borings (B-14 through B-20) was conducted on May 3 and 4, 1988. Borings for the third phase of exploration (B-21 through B-30) were drilled during the period from June 2 through 13, 1988, and Boring Nos. B-31 through B-34 were drilled on November 22 and 23, 1988. The borings ranged in depth from 25 to 50 feet

PREVIOUS WORK (continued)

below ground surface. Lithologies encountered consisted of silty sand, clayey sand, lean clay, fat clay and minor amounts of lignite.

A supplement to the initial soil investigation was conducted on April 18, 19, 26, and 27, 1989 in accordance with Texas Department of Health requirements to verify soil conditions. The purpose of this investigation was to extend 10 soil borings and determine subsurface materials and ground-water conditions within these areas. Boring Nos. B-6, B-23, B-27, and B-28 were extended to a depth of 30 feet below ground surface, while boring Nos. B-19, B-22, B-25, B-30, B-31, and B-34 were extended to 50 feet below ground surface.

Eleven piezometers were installed on April 26 and 27, 1989 by Pickett-Jacobs Consultants, Inc. The piezometers were constructed using 2 inch I.D., glue jointed PVC, with a five foot 0.010 factory slotted screen and were installed at the location of previous soil borings. The piezometers were designated PZ-2, PZ-6, PZ-14, PZ-16, PZ-19A, PZ-19B, PZ-22, PZ-27, PZ-30, PZ-31, and PZ-33, in accordance with locations of nearby borings. The depths of the piezometers ranged from 11 feet (PZ-19A) to 32 feet below ground surface (PZ-14). Water levels in the piezometers were measured and depths ranging from 3 feet (PZ-

16) to 18 feet below ground surface in PZ-22 and PZ-33 were recorded. All piezometers were subsequently plugged and abandoned.

Nineteen monitor wells (MW-1 through MW-15B) were installed at the site during the time period of November 12 through 27, 1991. Well Nos. MW-16 and MW-17 were installed March 31 and April 1, 1995, as replacements for dry monitor wells MW-10B and MW-11B. The wells were targeted at water-bearing strata revealed by previous geotechnical investigations and piezometer installations. All monitor wells were constructed using four inch I.D., schedule 40, threaded PVC. Well screens were constructed using 0.010 inch factory slotted PVC well screen. Depths of the monitor wells ranged from 16 feet below ground surface (271.6 feet msl.,MW-2) to 81 feet below ground surface (238.5 feet msl., MW-1A). Development of the monitor wells took place from December 12 through 20, 1991. Water levels were measured quarterly from February 1993 to February 1995. Historical water-level data are presented as Tables 3A and 3B.

The locations of all borings, piezometers, and monitor wells are presented on the boring location map included as Plate VII of this report. Relevant data on each monitor well is presented in Table 1.

Table 1
Summary of Monitor Well Information
(all measurements in feet; elevations referenced to MSL)

Number	Ground Surface Elev	Top of Casing Elev	Bottom of Well		Screened Interval		Static Water Level	
			Depth	Elev.	Depth	Elev.	Depth	Elev.
MW-1A	319.5	320.64	36	283.50	15-35	304.5-284.5	Dry	—
MW-1B	319.5	320.51	81	238.50	60-80	259.5-239.5	51.35	208.15
MW-2	287.6	288.99	16	271.60	5-15	282.6-272.6	13.46	269.14
MW-3	277.0	277.78	33	244.00	12-32	265-245	7.32	257.68
MW-4	269.7	270.66	31	238.70	10-30	259.7-239.7	11.23	248.47
MW-5	275.5	276.35	33	242.50	12-32	263.5-243.5	19.53	243.97
MW-6	268.8	269.50	27	241.80	16-26	252.8-242.8	13.05	239.75
MW-7	262.2	263.37	26	236.20	10-25	252.2-237.2	13.03	239.17
MW-8	262.2	263.15	48	214.20	32-47	230.2-215.2	10.79	219.41
MW-9	267.2	268.26	46	221.20	25-45	242.2-222.2	13.35	228.85
MW-10	272.9	273.42	35	237.90	19-34	253.9-238.9	8.65	245.25
MW-11	272.5	274.48	21	251.50	10-20	262.5-252.5	7.97	254.53
MW-12A	290.5	290.38	26	264.50	10-25	280.5-265.5	21.48	259.02
MW-12B	290.5	290.72	50	240.50	34-49	265.5-250.5	13.11	252.39
MW-13A	304.1	*307.39	22	282.10	6-21	298.1-283.1	dry	---
MW-13B	304.1	*308.29	47	257.10	26-46	278.1-258.1	38.42	239.68
MW-14	307.3	*310.75	33	274.30	17-32	290.3-275.3	30.22	260.08
MW-15A	310.5	*313.28	64	246.50	48-63	262.5-247.5	37.96	224.54
MW-15B	310.5	*312.55	42	268.50	26-41	284.5-269.5	42.36	242.14
MW-16	270.3	270.69	47	223.30	36-46	234.3-224.3	10.97	223.33
MW-17	281.0	281.32	49	232.00	38-48	243-233	22.03	220.97

* Casings and protective covers were raised in accordance with TAC § 330.242

REGIONAL GEOLOGY AND HYDROGEOLOGY

The Angelina County Waste Management Center, located in south-central Angelina County, is situated southwest of the Sabine Uplift in the East Texas Basin. Cenozoic sedimentary deposits which accumulated in the East Texas Basin reflect transgressive and regressive episodes resulting from a combination of fluctuating eustatic sea levels and subsidence induced by high rates of sediment influx. Depositional environments range from fluvial, deltaic, marginal marine, and marine in the outcrop area to primarily marine in the downdip section.

The stratigraphy of Angelina County, as it relates to the occurrence of fresh ground water, consists of the Wilcox Group (undifferentiated), Claiborne Group, Cook Mountain Formation, Yegua Formation, and the lower portion of the Jackson Group (Plate I). In East Texas, the Claiborne Group is comprised of (in ascending order): the Carrizo Sand, Reklaw Formation, Queen City Sand, Weches Formation, and the Sparta Sand. Rocks of the Midway Group, which underlie the Wilcox, form the lower boundary for fresh ground water occurrence throughout East Texas. Ages of these units range from Paleocene (Midway Group) to Oligocene (Whitsett Formation of the Jackson Group).

REGIONAL GEOLOGY AND HYDROGEOLOGY (continued)

The Carrizo Sand, which forms the base of the Claiborne Group, and sands of the underlying Wilcox Group are the most productive water-bearing units in East Texas. Together they host the only major regional aquifer (Carrizo-Wilcox Aquifer) as defined by the Texas Water Development Board (TWDB). The Queen City Sand and the Sparta Sand host minor aquifers (Preston, 1991). The Yegua Formation provides a less productive, but important, source of fresh ground water in the area of study. Table 2 summarizes the aquifers and their respective host units along with their water-bearing properties.

Wilcox Group

Formations within the Wilcox Group are: the Calvert Bluff Formation, Simsboro Formation, and Hooper Formation (Kaiser et. al., 1978). Individual formations in the Wilcox are not distinguishable in Angelina County. The Wilcox Group consists of fluvial-deltaic deposits of sand, silt, clay and lignite.

Typical Wilcox sand consists of about 75% quartz and 20% rock fragments, and 5% feldspar. Most of the feldspar is orthoclase with lesser amounts of plagioclase. Glauconite and carbonate rock clasts may be locally abundant. Only about 3% of the framework grains are of igneous and metamorphic origin.

These sands show evidence of minor diagenesis reflected by the presence of micritic and sparry calcite cements. In some areas, the sand grains are cemented by clay rims (Dutton, 1979).

Sand bodies are generally elongate in a downdip direction and lenticular in cross section, reflecting a channel belt origin. Along the margins of the sand body, net sand content decreases as interfingering finer sediments become dominant. In southern Angelina County, the Wilcox is more than 3,300 feet thick.

Carrizo Sand

The Carrizo Sand consists of approximately 100 feet of moderately- to well-sorted, fine- to medium-grained sands which are fluvial to deltaic in origin (Ayers et al, 1985). At the surface, the Carrizo is often red in color due to staining by iron oxide. Surface exposures often exhibit internal cross-stratification. These sands, in combination with sands of the upper Wilcox, comprise the Carrizo-Wilcox Aquifer. In East Texas, sands of the upper Wilcox and the Carrizo are in hydraulic communication and are considered to be one aquifer system (Preston, 1991). At the subject site, the top of the Carrizo is at an elevation of approximately 1600 feet below MSL.

Reklaw Formation

The thickness of the Reklaw Formation averages slightly over 200 feet. The upper portion of the Reklaw Formation is composed primarily of clay while the lower portion often consists of a silty, glauconitic, fine-grained quartz sand (Guyton & Associates, 1970). For ground-water production, the underlying Carrizo is usually favored over the basal Reklaw sands because of greater production capability and better water quality.

Queen City Sand

The Queen City Sand was deposited as a terrigenous clastic wedge of interbedded sand and shale. Angelina County lies east of the major sand depocenters which mark the axis of the sand dispersal system. The depocenters, characterized by lobate sand bodies of deltaic origin, are found in Cherokee and Anderson counties. The Queen City Aquifer is composed of alternating beds of very fine- to fine-grained quartz sand and clay. No sands are present southeast of a line trending northeast-southwest through Lufkin, Texas. In southern Angelina County, the Queen City consists of clays which are indistinguishable from the clays of the overlying Weches Formation and the underlying Reklaw Formation (Guyton & Associates, 1970). The thickness of the Queen City ranges from approximately 200 feet in northeastern Texas to 2500 feet in south Texas (Guevara & Garcia, 1972). Only a small number of water wells are completed in the Queen City in Angelina and Nacogdoches counties. Westward, in Cherokee County, the Queen City becomes a more prolific water-bearing formation due to an increase in net sand thickness and a widespread recharge area.

Weches Formation

The Weches consists of marine clays and silts with beds of fossiliferous limestone and fine-grained sands. The thickness of the Weches averages approximately 90 feet. The Weches is essentially nonwater-bearing and functions as a leaky aquitard between the Queen City and the Sparta Sand.

Sparta Sand

Terrigenous clastics of the Sparta Sand lie unconformably upon the Weches Formation. The Sparta, which reaches a maximum thickness of about 200 to 300 feet, consists primarily of very fine- to medium-grained quartz sand and clay

(Fogg & Kreitler, 1982). Thin beds and seams of lignite may be locally abundant. The formation typically fines upward from a gravel or coarse sand base. Iron-oxide staining produces a red color in outcrop localities. The Sparta Formation hosts the Sparta Aquifer, a minor but important aquifer in the East Texas region (Fogg & Kreitler, 1982).

Cook Mountain Formation

The Cook Mountain Formation outcrops in a three to seven mile wide band extending across southern Nacogdoches County and northern Angelina County. The formation consists primarily of silt and clay with occasional thin beds of sand, sandy clay, and marly clay (Guyton & Associates, 1970). The Cook Mountain is insignificant as a water-bearing unit, but serves as an effective aquitard separating the Sparta and the Yegua.

Yegua Formation

The Yegua outcrops in the southeastern tip of Nacogdoches County and across central Angelina County. The formation is composed of thin beds of sand, silt, and clay with minor amounts of lignite. The sandy zones of the Yegua

Formation are generally found in the lower portion while the upper portion contains higher percentages of clay and silt. Although not classified as an aquifer host unit by the TWDB, the Yegua provides fresh water to numerous wells in the area. Yegua sands are composed predominantly of very fine- to fine-grained quartz sand. Sand bodies are generally discontinuous and are not correlative over large distances (Guyton & Associates, 1970).

Jackson Group

The Jackson Group outcrops approximately four to five miles south of the subject site. In southern Angelina County, the Jackson is represented by (in ascending order): the Caddell Formation, Wellborn Formation, Manning Formation, and Whitsett Formation. None of these units are significant producers of ground water. The role of the Jackson Group is to form an overlying confining layer for the Yegua Formation (Jackson, 1982).

Table 2
Aquifers and Corresponding Stratigraphic Units

STRATIGRAPHIC UNIT	AQUIFER NAME	RANGE IN THICKNESS (feet)	THICKNESS AT LUFKIN (feet)	WATER-BEARING PROPERTIES
Yegua	*	0-1050	150-400	Yields small to moderate quantities of fresh to brackish water.
Sparta Sand	Sparta (minor aquifer)	0-290	200	Yields small to moderate quantities of fresh water.
Queen City Sand	Queen City (minor aquifer)	0-130	50	Yields small to moderate quantities of fresh water, mostly in outcrop area.
Carrizo Sand	Carrizo-Wilcox (major aquifer)	0-170	120	Yields moderate to large quantities of fresh water.
Wilcox Group		**	950-3,300	

* - not considered an aquifer but has local importance
** - not determined
(Information obtained from Guyton & Associates, 1970)

SITE STRATIGRAPHY

The Eocene Yegua Formation outcrops at the Angelina County Waste Management Center and extends at least to the terminal depth of all borings at the site (Plate I). The Yegua is composed predominantly of silt and clay with

SITE STRATIGRAPHY (continued)

interbeds or channels of sand. Sand content typically increases toward the base of the formation. A review of previous investigations conducted by the Texas Water Development Board indicates the Yegua is approximately 400 feet thick at the ACWMC.

Site stratigraphy of the Yegua Formation is characterized by organic rich silts and clays which are dissected by channel sand bodies, lobes, and sheets. These sands thin marginally to laminations, lenses, and streaks. As is common in deltaic environments, avulsion of the sediment supplying distributary channels controlled the location of the sand bodies within the formation. In areas marginal to the distributary channels, the lower energy marshes and swamps allowed for the accumulation of organic material and muds, forming the gray clays, silts and lignite beds found throughout the Yegua.

As the deltas prograded seaward, delta lobe sand bodies were deposited along the delta front, forming thick sand wedges and sheets. These sands were commonly reworked by wave action and deposited near-shore, forming the marine barrier islands or barrier bars.

SITE STRATIGRAPHY (continued)

Specific lithologies encountered during subsurface investigations consist of a surficial veneer of silty sand (SM) underlain by deposits of mostly organic rich fat clay (OH), lean clay (OL), and clayey sand (SC). The greatest thickness of silty sand (22 feet) noted in drilling activities for piezometers, monitor wells, and all geotechnical investigations, occurred in the boring of monitor well MW-9. The thickest section of clayey sand intersected was 25 feet in boring B-25. Most clayey sand intercepts do not exceed 10 feet. The maximum thickness of lean clay encountered while drilling was 24 feet (B-19). Clay and silt deposits are typically less 10 feet thick, but range up to 24 feet thick (B-23). In general, the near surface stratigraphy of the site can be characterized as a series of channel sands or sand lobes and associated organic rich deltaic silts, clays and lignite beds.

Organic Rich Clays and Silts

The organic rich clays (OH, OL) and silts are the most common lithologic group at the site. Deposits are mostly gray to dark-gray and, to a lesser extent, tan or brown in color. The gray or dark-gray color is a result of the organic-rich nature of the sediments and their close proximity to lignite beds. Varying amounts of sand are present either within the clays and silts or as thin interbeds up to several inches thick.

Silty Sands and Clayey Sands

Silty sand and clayey sand are the second most abundant lithologic group at the site. These sands were deposited by distributary channels of the major tributaries. Most of the sands are of a channel-fill, sheet, or delta lobe nature. Within the excavation in Tract 1, widespread trough crossbedding can be seen throughout the sands directly overlying the locally confining lignitic clay. One occurrence of marine sand with thin laminations of shell fragments was also noted in the eastern end of the excavation. The thicker sands at the site are the major host units for ground water.

SITE HYDROGEOLOGY

The occurrence of fresh ground water in the Yegua is largely determined by the distribution of sand bodies and by the complexity of associated clay and silt facies. Sporadically distributed sand bodies host most of the ground water in the area and provide the primary paths for its movement.

The uppermost aquifer at the site consists of two water-bearing zones with varying degrees of hydraulic communication between the two zones. These water-bearing units are characterized by locally continuous sand bodies bounded by finer grained silt and clay facies. The thickness of the sand bodies typically does not exceed 10 feet. Marginal to the primary silty sand and clayey sand bodies, lithologies are dominated by interbedded silty sand and clay. These thin sand interbeds are the conduit for communication between the primary sands. This premise is supported by the observation that monitor wells which are completed in interbedded silty sand and clay bodies located marginal to the primary sands (MW-10), have similar water level elevations as those completed in the primary sand bodies (MW-11). Similarly, monitor wells completed in sands which are vertically separated have similar water levels, such as monitor wells MW-7 and MW-8. As a result of the channel-fill nature of the sands, the possibility exists that the individual channels are in contact where meandering channels were deposited on, or incised into older deposits.

Within the uppermost aquifer, deeper bodies of silty sand and clayey sand are often under confined conditions where overlain by silts and clays forming a local confining unit (MW-8). Conditions are mostly unconfined in the upper portion of the aquifer. The maximum thickness of the uppermost water-bearing system, based upon the highest ground surface elevation of approximately 320 feet (MSL) and the lowest elevation of the top of the lower confining bed 215 feet (MSL) , is estimated at approximately 105 feet.

The lower confining bed of the uppermost aquifer is a hard gray clay with few sand seams. The stratum appears to be continuous across the site. This aquitard underlies the silty sand and clayey sand of the deeper, locally confined zones. This stratum was intersected in borings B-20, B-29, B-30, B-31, and B-34, neither the thickness nor the lateral extent of this unit was revealed by these borings. The top of the lower confining bed occurs between approximately 215 and 225 feet MSL. Laboratory tests conducted on samples from this unit yielded Liquid Limits (LL) ranging from 58 to 62 and Plastic Limits (PL) from 19 to 23. Plasticity Indices were from 30 to 39.

At the site, flow in the shallow zones of the uppermost aquifer is to the north-northeast except at the southwestern end of the site where the flow direction is to the southwest (Plate III). Ground-water contour maps indicate a ground-water divide located along a line between monitor wells MW-14 and MW-2. The position of the ground-water divide appears to be controlled by the southwest dip of a local lower confining unit and by subsequent thickening of the overlying water-bearing sands (Plates VIII - IX). On the flanks of this divide, the potentiometric surface within these sands increases in depth. Consequently, monitor wells MW-1A and MW-13A were completed a depths insufficient to intercept the shallow water-bearing sands. A ground-water contour map produced for the deeper zones indicates that the flow direction is also to the northeast (Plate IV).

Two water wells drilled at the site provide information about stratigraphy and ground water beyond the terminal depths of the soil borings. The first well, completed in February 1975 by English Drilling Co., was drilled to a total depth of 348 feet. Well screens were placed from 215-235 feet, 302-307 feet, and 314-319 feet below ground surface. The second well, drilled in August 1994 by Reed Environmental Drilling, was drilled to a depth of 280 feet below the surface. The well screen was set from 218-278 feet below ground surface. Driller's logs for the wells are presented in Appendix II. Both wells were completed in sands of the lower Yegua and conditions are confined. The various screen settings in the water wells and monitor wells reflect the stratigraphic complexity of the site.

WATER LEVEL MEASUREMENTS

Water level elevations in all monitor wells were recorded quarterly from February 1993 to February 1995. Additional water level readings were taken November 7, 1995 to obtain recent data. A summary of all water level measurements is presented as Tables 3A and 3B.

WATER LEVEL MEASUREMENTS (continued)

Table 3A
Water Level Measurements
February 1993 - January 1994

WELL	02-93		04-93		09-93		01-94	
	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
MW-1A	Dry	---	Dry	---	Dry	---	Dry	---
MW-1B	52.52	267.99	55.50	265.01	52.30	268.21	52.50	268.01
MW-2	12.86	276.13	12.75	276.24	12.79	276.20	12.52	276.49
MW-3	7.87	269.91	7.50	270.28	6.57	271.21	7.50	270.28
MW-4	10.21	260.45	9.10	261.56	10.66	260.00	10.25	260.41
MW-5	18.32	258.03	18.13	258.22	18.66	257.69	18.50	257.85
MW-6	12.06	257.44	11.60	257.90	12.14	257.36	12.00	257.50
MW-7	10.88	252.49	12.00	251.37	12.89	250.48	12.50	250.87
MW-8	12.37	250.78	9.25	253.90	11.00	252.15	8.75	254.40
MW-9	11.92	256.34	11.00	257.26	13.02	255.24	12.50	255.76
MW-10	7.05	266.37	10.10	263.32	7.01	266.41	8.25	265.17
MW-11	7.24	267.24	7.80	266.68	6.92	267.56	9.00	265.48
MW-12A	11.49	278.89	12.55	277.83	11.29	279.09	12.00	278.38
MW-12B	21.05	269.67	21.25	269.47	21.05	269.67	21.75	268.97
MW-13A	Dry	---	Dry	---	21.00	284.31	Dry	---
MW-13B	39.23	266.60	40.10	265.73	37.85	267.98	38.00	267.83
MW-14	26.25	281.89	27.00	281.14	26.55	281.59	28.00	280.14
MW-15A	35.25	275.79	35.50	275.54	35.45	275.59	36.00	275.04
MW-15B	41.34	269.69	46.05	264.98	41.14	269.89	Dry	---
MW-16	8.82	261.87	11.25	259.44	10.78	259.91	9.00	261.69
MW-17	21.43	259.89	21.20	260.12	21.33	259.99	22.00	259.32

All water level measurements in feet; measured from TOC

WATER LEVEL MEASUREMENTS (continued)

Table 3B
Water Level Measurements
March 1994 - November 1995

WELL	03-94		10-94		02-95		11-95	
	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
MW-1A	Dry	---	Dry	---	Dry	---	Dry	---
MW-1B	51.57	268.94	51.38	269.13	50.97	269.54	51.35	269.16
MW-2	12.90	276.09	12.98	276.01	12.58	276.41	13.46	275.53
MW-3	7.84	269.94	7.00	270.78	7.30	270.48	7.32	270.46
MW-4	10.26	260.40	11.25	259.41	10.00	260.66	11.23	259.43
MW-5	18.48	257.87	19.26	257.09	18.36	257.99	19.53	256.82
MW-6	12.10	257.40	12.89	256.61	12.01	257.49	13.05	256.45
MW-7	12.54	250.80	12.87	250.50	14.18	249.19	13.03	250.34
MW-8	9.49	253.66	11.29	251.86	9.37	253.78	10.79	252.36
MW-9	11.88	256.38	13.62	254.64	12.16	256.10	13.35	254.91
MW-10	7.57	265.85	8.37	265.05	7.65	265.77	8.65	264.77
MW-11	7.40	267.08	7.77	266.71	7.15	267.33	7.97	266.51
MW-12A	11.80	278.58	12.55	277.83	12.43	277.95	21.48	277.61
MW-12B	21.32	269.00	21.47	269.25	21.31	269.41	13.11	268.90
MW-13A	Dry	---	24.82	282.57	Dry	---	Dry	---
MW-13B	37.15	271.14	39.30	268.99	38.72	269.57	38.42	269.87
MW-14	26.27	284.48	29.71	281.04	29.45	281.30	30.22	280.53
MW-15A	34.89	278.39	32.49	280.79	37.30	275.98	37.96	275.32
MW-15B	40.58	271.97	42.47	270.08	42.04	270.51	42.36	270.19
MW-16	10.42	260.27	11.38	259.31	10.52	260.17	10.97	259.72
MW-17	21.69	259.63	21.90	259.42	21.19	260.13	22.03	259.29

All water level measurements in feet; measured from TOC

RECENT FIELD ACTIVITIES

Recently, seven soil borings (B-35 through B-41) were placed at various locations at the site. These borings were conducted in order to further evaluate ground-water conditions within the uppermost aquifer, especially in areas where replacement or new monitor wells were to be installed. As a supplement to the soil borings, a stratigraphic study was conducted along the northern wall of the current excavation.

Soil Borings

All soil borings were conducted via the use of a Geoprobe model 5400 Hydraulic/Percussion Soil Sampler. Samples were collected both in 1.25 inch and 2 inch sample tube. The locations of all borings are presented on Plate VII. Boring B-35 was placed roughly in the center of the current area of excavation at a surface elevation of approximately 276 feet msl. The boring revealed a section of moist to saturated clayey sand to a depth of 8 feet. This sand was underlain by a local lower confining layer of lignitic clay to the terminal depth of 12 feet below ground surface. The local lower confining unit served as a marker bed for other borings in this vicinity. Sands encountered in boring B-35 were saturated from 3 to 8 feet below ground surface.

RECENT FIELD ACTIVITIES (continued)

The second boring, B-36, was placed at the western edge of the excavated area at a surface elevation of approximately 276 feet msl. Samples from this soil boring revealed that the clayey sand was not present in this location. Instead, the lithology consisted of thinly interbedded organic silts and clays to the terminal depth of 12 feet below ground surface. The boring was dry upon completion.

Soil boring B-37 was located approximately 500 feet north of the northern edge of the current excavation. The surface elevation was estimated to be approximately 290 feet msl. The lithology consisted of clayey sand and interbedded silty sand from the surface to a depth of 18 feet. Organic clay was found from 18 feet to the terminal depth of 28 feet below ground surface. A six-inch thick bed of hard, dark brown lignite was encountered at a depth of 19.0 to 19.5 feet. Sands from 12 to 18 feet below ground surface were fully saturated.

Boring B-38 was located approximately 100 feet north of the water tank along the west side of the Southland Energy Pipeline. Ground surface elevation was estimated to be 285 feet msl. The stratigraphy of B-38 consisted dry clayey sand and silty sand from the surface to 14 feet. This sand was underlain by 6 feet of dry, organic fat clay from 14 to 20 feet. A one-foot seam of crumbly, dark brown lignite was intercepted at 20 to 21 feet. The lignite was underlain by silty organic clay to the terminal depth of 23 feet below ground surface. The boring was dry upon completion.

Boring B-39 was placed adjacent to monitor well MW-9 at a surface elevation of 267 feet msl. Lithologies encountered were silty sand from to a depth of 3 feet, interbedded fat clay and clayey sand from 3 to 20 feet and saturated silty sand from 20 feet below surface to the terminal depth of 30 feet. Saturated conditions were encountered from 15 feet below ground surface to the terminal depth.

Three borings were placed along the pipeline separating Tracts 1 and 2. The first boring (B-38) did not encounter ground water. The final two borings focused on determining if shallow water-bearing sediments were present along the common tract boundary. Boring B-40 was located approximately 400 feet south of the northern permit boundary, along the pipeline, and at an approximate ground elevation of 280 feet msl. The stratigraphy consisted of silty sand from the surface to 10 feet, interbedded silty sand and clayey sand from 10 to 18 feet, and silty organic clay from 18 feet to the terminal depth of 22 feet below ground surface. Saturated strata were noted at a depth of 10 to 18 feet. The final boring (B-41) was located along the pipeline approximately 600 feet north of monitor wells MW-12A and MW-12B. A single intercept of moist clayey sand was encountered from the surface to a depth of 8 feet. Slightly moist, very dense to very stiff, dark gray, interbedded organic rich silts and clays extended from 8 feet to the terminal depth of 40 feet. The boring was dry upon completion.

The Excavation

An excavation for cell construction in the center of Tract 1 has created a window thorough which a view of the shallow subsurface can be seen. The stratigraphy exposed within this excavation is believed to be a representative sample of the shallow stratigraphy elsewhere at the site. Attention was focused on the relationship between the local confining layers of organic clays and silts and the overlying or adjacent primary sand bodies. As a result of these field activities the determination was made that the water-bearing strata at the site are more laterally continuous than previously reported.

RECENT FIELD ACTIVITIES (continued)

Within the northern portion of the excavation, a bed of dark gray, lignitic clay occurs along the base of the cut face. The thickness of the lignitic clay could not be determined from the outcrop. The unit is overlain by a section of trough cross-bedded slightly clayey sand. This sand is the host unit for the shallow ground water in this area and has a variable thickness of 5 to 7 feet. The lignitic clay functions as the lower confining bed for the shallow, water-bearing sand. Both the lignitic clay and trough cross-bedded clayey sand can be traced along entire northern cut face of the excavation, a distance of approximately 1000 feet from east to west. Thinly laminated very clayey sand overlies the trough cross-bedded clayey sand. This unit commonly exhibits scour and fill sedimentary structures and ranges from approximately 3 to 8 feet thick. The very clayey sand grades laterally into a massive silty sand at the western end of the excavation. A 5 to 10 foot thick section of interbedded silty sand and clay overlies the unit of very clayey sand. The uppermost unit exposed within the excavation is an approximate 5 foot thick surficial veneer of dry silty sand. The continuity of these strata is depicted in the photographs of the outcrops exposed within the northern part of the excavation in Tract 1.

Photo #1 is a view of the western half of the north cut face. The excavation has extended into the local lower confining unit of the shallow water-bearing sand which is exposed as the dark brown (saturated) unit at the base of the section. The continuity of these strata is also evident in this view. The length of the section from the right side of the photo to the left (east to west), is approximately 600 feet.

Photo #2 is a view of the eastern portion of the trench. In this area the trough cross-bedded silty sand or slightly clayey sand which hosts the shallow ground water is well exposed. The trough cross-bedded sedimentary structures are a result of the fluvial-deltaic origin of these sand bodies. The lower confining layer of lignitic clay is exposed at the base of the sand. Surficial yellow staining depicted in the lower right hand portion of the photograph probably results from weathering of sulfide minerals within the lignitic clay. The exposed lower confining layer at this location is approximately 1.5 feet thick. Adjacent to the area depicted in this photograph, ground water seeps occur along the top of this relatively impermeable layer.

The location of Photo #3 is in the north-central portion of the current excavation. Depicted in the photo is the trough cross-bedded clayey sand overlain by a

RECENT FIELD ACTIVITIES (continued)

distinct scour and fill structure of very clayey sand. The 36-inch diameter culvert provides a scale for the photo. The scour and fill structure is overlain by approximately 8 feet of interbedded silty sand and clay. A surficial veneer of silty sand overlies the interbedded silty sand and clay unit. The variety of fluvial processes responsible for deposition of the lithologic units at the site is evident in this photograph.

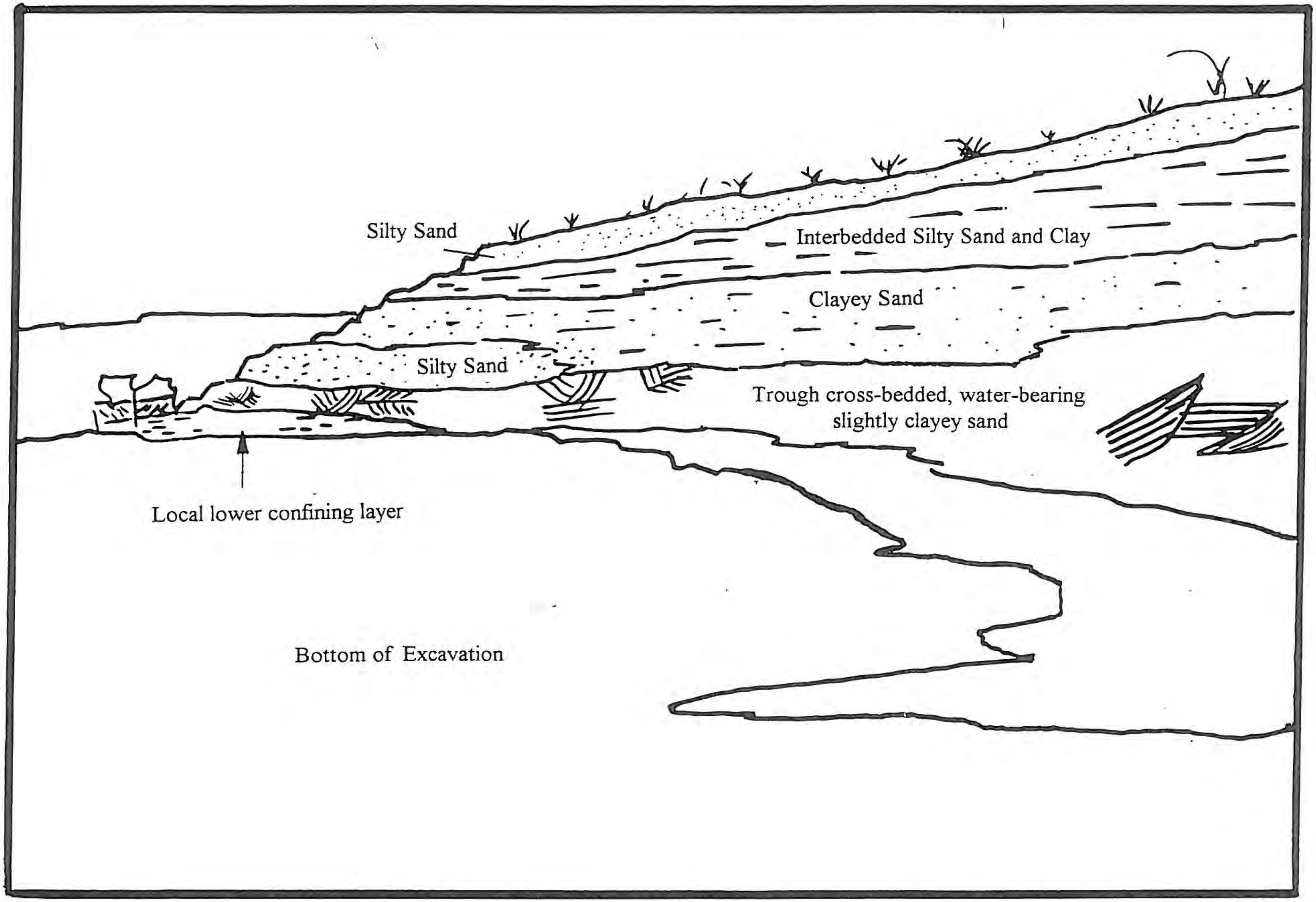


Photo # 1 Western End of Trench

Photo # 1 Western End of Trench

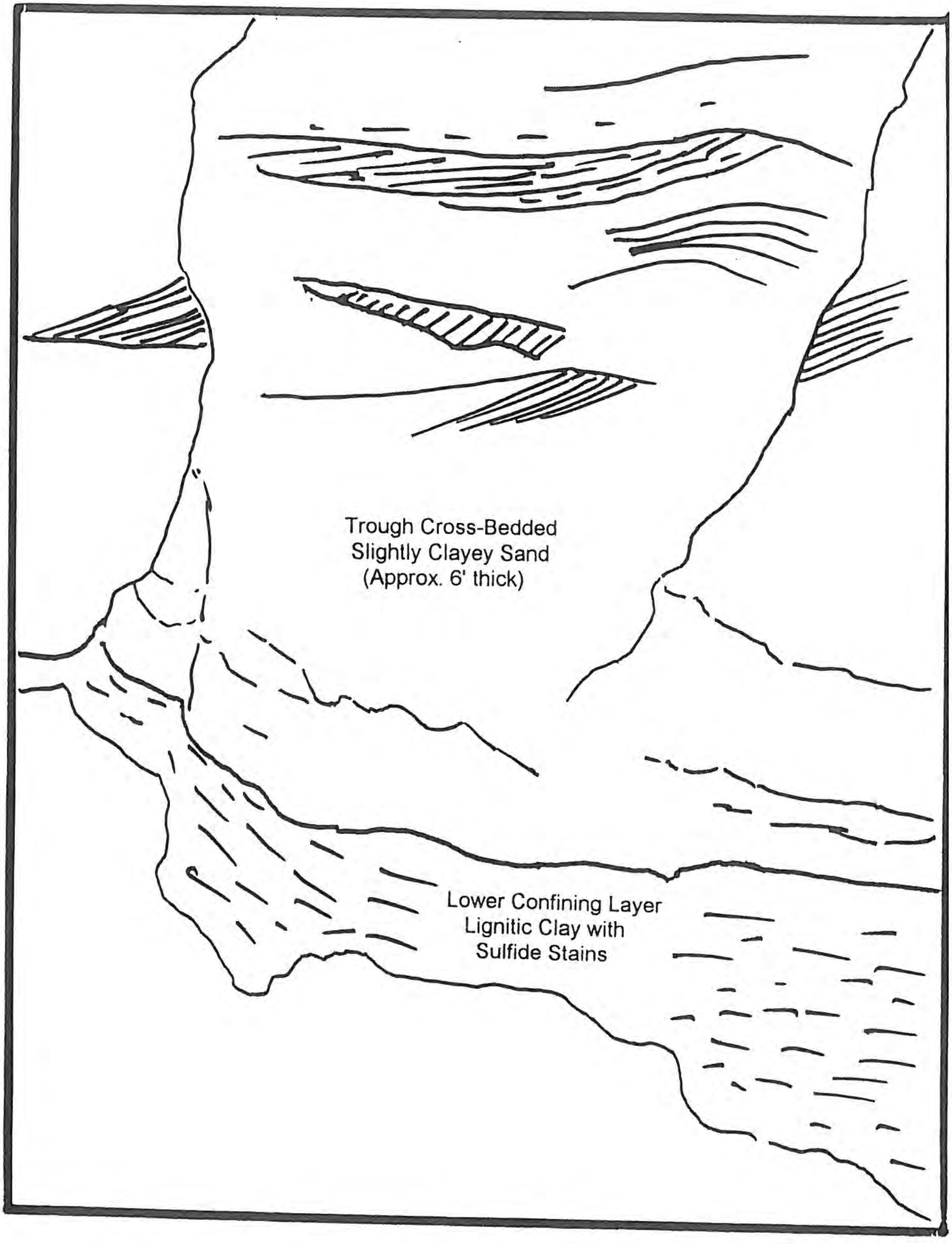


Photo # 2 East End of trench

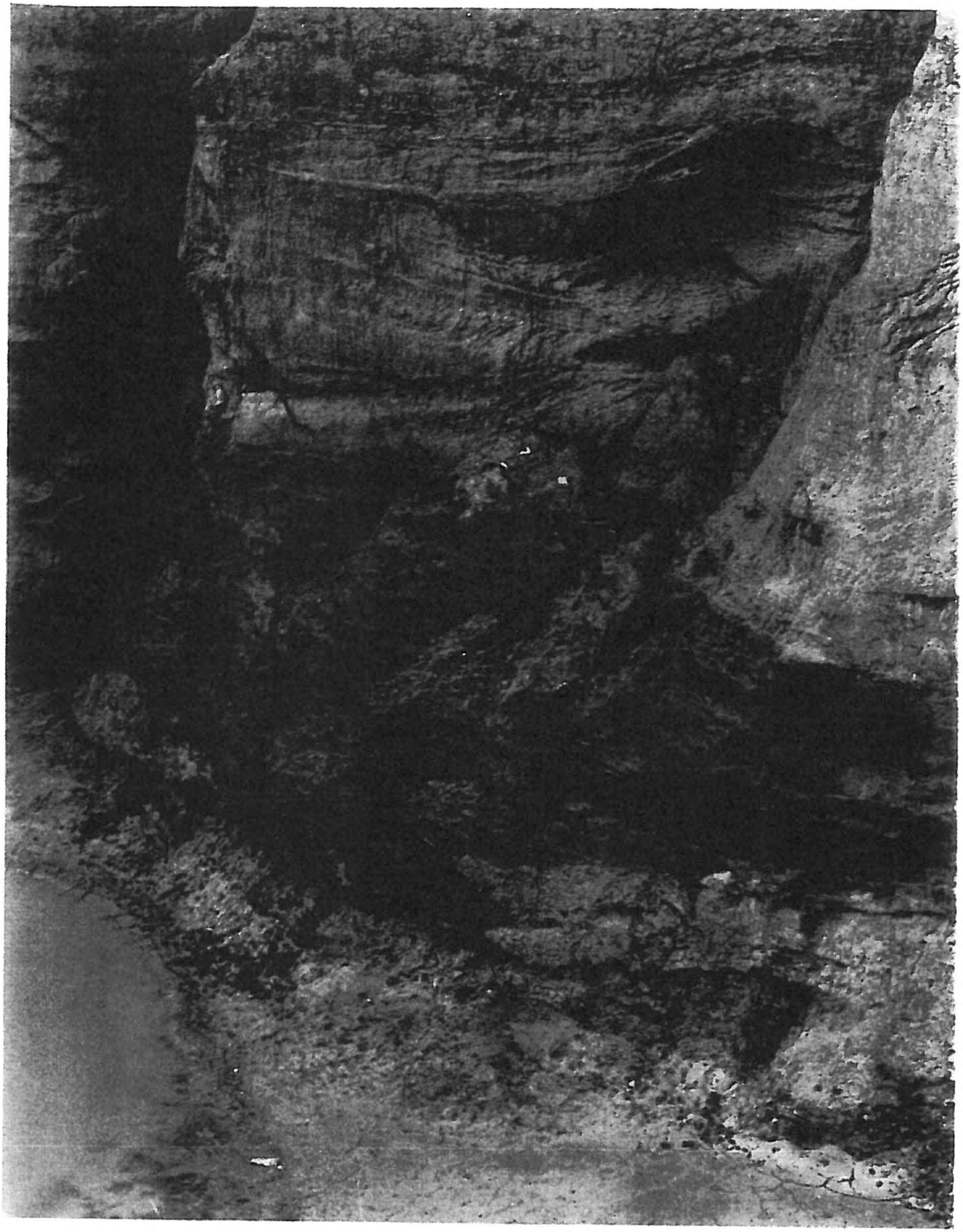


Photo #2 East End of Trench

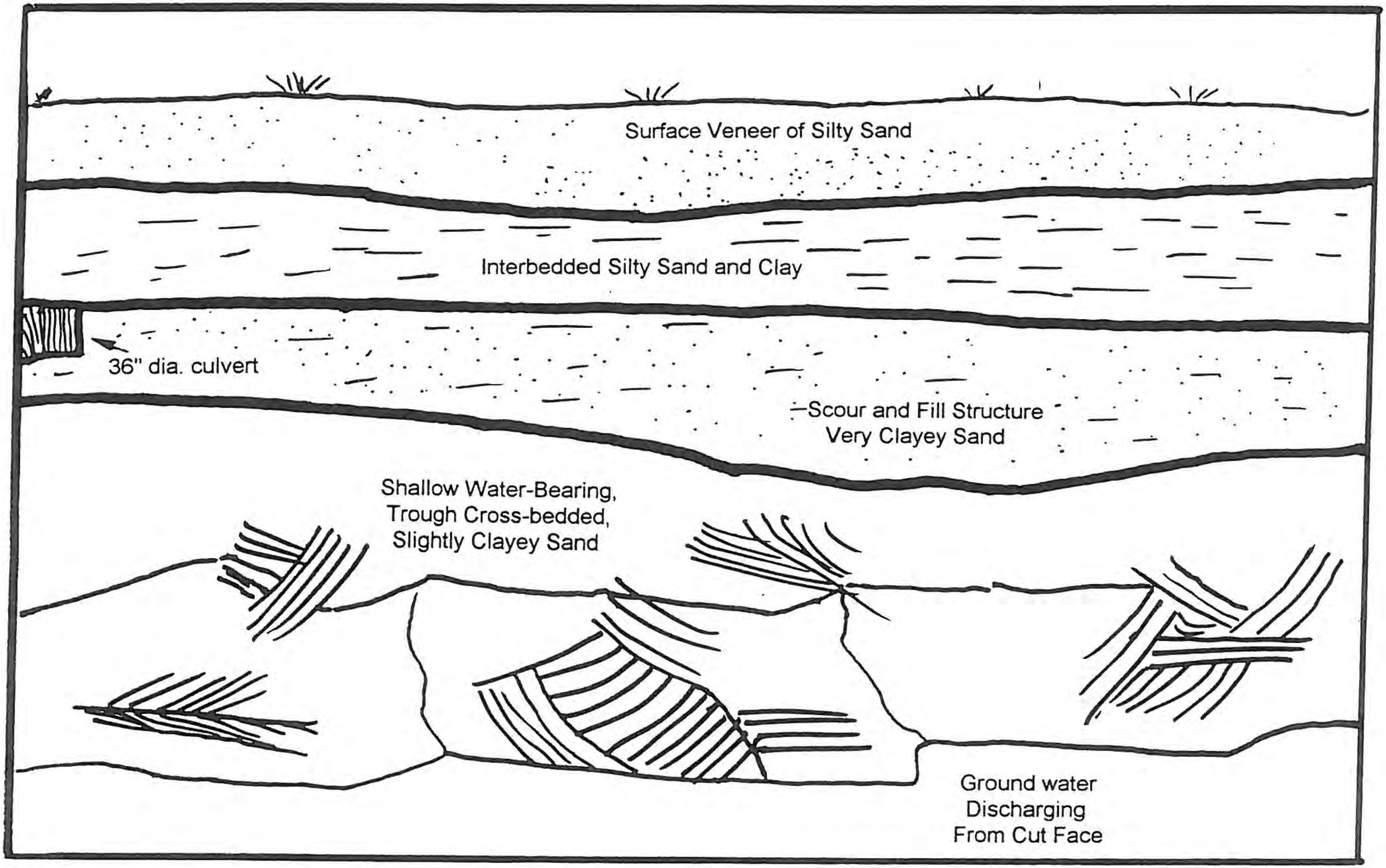


Photo # 3 Center of trench

Photo # 3 Center of Trench

DISCUSSION

Currently, the site ground-water monitoring system consists of 21 monitor wells. Monitor wells MW-1B, MW-8, MW-12B, MW-13B, MW-15A, MW-16 and MW-17 are completed in the deeper zones of the uppermost aquifer. Monitor well MW-9 screens both water-bearing zones. The remainder of the monitor wells are completed in the shallow zone of the uppermost aquifer (Plate X). Monitor wells MW-1A and MW-13A which are completed at shallow depths have historically been dry. All of the deeper monitor wells are either accompanied by a shallow well or are in close proximity to a monitor well completed in the shallow zone. Deeper monitor wells at the site are completed at depths too great to effectively detect a release of contaminants to the ground water.

The approximate elevation of the base of current excavation in the central part of Tract 1,(276 feet msl), is roughly equal to the elevation of the screened interval in monitor wells MW-2 and MW-12A. The silty sand or clayey sand exposed on the northern end of the current excavation is believed to equate to the screened interval of these wells. Within the excavation, the exposure of water-bearing sand is approximately 1000 feet long from east to west.

A geologic cross section (Plate VIII) indicates that the local lower confining layer of lignitic clay deepens to the south and southwest along a line roughly between monitor wells MW-2 and MW-14. Subsequently, the overlying sands which act as the host for groundwater in this area, also deepen to the southwest. The result is a northwest-southeast trending ridge on the top of the local lower confining layer of lignitic clay. The ridge produces a ground-water divide between monitor wells MW-2 and MW-14. Generally, ground water flows down the flanks of this divide to the northeast and southwest. The ground-water elevation map for the shallow zone indicates a trough located in the vicinity of monitor well MW-13B (Plate III). With the exception of this trough, ground-water flow direction appears to be consistent to the northeast on the northeast side of the ground-water divide.

Recharge to the uppermost aquifer most likely occurs at the outcrop of the various sand bodies either at the site or in close proximity. Additional recharge to the shallow water-bearing zones of the uppermost aquifer may occur where hydraulic communication with the deeper (confined) zones exists. Factors which determine the interconnectedness of the shallow and deeper (confined) water-bearing zones include the degree of interbedding of sand and clay between the primary sand bodies and the amount of lateral and vertical separation.

Hydraulic communication between the two water-bearing zones varies across the site. Water level measurements in adjacent monitor wells MW-15A and MW-15B and monitor wells MW-7 and MW-8 indicate that water levels in the deeper (confined) zones are higher than those in the shallow zone (Plate V). At these locations, the deeper (confined) zone is under higher piezometric pressure and possibly recharges the shallow zone of the uppermost aquifer where the two are in hydraulic communication. An upward flow is indicated at these locations. Water levels in monitor wells MW-12A and MW-12B indicate a downward flow direction between the two zones in this portion of the facility.

Ground-water flow direction is generally in two directions at the subject site. The direction of flow is determined by the location of a ground-water divide which trends between monitor wells MW-14 and MW-2. Ground water flows in a northeasterly direction on the northeast side of the ground-water divide, and in a southwesterly direction on the southwest side of the ground-water divide. The exception is the trough indicated in the vicinity of monitor well MW-13B.

Plate X presents ground water levels relative to the screened interval and ground surface elevation for each well.

RECOMMENDATIONS

The following recommendations are submitted as a result of this initial ground-water characterization study:

1) Plug and abandon monitor wells MW-1A and MW-13A which are consistently dry and serve no purpose.

2) Plug and abandon monitor wells MW-8, MW-12B, ~~MW-15A~~, MW-16 and MW-17, which are screened too deep to effectively detect a release.

3) Plug and abandon monitor well MW-9, which screens both the shallow and deep zones.

4) Install a replacement monitor well, MW-18, at the location of monitor well MW-1A. MW-18 should be screened at approximately 280 to 270 feet msl.

5) Replacement monitor well, MW-19, at the location of monitor well MW-9. MW-19 should be screened at approximately 257 to 247 feet msl. Install prior to opening of Tract 2.

6) Install a new monitor well (MW-20) along the Southland Energy Pipeline approximately 400 feet south of the northern permit boundary. This line separates Tracts 1 and 2. This well, located in the site interior, will provide interim downgradient monitoring for Tract 1.

RECOMMENDATIONS (continued)

7) Warehouse monitor wells MW-5, MW-6, MW-7, MW-19, MW-10, and MW-11, which monitor the perimeter of Tract 2. Monitor only wells around Tract 1 until construction and waste filling activities have begun in Tract 2. Warehoused wells should be purged at least annually to ensure that the well screens remain open.

8) Perform aquifer tests on all replacement or new monitor wells and selected existing wells to accurately determine hydraulic properties of the water-bearing strata.

9) Submit final ground-water characterization report.

The recommended ground-water monitoring system is shown on Plate VI and summarized on Table 4.

Table 4
Summary of Recommended Ground-Water Monitoring System

Well	Aquifer	Status	Remarks
MW-1A	Interbedded Sand-clay	Existing	Plug & Abandon
MW-1B	Interbedded Sand-clay	Existing	Downgradient well
MW-2	Silty Sand	Existing	Downgradient well
MW-3	Clayey Sand -Lean Clay	Existing	Downgradient well
MW-4	Clayey Sand	Existing	Downgradient well
MW-5	Clayey Sand, Clay-Sand	Existing	Warehouse - Downgradient well
MW-6	Interbedded Clay-Sand	Existing	Warehouse - Downgradient well
MW-7	Interbedded Clay-Sand	Existing	Warehouse - Downgradient well
MW-8	Interbedded Clay-Sand	Existing	Plug & Abandon
MW-9	Silty Sand	Existing	Plug & Abandon
MW-10	Interbedded Clay-Sand	Existing	Warehouse - Downgradient well
MW-11	Silty Sand - Clayey Sand	Existing	Warehouse - Downgradient well
MW-12A	Interbedded Clay-Sand	Existing	Downgradient well
MW-12B	Fine Sand (SP)	Existing	Plug & Abandon
MW-13A	Clayey Sand	Existing	Plug & Abandon
MW-13B	Interbedded Clay-Sand	Existing	Downgradient well
MW-14	Clayey Sand	Existing	Upgradient well
MW-15A	Silty Sand-Lean Clay	Existing	Plug & Abandon
MW-15B	Clayey Sand	Existing	Downgradient well
MW-16	Interbedded Clay-Sand	Existing	Plug & Abandon
MW-17	Clayey Sand	Existing	Plug & Abandon
MW-18	Silty Sand - Clayey Sand	To be drilled	Replacement for MW-1A
MW-19	Interbedded Clay-Sand	To be drilled upon opening of Tract 2	Replacement for MW-9 Downgradient
MW-20	Silty Sand	To be drilled	New Well Between Tracts 1&2 Downgradient well

REFERENCES

Dutton, S.P., 1979, Petrography and diagenesis of Wilcox sandstones: University of Texas at Austin, Bureau of Economic Geology Geological Circular 80-12, 5 pp.

Fogg, Graham E. and Kreitler, Charles W., 1982, Ground-water hydraulics and hydrochemical facies in Eocene aquifers of the East Texas basin: University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 127, 75 pp.

Fogg, Graham E., Kaiser, W.R., Ambrose, M.L., and MacPherson, G.L., 1983, Regional aquifer characterization for deep-basin lignite mining, Sabine uplift area, northeast Texas: University of Texas at Austin, Bureau of Economic Geology Geologic Circular 83-3, 30 pp.

Guevara E.H. and Garcia, R., 1972, Depositional systems and oil-gas reservoirs in the Queen City Formation (Eocene), Texas: University of Texas at Austin, Bureau of Economic Geology, 22 pp.

Guyton, W.F. and Associates, 1970, Ground-water conditions in Angelina and Nacogdoches Counties, Texas: Texas Water Development Board Report 110, 167 pp.

Jackson, Mary L.W. and Garner, L.E., 1982, Environmental geology of the Yegua-Jackson lignite belt, southeast Texas: University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 129, 36 pp.

Kaiser, W.R., and others, 1986, Geology and ground-water hydrology of deep-basin lignite in the Wilcox Group of East Texas: University of Texas at Austin, Bureau of Economic Geology Report, 182 pp.

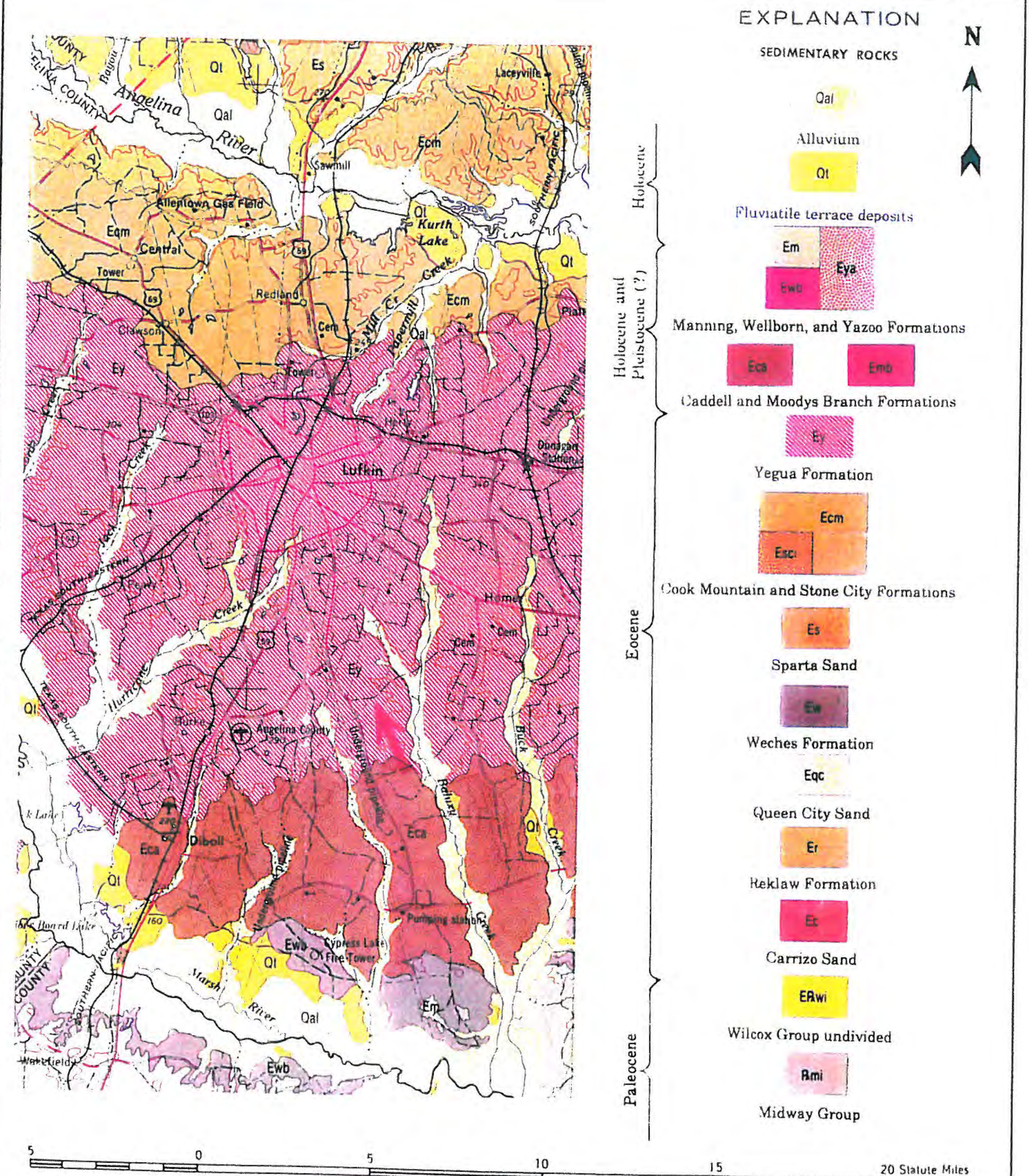
Preston, Richard D., 1991, Evaluation of ground-water resources in the vicinity of the cities of Henderson, Jacksonville, Kilgore, Lufkin, Nacogdoches, Rusk, and Tyler in East Texas: Texas Water Development Board Report 327, 51 pp.

LIMITATIONS

The investigation reported herein is considered sufficient in detail and scope to form a reasonable basis for the conclusions presented in this report. However, because of limitations in the number, spacing, and depth of wells, piezometers, and exploratory borings, geological and hydrogeological conditions may not have been fully revealed by this investigation. It is conceivable that subsurface conditions may be encountered which differ from those presented in this report. Our observations and conclusions presented herein are based upon conditions which existed at time of the specified field activities. Our professional services have been performed and our findings presented in accordance with generally accepted geological and hydrogeological principles and practices. These warranties are in lieu of other warranties either expressed or implied.

APPENDIX I

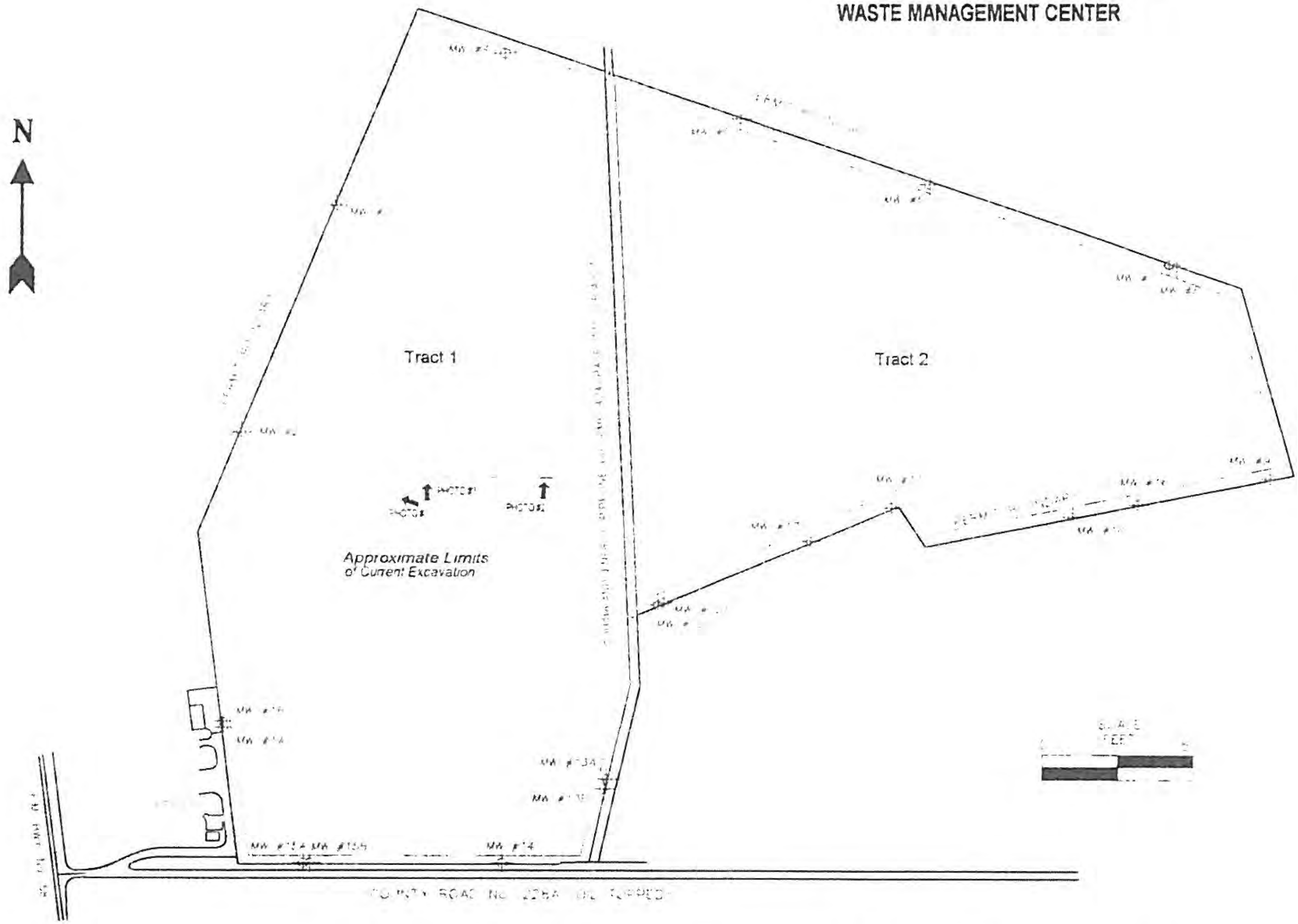
PLATES



CONTOUR INTERVAL 50 FEET TAKEN FROM THE GEOLOGIC ATLAS OF TEXAS, PALESTINE SHEET

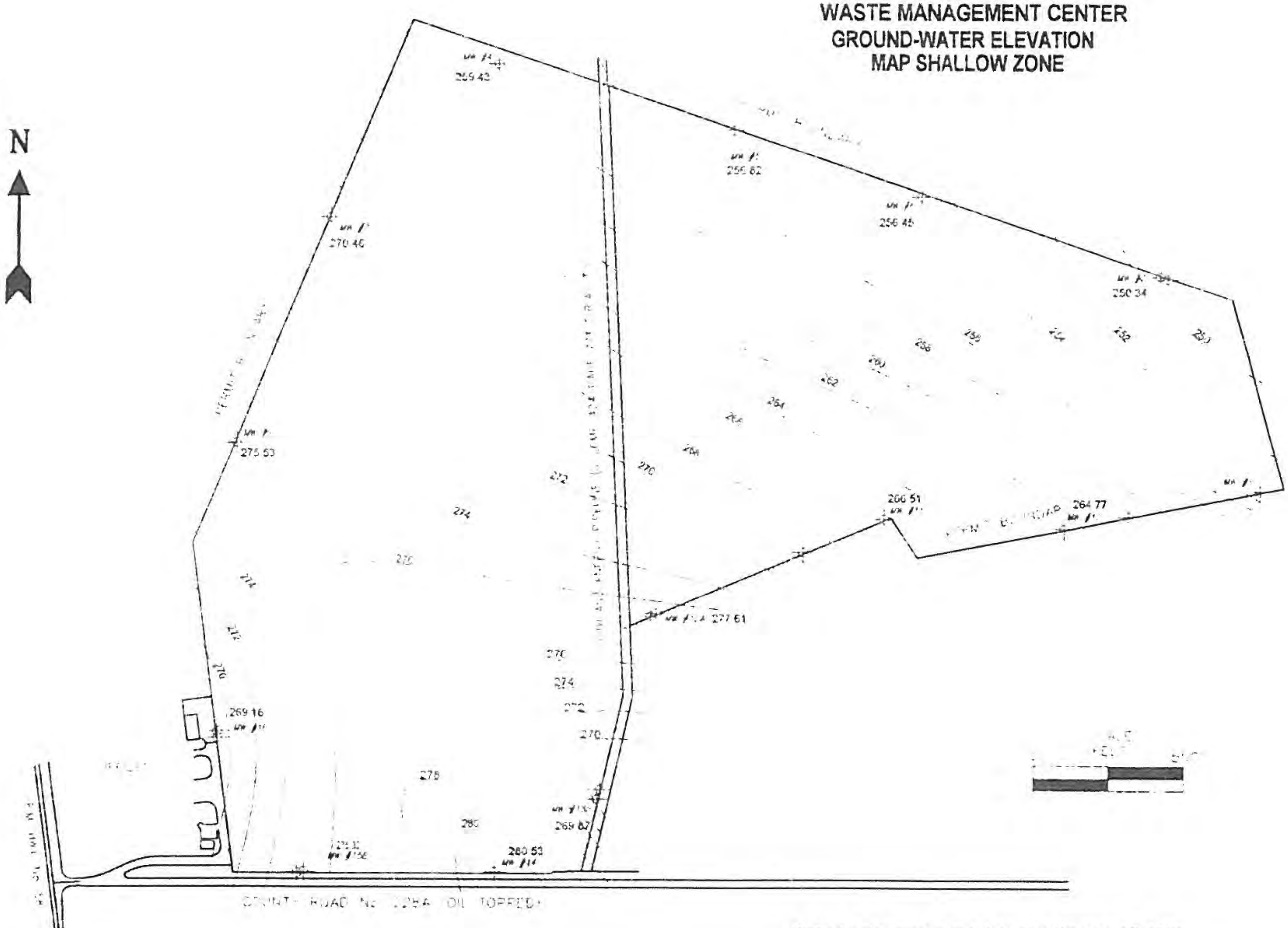
Hydrex ENVIRONMENTAL, INC. 117 North Street Suite 8 Nacogdoches Texas 75961 (409) 568-9451 FAX (409) 568-9527	GEOLOGIC MAP	PLATE I
		DATE:
		SCALE 1:250 000

SITE MAP OF ANGELINA COUNTY WASTE MANAGEMENT CENTER



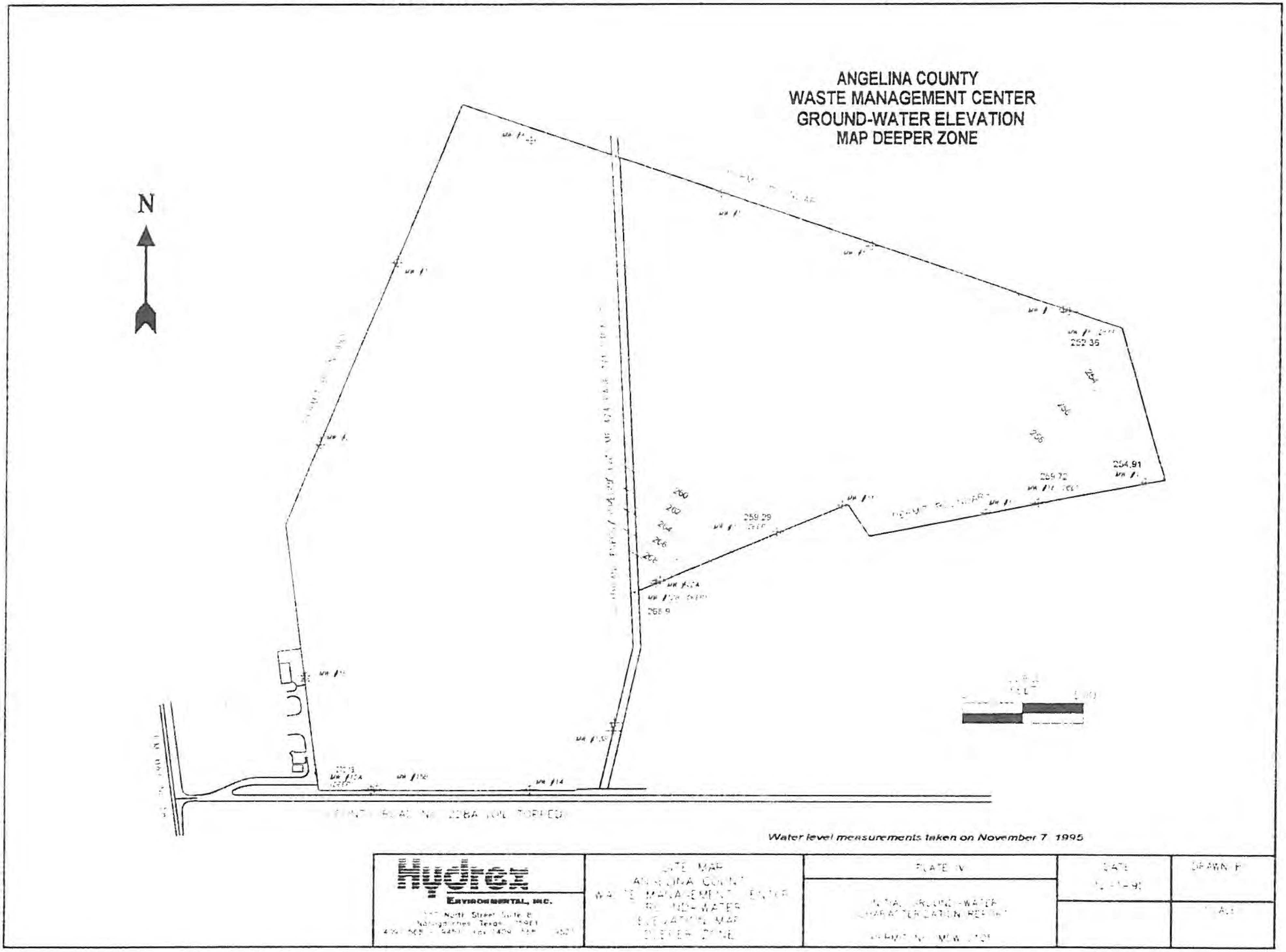
Hydrex Environmental, Inc.	SITE MAP ANGELINA COUNTY WASTE MANAGEMENT CENTER	PLATE	DATE	DRAWN BY:
		GROUND WATER CHARACTERIZATION ACWMC PERMIT NO. MSW 2165		

ANGELINA COUNTY
WASTE MANAGEMENT CENTER
GROUND-WATER ELEVATION
MAP SHALLOW ZONE

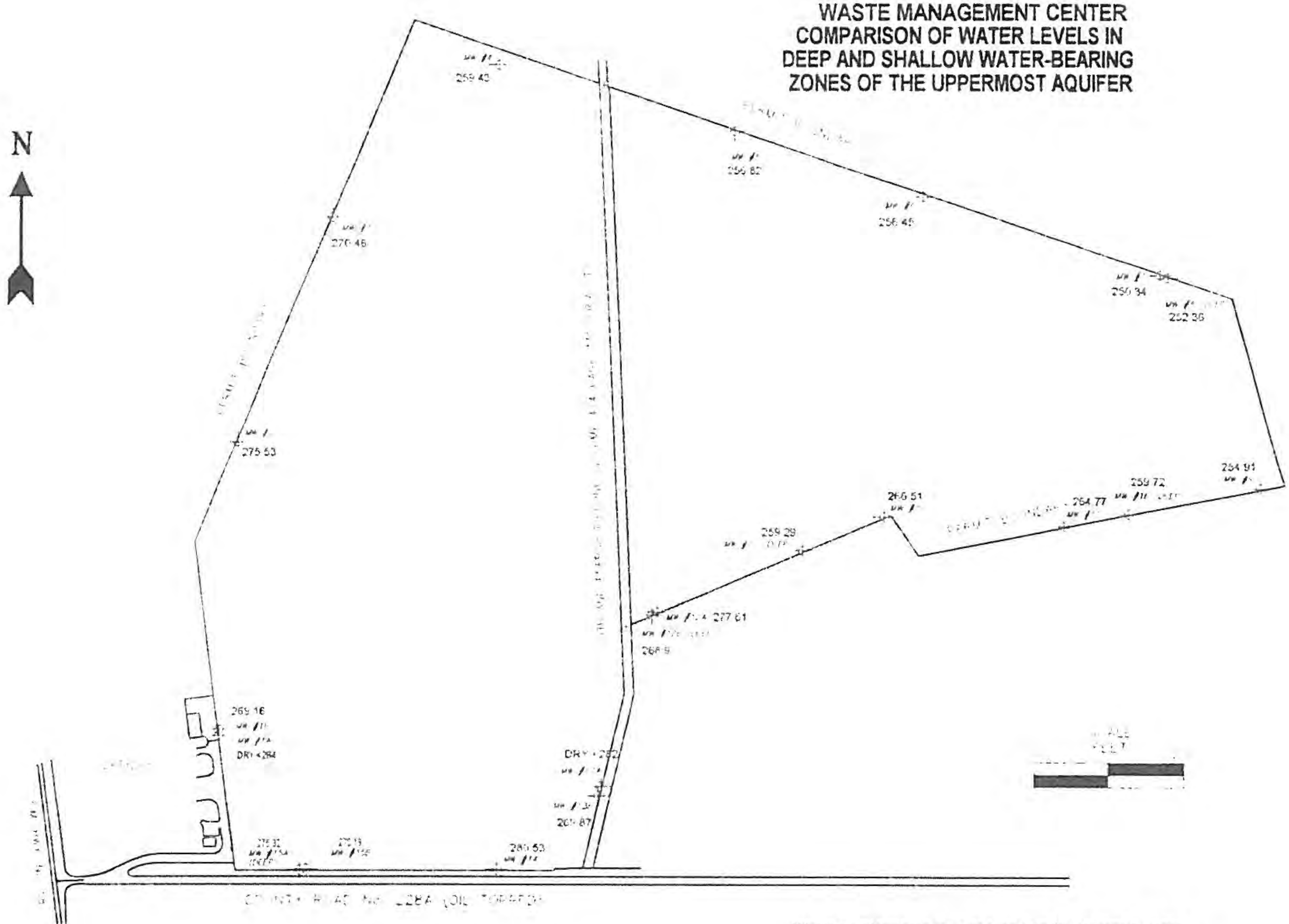


Water level measurements taken on November 7, 1995

Hydrex Environmental, Inc.	SITE MAP ANGELINA COUNTY WASTE MANAGEMENT CENTER GROUND-WATER ELEVATION MAP SHALLOW ZONE	PLATE III	DATE	DRAWN BY
				SCALE


ANGELINA COUNTY
WASTE MANAGEMENT CENTER
GROUND-WATER ELEVATION
MAP DEEPER ZONE
N
252.36
254.91
259.72
259.29
258.9
260
262
264
266
268
PERMIT BOUNDARY
COUNTY ROAD NO. 228A (OIL TOPPED)
Water level measurements taken on November 7, 1995
Hydrex
ENVIRONMENTAL, INC.
PLATE IV

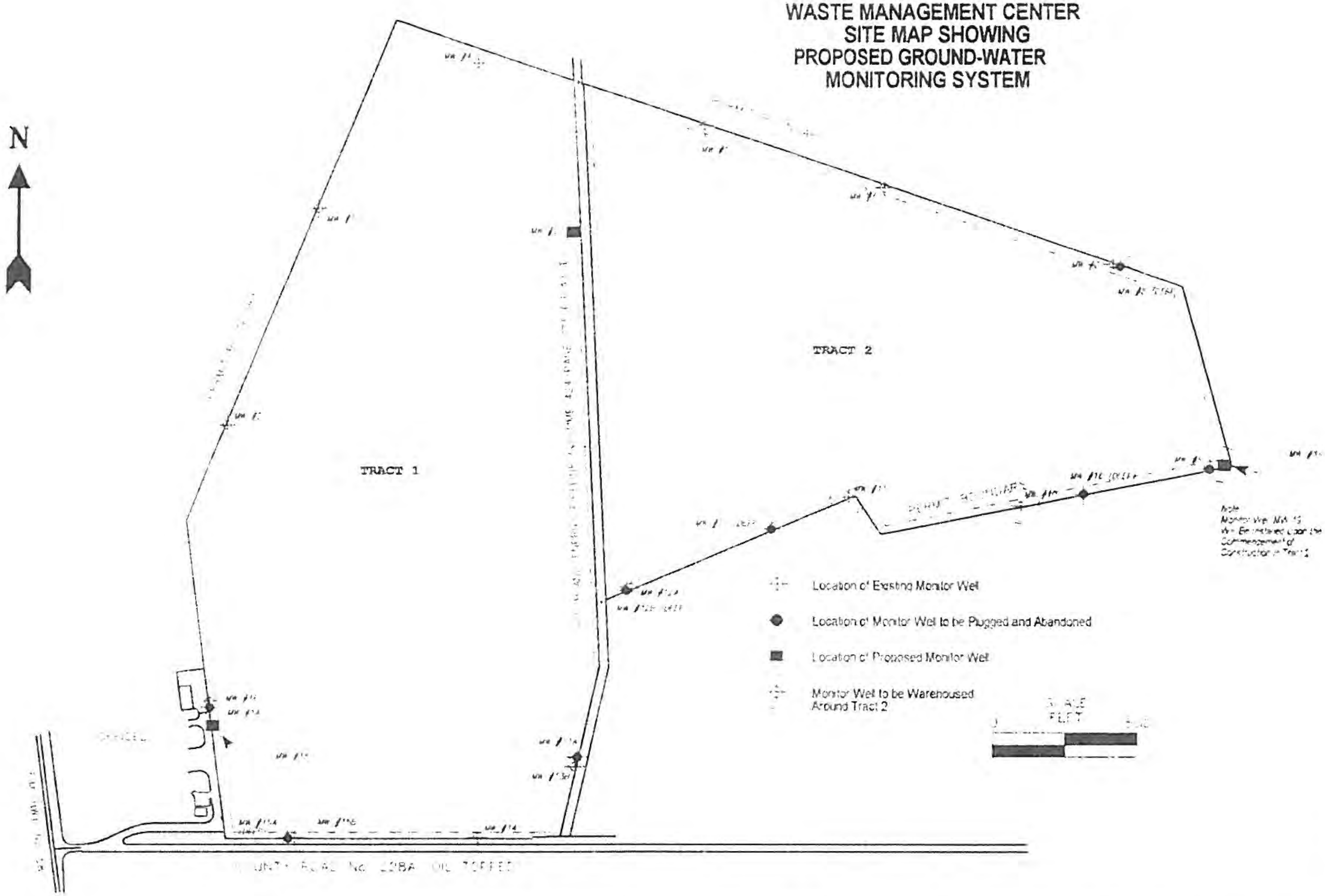
ANGELINA COUNTY
WASTE MANAGEMENT CENTER
COMPARISON OF WATER LEVELS IN DEEP AND SHALLOW WATER-BEARING ZONES OF THE UPPERMOST AQUIFER



Water level measurements taken on November 7, 1995

Hydrex Environmental, Inc.	SITE MAP ANGELINA COUNTY WASTE MANAGEMENT CENTER COMPARISON OF WATER LEVELS IN DEEP AND SHALLOW ZONES	PLATE INITIAL GROUND-WATER CHARACTERIZATION REPORT	DATE	DRAWN BY

ANGELINA COUNTY WASTE MANAGEMENT CENTER SITE MAP SHOWING PROPOSED GROUND-WATER MONITORING SYSTEM



Hydrex Environmental, Inc.

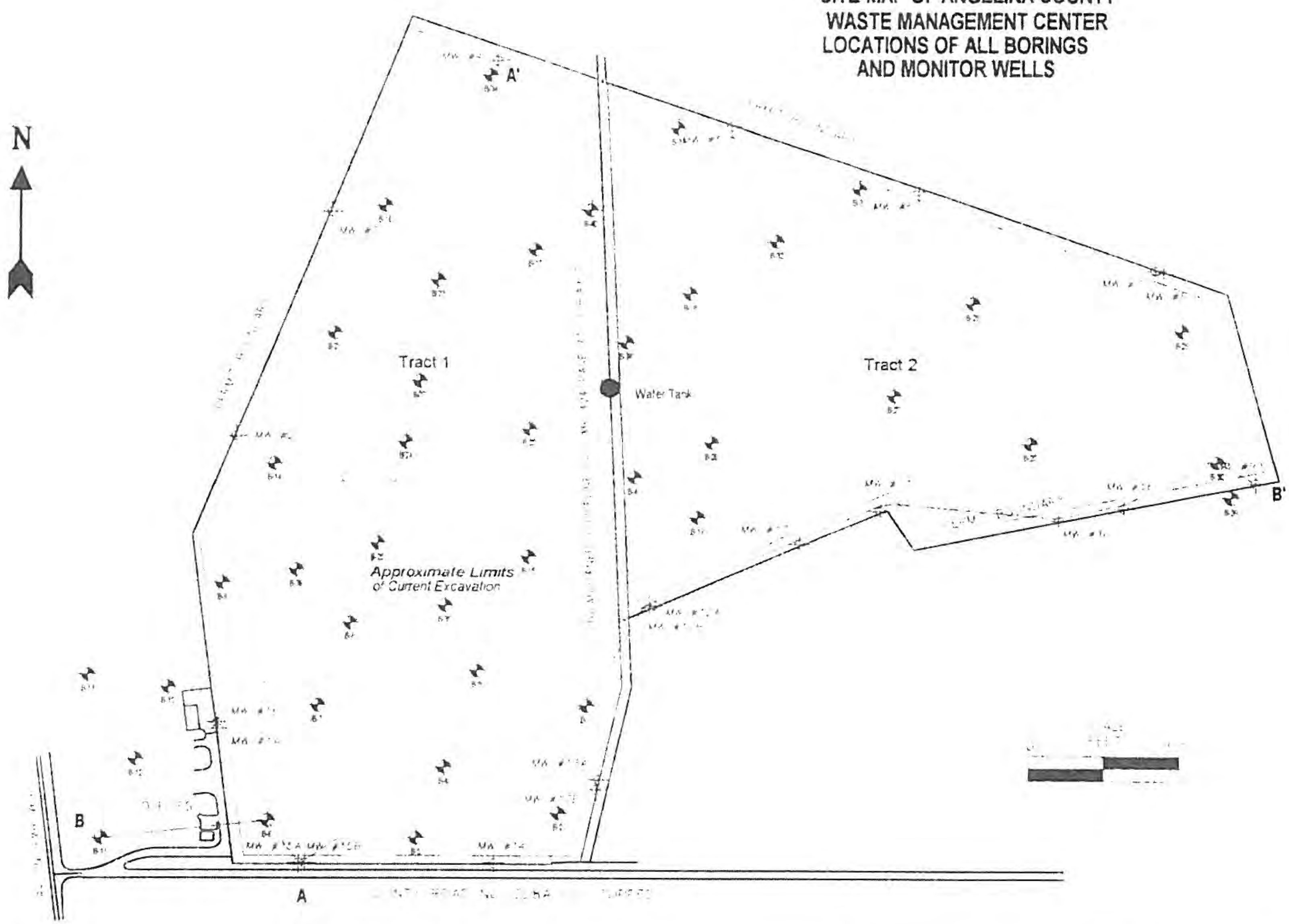
SITE MAP
ANGELINA COUNTY
WASTE MANAGEMENT CENTER
PROPOSED GROUND-WATER
MONITORING SYSTEM

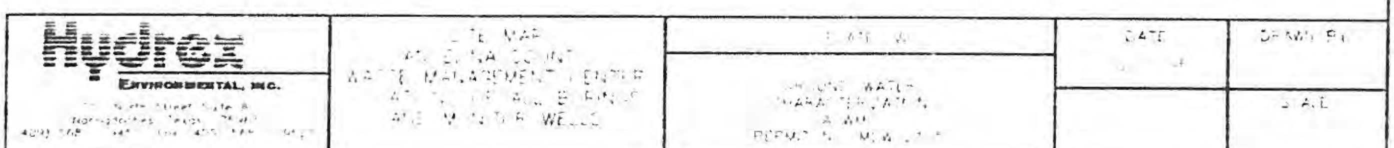
PLATE VI

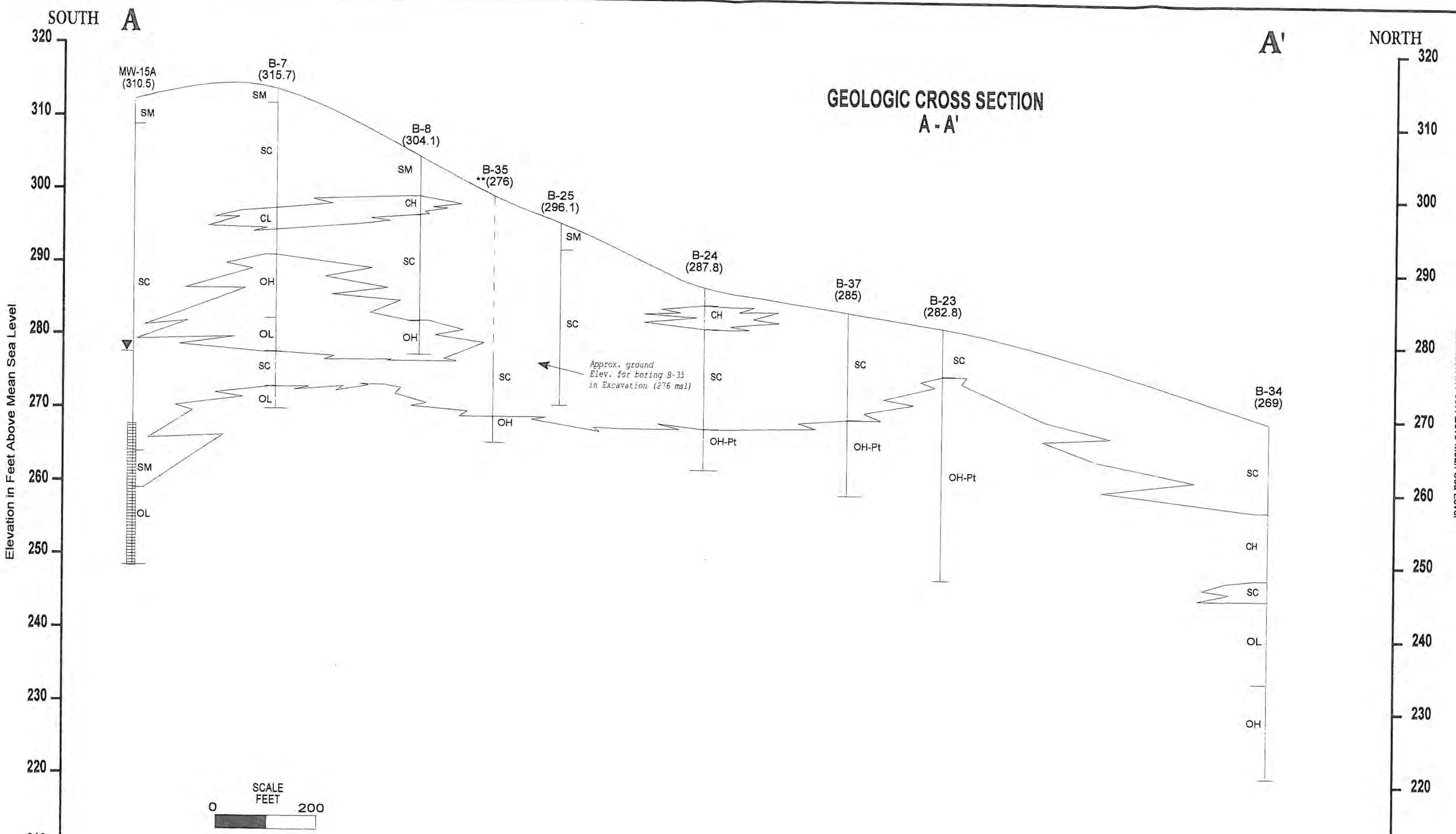
INITIAL GROUND-WATER CHARACTERIZATION REPORT

DATE	DRAWN BY

SITE MAP OF ANGELINA COUNTY WASTE MANAGEMENT CENTER LOCATIONS OF ALL BORINGS AND MONITOR WELLS







* For location of Borings, See Plate VII

Classification Key

SM - Sand, moderately sorted
SP - Sand, poorly sorted
SC - Clayey sand
CL - Lean Clay
CH - Fat clay
OL - Organic lean clay
OH - Organic fat clay
Pt - Lignite

Hydrex
ENVIRONMENTAL, INC.
117 North Street, Suite 8
Nacogdoches, Texas 75961
(409) 568-9451 Fax: (409) 568-9527

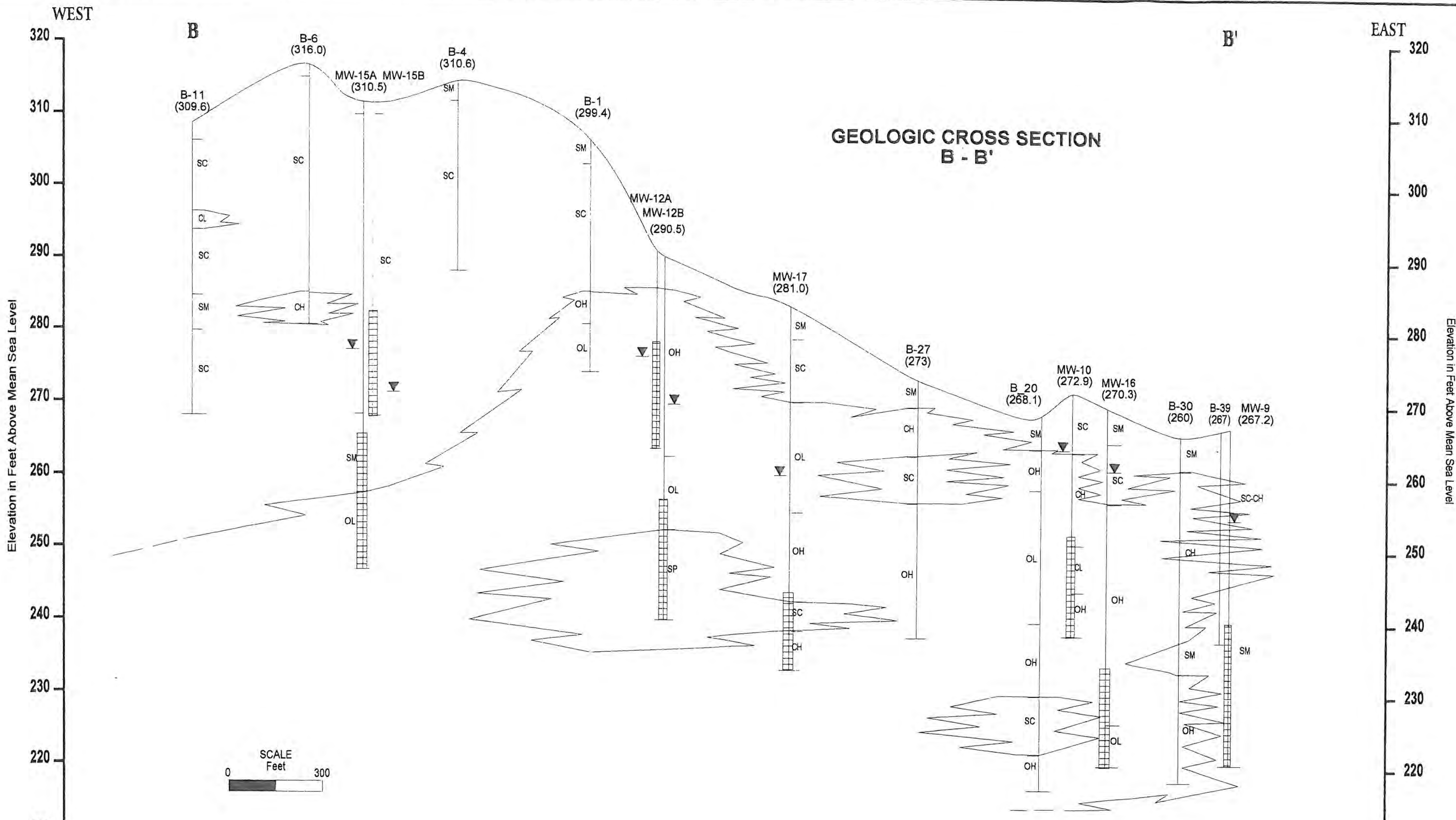
GEOLOGIC CROSS SECTION
A-A'

PLATE VIII

GROUND-WATER CHARACTERIZATION
ANGELINA COUNTY WASTE
MANAGEMENT CENTER
PERMIT No. MSW 2105

DATE:
DECEMBER 1, 1995

SCALE:
AS SHOWN



Classification Key

SM - Sand, moderately sorted
SP - Sand, poorly sorted
SC - Clayey sand
CL - Lean Clay
CH - Fat clay
OL - Organic lean clay
OH - Organic fat clay
Pt - Lignite

For location of Borings, See Plate VII

Hydrex
ENVIRONMENTAL, INC.
117 North Street, Suite 8
Nacogdoches, Texas 75961
(409) 568-9451 Fax: (409) 568-9527

GEOLOGIC CROSS SECTION
B-B'

PLATE IX

GROUND-WATER CHARACTERIZATION
ANGELINA COUNTY WASTE
MANAGEMENT CENTER
PERMIT No. MSW 2105

DATE:
DECEMBER 1, 1995

SCALE:
AS SHOWN

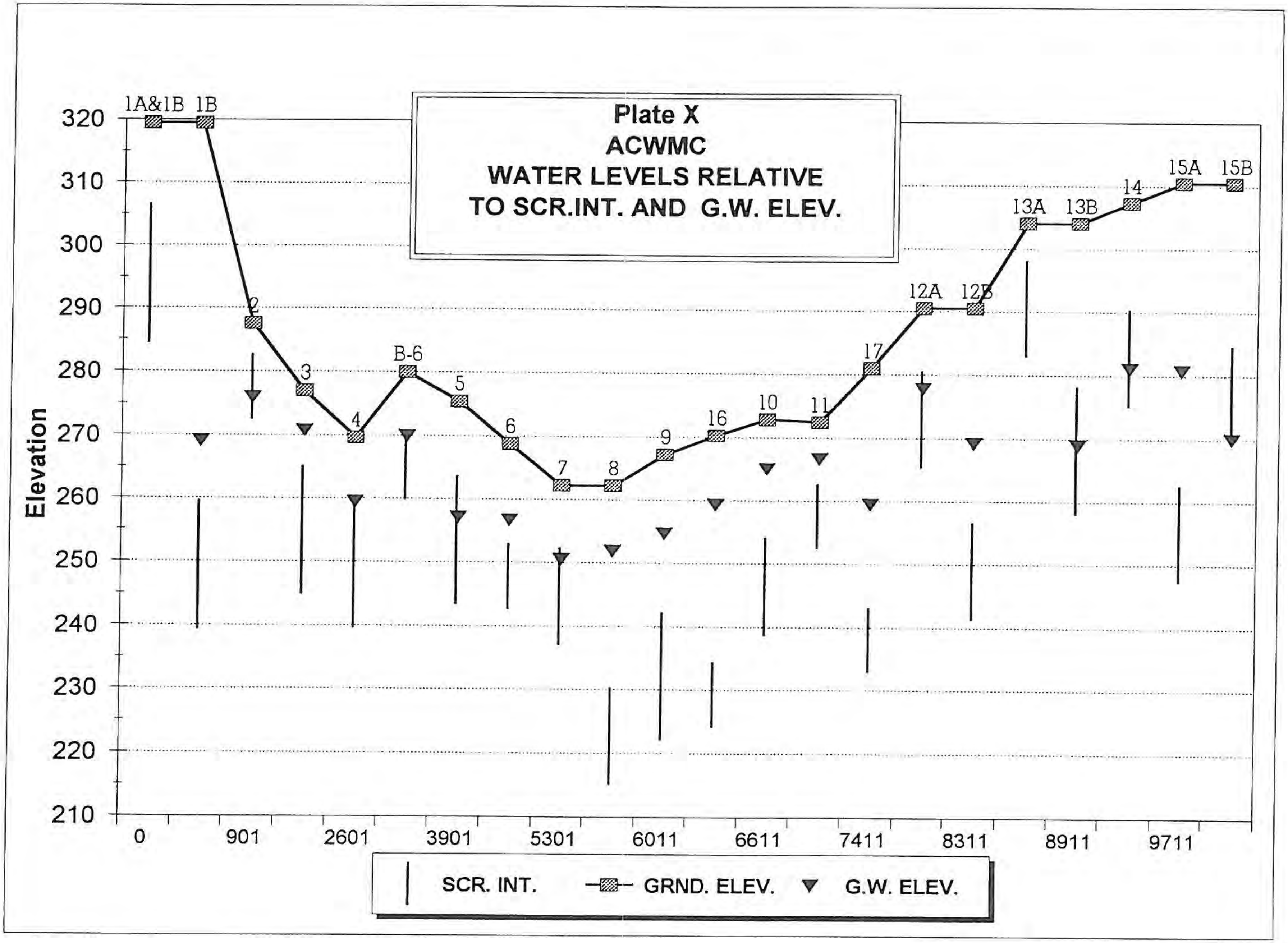


Plate X
ACWMC
WATER LEVELS RELATIVE
TO SCR.INT. AND G.W. ELEV.
Elevation
320
310
300
290
280
270
260
250
240
230
220
210
0
901
2601
3901
5301
6011
6611
7411
8311
8911
9711
1A&1B
1B
2
3
4
B-6
5
6
7
8
9
16
10
11
17
12A
12B
13A
13B
14
15A
15B
SCR. INT.
GRND. ELEV.
G.W. ELEV.

APPENDIX II

SOIL BORING AND MONITOR WELL

LOGS

LOG OF BORING NO. 1

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87
DATE: 7-6-87

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 299.4

DEPTH (FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	LL	PL	PI
0–4.0'	1.0, 1.0	Firm light brown silty fine sand (SM) (wet)			
4.0–13.0'	4+, 4+, 4+	Dense tan and gray clayey sand (SC) with silty clay seams and layers -becomes light gray and tan -with layers of sandy clay	51	17	34
13.0–17.0'	4+	Hard gray and brown clay with (CH) numerous seams and laminations of clayey sand	62	17	45
17.0–25.0'	4+, 4+	Hard gray and brown sandy clay (CL) with seams of light gray and tan clayey sand -becomes hard dark gray sandy clay with seams of silty sand and clayey sand			

Boring Terminated @ 25.0'

NOTE: Boring was dry upon completion.
Dry and caved @ 24' on 7-8-87.
Water @ 18' and caved @ 19' on 8-7-87.

PICKETT-JACOBS CONSULTANTS, INC

LOG OF BORING NO. 2

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87
DATE: 7-6-87
12-20-89

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 310.1

DEPTH (FT.)	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT.^{2})	STRATUM DESCRIPTION	LL	PL	PI
			Loose brown silty fine sand (SM)			
2.0'		0.5				
		4+	Firm gray and reddish-brown very clayey sand with sandy clay seams (SC)	37	16	21
5		2.5	-becomes gray and brown			
		4.5		40	18	22
10.0'		3.5	-becomes tan and gray			
			Firm light brown slightly clayey sand (SC)			
15		3.0				
20		3.0	-becomes very clayey sand with sandy clay layers			
22.0'						
25		2.5	Firm tan and gray very clayey sand with seams of sandy clay and silty sand (SC)	43	18	25
30		2.5	-becomes gray and tan			
31.0'						
35		4+	Hard dark gray and tan sandy clay with seams and laminations of silty sand and clayey sand (CL)	47	16	31

(Continued on Page 2)

LOG OF BORING NO. 2

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87
DATE: 7-6-87
12-20-89

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 310.1

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	ATTERBERG LIMITS (%) LL	PL	PI
					37.0'			
				3.0	Firm dark gray very clayey sand with sandy clay layers (SC)			
40								
				3.0	45.0'			
45					Hard dark gray clay with silt and sand seams (CH)			
50				4+	50.0'	62	21	41
					Boring Terminated @ 50.0'			
55								

NOTE: Seepage @ 26' while drilling.
Water @ 39' and caved @ 41' upon completion.
Water @ 20' and caved @ 33' on 7-8-87.
Water @ 30' and caved @ 33' on 8-7-87.

LOG OF BORING NO. 3

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87

DATE: 8-25-87
12-20-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 304.6

DEPTH (FT.)	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	ATTERBERG LIMITS (%) LL	PL	PI
	14		Firm light brown silty fine sand (SM)			
	17		4.0'			
5		3.5	Firm gray and tan clayey sand with seams of sandy clay (SC)	45	23	22
		4.5				
10		3.0		40	19	21
		4.0				
15			16.0'			
20		4.0	Very stiff gray and brown clay with seams and laminations of clayey sand (CH)	73	17	56
25		2.5		64	18	46
30		3.5				
			32.0'			
35		4.5	Hard gray sandy clay with sand seams (CL)			

(Continued on Page 2)

LOG OF BORING NO. 3

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87

DATE: 8-25-87
12-20-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2)	STRATUM DESCRIPTION GROUND ELEV. 304.6	ATTERBERG LIMITS (%) LL	PL	PI
40				3.0	Very stiff gray and brown sandy clay with seams and laminations of fine sand (CL)			
45				3.5	45.0'			
					Hard dark gray clay with sand seams (CH)			
50				4+	50.0'	63	21	42
					Boring Terminated @ 50.0'			
55								
					NOTE: Boring was dry upon completion. Dry and caved @ 45.0' on 8-26-87.			

LOG OF BORING NO. 4

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87
DATE: 8-25-87

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 312.6

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	LL	PL	PI
			11		Firm light brown silty fine sand (SM)			
			20					
4.0'								
5				3.5	Firm gray and tan clayey sand (SC) with pockets and laminations of sand	28	21	7
				3.0				
				1.0	-becomes gray clayey sand with seams and laminations of sandy clay			
10								
				3.5	-becomes firm gray clayey sand with seams and laminations of sand	29	22	7
15								
				3.0				
20								
				3.0	-becomes gray and brown	38	20	18
25 (25.0')								
30								
35								

Boring Terminated @ 25.0'

NOTE: Seepage @ 7.5' while drilling.
Water @ 13' and caved @ 19' on 8-26-87.

LOG OF BORING NO. 5

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87

DATE: 7-6-87
12-20-89

LOCATION: See Boring Plan   TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 315.7

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	ATTERBERG LIMITS (%) LL	PL	PI
				0.5	Loose light brown silty fine sand (SM)			
				0.5	4.0'			
5				4.5	Dense gray and reddish-brown very (SC) clayey sand	37	16	21
				4+				
				4+	-becomes gray and tan very clayey sand with roots			
10								
15				4+	-with seams of sandy clay	47	16	31
					16.0'			
20				1.5	Firm gray and tan clayey sand (SC) (dry)			
25				1.5	-becomes moist			
30				1.5		36	17	19
					32.0'			
35				4.5	Dense gray slightly clayey sand (SC) with layers of brown sandy clay			

LOG OF BORING NO. 5

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87

DATE: 7-6-87
12-20-89

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION GROUND ELEV. 315.7	ATTERBERG LIMITS (%) LL	PL	PI
					37.0'			
40				4.5	Dense light brown silty fine sand (SM) with clayey sand layers -becomes gray silty fine sand with occasional seams of silty clay			
45					45.0'			
50				4+	Hard dark gray clay with silty sand layers and lignite (CH) 50.0'	36	18	18
55					Boring Terminated @ 50.0'			

NOTE: Seepage @ 37' while drilling.
Water @ 27' and caved @ 28' upon completion.
Water @ 18' and caved @ 23' on 7-8-87.
Caved @ surface on 8-7-87.

LOG OF BORING NO. 6

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87
DATE: 7-7-87
12-20-89

LOCATION: See Boring Plan **TYPE BORING/SAMPLING:** Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 316.0

DEPTH (FT.)	HAND PENETROMETER (TONS/FT^2)	STRATUM DESCRIPTION	LL	PL	PI
	1.0	Loose brown silty fine sand (SM) — 2.5'			
	0.5	Soft gray and tan very sandy clay (CL) — 4.0'			
5	2.5 2.5 4+	Firm gray and tan very clayey sand with seams of very sandy clay (wet) (SC)	40	17	23
10		12.0'			
15	4+	Dense tan and gray slightly clayey sand (SC) — 17.0'	33	16	17
20	4+	Dense tan and gray clayey sand (SC)	36	15	21
25	4+	-becomes gray and tan clayey sand with seams of silty sand and sandy clay			
30	1.5	30.0'	30	19	11
		Hard dark gray clay with sand pockets and layers (CH)	61	19	42
35	4+	35.0'			

Boring Terminated at 35.0'

NOTE: Boring was dry upon completion on 7-7-87.
Dry and caved @ 25.0' on 7-8-87.
Water @ 21.0' and caved @ [illegible]

LOG OF BORING NO. 7

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87

DATE: 7-7-87
12-20-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 315.7

DEPTH (FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION		LL	PL	PI
0–2.0'	1.0	Loose brown silty fine sand	(SM)			
2.0'–4.0'	3.0	Firm gray and tan clayey sand with sandy clay layer	(SC)			
4.0'–11.0'	4+, 4+, 4+	Dense tan and gray clayey sand with layers of silty sand	(SC)	43	18	25
11.0'–16.0'	3.0	Firm gray clayey sand with silty sand layers	(SC)	35	15	20
16.0'–22.0'	3.5	Very stiff tan and gray very sandy clay	(CL)			
22.0'–32.0'	4.0, 4+	Hard gray and tan clay with layers of very clayey sand -with organic matter	(CH)	53	18	35
32.0'–	4+	Hard gray very sandy clay with numerous laminations of silt and fine sand	(CL)			

Standard Penetrometer (Blows/Ft.): no entries. Depth scale marks: 5, 10, 15, 20, 25, 30, 35.

(Continued on Page 2)

LOG OF BORING NO. 7

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87

DATE: 7-7-87
12-20-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 315.7

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2)	STRATUM DESCRIPTION	ATTERBERG LIMITS (%) LL	PL	PI
					37.0'			
40				4+	Dense gray very clayey sand with seams of silt and fine sand (SC)			
					42.0'			
45				4+	Hard gray very sandy clay (CL)			
50				4+	50.0'	47	22	25
55								

Boring Terminated @ 50.0'

NOTE: Seepage @ 21' while drilling.
Water @ 42.5' and caved @ 46' on 7-8-87.
Water @ 39' and caved @ 42' on 8-7-87. (276.7)

LOG OF BORING NO. 8

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87
DATE: 7-6-87

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 304.1

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2)	STRATUM DESCRIPTION	ATTERBERG LIMITS (%) LL	PL	PI
				1.5	Loose brown silty fine sand (wet) (SM) 4.0'	Non-Plastic		
5				4+	Dense gray and tan clayey sand with layers of sandy clay and silty sand (SC) 6.0'			
				4+	Hard gray and tan clay with layers of silty sand and clayey sand (CH) 8.0'	60	18	42
10				4+	Dense gray and tan clayey sand with layers of silty sand (SC) 12.0'			
15				4+	Dense gray clayey sand with silty sand layers (SC) 17.0'	46	15	31
20				4+	Dense gray and tan very clayey sand with sandy clay seams (SC) 22.0'			
25				4+	Hard dark gray clay with seams of clayey sand and silt (CH) 25.0'	51	17	34
30					Boring Terminated @ 25.0'			
35								

NOTE: Boring was dry upon completion.
Boring was dry and caved @ 24' on 7-8-87.
Water @ 3.5' and caved @ 6' on 8-7-87.

LOG OF BORING NO. 9

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87
DATE: 8-25-87

LOCATION: See Boring Plan TYPE BORING/SAMPLING:

DEPTH TO WATER:

GROUND ELEV. 302.1

DEPTH (FT.)	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	LL	PL	PI
	11		Firm light brown sitly fine sand (SM)			
	18		4.0'			
5		3.0	Very stiff gray and brown clay (CH) with seams and layers of sand			
		4+		62	18	44
		4.0				
10						
		4.5		91	20	71
15						
		3.5		73	19	54
20						
		4.0	25.0'			
25			Boring Terminated 25.0'			
30						
35						

NOTE: Boring was dry upon completion. Dry and caved @ 25.0' on 8-26-87.

LOG OF BORING NO. 10

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87
DATE: 8-24-87

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 313.6

DEPTH (FT.)	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	LL	PL	PI
	9		Firm light brown silty fine sand (SM)			
	11		4.0'			
5		4.5	Dense gray and red very clayey sand with seams and laminations of clay and sand (SC)	40	17	23
		4.5				
10		4.5	-becomes gray and brown	43	19	24
15	33					
20		4+				
25		4+		38	16	22
			26.0'			
			Hard brown and gray sandy clay with seams and laminations of sand (CL)			
30		4+				
35		4+				

(Continued on Page 2)

LOG OF BORING NO. 10

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87
DATE: 8-24-87

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2)	STRATUM DESCRIPTION GROUND ELEV. 313.6	ATTERBERG LIMITS (%) LL	PL	PI
40				4+	Hard gray and brown sandy clay (CL) with seams and laminations of fine sand			
45				4+	45.0'			
					Boring Terminated @ 45.0'			
50					NOTE: Boring was dry upon completion. Dry and caved @ 45.0' on 8-25-87. Dry and caved @ 43.5' on 8-26-87.			

LOG OF BORING NO. 11

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87
DATE: 7-24-87

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 309.6

DEPTH (FT.)	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION		ATTERBERG LIMITS (%) LL	PL	PI
	12		Firm brown silty fine sand 3.0'	(SM)			
5		3.0	Firm tan slightly clayey sand 6.0'	(SC)			
10		4+ 4+	Dense gray and tan very clayey sand 12.0'	(SC)	43	18	25
		1.5	Stiff tan and gray sandy clay 14.0'	(CL)			
15, 20		2.0	Firm tan and gray clayey sand 24.0'	(SC)	40 39	24 25	16 14
25		1.0	Firm gray silty fine sand 28.0'	(SM)			
30, 35		2.5 1.5	Firm gray and tan clayey sand	(SC)	35	23	12

(Continued on Page 2)

LOG OF BORING NO. 11

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87
DATE: 7-24-87

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 309.6

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	ATTERBERG LIMITS (%) LL	PL	PI
40				4.0	Dense gray and tan clayey sand (SC)			
45					Boring Terminated @ 40.0'			
50					NOTE: Boring was dry upon completion. Water @ 38' and caved @ 38.5' on 8-7-87.			

LOG OF BORING NO. 12

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87
DATE: 8-24-87

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 314.0

DEPTH (FT.)	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2)	STRATUM DESCRIPTION	LL	PL	PI
2.0'	11		Firm light brown silty fine sand (SM)			
4.0'	10		Firm gray and tan clayey sand (SC)	23	17	6
		4+	Dense gray and tan clayey sand (SC) with seams and laminations of sand			
		4+		34	12	22
		4+				
	50+		-becomes very dense	40	16	24
	52			33	24	9
25.0'	44		-with clay seams			

Boring Terminated @ 25.0'

NOTE: Boring was dry upon completion.
Dry and caved @ 25' on 8-25-87.
Dry and caved @ 24.5' on 8-26-87.

LOG OF BORING NO. 13

PROJECT: Angelina County Landfill
Lufkin, Texas

JOB NO.: 164-87
DATE: 8-25-87

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 303.9

Depth (ft.)	Standard Penetrometer (Blows/Ft.)	Hand Penetrometer (Tons/Ft²)	Stratum Description	Atterberg Limits (%) LL	PL	PI
0–2.0'	31		Dense tan silty fine sand (SM)			
2.0'–4.0'		4+	Hard gray and red sandy clay (CL)	32	13	19
4.0'–25.0'		3.5	Dense gray clayey sand with sand seams and clay pockets (SC)	37	14	23
		4+				
		3.5	-becomes gray and tan clayey sand with seams and laminations of sand			
		3.5		38	14	24
			-becomes gray and tan	45	18	27
25.0'	33					

Boring Terminated @ 25.0'

NOTE: Boring was dry upon completion.
Dry and caved @ 25' on 8-26-87.

LOG OF BORING NO. 14

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 5-4-88

LOCATION: See Attached Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 286.1

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2)	STRATUM DESCRIPTION		ATTERBERG LIMITS (%) LL	PL	PI
					1.0' Loose silty sand	(SM)			
5				3.0 3.0	Firm tan very clayey sand with sand seams 7.5'	(SC)	35	14	21
10					Firm tan clayey sand with sand seams 12.5'	(SC)	34	23	11
15 20				4.5+ 4.5+	Hard brown clay with silt seams 23.0'	(CH)	75	23	52
25 30				4.5+ 4.5+	Hard gray clay with sand seams 32.0'	(CH)	63	27	36
35					Dense gray sand 35.0'	(SP)			

Boring Terminated 35'
Note: Seepage noted at 32.0' during drilling. Water at [illegible]

LOG OF BORING NO. 15

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 5-3-88

LOCATION: See Attached Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 299.5

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	ATTERBERG LIMITS (%) LL	PL	PI
0–3.0'					Loose tan silty sand (SM)			
5				4.5+	Very dense gray and tan clayey sand (SC)	22	19	3
10				4.5+	- becomes very clayey with clay layers	68	17	51
15				4.5+	16.0'	57	20	37
16.0'–20.0'				4.5+	Hard tan and brown sandy clay with sand seams (CL)	43	22	21
20.0'–25.0'					Dense gray and tan silty sand (SM)			

Boring Terminated @ 25.0'

Note: Seepage at 24.0' during drilling. Water @ 21'9" and open to 22.0' on 5-11-88.

LOG OF BORING NO. 16

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 5-4-88

LOCATION: See Attached Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION (GROUND ELEV. 271.1)		ATTERBERG LIMITS (%) LL	PL	PI
1.0'					Loose tan silty sand	(SM)			
				3.5	Firm tan very clayey sand with sand seams	(SC)	46	19	27
5				4.0	- becomes tan and gray and dense				
9.0'									
10					Dense tan silty sand	(SM)			
13.0'									
15				4.5+	Hard gray clay with silt seams	(CH)	58	21	37
20				4.5+					
25 / 25.0'				4.5+			61	21	40

Boring Terminated @ 25.0'
Note: Seepage @ 13.0' during drilling. Water @ 3'6" and open to 19.0' on 5-11-88.
Water @ 4' and caved @ 16' on 8-1-88.
No seepage in test pit excavated to 11' on 8-1-88.

30

35

LOG OF BORING NO. 17

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 5-3-88

LOCATION: See Attached Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 287.1

DEPTH (FT.)	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	LL	PL	PI
0–2.0'			Loose gray silty sand (SM)			
2.0'–18.0'		4.5+	Hard tan clay with silt seams (CH)	99	23	76
		4.5+	- becomes gray and tan	91	27	64
		4.5+	- with sand seams	77	19	58
18.0'–22.0'		4.5+	Dense gray clayey sand (SC)	33	24	9
22.0'–25.0'			Dense tan and brown clayey sand (SC)			

Boring terminated @ 25.0'

Note: Dry upon completion and dry and open to 22.0' on 5-11-88.

LOG OF BORING NO. 18

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 5-4-88

LOCATION: See Attached Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 286.8

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION		ATTERBERG LIMITS (%) LL	PL	PI
0–5.0					Loose brown silty sand	(SM)			
5.0–13.0				4.5+	Hard brown and tan clay with silt seams	(CH)	91	28	63
				4.5+			80	28	52
13.0–23.0				4.5+	Hard gray clay with sand seams	(CH)	77	27	50
				4.5+					
23.0–26.0				4.5+	Very dense gray very clayey sand with sand seams	(SC)	48	17	31
26.0–28.0					Dense gray silty sand	(SM)			
28.0–35.0				4.5+	Hard gray sandy clay with joints and sand seams	(CL)	44	20	24
				4.5+					

(Continued on Page 2)

LOG OF BORING NO. 18

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 5-4-88

LOCATION: See Attached Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2)	DEPTH TO WATER: STRATUM DESCRIPTION GROUND ELEV. 286.8	ATTERBERG LIMITS (%) LL	PL	PI
40				3.0	Dense gray silty sand with sandy clay layers (SM)			
45					Boring Terminated @ 42.0'			
					Note: Seepage at 28.0' during drilling. Water @ 12.0' and open to 18.0' on 5-11-88.			
50								
55								
60								
65								
70								

LOG OF BORING NO. 19

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 5-3-88
4-26-89
12-21-89

LOCATION: See Attached Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 283.1

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	LL	PL	PI
2.0'					Loose brown silty sand (SM)			
5 / 7.0'				4.5+	Hard tan clay with sand seams (CH)	61	18	43
10 / 13.0'					Loose tan clayey sand (SC)	27	14	13
15 / 20 / 22.0'				4.5+ 4.5+	Hard tan and brown clay with silt seams (CH)	90	20	70
25				4.5+	Dense tan and gray clayey sand (SC)	33	23	10
					-becomes gray and brown laminated clayey sand	37	20	17
30 / 35				4+ 4+	Hard gray and brown laminated sandy clay (CL)	39	18	21

(Continued on Page 2)

LOG OF BORING NO. 19

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 5-3-88
4-26-89
12-21-89

LOCATION: See Attached Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 283.1

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	ATTERBERG LIMITS (%) LL	PL	PI
				4+	Hard gray and brown laminated sandy clay (CL)			
40								
				4+				
45								
				4+				
50					50.0'	44	21	23

Boring Terminated @ 50.0'

NOTE: Seepage at 7.0' during drilling on 5-3-88. Water @ 5.0' and open to 8.0' on 5-11-88.

Water @ 6.0' and caved on 8-1-88 Seepage @ 9.0' in test pit excavated to 11.0' on 8-1-88. Water @ 10.8' after 15 minutes.

Seepage @ 11.0' and 20.0' during drilling on 4-26-89. Water @ 20.0' upon completion.

LOG OF BORING NO. 20

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 5-4-88
12-21-89

LOCATION: See Attached Plan
TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 268.1

DEPTH (FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION		ATTERBERG LIMITS (%) LL	PL	PI
	2.5	Firm tan silty sand	(SM)			
5	2.5	6.0'				
	4.5+	Hard tan and brown clay with silt seams	(CH)			
10	4.5+	10.0'		82	19	63
15	4.5+	Hard gray sandy clay with sand seams	(CL)	40	22	18
20	4.5+			41	21	20
25	4.5+					
		28.0'				
30	4.5'	Hard gray clay with sand seams	(CH)	59	18	41
35	4.5+					

(Continued on Page 2)

LOG OF BORING NO. 20

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 5-4-88
12-21-89

LOCATION: See attached Plan TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2)	DEPTH TO WATER: STRATUM DESCRIPTION GROUND ELEV. 268.1	ATTERBERG LIMITS (%) LL	PL	PI
					Hard gray clay with sand seams (CH) 38.0'			
40				4.5+	Dense gray clayey sand (SC)	38	20	18
45				4.5+	45.0'			
					Hard dark gray clay with sand seams and traces of lignite (CH)			
50				4+	50.0'	52	23	29
					Boring Terminated @ 50.0'			
55					Note: Boring dry upon completion on 5-4-88. Water @ 23.0 and open to 27.0' on 5-11-88.			
60								
65								
70								

LOG OF BORING NO. 21

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 6-3-88
12-21-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 277.1

DEPTH (FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION		LL	PL	PI
	3.0	Firm tan and brown silty fine	(SM)			
	1.7	-becomes slightly clayey with calcareous nodules and clay pockets				
5	1.7	6.0'		22	20	2
	4.5	Hard gray and tan clay with silt laminations, lignitic clay seams and limonite stains	(CH)	112	25	87
10	3.5	-becomes very stiff				
		12.0'				
15	4+	Hard brown and gray laminated clay with lignitic clay seams	(CH)	98	22	76
20	4+	-with sand pockets				
		21.0'				
25	4+	Dense gray and brown clayey sand with silty sand laminations	(SC)	65	15	50
30	4+					
35	4+	-with layers of sandy silt		Non-Plastic		

(Continued on Page 2)

LOG OF BORING NO. 21

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 6-3-88
12-21-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	DEPTH TO WATER: STRATUM DESCRIPTION GROUND ELEV. 277.1	ATTERBERG LIMITS (%) LL	PL	PI
				4+	Dense gray and brown very clayey sand with laminations of clay and silty sand (SC)			
40								
				4+				
45								
50				4+	50.0'	53	17	36
					Boring Terminated @ 50.0'			
55								
60								
65								

NOTE: Seepage @ 21' while drilling on 6-3-88.

Water @ 20' and caved @ 37' upon completion.

Water @ 3' and caved @ 15.5' on 6-9-88.

Bailed to 12.5', but heavy seepage from 3' to 7' on 6-9-88.

Water @ 4' and caved @ 13' one hour after bailing.

Water @ 4.5' and caved @ 12' on 8-1-88.

No seepage in test pit excavated to 11' on 8-1-88.

LOG OF BORING NO. 22

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 6-2-88
4-26-89
12-21-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 300.0

DEPTH (FT.)	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	ATTERBERG LIMITS (%) LL	PL	PI
2.0'		1.7	Firm tan and brown silty sand (SM)			
5.0'		4+ 4+	Firm tan and brown silty fine sand with red and tan clay seams (SM)	Non-	Pla	stic
12.0'		4+ 4+	Hard tan and brown laminated clay with limonite stains, slickensides and calcareous nodules (CH)	109	32	77
16.5'		3.0	Firm gray and tan laminated very clayey sand with brown clay pockets and layers (SC)	60	15	45
21.0'		1.2	Firm gray and tan laminated clayey sand with limonite stains (SC)	30	14	16
22.5'			Hard dark gray clay (CH)			
25.0'		4+	Hard brown lignite (PT)			
		4+ 4+	Hard gray and brown laminated sandy clay (CL) -with sandstone seams			

(Continued on Page 2)

LOG OF BORING NO. 22

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 6-2-88
4-26-89
12-21-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 300.0

DEPTH (FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	LL	PL	PI
40	4+	Hard gray and brown laminated sandy clay (CL) — 42.0'			
45	2.5	Firm gray clayey sand with clay seams (SC) — 45.0'	30	26	4
50	4+	Hard dark gray clay with sand seams and traces of lignite (CH) — 50.0'	58	25	33

Boring Terminated @ 50.0'

NOTE: Seepage @ 16.5' while drilling on 6-2-88.

Dry upon completion.

Dry and caved @ 16.5' on 6-9-88.

Seepage @ 42.0' while drilling on 4-26-89.

Water @ 32.0' upon completion.

Water @ 18.0' and caved @ 33.0' on 5-8-89.

LOG OF BORING NO. 23

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 6-13-88, 4-19-89, 12-20-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 282.8

DEPTH (FT.)	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	ATTERBERG LIMITS (%) LL	PL	PI
2.0'		0.5	Loose tan and brown silty sand (SM)			
6.0'		4+	Firm tan and brown clayey sand with gray and brown clay seams (SC)	23	14	9
		4+				
11.0'		4+	Hard brown and tan laminated clay with limonite stains and lignitic clay seams (CH)	77	25	52
		4+	-with sand layer @ 10'			
35.0'		4+	Hard gray and brown laminated clay (CH)	75	23	52
		4+		69	19	50
		4+				
		4.5		61	17	44
		4+		54	20	34

Boring Terminated @ 35.0'

NOTE:
Seepage @ 11' while drilling on 6-13-88.
Water @ 8' upon completion.
Water @ 8' and caved @ 18.5' on 6-14-88.
Water @ 8' and caved @ 17' on 8-1-88.
Heavy seepage @ 9.5' in test pit excavated to 11' on 8-1-88.
Water @ 9.5' after 15 minutes.

LOG OF BORING NO. 24

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 6-13-88

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 287.8

DEPTH (FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	LL	PL	PI
1.5'	1.0	Firm tan and brown silty sand (SM)			
4.0'	4+	Hard tan and brown clay with limonite stains and sand pockets (CH)	62	15	47
	4+, 4+	Firm tan and brown very clayey sand with limonite stains and sand pockets (SC)			
12.5'	4.5	-with brown clay laminations	49	13	36
18.5'	2.5	Firm gray and tan very clayey sand with gray and tan clay seams and limonite stains (SC)	60	18	42
22.0'	4+	Hard brown and tan laminated clay with limonite stains (CH)	76	22	54
25.0'	4+	Hard brown lignite with gray clay seams (Pt)			

Boring Terminated @ 25'

NOTE: Seepage @ 13' while drilling.
Boring dry and caved @ 15' upon completion.
Dry and caved @ 12.5' on 6-14-88.

LOG OF BORING NO. 25

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 6-13-88
4-18-89
12-20-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 296.1

DEPTH (FT.)	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	LL	PL	PI
		0.5	Loose tan and brown silty sand (SM)			
2.0'						
		3.0	Firm tan and brown clayey sand (SC) with limonite stain, calcareous nodules, and tan clay pockets and seams			
5		3.5		27	15	12
		4.0				
		4.0		49	13	36
10						
			-sand content increasing			
		4+				
15						
		3.5		42	17	25
20						
		1.7	-becomes firm tan and gray clayey sand with brown clay seams			
25				42	17	25
27.0'						
			Hard brown and gray laminated silty clay (CL)	49	21	28
	59					
30						
		4+	-becomes sandy clay			
35						

(Continued on Page 2)

LOG OF BORING NO. 25

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 6-13-88
4-18-89
12-20-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 296.1

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	ATTERBERG LIMITS (%) LL	PL	PI
					Hard brown and gray sandy clay (CL)			
40				4+				
45				4+				
50				4+	50.0'	47	19	28
					Boring Terminated @ 50.0'			
					NOTE: Boring was dry upon completion on 6-13-88.			
55					Water @ 21.0' and caved @ 21.5' on 6-14-89.			

LOG OF BORING NO. 26

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 6-2-88

LOCATION: See Boring Plan   TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 283.7

HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION		ATTERBERG LIMITS (%) LL	PL	PI
1.2	Firm tan silty fine sand	(SM)			
	2.5'				
4+ 4+	Firm gray and tan very clayey sand with tan sand pockets and limonite stains	(SC)	52	16	36
	6.0'				
4+ 3.7 4+	Hard tan, brown and gray laminated clay with limonite stains, slickensides, and seams of lignitic clay and sand	(CH)	78	25	53
	16.0'				
4+	Hard gray laminated very clayey sand with limonite stains	(SC)	54	15	39
	23.0'				
2.0	Firm gray clayey sand with seams of lignite and clay	(SC)			
	26.0'				
4+	Hard dark gray laminated clay	(CH)	53	22	31
4+	-with layers of very clayey sand				

(Continued on Page 2)

LOG OF BORING NO. 26

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-88
DATE: 6-2-88

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	DEPTH TO WATER: STRATUM DESCRIPTION GROUND ELEV. 283.7	ATTERBERG LIMITS (%) LL	PL	PI
					Hard dark gray laminated clay (CH)			
40				4+	40.0'			
					Boring Terminated @ 40.0'			
45					NOTE: Seepage @ 23' while drilling. Water @ 24' upon completion. Water @ 16.5' and caved @ 22' on 6-9-88. Bailed to 19.5' @ 10:30 on 6-9-88, and seepage @ 17'. Water @ 17' and caved @ 22' @ 11:35 on 6-9-88.			
50								
55								
60								
65								

LOG OF BORING NO. 27

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 6-2-88, 4-27-89, 12-21-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 273.0

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2)	STRATUM DESCRIPTION	ATTERBERG LIMITS (%) LL	PL	PI
1.5'				1.2	Firm gray and tan silty fine sand (SM)			
4.0'				4.5	Firm gray, tan and brown silty fine sand with yellow clay pockets (SM)	Non-Plastic		
12.5'				3.5 4.5 4+	Very stiff gray and tan clay with limonite stain and sand laminations and seams (CH)	81	14	67
17.0'				1.2	Firm gray and tan clayey sand with clay laminations (SC)	37	22	15
27.0				4+ 4+	Hard gray clay with fine sand laminations (CH)	69	19	50
					Hard gray laminated sandy clay (CL)	43	18	25

(Continued on Page 2)

LOG OF BORING NO. 27

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 6-2-88
4-27-89
12-21-89

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2)	DEPTH TO WATER: STRATUM DESCRIPTION GROUND ELEV. 273.0	ATTERBERG LIMITS (%) LL	PL	PI
					Hard gray laminated sandy clay (CL)			
35					35.0'	49	19	30
					Boring Terminated @ 35.0'			
40								

NOTE: Seepage @ 12.5' while drilling.
Boring was very dry upon completion.
Water @ 8' on 6-9-88.
Bailed to 10.5' @ 10:50 on 6-9-88.
Seepage coming in @ 9' to 10' depth.
Water @ 8' and caved @ 12' @ 11:48 on 6-9-88.
Water @ 8' and caved @ 12' on 8-1-88.
No seepage in test pit excavated to 11' on 8-1-88.
Seepage @ 13' while drilling on 4-27-89.
Water @ 13.5' upon completion on 4-27-89.

LOG OF BORING NO. 28

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 6-13-88, 4-27-89, 12-21-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 268.9

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION		ATTERBERG LIMITS (%) LL	PL	PI
				0.5	Loose tan and brown silty sand	(SM)			
				4+	-becomes slightly clayey				
4.0'									
5				4+	Hard gray and tan laminated clay with sand seams and limonite stains	(CH)	76	24	52
				4+					
8.0'									
10				4+	Firm gray and tan laminated clayey sand with brown clay seams and limonite stains	(SC)	34	12	22
13.0'									
15				4+	Hard gray and tan laminated sandy clay with limonite stains and brown clay seams	(CL)	32	19	13
17.0'									
20				4+	Hard gray laminated clay	(CH)			
25				4+	-with lignite seam		68	22	46
30				4+	-becomes gray and brown		74	17	57
30.0'									
					Dense gray clayey sand with traces of lignite	(SC)	34	21	13
35				4+					
35.0'					Boring Terminated @ 35.0'				

NOTE: Boring was dry upon completion on 6-13-88.
Dry and caved @ 25.0' on 6-14-88.

LOG OF BORING NO. 29

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 6-13-88
12-21-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 260.0

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER ($TONS/FT^2$)	STRATUM DESCRIPTION		ATTERBERG LIMITS (%) LL	PL	PI
				3.0	Firm tan and brown silty sand	(SM)			
				4+	-with gray clayey sand seams				
4.0'									
5				4+	Hard gray and brown sandy clay with tan sand pockets	(CL)	47	14	33
				4+					
8.0'									
				4+	Hard gray and tan clay with limonite stains	(CH)	70	17	53
10									
11.0'									
15				4+	Hard gray laminated clay with limonite stains and sand seams	(CH)	85	18	67
20				4+					
22.0'									
				4+	Hard dark gray laminated sandy clay with sand seams	(CL)	40	15	25
25									
30				4+					
32.0'									
35				4+	Firm dark gray laminated clayey sand with seam of gray medium sand	(SC)	27	13	14

(Continued on Page 2)

LOG OF BORING NO. 29

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 6-13-88
12-21-89

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 260.0

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2)	STRATUM DESCRIPTION	LL	PL	PI
40				4+	Firm dark gray laminated clayey sand with seams of sand and gray clay (SC)			
45				4+	45.0'	45	17	28
					Hard dark gray sandy clay (CL)			
50				4+	50.0'	49	19	30
55					Boring Terminated @ 50.0'			
60								
65								

NOTE: Seepage @ 34' while drilling on 6-13-88.
Water @ 34' upon completion.
Water @ 7.5' and caved @ 37.5' on 6-14-88.

No seepage in test pit excavated to 11' on 8-1-88.

LOG OF BORING NO. 30

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 6-2-88
12-21-89
4-27-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 265.5

DEPTH (FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION		ATTERBERG LIMITS (%) LL	PL	PI
	1.7	Firm brown and tan silty fine sand	(SM)			
4.0'	1.7	-becomes brown, tan and gray		Non-Plastic		
5	4.5	Hard gray, tan, and brown laminated clay with limonite stain and pockets of red sandy clay	(CH)	107	23	84
	4+					
10	4+	-with silt seams and sand pockets				
15	4+			81	19	62
18.5'						
20	4+	Hard dark gray clay	(CH)	54	24	30
21.5'						
25	4+	Dense gray silty fine sand with gray clay seams	(SM)			
27.0'						
30	4+	Hard gray and brown laminated sandy clay	(CL)			
35	4+			46	22	24

(Continued on Page 2)

LOG OF BORING NO. 30

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 6-2-88
12-21-89
4-27-89

LOCATION: See Boring Plan
TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 265.5

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	LL	PL	PI
					Hard gray and brown laminated sandy clay (CL)			
40				4+				
45				4+	45.0'			
					Hard gray clay with sand seams (CH)			
50				4+	50.0'	58	20	38
					Boring Terminated @ 50.0'			
55								

NOTE: Seepage @ 21.5' while drilling.
Water @ 23' upon completion.
Water @ 10' on 6-9-88.
Bailed to 19' @ 11:10 on 6-9-88.
Water @ 18' @ 12:00 on 6-9-88.

LOG OF BORING NO. 31

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-23-88
4-27-89
12-21-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	DEPTH TO WATER: STRATUM DESCRIPTION — GROUND ELEV. 272 Approx.	ATTERBERG LIMITS (%) LL	PL	PI
				2.2	Firm gray and tan silty fine sand (SM)			
				4+	-becomes slightly clayey			
					4.0'			
5				4+	Hard gray, tan, and brown clay (CH) with silt laminations and sand seams			
				4+				
10				4.0		62	17	45
15				2.5	-becomes very stiff			
					16.5'			
					Firm gray and brown clayey sand (SC)			
				1.5	19.0'			
20				4.5	Hard gray and brown laminated sandy clay (CL)			
					21.0'			
25				1.5	Firm gray and brown very clayey sand (SC)	54	15	39
					28.0'			
30				4+	Hard gray and brown laminated clay (CH)	88	18	70
35				4+				

(Continued on Page 2)

LOG OF BORING NO. 31

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 11-23-88
4-27-89
12-21-89

LOCATION: See Boring Plan   TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 272 Approx.

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	ATTERBERG LIMITS (%) LL	PL	PI
				4+	Hard gray and brown laminated clay (CH)			
40								
45				4+	45.0'	56	24	32
				4+	Hard dark gray laminated silty clay with silt seams (CL)			
50					50.0'	45	21	24
55								

Boring Terminated @ 50.0'

NOTE: Heavy seepage @ 18.0' while drilling on 11-23-88.

Boring was caved and dry @ 16.5' upon completion.

Water @ 14.5' and caved @ 15.0' on 12-6-88.

Water @ 20.0' and caved @ 37.5 on 4-27-89.

LOG OF BORING NO. 32

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 11-23-88

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 280 Approx.

DEPTH (FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION		LL	PL	PI
0–3.0'	1.2	Firm gray and tan silty fine sand	(SM)			
3.0'–12.0'	4.0, 4.5, 4+, 4+	Hard gray, tan and brown laminated clay with sand and silt seams	(CH)	83	17	66
12.0'–17.0'	4.5	Firm gray, tan and brown very clayey sand -becomes brownish tan	(SC)	50	17	33
17.0'–27.0'	4+, 4.0	Hard gray and brown laminated clay with limonite stains	(CH)	67	17	50
27.0'–32.0'	2.7	Firm gray and brown laminated clayey sand	(SC)			
32.0'–35.0'	4+	Hard gray and brown laminated clay	(CH)			

Boring Terminated @ 35.0'

NOTE: Seepage and caving @ 16' while drilling.
Water @ 26.5 and caved @ 28' upon completion.
Water @ 13.5' and caved @ 17' on 12-6-88

LOG OF BORING NO. 33

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87
DATE: 11-22-88

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Dry Auger

DEPTH TO WATER: Water @ 20' and caved @ 29' on 12-6-88.

GROUND ELEV. 277 Approx.

Depth (ft.)	Hand Penetrometer (tons/ft²)	Stratum Description	LL	PL	PI
	1.5	Gray and tan silty fine sand (SM)			
	4+	-with gray clay layer			
4.0'					
5	4+	Hard gray and tan laminated sandy clay with limonite stains (CL)	48	16	32
	4+				
	4+				
10					
12.0'					
15	4+	Firm dark gray laminated clayey sand with silt and clay seams (SC)	27	15	12
20	4+				
25	4+	-becomes very clayey sand	50	15	35
27.0'					
	4+	Firm gray laminated clayey sand with seam of coarse sand (SC)			
29.5'					
30		Hard dark gray laminated sandy clay (CL)			
35.0'	4+				

Boring Terminated @ 35.0'

NOTE: Seepage @ 28' while drilling.
Water @ 26.5' and caved @ 31' upon completion.
Water @ 20' and caved @ 30' on 11-23-88.

LOG OF BORING NO. 34

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-22-88
4-19-89
12-20-89

LOCATION: See Boring Plan TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 269 Approx.

DEPTH (FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	LL	PL	PI
0–4.0'	1.2, 4+	Firm gray silty fine sand (SM)			
4.0'–6.0'	4+	Hard gray and tan sandy clay with limonite stain (CL)			
6.0'–12.0'	2.2, 3.2	Firm gray and tan laminated clayey sand with limonite stain (SC)	38	15	23
12.0'–22.5'	4+, 4+	Hard gray and brown laminated clay with sand pockets and limonite stain (CH)	66	29	37
22.5'–26.0'	1.0	Firm gray clayey sand (SC)	38	13	25
26.0'–	4+, 3.5	Hard gray and brown laminated sandy clay (CL)			

Columns also printed: SYMBOL, SAMPLES, STANDARD PENETROMETER (BLOWS/FT.); ATTERBERG LIMITS (%)

(Continued on Page 2)

LOG OF BORING NO. 34

PROJECT: Angelina County Landfill (1987)
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-22-88
4-19-89
12-20-89

LOCATION: See Boring Plan

TYPE BORING/SAMPLING: Rotary Wash/ Dry Auger

DEPTH TO WATER:

GROUND ELEV. 269 Approx.

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	ATTERBERG LIMITS (%) LL	PL	PI
37.0'					Hard gray and brown laminated sandy clay (CL)			
				4+	Hard brown and gray laminated clay with sand pockets (CH)	56	22	34
40								
				4+				
45								
50.0'				4+		62	23	39
50								
55								

Boring Terminated @ 50.0'

NOTE: Heavy seepage @ 24.0' while drilling on 11-22-88.

Water @ 14.0' and caved @ 26.0' upon completion.

Water @ 11.0' and caved @ 24.0' on 11-23-88.

Water @ 11.5' and caved @ 19.5' on 12-6-88.

Soil Boring B-35

PROJECT: ACWMC Ground-Water Characterization
DRILL RIG: Geoprobe Model 5400
INITIAL GW DEPTH: ft.

DATE: 10-24-95
HOLE DIA.: 2.0" in.
FINAL GW: ft.

GEOLOGIST: John M. Wilson
SAMPLER: John M. Wilson
HOLE ELEV.: 276 ft. MSL

DESCRIPTION	USCS CLASS	DEPTH
Clayey Sand; Loose, gray to dark gray, moist, some heavy minerals and organic material.	SC	0 – 8
Organic Fat Clay; Very stiff, dark gray to black, dry, small .25" thick laminations of sand and silt.	OH	8 – 12
Bottom of Boring @ 12.0'		12

Columns: GRAPHIC LOG, DEPTH (0–20), SAMPLE (0–12), Water Level

WELL CONSTRUCTION DETAIL: Bentonite Seal (0–12)

Hydrex Environmental, Inc.
117 North Street, Suite 8
Nacogodoches, Texas 75961

Notes:
Approximate elevation from site topographic map

Project No.
L-03-39

Soil Boring B-36

PROJECT: ACWMC Ground-Water Characterization
DRILL RIG: Geoprobe Model 5400
INITIAL GW DEPTH: ft.

DATE: 10-24-95
HOLE DIA.: 2.0" in.
FINAL GW: ft.

GEOLOGIST: John M. Wilson
SAMPLER: John M. Wilson
HOLE ELEV.: 276 ft. MSL

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	Water Level	WELL CONSTRUCTION DETAIL
Interbedded organic silt and clay; Dense, dark gray, organic material and thin laminations of moist clay.	SM/OH		0 – 12			Bentonite Seal
Bottom of Boring @ 12.0'						

Depth scale: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30

Hydrex Environmental, Inc.
117 North Street, Suite 8
Nacogdoches, Texas 75961

Notes:
Approximate elevation from site topographic map

Project No.
L-03-39

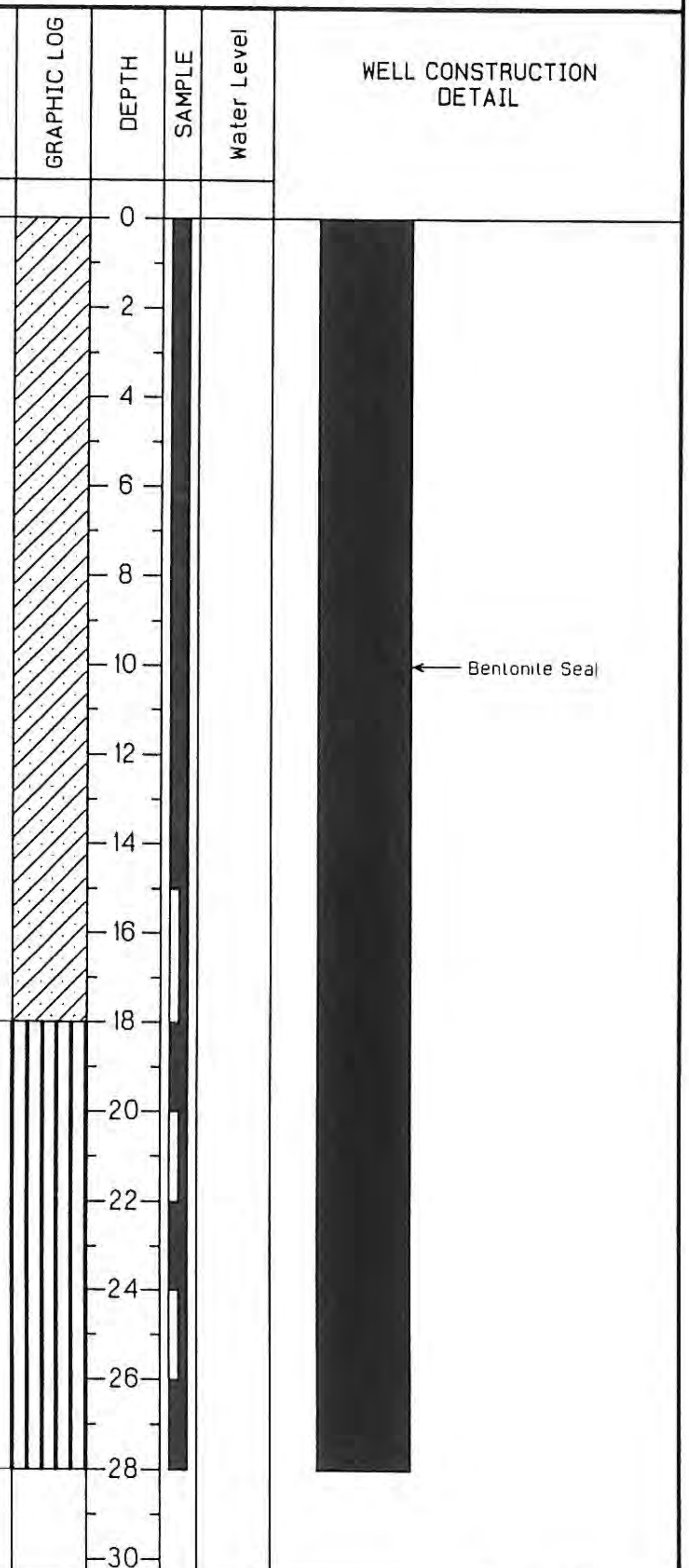
Soil Boring B-37

PROJECT: ACWMC Ground-Water Characterization
DRILL RIG: Geoprobe Model 5400
INITIAL GW DEPTH: ft.

DATE: 10-24-95
HOLE DIA.: 2.0" in.
FINAL GW: ft.

GEOLOGIST: John M. Wilson
SAMPLER: John M. Wilson
HOLE ELEV.: 285 ft. MSL

DESCRIPTION	USCS CLASS
Clayey Sand Interbedded with Silty Sand; Loose to very loose, tan moist, oxidized, intermittent layers of clay, and organic material.	SC
Organic Fat Clay; Very stiff, dark gray to black, dry, small .25" thick laminations of sand and silt, .5' thick lignite bed at 19-19.5' increase in silt, dry, crumlby.	OH
Bottom of Boring @ 28.0'	



Hydrex Environmental, Inc.

117 North Street, Suite 8
Nacogdoches, Texas 75961

Notes:
Approximate elevation from site topographic map

Project No.
L-03-39

Soil Boring B-38

PROJECT: ACWMC Ground-Water Characterization
DRILL RIG: Geoprobe Model 5400
INITIAL GW DEPTH: ft.

DATE: 10-24-95
HOLE DIA.: 2.0" in.
FINAL GW: ft.

GEOLOGIST: John M. Wilson
SAMPLER: John M. Wilson
HOLE ELEV.: 285 ft. MSL

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	Water Level	WELL CONSTRUCTION DETAIL
Clayey Sand Interbedded with Silty Sand; Loose to very loose, tan dry, oxidized, intermittent layers of clay, and organic material.	SC		0 2 4 6 8 10 12			Bentonite Seal
Organic Fat Clay; Very stiff, dark gray to black, dry.	OH		14 16 18			
Lignite; Crumbly, dark brown to black.	Pt		20			
Silty Organic Clay; Hard, clay, very dense silt interbeds, dark gray, dry.	OL		22			
Bottom of Boring @ 23.0'			24 26 28 30			

Hydrex Environmental, Inc.
117 North Street, Suite 8
Nacogodoches, Texas 75961

Notes:
Approximate elevation from site topographic map

Project No.
L-03-39

Soil Boring B-39

PROJECT: ACWMC Ground-Water Characterization
DRILL RIG: Geoprobe Model 5400
INITIAL GW DEPTH: ft.

DATE: 10-24-95
HOLE DIA.: 2.0" in.
FINAL GW: ft.

GEOLOGIST: John M. Wilson
SAMPLER: John M. Wilson
HOLE ELEV.: 267 ft. MSL

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	Water Level	WELL CONSTRUCTION DETAIL
Silty Sand; Loose, tan, dry (top soil)	SM		0			
			2			
Interbedded Fat Clay and Clayey Sand; Brown and tan, very stiff to loose, moist, sand laminations .5" thick, approx. 50% SC.	SC/CH		4			
			6			
			8			
			10			← Bentonite Seal
			12			
			14			
Becomes saturated a 15'						
			16			
			18			
Silty Sand; Loose, gray, saturated.	SM		20			
			22			
			24			
			26			
			28			
			30			

Hydrex Environmental, Inc.
117 North Street, Suite 8
Nacogdoches, Texas 75961

Notes:
Approximate elevation from site topographic map

Project No.
L-03-39

Page 1 of 1

Soil Boring B-40

PROJECT: ACWMC Ground-Water Characterization
DRILL RIG: Geoprobe Model 5400
INITIAL GW DEPTH: ft.

DATE: 11-4-95
HOLE DIA.: 2.0" in.
FINAL GW: ft.

GEOLOGIST: John M. Wilson
SAMPLER: John M. Wilson
HOLE ELEV.: 280 ft. MSL

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	Water Level	WELL CONSTRUCTION DETAIL
Silty Sand; Loose, tan, moist	SM		0			
			2			
			4			
			6			
			8			
Interbedded Silty Sand and Clayey Sand; Brown and tan, loose, to loose, saturated from 10 to 18', some heavy minerals.	SC/SM		10			Bentonite Seal
			12			
			14			
			16			
Silty Organic Clay; very dense, moist, grades to moist organic clay at 20'	OL		18			
hard rock at 22',			20			
Bottom of Boring @ 22.0'			22			
			24			
			26			
			28			
			30			

Hydrex Environmental, Inc.
117 North Street, Suite 8
Nacogdoches, Texas 75961

Notes:
Approximate elevation from site topographic map

Project No.
L-03-39

Soil Boring B-41

PROJECT: ACWMC Ground-Water Characterization
DRILL RIG: Geoprobe Model 5400
INITIAL GW DEPTH: ft.

DATE: 11-4-95
HOLE DIA.: 2.0" in.
FINAL GW: ft.

GEOLOGIST: John M. Wilson
SAMPLER: John M. Wilson
HOLE ELEV.: 290 ft. MSL

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	Water Level	WELL CONSTRUCTION DETAIL
Silty Sand; Loose, light gray to tan, moist	SM		0			
			2			
			4			
			6			
			8			
			10			← Bentonite Seal
			12			
Interbedded Silt and Orgnaic Lean Clay; Crumbly, dark gray, loose, silt in in thin .25" thick laminations.	OL		14			
			16			
			18			
			20			
			22			
small streaks of lignite, dry			24			
			26			
			28			
			30			

Hydrex Environmental, Inc.
117 North Street, Suite 8
Nacogodoches, Texas 75961

Notes:
Approximate elevation from site topographic map

Project No.
L-03-39

Soil Boring B-41

PROJECT: ACWMC Ground-Water Characterization	**DATE:** 11-4-95	**GEOLOGIST:** John M. Wilson
DRILL RIG: Geoprobe Model 5400	**HOLE DIA.:** 2.0" in.	**SAMPLER:** John M. Wilson
INITIAL GW DEPTH: ft.	**FINAL GW:** ft.	**HOLE ELEV.:** 290 ft. MSL

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	Water Level	WELL CONSTRUCTION DETAIL
	OL		30			
			32			
			34			
			36			
			38			
Bottom of Boring @ 40.0'			40			
			42			
			44			
			46			
			48			
			50			
			52			
			54			
			56			
			58			
			60			

Hydrex Environmental, Inc.

117 North Street, Suite 8
Nacogdoches, Texas 75961

Notes:

Approximate elevation from site topographic map

Project No.
L-03-39

LOG OF MONITOR WELL NO. 1A

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-18-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

DEPTH TO WATER:

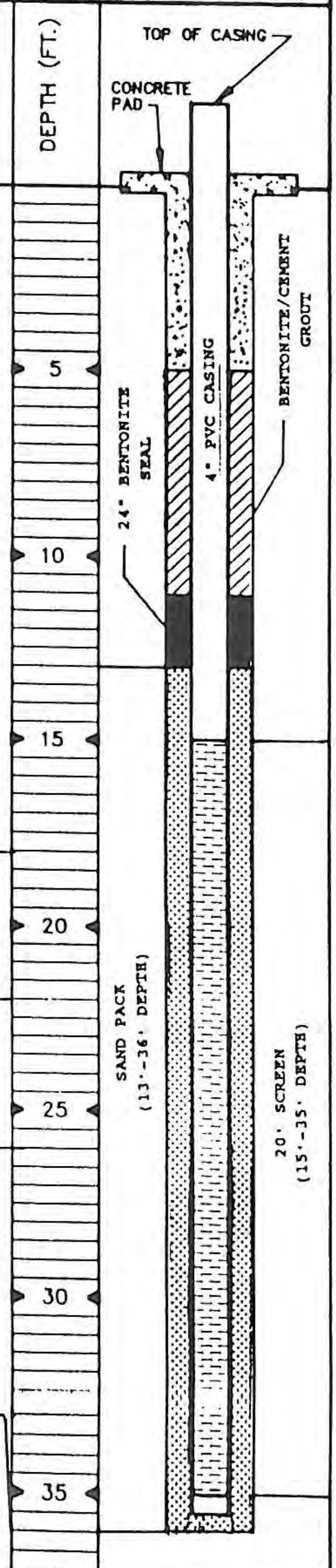
GROUND ELEV. 319.5

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT.^{2})	STRATUM DESCRIPTION
0–5					Silty sand
5–13					Clayey sand
13–18.0				2.5	Firm tan clayey sand with sand seams and ferrous stains (SC) 18.0'
18.0–22.0				2.0	Very stiff tan clay with sand seams and ferrous stains (CH) 22.0'
22.0–26.0				1.7	Firm gray clayey sand with sand seams (SC) 26.0'
26.0–36.0				3.7 4+	Hard gray and tan sandy clay (CL) with sand seams, ferrous stains, and ferrous partings 36.0'

Boring Terminated @ 36.0'

Slight seepage @ 22' while drilling.
Switched to rotary wash @ 25'.

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 1B

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-18-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install. / Dry Auger for Soil Sampling

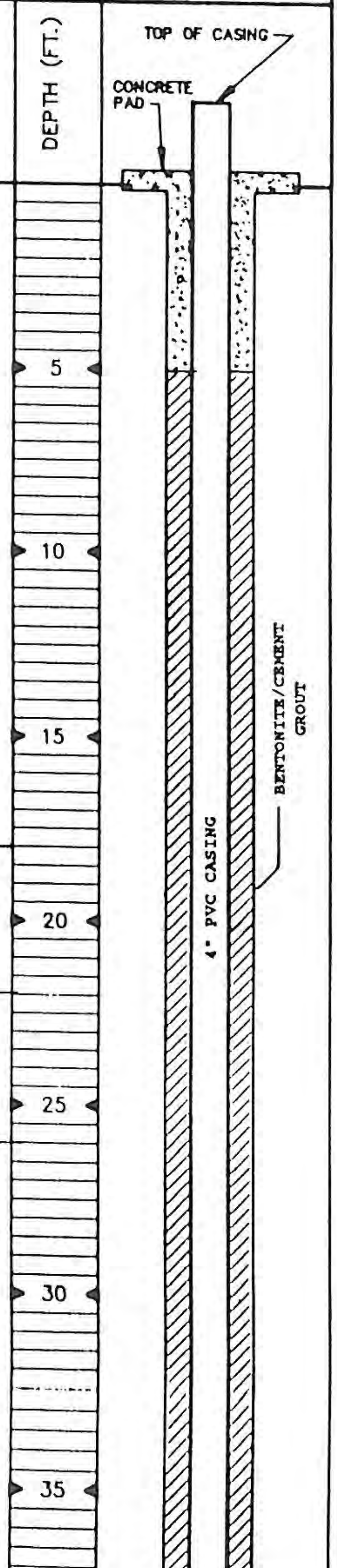
DEPTH TO WATER:

GROUND ELEV. 319.5

DEPTH (FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION
0 – 18.0'	2.5	Firm tan clayey sand with sand seams and ferrous stains (SC)
18.0' – 22.0'	2.0	Very stiff tan clay with sand seams and ferrous stains (CH)
22.0' – 26.0'	1.7	Firm gray clayey sand with sand seams (SC)
26.0' –	3.7, 4+	Hard gray and tan sandy clay with sand seams, ferrous stains, and ferrous partings (CL)

Columns: DEPTH (FT.) | SYMBOL | SAMPLES | STANDARD PENETROMETER (BLOWS/FT.) | HAND PENETROMETER (TONS/FT²) | STRATUM DESCRIPTION | MONITOR WELL DATA: DEPTH (FT.)

MONITOR WELL DATA



(Continued on Page 2)

LOG OF MONITOR WELL NO. 1B

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-18-91

LOCATION: See Monitor Well Plan

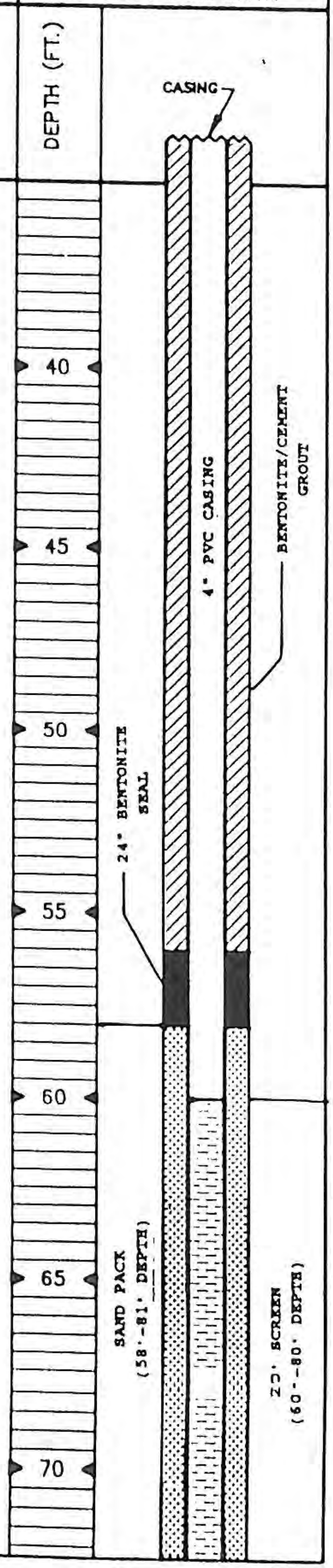
TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

DEPTH TO WATER:

GROUND ELEV. 319.5

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION
40–57					Clays and sandy clays with sand seams
57–72					Hard laminated gray and brown clay with sand seams (CH)
~61				4+	
~65				4+	
~69				4+	

MONITOR WELL DATA



(Continued on Page 3)

LOG OF MONITOR WELL NO. 1B

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-18-91

LOCATION: See Monitor Well Plan

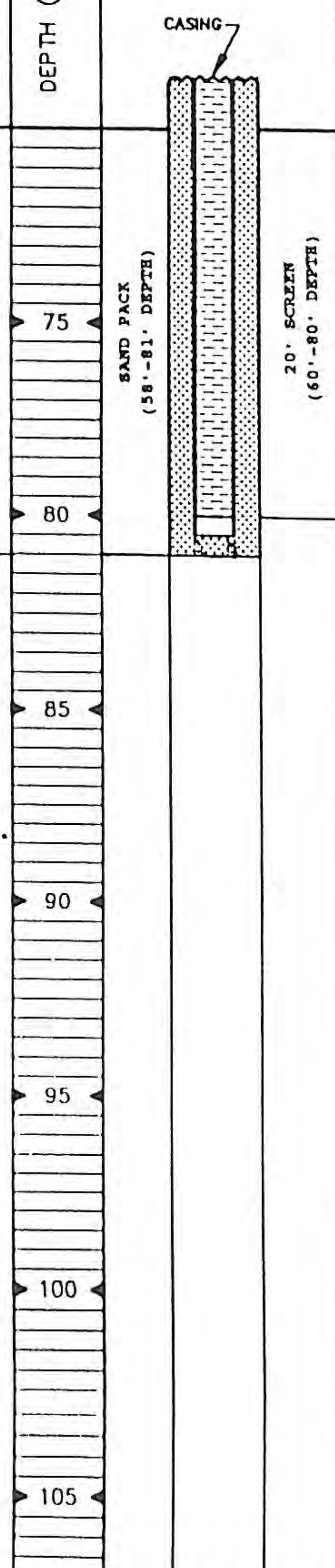
TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

DEPTH TO WATER:

GROUND ELEV. 319.5

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT.²)	STRATUM DESCRIPTION
				4+	Hard laminated gray and brown (CH) clay with sand seams
75				1.0 4+	-with 6" sand layer @ 77'
80				4+	-with shale seam
					81.0'
					Boring Terminated @ 81.0'
85					
90					Slight seepage @ 22' while drilling. See Log of Monitor Well No. 1A for details of well set @ 15' to 35.'
95					Six inch layer of saturated sand @ 77'.
100					Switched from dry auger to rotary wash @ 25' due to caving soil.
105					

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 2

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-07

DATE: 11-21-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

DEPTH TO WATER:

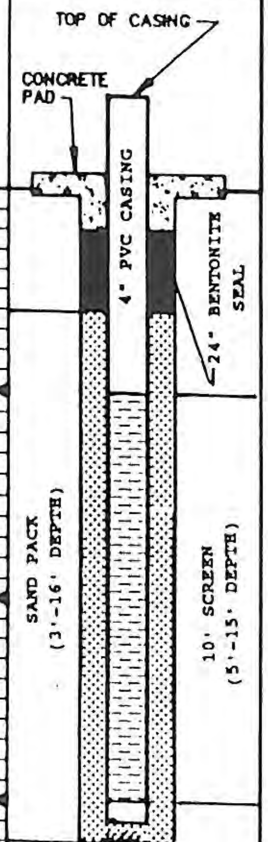
GROUND ELEV. 287.6

Depth (ft.)	Hand Penetrometer (tons/ft.²)	Stratum Description	
0.0–2.0'		Tan silty sand	(SM)
2.0–6.0'	3.5	Firm tan and gray clayey sand with clay seams	(SC)
6.0–10.0'	3.0	Very stiff reddish-tan and gray clay with seams of sand and ferrous material	(CH)
10.0–14.0'	2.5, 1.0	Firm gray silty fine sand with clay partings	(SM)
14.0–16.0'	3.7	Very stiff gray clay with sand seams	(CH)

Boring Terminated @ 16.0'

Moderate seepage @ 6' while drilling. Samples below 6' were wet.

MONITOR WELL DATA



PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-21-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

DEPTH TO WATER:

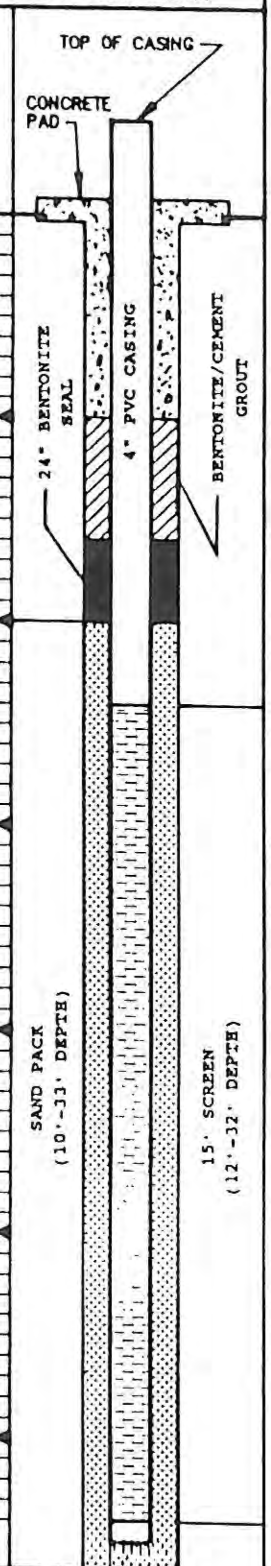
GROUND ELEV. 277.0

DEPTH (FT.)	HAND PENETROMETER (TONS/FT.²)	STRATUM DESCRIPTION
0–7.0'		Silty sand Clay 7.0'
7.0'–13.0'	4+	Firm tan and brown clayey sand (SC) 13.0'
13.0'–15.0'	0.5	Firm gray silty fine sand (SM) 15.0'
15.0'–25.0'	4+ 4+ 0.5 4+	Hard laminated gray and brown sandy clay with sand seams (CL) -with layer of sand @ 22' 25.0'
25.0'–33.0'	4+ 4+	Firm gray clayey sand (SC) 33.0'

Boring Terminated @ 33.0'

Slight seepage @ 15' and 23' while drilling. Switched to rotary wash @ 24'.

MONITOR WELL DATA



PICKETT—JACOBS CONSULTANTS, INC.

LOG OF MONITOR WELL NO. 4

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-23-91

LOCATION: See Monitor Well Plan

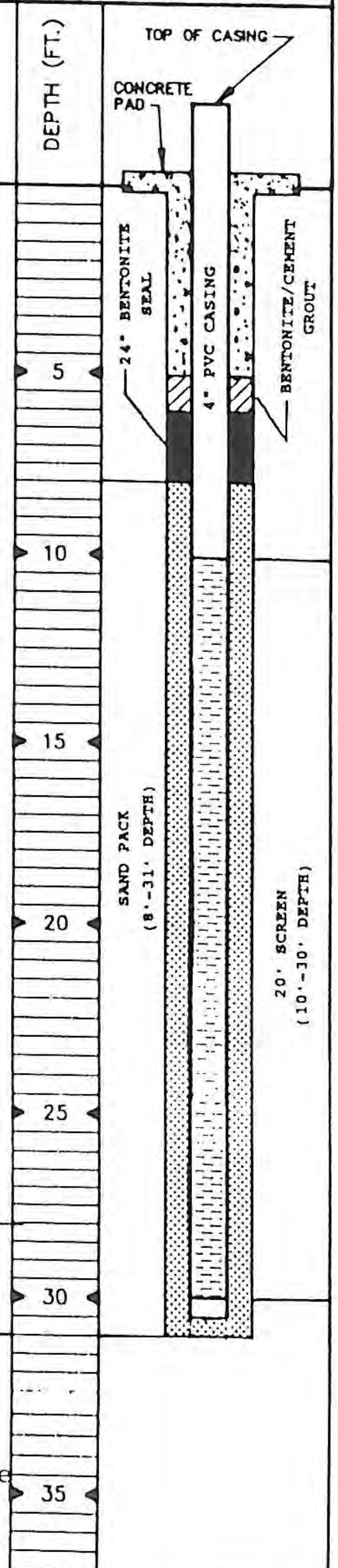
TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

DEPTH TO WATER:

GROUND ELEV. 269.7

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT.^{2})	STRATUM DESCRIPTION
					Silty sand
					Sandy clay
5					
10				4+	Firm laminated brown and gray (SC) clayey sand with sand seams and ferrous stain
15				4+	
20				4+	-with lignite seam
				1.7	-with clay seams
25				1.0	-with lignite seam 28.0'
30				4+	Hard laminated gray clay (CH) 31.0'
35					Boring Terminated @ 31.0' Slight seepage @ 23' while drilling. Switched to rotary wash @ 25' because of caving soil.

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 5

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-25-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

DEPTH TO WATER:

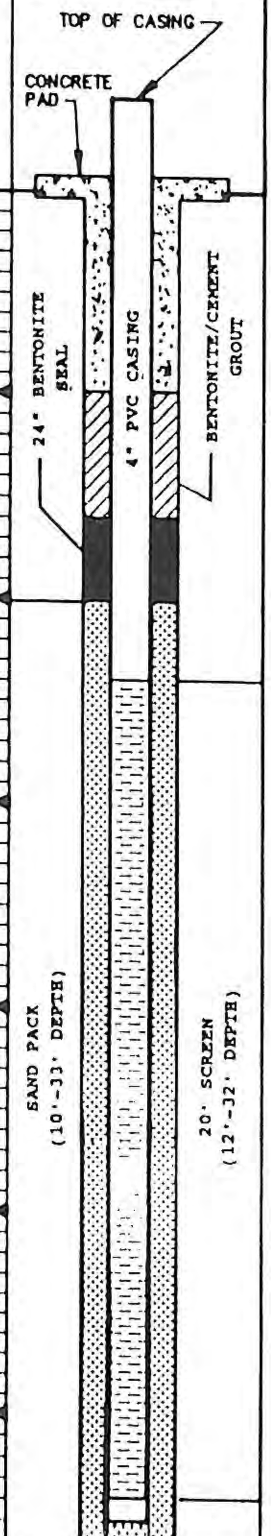
GROUND ELEV. 275.5

HAND PENETROMETER (TONS/FT.²)	STRATUM DESCRIPTION		Depth
3.5	Firm tan and gray clayey sand with ferrous stains	(SC)	12.0'
2.7	Very stiff tan and gray sandy clay with ferrous stians and sand seams	(CL)	17.0'
4+ 4+	Hard laminated gray and brown clay with seams of lignite and sand	(CH)	25.0'
1.5	Firm gray clayey sand with seams of clay and lignite	(SC)	30.0'
	Hard laminated gray clay with sand seams	(CH)	33.0

Boring Terminated @ 33.0'

Slight seepage @ 16.5' and 25' while drilling. Rotary wash @ 25'.

MONITOR WELL DATA



PICKETT–JACOBS CONSULTANTS, INC.

LOG OF MONITOR WELL NO. 6

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-25-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

DEPTH TO WATER:

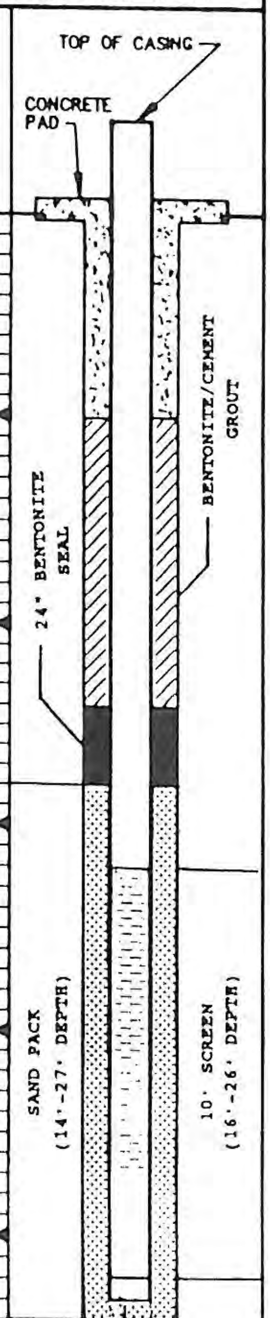
GROUND ELEV. 268.8

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2.)	STRATUM DESCRIPTION
0–13					Clay
15				4+	Hard gray and brown clay with (CH) lignite seams
19				3.7	-with layer of wet sand from 19.5' to 21'
23				4+	-becomes hard gray clay with sand seams
26				4+	
27.0'					Boring Terminated @ 27.0'

Moderate seepage @ 19.5' while drilling.

Switched to rotary wash @ 20' because of caving soil.

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 7

PROJECT: 114.5-Acre-Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-25-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

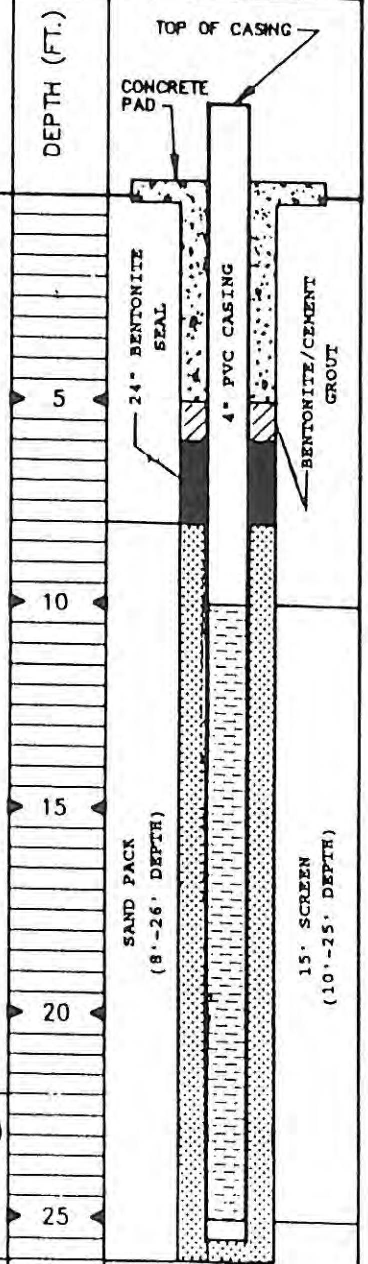
DEPTH TO WATER:

GROUND ELEV. 262.2

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT.^{2})	STRATUM DESCRIPTION
0–22.0				4+ 3.2 1.0 4+ 4+	Silty sand clay Hard brown and gray clay with ferrous stain, sand seams, and lignite partings (CH) -with 6" layer sand @ 13' 22.0'
22.0–26.0					Hard brown and gray sandy clay (CL) with clayey sand layers 26.0'
					Boring Terminated @ 26.0'

Slight seepage @ 13' while drilling.
Switched to rotary wash @ 20' because of caving soil.

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 8

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-26-91

LOCATION: See Monitor Well Plan

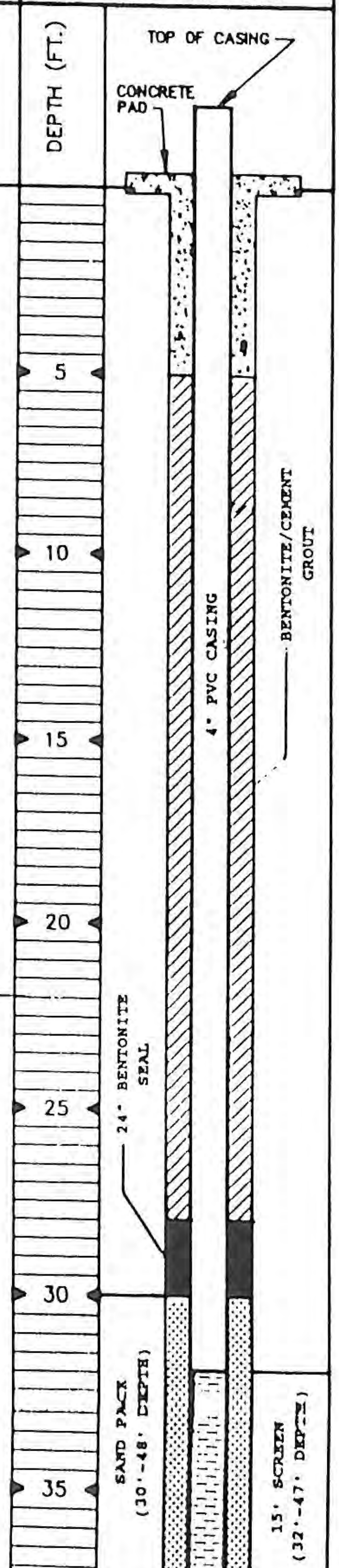
TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

DEPTH TO WATER:

GROUND ELEV. 262.2

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT.²)	STRATUM DESCRIPTION
5					
10					
15					
20				4+	Hard laminated gray and brown (CH) clay with sand seams
22.0'					
25					
30					
35				4+	Hard laminated gray and brown (CL) sandy clay with sand seams

MONITOR WELL DATA



(Continued on Page 2)

LOG OF MONITOR WELL NO. 8

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-26-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install.
Dry Auger for Soil Sampling

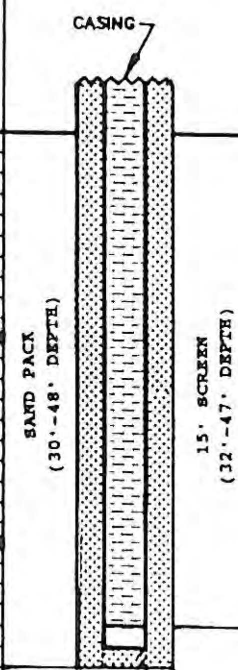
DEPTH TO WATER:

GROUND ELEV. 262.2

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION
				4+	Hard laminated gray and brown (CL) sandy clay with sand seams
40					40.0'
				4+	Hard laminated gray and brown (CH) clay with sand seams
				4+	
45				4+	
					48.0'
					Boring Terminated @ 48.0'
50					
55					Slight seepage @ 13' while drilling. Saturated sand seam @ 34'.
60					Switched to rotary wash @ 20' because of caving soil. See Log of Monitor Well No. 7 for details of adjacent well set at 10'-15' zone.
65					
70					

MONITOR WELL DATA

DEPTH (FT.): 40, 45, 50, 55, 60, 65, 70



LOG OF MONITOR WELL NO. 9

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-13-91

LOCATION: See Monitor Well Plan

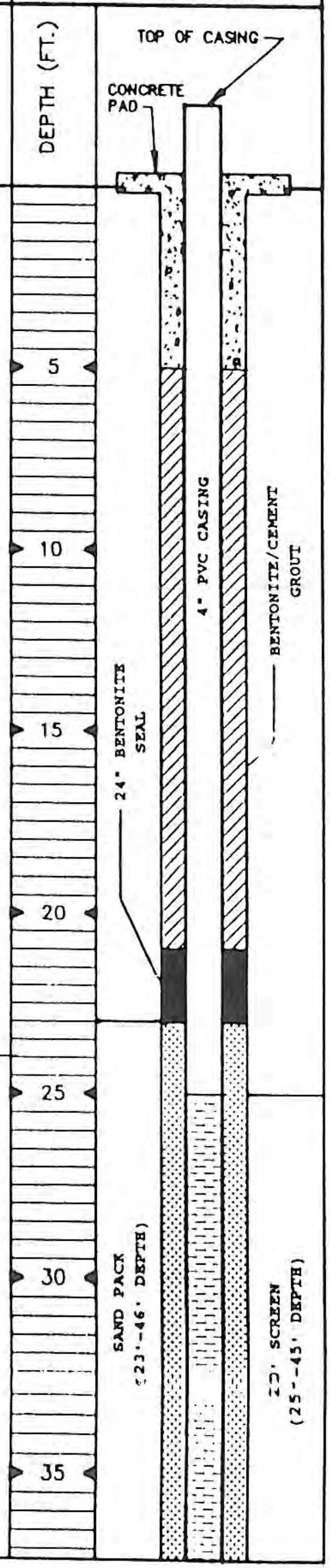
TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

DEPTH TO WATER:

GROUND ELEV. 267.2

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2.)	STRATUM DESCRIPTION	
					Silty sand	
					Sandy clay	
20				0.5	Firm gray clayey sand with clay partings	(SC)
					24.0'	
25				1.0	Firm gray silty fine sand	(SM)
30				0.5	-with clayey sand seam	

MONITOR WELL DATA



(Continued on Page 2)

LOG OF MONITOR WELL NO. 9

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-13-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install.
Dry Auger for Soil Sampling

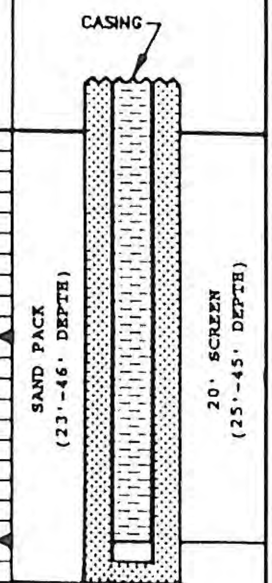
DEPTH TO WATER:

GROUND ELEV. 267.2

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION
40, 45					Firm gray silty fine sand (SM)
46.0'					Boring Terminated @ 46.0'
50, 55, 60, 65, 70					Slight seepage @ 16' and moderate seepage @ 29' while drilling. Switched to rotary wash @ 29' because of caving soil.

MONITOR WELL DATA

DEPTH (FT.): 40, 45, 50, 55, 60, 65, 70



LOG OF MONITOR WELL NO. 10A

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-26-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install.
Dry Auger for Soil Sampling

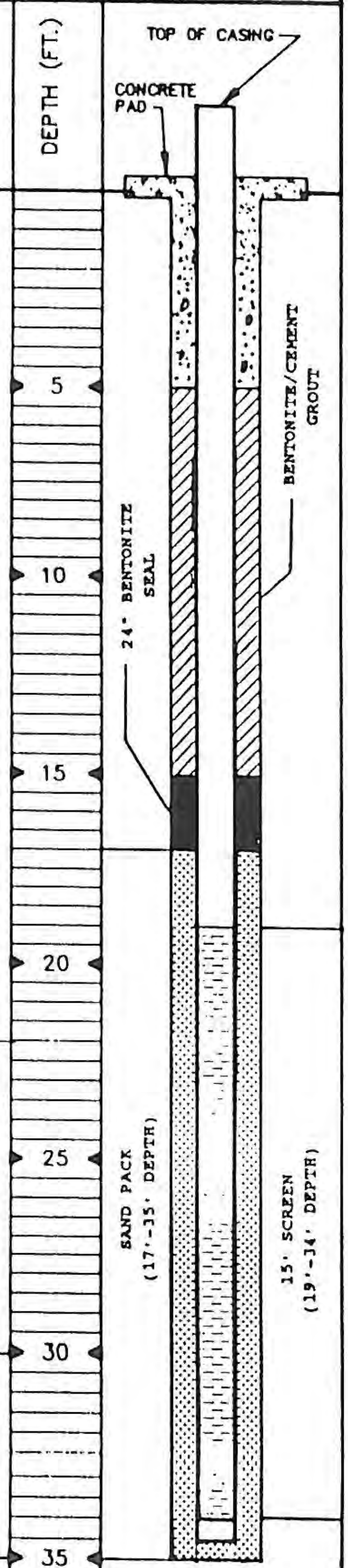
DEPTH TO WATER:

GROUND ELEV. 272.9

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT.²)	STRATUM DESCRIPTION
					Silty sand
					Clayey sand
5					Clay
10					
15					
20				4+	Hard laminated gray and brown (CH) clay with sand seams
					22.0'
				4+	Hard laminated gray and brown (CL) sandy clay with sand seams and lignite partings
25					
				4+	
30					30.0'
				4+	Hard laminated gray and brown (CH) clay with lignite seams and pockets
				4+	
35					35.0'

Boring Terminated @ 35.0'
Seepage @ 24.5' while drilling.

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 10B

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-26-91

LOCATION: See Monitor Well Plan

TYPE BORING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 272.9

DEPTH (FT.)	HAND PENETROMETER (TONS/FT.²)	STRATUM DESCRIPTION
15.0–22.0'	4+ (at 20)	Hard laminated gray and brown clay with sand seams and ferrous stain (CH)
22.0'–30.0'	4+, 4+	Hard laminated gray and brown sandy clay with sand seams and lignite partings (CL)
30.0'–	4+, 4+	Hard laminated gray and brown clay with lignite partings (CH)

MONITOR WELL DATA: TOP OF CASING; CONCRETE PAD; MONITOR WELL NOT SET

(Continued on Page 2)

LOG OF MONITOR WELL NO. 10B

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-26-91

LOCATION: See Monitor Well Plan

TYPE BORING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 272.9

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	DEPTH (FT.)	MONITOR WELL DATA
40				4+	Hard laminated gray and brown clay with sand seams (CH)	40	PROPOSED SCREEN ZONE; SCREEN NOT SET
45				4+		45	
50				4+		50	
				4+	54.0'		
55					Boring Terminated @ 54.0'	55	
60						60	
65						65	
70						70	

MONITOR WELL DATA: CASING

Seepage @ 24.5' while sampling. See Log of Monitor Well No. 10A for well set at that depth.

Seepage and sand layers were not encountered in proposed monitor well screen depth zone of 39-49'. Therefore, Monitor Well 10B was not set.

LOG OF MONITOR WELL NO. 11A

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-13-91

LOCATION: See Monitor Well Plan

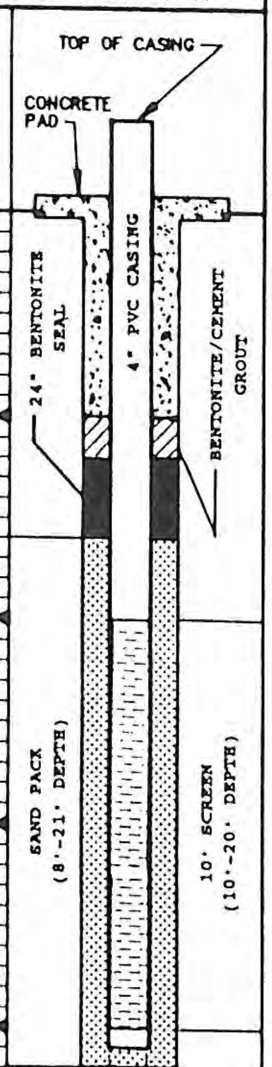
TYPE BORING: Rotary Wash for Well Install.
Dry Auger for Soil Sampling

DEPTH TO WATER:

GROUND ELEV. 272.5

DEPTH (FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION	
		Silty sand	
5		Sandy clay	
10 – 14.5'		Firm brown clayey sand with sand seams	(SC)
14.5' – 17.0'		Firm gray silty fine sand	(SM)
17.0' – 21.0'	4+	Hard laminated gray sandy clay	(CL)
		Boring Terminated @ 21.0'	
		Slight seepage @ 14.5' while drilling.	

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 11B

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-13 & 27-91

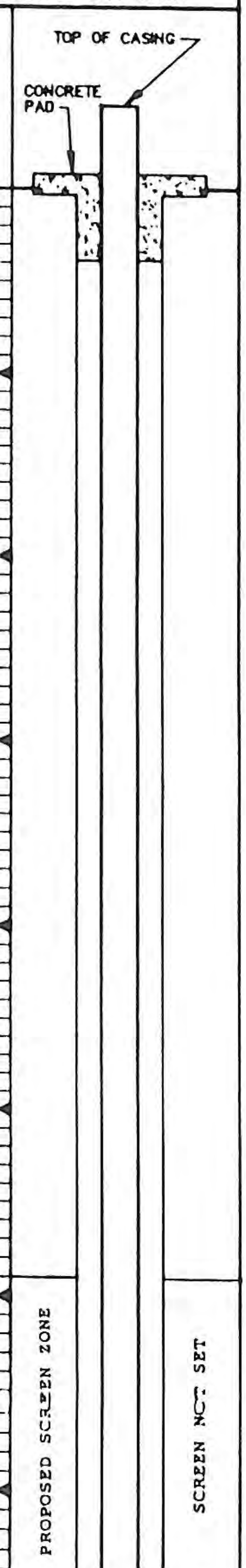
LOCATION: See Mointor Well Plan

TYPE BORING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 272.5

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT².)	STRATUM DESCRIPTION	
0–10.0'					Silty sand Sandy clay	
10.0'–17.0'				4+	Firm brown and gray clayey sand with seams of sand and clay	(SC)
17.0'–				4+ 4+ 4+	Hard laminated gray sandy clay	(CL)



(Continued on Page 2)

LOG OF MONITOR WELL NO. 11B

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-13 & 27-91

LOCATION: See Monitor Well Plan

TYPE BORING: Dry Auger

DEPTH TO WATER:

GROUND ELEV. 272.5

DEPTH (FT.)	HAND PENETROMETER (TONS/FT.²)	STRATUM DESCRIPTION
to 37.0'		Hard laminated gray sandy clay (CL)
37.0'–51.0'	4+	Hard laminated gray and brown clay with lignite seams (CH)
	4+	-with seams of lignite and sand
	4+	
	4+	
51.0'	4+	Boring Terminated @ 51.0'

Slight seepage @ 14.5' while sampling. See Log of Monitor Well No. 11A for well set at that depth.

Seepage and sand layers were not encountered in proposed monitor well screen depth zone of 29.5'-39.5'. Therefore, Monitor Well 11B was not set.

MONITOR WELL DATA: CASING; PROPOSED SCREEN ZONE; SCREEN NOT SET

LOG OF MONITOR WELL NO. 12A

PROJECT: 114.5-Acre Tract, Angelina County Landfill, Angelina County, Texas

JOB NO.: 164-87

DATE: 11-12-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install. / Dry Auger for Soil Sampling

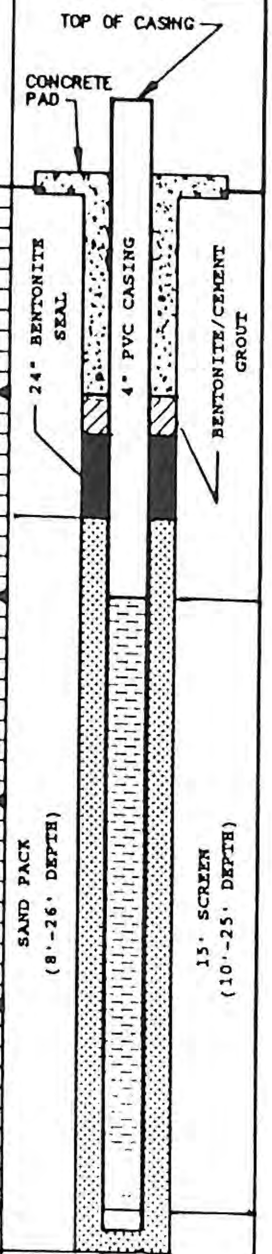
DEPTH TO WATER:

GROUND ELEV. 290.5

DEPTH (FT.)	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION
0–1			Silty sand
1–10			Clayey sand
			Clay
11–26		4+, 4+, 4+, 4+, 4+	Hard laminated brown and gray clay with sand seams and ferrous stain (CH)
26.0'			Boring Terminated @ 26.0'

Slight seepage in sand layer @ 14' while drilling.

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 12B

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

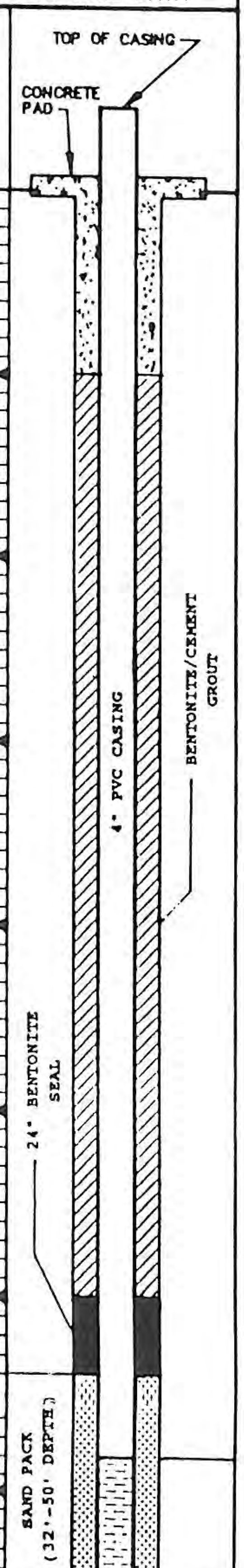
JOB NO.: 164-87

DATE: 11-12-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install.
Dry Auger for Soil Sampling

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT.^{2})	DEPTH TO WATER: STRATUM DESCRIPTION GROUND ELEV. 290.5	MONITOR WELL DATA DEPTH (FT.)
5						5
10						10
15						15
20						20
25				4+	Hard laminated brown and gray clay with sand seams and ferrous stain (CH)	25
30						30
35					Hard laminated gray sandy clay with sand seams (CL)	35



(Continued on Page 2)

LOG OF MONITOR WELL NO. 12B

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-12-91

LOCATION: See Monitor Well Plan

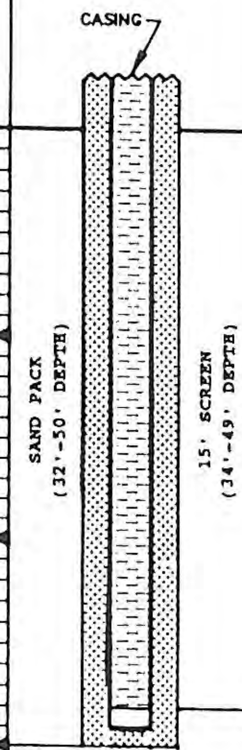
TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

DEPTH TO WATER:

GROUND ELEV. 290.5

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT.^{2})	STRATUM DESCRIPTION	DEPTH (FT.)
				2.0	Hard gray sandy clay with sand seams (CL)	
					38.5'	
40					Firm gray fine sand (SP)	40
45					-with clay seams	45
50					50.0'	50
					Boring Terminated @ 50.0'	
55						55
60						60
65						65
70						70

MONITOR WELL DATA



Slight seepage @ 14' while drilling. See Log of Monitor Well No. 12A for details of well set at that depth.

Switched to rotary wash @ 30'.

Saturated sand @ 38.5'. Boring was caving below 47'.

LOG OF MONITOR WELL NO. 13A

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-14-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

DEPTH TO WATER:

GROUND ELEV. 304.1

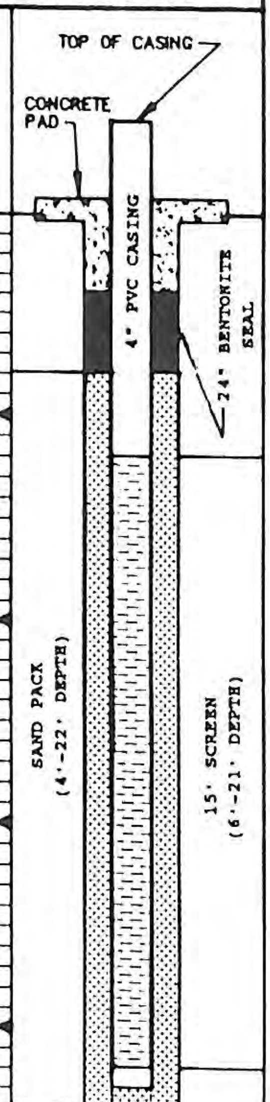
DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT.^{2})	STRATUM DESCRIPTION
0–14.0'				1.7 0.5	Firm gray and tan clayey sand (SC) with sand seams 14.0'
14.0'–22.0'				4+	Hard laminated gray and brown (CH) clay with sand seams and ferrous stain 22.0'

Boring Terminated @ 22.0'

Slight seepage @ 11' while drilling.

Switched to rotary wash @ 18' because of caving soil.

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 13B

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-27-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

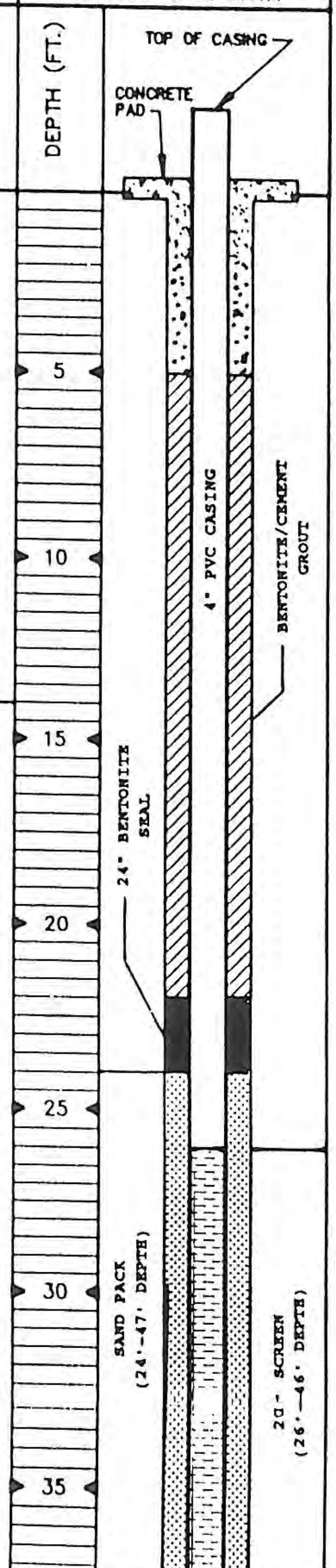
DEPTH TO WATER:

GROUND ELEV. 304.1

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2.)	STRATUM DESCRIPTION
0–14.0				1.7 0.5	Firm gray and tan clayey sand with sand seams (SC) 14.0'
14.0–36				4+ 4+ 4+ 4+	Hard laminated gray and brown clay with sand seams and ferrous stains (CH)

(Continued on Page 2)

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 13B

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-27-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

DEPTH TO WATER:

GROUND ELEV. 304.1

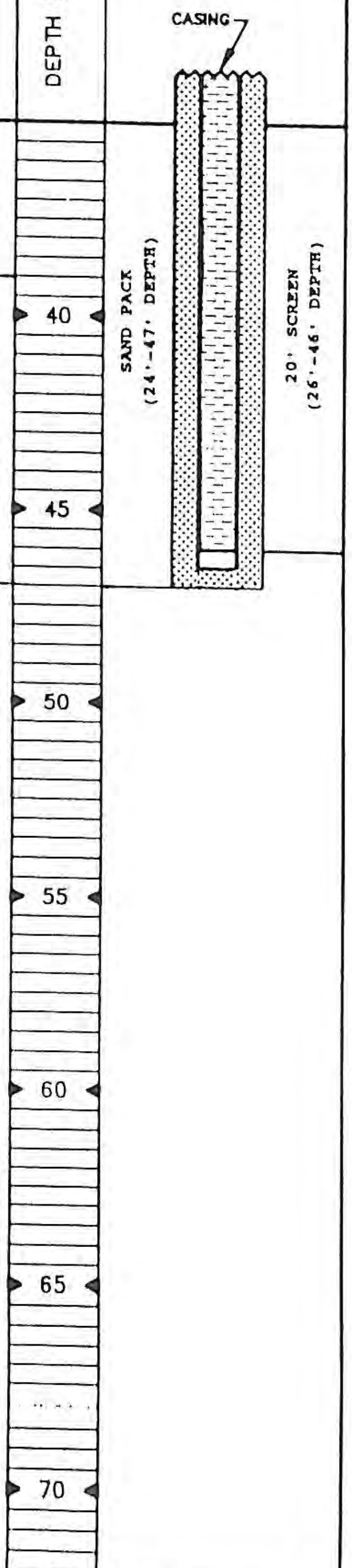
DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION
to 39.0				4+	Hard laminated gray and brown clay with sand seams (CH) — 39.0'
39.0–47.0				4+, 4+	Hard laminated gray and brown sandy clay with sand seams (CL) — 47.0'
					Boring Terminated @ 47.0'

Slight seepage @ 11' while drilling. See Log of Monitor Well No. 13A for details of well set at that depth.

Switched to rotary wash @ 18' because of caving soil.

Saturated sand seam @ 40.5'.

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 14

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-14-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install.
Dry Auger for Soil Sampling

DEPTH TO WATER:

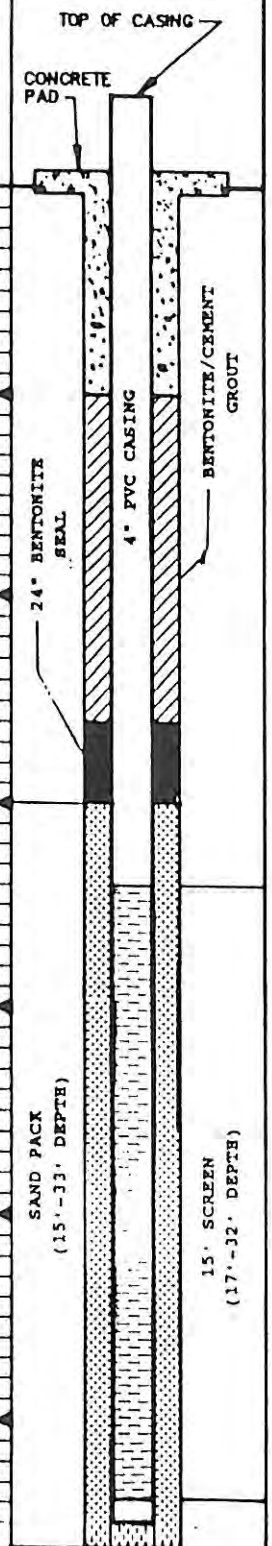
GROUND ELEV. 307.3

DEPTH (FT.)	HAND PENETROMETER (TONS/FT².)	STRATUM DESCRIPTION
0–~2		Silty sand
~2–~9		Clayey sand
~9–~14		Sandy clay
~14–21.0'	4+	Firm laminated gray and tan (SC) clayey sand with sand seams and ferrous stain
21.0'–25.0'	0.5 4+	Hard laminated gray and brown (CH) clay with ferrous stain and 6" layer of silty fine sand @ 21'
25.0'–33.0'	4+ 4+	Firm laminated gray and tan (SC) clayey sand with sand and ferrous seams, and ferrous stain

Boring Terminated @ 33.0'

Slight seepage @ 21' while drilling.
Switched to rotary wash @ 22'.

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 15A

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-15-91

LOCATION: See Monitor Well Plan

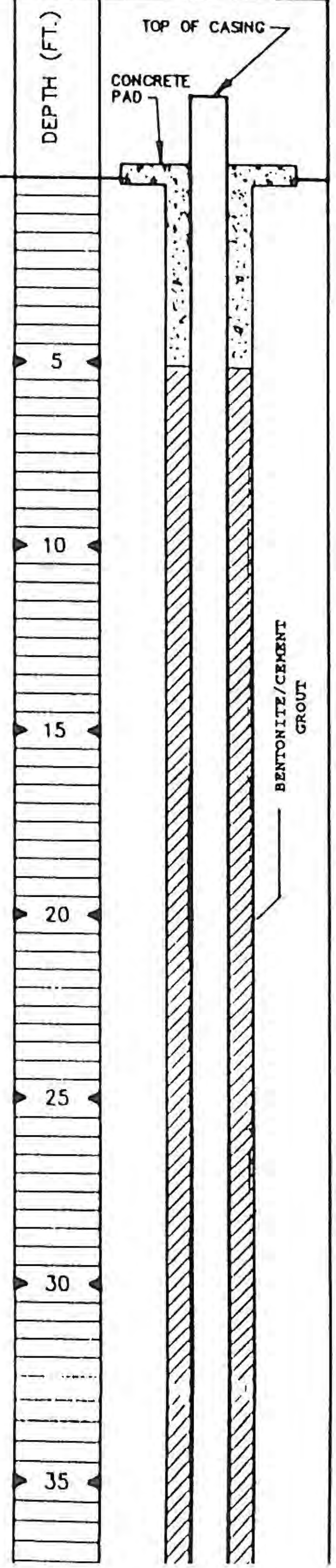
TYPE BORING: Rotary Wash for Well Install. Dry Auger for Soil Sampling

DEPTH TO WATER:

GROUND ELEV. 310.5

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT².)	STRATUM DESCRIPTION
					Silty sand
					Clayey sand
5					
10					
15					
20					
25					Firm gray clayey sand (SC)
				3.7	
30				4+	-becomes firm gray and tan clayey sand with sand seams and ferrous stains
35				1.7	-with layer of silty sand

MONITOR WELL DATA



(Continued on Page 2)

LOG OF MONITOR WELL NO. 15A

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-15-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install.
Dry Auger for Soil Sampling

DEPTH TO WATER:

GROUND ELEV. 310.5

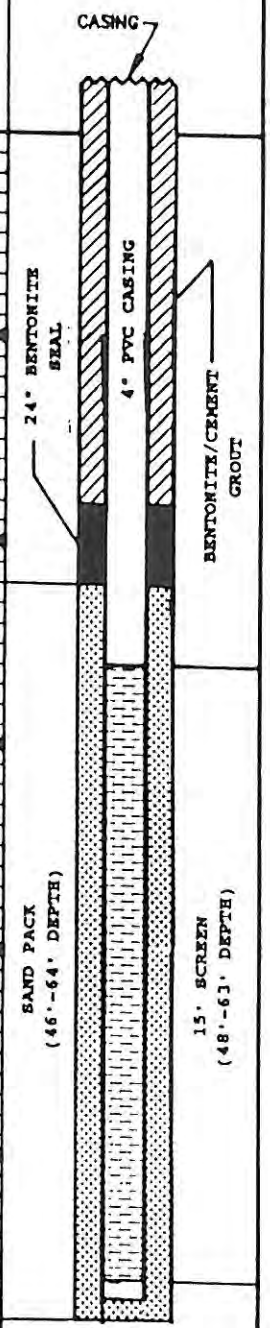
DEPTH (FT.)	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT²)	STRATUM DESCRIPTION
to 46.0'		4+	Firm gray and tan clayey sand (SC) with ferrous stain and seams of lignite and sandy clay
46.0' – 53.0'		0.5, 0.5	Firm dark gray silty fine sand with clay seams (SM)
53.0' – 64.0'		4+, 4+, 4+	Hard laminated gray and brown sandy clay with sand seams (CL)

Boring Terminated @ 64.0'

Moderate seepage @ 33' while drilling. See Log of Monitor Well No. 15B for details of well set @ that depth.

Moderate seepage @ 49' while drilling. Switched to rotary wash @ 50'.

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 15B

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 11-15-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install.
Dry Auger for Soil Sampling

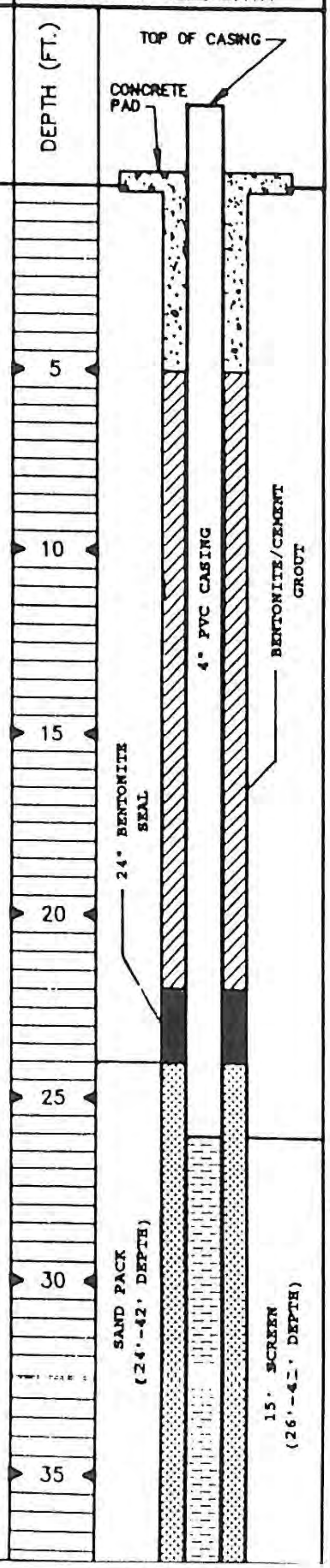
DEPTH TO WATER:

GROUND ELEV. 310.5

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2)	STRATUM DESCRIPTION
					Silty sand
5					Clayey sand
10					
15					
20					
25				3.7	Firm gray clayey sand (SC)
30				4+	-becomes firm gray and tan clayey sand with sand seams and ferrous stains
35				1.7	-with layer of silty sand

(Continued on Page 2)

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 15B

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

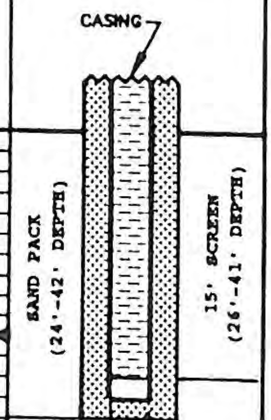
JOB NO.: 164-87

DATE: 11-15-91

LOCATION: See Monitor Well Plan

TYPE BORING: Rotary Wash for Well Install.
Dry Auger for Soil Sampling

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT.^{2})	DEPTH TO WATER: STRATUM DESCRIPTION GROUND ELEV. 310.05	DEPTH (FT.)	MONITOR WELL DATA
40				4+	Firm gray and tan clayey sand (SC) with ferrous stain and seams of lignite and sandy clay 42.0'	40	
45					Boring Terminated @ 42.0'	45	
50					Moderate seepage @ 33' while drilling.	50	
55						55	
60						60	
65						65	
70						70	



LOG OF MONITOR WELL NO. 16

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

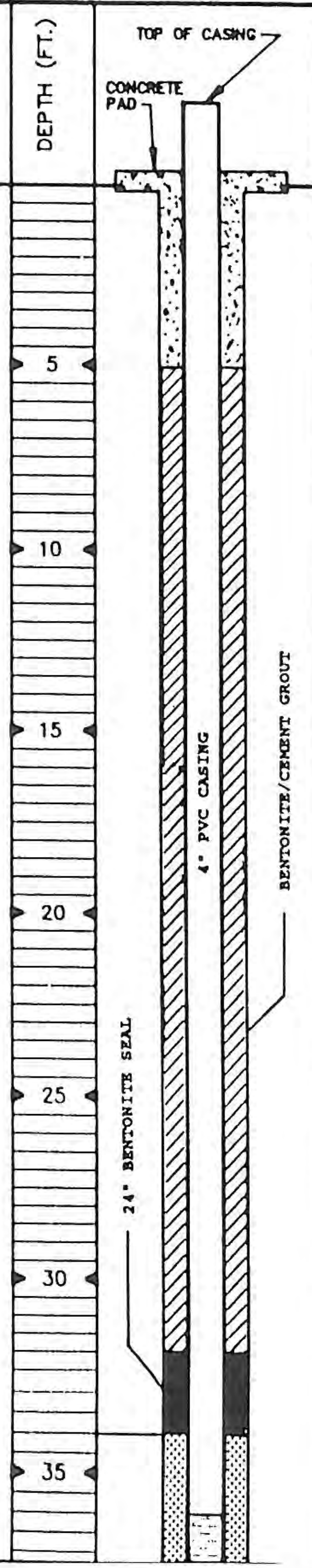
DATE: 3-31-92

LOCATION: See Monitor Well Plan

TYPE BORING: 6" I.D. Hollow Stem

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2.)	DEPTH TO WATER: STRATUM DESCRIPTION GROUND ELEV. 270.3
0–5					Silty sand
5–15					Sandy clay
15–30					Clay
30–37		■		4+	Hard gray clay with lignite partings (CH)

MONITOR WELL DATA



(continued on Page 2)

LOG OF MONITOR WELL NO. 16

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 3-31-92

LOCATION: See Monitor Well Plan

TYPE BORING: 6" I.D. Hollow Stem

DEPTH TO WATER:

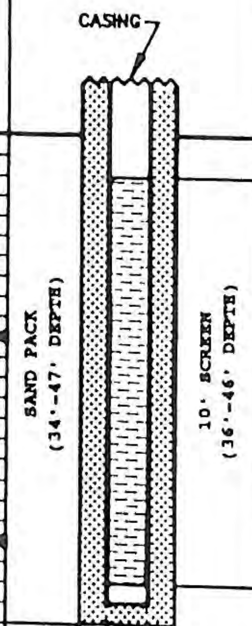
GROUND ELEV. 270.3

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT.^{2})	STRATUM DESCRIPTION
to 42.0'				4+	Hard laminated gray clay (CH) with silt seams
42.0' to 47.0'				4+	Hard laminated gray sandy (CL) clay with sand seams
47.0'					Boring Terminated @ 47.0'

Slight seepage @ 12' and heavy seepage @ 42' while drilling.

Set monitor well @ indicated depth.

MONITOR WELL DATA



LOG OF MONITOR WELL NO. 17

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

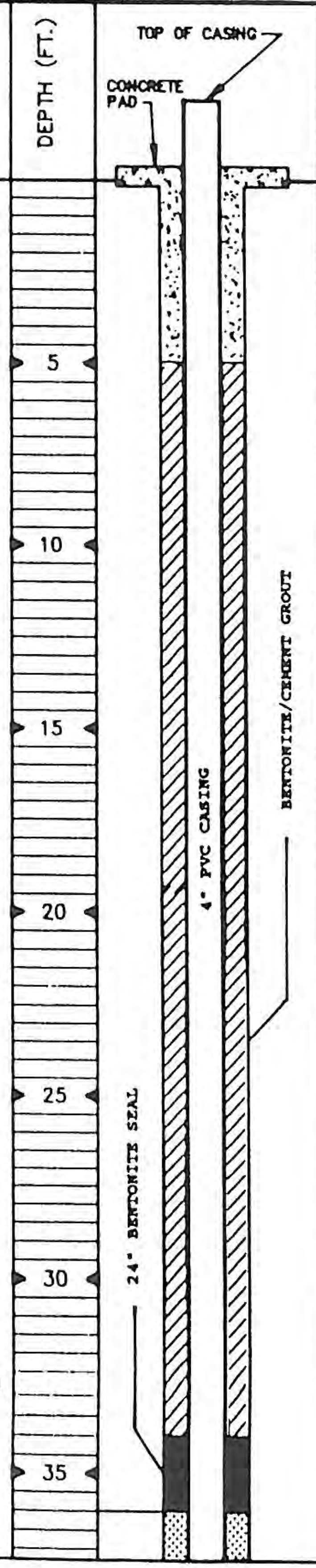
DATE: 4-1-92

LOCATION: See Monitor Well Plan

TYPE BORING: 6" I.D. Hollow Stem

DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT^2.)	DEPTH TO WATER: STRATUM DESCRIPTION GROUND ELEV. 281.0
0					Silty sand
5					Clayey sand
10					Sandy clay
15					
20					
25					
30					
35				4+	Hard laminated gray clay (CH) with silt seams

MONITOR WELL DATA



(continued on Page 2)

LOG OF MONITOR WELL NO. 17

PROJECT: 114.5-Acre Tract, Angelina County Landfill
Angelina County, Texas

JOB NO.: 164-87

DATE: 4-1-92

LOCATION: See Monitor Well Plan

TYPE BORING: 6" I.D. Hollow Stem

DEPTH TO WATER:

GROUND ELEV. 281.0

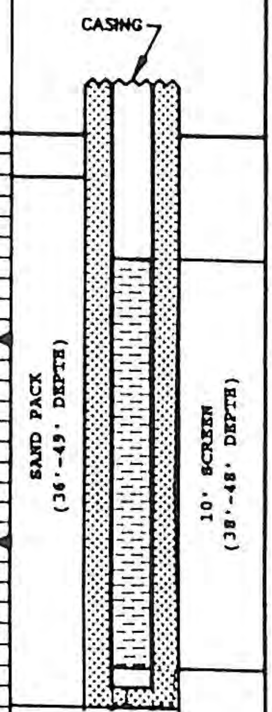
DEPTH (FT.)	SYMBOL	SAMPLES	STANDARD PENETROMETER (BLOWS/FT.)	HAND PENETROMETER (TONS/FT.²)	STRATUM DESCRIPTION
to 38.0'					Hard laminated gray clay (CH) with silt seams
38.0'–42.0'				4+	Firm laminated gray clayey sand with sand seams (SC)
42.0'–49.0'				4+	Hard laminated gray clay (CH) with sand seams
49.0'					Boring Terminated @ 49.0'

Depth scale: 40, 45, 50, 55, 60, 65, 70

Moderate seepage @ 26' and slight seepage @ 39' while drilling.

Set monitor well @ indicated depth.

MONITOR WELL DATA



DEPTH (FT.): 40, 45, 50, 55, 60, 65, 70

8(2)

Please use black ink.
Send original copy by certified mail to the Texas Department of Water Resources
P. O. Box 13087
Austin, Texas 78711

State of Texas
WATER WELL REPORT

Texas Water Well Drillers Board
P. O. Box 13087
Austin, Texas 78711

ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

1) OWNER Randy Nevill (Name) Address 1305 Crooked Creek (Street or RFD) Lufkin, (City) TX (State) 75901 (Zip)

2) LOCATION OF WELL:
County Angelina ______ miles in ______ (N.E., S.W., etc.) direction from Lufkin (Town)

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

☐ Legal description:
Section No. ______ Block No. ______ Township ______
Abstract No. ______ Survey Name ______
Distance and direction from two intersecting section or survey lines ______

☒ See attached map.

3) TYPE OF WORK (Check):
☒ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check):
☒ Domestic ☐ Industrial ☐ Public Supply ☐ Irrigation ☐ Test Well ☐ Other ______

5) DRILLING METHOD (Check):
☒ Mud Rotary ☐ Air Hammer ☐ Driven ☐ Bored ☐ Air Rotary ☐ Cable Tool ☐ Jetted ☐ Other ______

6) WELL LOG:

Date drilled 2-3-87

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
6 3/4	Surface	209

From (ft.)	To (ft.)	Description and color of formation material
0'	18'	Mixed Clay
18'	155'	Blue Clay
155'	162'	Tite Sand
162'	195'	Blue Clay
195'	197'	Tite Sand
197'	199'	Blue Clay
199'	206'	Good Sand
206'	209'	Blue Clay

(Use reverse side if necessary)

7) BOREHOLE COMPLETION:
☐ Open Hole ☒ Straight Wall ☐ Underreamed
☒ Gravel Packed ☐ Other ______
If Gravel Packed give interval ... from 140 ft. to 209 ft.

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mgf., if commercial	Setting (ft.) From	To	Gage Casing Screen
4	N	SCD. 40 PVC	+1	196	
			206	209	
4	N	SCD. 40 PVC SLOTTED	196	206	.020

9) CEMENTING DATA [Rule 319.44(b)]
Cemented from 0 ft. to 20 ft.
______ ft. to ______ ft.
Method used ______
Cemented by ______

10) SURFACE COMPLETION
☒ Specified Surface Slab Installed [Rule 319.44(c)]
☐ Pitless Adapter Used [Rule 319.44(d)]
☐ Approved Alternative Procedure Used [Rule 319.71]

11) WATER LEVEL:
Static level 62 ft. below land surface Date 2-7-87
Artesian flow ______ gpm. Date ______

12) PACKERS: Type Depth

13) TYPE PUMP:
☐ Turbine ☐ Jet ☒ Submersible ☐ Cylinder
☐ Other ______
Depth to pump bowls, cylinder, jet, etc., 105 ft.

14) WELL TESTS:
Type Test: ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: ______ gpm with ______ ft. drawdown after ______ hrs.

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable water? ☐ Yes ☒ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? ______ Depth of strata ______
Was a chemical analysis made? ☐ Yes ☒ No

RECEIVED
AUG 1 0 1987
TEXAS WATER COMMISSION

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 12 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME Leubner Water (Type or Print) Water Well Driller's License No. 368

ADDRESS Rt. 7, Box 4670 (Street or RFD) Lufkin (City) Texas (State) 75901 (Zip)

(Signed) Roy Leubner (Licensed Water Well Driller) (Signed) ______ (Registered Driller Trainee)

*Please attach electric log, chemical analysis, and other pertinent information, if available.

For TDWR use only
Well No. 37-43-8
Located on map ______

Send original copy by certified mail to the Texas Water Development Board P. O. Box 13087 Austin, Texas 78711

State of Texas

WATER WELL REPORT

For TWDB use only
Well No. 37-51-2A
Located on map
Received:

1) OWNER:
Person having well drilled: Angelina County Sanitary Landfill (Name) — Address: Angelina County Court House (Street or RFD), Lufkin (City), Texas (State)

Landowner: Owens-Illinois, Inc. Western Woodlands (Name) — Address: Old Mill Road (Street or RFD), Lufkin (City), Texas (State)

2) LOCATION OF WELL:
County: Angelina, 5 miles in South (N.E., S.W., etc.) direction from Lufkin (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*

North ↑

(Use reverse side if necessary)

or

Give legal location with distances and directions from adjacent sections or survey lines.

Labor ______ League ______
Block ______ Survey ______
Abstract No. ______
(NW¼ NE¼ SW¼ SE¼) of Section ______

3) TYPE OF WORK (Check):
New Well X   Deepening   Reconditioning   Plugging

4) PROPOSED USE (Check):
Domestic X   Industrial   Municipal   Irrigation   Test Well   Other

5) TYPE OF WELL (Check):
Rotary X   Driven   Dug   Cable   Jetted   Bored

6) WELL LOG:
Diameter of hole 6¼" in. Depth drilled 348 ft. Depth of completed well 348 ft. Date drilled 2/4/75

All measurements made from 0 ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	26	Yellow Clay
26	76	Dark Gray Shale
76	96	Sand
96	113	Dark Gray Shale
113	114	Rock
114	155	Dark Gray Shale
155	160	Sand & Shale
160	161	Rock
161	162	Dark Gray Shale
162	235	Sand
235	237	Dark Gray Shale

(Use reverse side if necessary) (over)

9) Casing:
Type: Old   New X   Steel   Plastic X   Other
Cemented from 0 ft. to 204 ft.

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Gage
4"	0	204	Sch.40

10) SCREEN:
Type: Stainless Steel Underbar
Perforated   Slotted X

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Slot Size
2"	215	235	10
2"	302	307	12
2"	314	319	12

7) COMPLETION (Check):
Straight wall X   Gravel packed   Other
Under reamed   Open Hole

8) WATER LEVEL:
Static level 57 ft. below land surface Date 2/19/75
Artesian pressure ______ lbs. per square inch Date ______
Depth to pump bowls, cylinder, jet, etc., 183' ft. below land surface.

11) WELL TESTS:
Was a pump test made? Yes X No If yes, by whom? English Drilling Co. Reagan English
Yield: 12 gpm with 31 ft. drawdown after 8 hrs.
Bailer test ______ gpm with ______ ft. drawdown after ______ hrs.
Artesian flow ______ gpm
Temperature of water ______

12) WATER QUALITY:
Was a chemical analysis made? Yes X No
Did any strata contain undesirable water? Yes No X
Type of water? ______ depth of strata ______

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME: Reagan English (Type or Print) — Water Well Drillers Registration No. 76

ADDRESS: 2403 North Raguet (Street or RFD), Lufkin (City), Texas (State) 75901

(Signed) Reagan English (Water Well Driller) — English Drilling Co. (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

Section 4
Proof of Submittal
Of Permit Modification Application Fee

Hydrex
ENVIRONMENTAL, INC.

March 18, 2008

MC-214
Ms. Jacqueline Mgebroff
Revenue Section
Office of Administrative Services
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Re: **Application Fee Submittal for the Permit Modification for Changes to the Groundwater Monitoring System Design Angelina County Waste Management Center MSW Permit No. 2105A Angelina County, Texas**

Dear Ms. Mgebroff:

On behalf of Angelina County, and as required by 30 TAC §330.59(h)(1), we submit the attached application fee ($150.00) for the permit modification submitted for changes to the groundwater monitoring system for Angelina County Waste Management Center, MSW Permit No. 2105A, Angelina County, Texas.

If you have any questions regarding this information, please feel free to contact me at (936) 568-9451 or by e-mail at tscarborough@hydrex-inc.com.

Sincerely,
Hydrex Environmental, Inc.

Leonell N. Scarborough, P.G.
Hydrogeologist

cc: MC 124
Mr. Jeff Davis, Team Leader
MSW Permits Section
Office of Waste Management, Permits Division
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, TX 78711-3087

Mr. Chris Fitzgerald
Landfill Manager
Angelina County Waste Management Center
P.O. Box 1862
Lufkin, TX 75902-1862

14409

HYDREX ENVIRONMENTAL, INC.
1120 NW STALLINGS DRIVE
NACOGDOCHES, TX 75964-3428
(936) 568-9451

REGIONS BANK
TEXAS

88-78-1119

3/19/2008

Security features. Details on back.

PAY TO THE ORDER OF: Texas Commission on Environmental Quality $ **150.00

One Hundred Fifty and 00/100** DOLLARS

Texas Commission on Environmental Quality
Revenue Section
Office of Admin. Service
PO Box 13087
Austin, TX 78711-3087

HYDREX ENVIRONMENTAL, INC.

AUTHORIZED SIGNATURE

MEMO Subchapter J GW Mod, App Fee

⑈014409⑈ ⑆111900785⑆ 84 1400 9700⑈

HYDREX ENVIRONMENTAL, INC. 14409

Texas Commission on Environmental Quality	3/19/2008	
ACWMC (MSW # 2105A)		150.00

Checking Acct - Regio ,Subchapter J GW Mod, App Fee	150.00