



BIGGS & MATHEWS ENVIRONMENTAL

Consulting Engineers ♦ Hydrogeologists

Mansfield ♦ Wichita Falls

February 18, 2015

Mr. Arten J. Avakian, Project Manager
Municipal Solid Waste Permits Section (MC-124)
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Re: Waste Management Skyline Landfill – Dallas and Ellis Counties
Municipal Solid Waste (MSW) Permit No. 42D
Permit Amendment Application – Supplemental Review Comments
Tracking Nos. 15821429, 16078600, and 18430503; RN100542232/CN603572132

Dear Mr. Avakian:

This response to your comments related to the Technical Review Submittal dated January 8, 2015, is submitted on behalf of Waste Management Skyline Landfill. The permit amendment application for the proposed Waste Management Skyline Landfill has been revised as appropriate and one original and three copies are enclosed with this letter. Our responses to the Texas Commission on Environmental Quality (TCEQ) supplemental comments are presented below.

Part III of the Application (Facility Investigation and Design)

Part III, Attachment C (Facility Surface Water Drainage Report)

1. Review and clarify the information presented in Table 2 – Postdeveloped Boundary Analysis Summary, beginning on page C1-14 for Detention Ponds 24, 27, and 29. Please revise the application as appropriate.

RESPONSE: As we discussed, the information presented in Table 2 for Ponds 24, 27, and 29 for the spillway elevations and outlet structures were reviewed and corrected to be consistent with the design models. In addition, a clarification to Drawing C3-8 to correct the outlet pipe dimension call-out for Pond 24 is included.

Part III, Attachment E (Geology Report)

2. Review and clarify the potentiometric surface contours presented on the figures in Appendix E6.

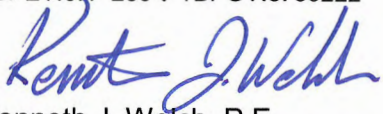
RESPONSE: As we discussed, potentiometric surface contours were revised on Figures E6-1 through E6-6 and E6-12.

Mr. Arten Avakian
February 18, 2015
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We trust these responses are satisfactory to you and meet the regulations of the TCEQ.
If you need additional information, please let us know.

Sincerely,

BIGGS & MATHEWS ENVIRONMENTAL
TBPE No. F-256 ♦ TBPG No. 50222



Kenneth J. Welch, P.E.
Principal Engineer

Attachments: Part I Form – pages 1, 2 and 10
Permit Amendment Application – Technical Review Comments (original plus
three copies)

cc: Waste Management Skyline Landfill, c/o Mr. Steve Jacobs, Director of Disposal
Operations

**SKYLINE LANDFILL
CITY OF FERRIS
DALLAS AND ELLIS COUNTIES, TEXAS
TCEQ PERMIT APPLICATION NO. MSW 42D**

PERMIT AMENDMENT APPLICATION

Prepared for

Waste Management of Texas, Inc.

April 2012
Revised August 2012
Revised July 2014
Revised January 2015

Revised February 2015



Biggs & Mathews Environmental, Inc.
Firm Registration No. F-256

Prepared by

BIGGS & MATHEWS ENVIRONMENTAL

1700 Robert Road, Suite 100 ♦ Mansfield, Texas 76063 ♦ 817-563-1144

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FIRM REGISTRATION NO. F-256

TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS
FIRM REGISTRATION NO. 50222

VOLUME 1

**SKYLINE LANDFILL
CITY OF FERRIS
DALLAS AND ELLIS COUNTIES, TEXAS
TCEQ PERMIT APPLICATION NO. MSW 42D**

PERMIT AMENDMENT APPLICATION

VOLUME 1 OF 5

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TCEQ PERMIT APPLICATION NO. MSW 42D**

PERMIT AMENDMENT APPLICATION

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**SKYLINE LANDFILL
DALLAS AND ELLIS COUNTIES, TEXAS
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TCEQ PART I FORM



Texas Commission on Environmental Quality

Permit or Registration Application for Municipal Solid Waste Facility

Part I

A. General Information

Facility Name:	Skyline Landfill			
Physical or Street Address (if available):	1201 North Central St			
(City) (County)(State)(Zip Code):	Ferris	Ellis	TX	75125-2101
(Area Code) Telephone Number:	972-842-5710			
Charter Number:	22300000			

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 :	Waste Management of Texas, Inc.			
Mailing Address:	1201 North Central St			
(City) (County)(State)(Zip Code):	Ferris	Ellis	TX	75125-2101
(Area Code) Telephone Number:	972-842-5710			
(Area Code) FAX Number:	972-842-5873			
Charter Number:	22300000			

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:	Steve Jacobs			
Mailing Address:	9708 Giles Rd.			
(City) (County)(State)(Zip Code):	Austin	Travis	TX	78754
(Area Code) Telephone Number:	512-272-6245			
(Area Code) FAX Number:	512-272-6289			

Application Type:

<input checked="" type="checkbox"/>	Permit	<input checked="" type="checkbox"/>	Major Amendment	<input type="checkbox"/>	Minor Amendment
<input type="checkbox"/>	Registration	<input type="checkbox"/>	Modification	<input type="checkbox"/>	Temporary Authorization
		<input checked="" type="checkbox"/>	w/Public Notice		
		<input type="checkbox"/>	w/out Public Notice	<input checked="" type="checkbox"/>	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:

<input checked="" type="checkbox"/> Type I	<input type="checkbox"/> Type IV	<input type="checkbox"/> Type V	<input type="checkbox"/> Type IX
<input type="checkbox"/> Type I AE	<input type="checkbox"/> Type IV AE	<input type="checkbox"/> Type VI	

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

<input checked="" type="checkbox"/> Storage	<input checked="" type="checkbox"/> Processing	<input checked="" type="checkbox"/> Disposal
---	--	--

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

<input type="checkbox"/> Containers	<input type="checkbox"/> Tanks	<input type="checkbox"/> Surface Impoundments	<input checked="" type="checkbox"/> Landfills
<input type="checkbox"/> Incinerators	<input type="checkbox"/> Composting	<input type="checkbox"/> Type IV Demonstration Unit	<input type="checkbox"/> Type IX Energy/ Material Recovery
<input checked="" type="checkbox"/> Other (Specify)	Citizen's Convenience Center	<input checked="" type="checkbox"/> Other (Specify)	Leachate Storage Facility
<input checked="" type="checkbox"/> Other (Specify)	Mud Grate Facility	<input checked="" type="checkbox"/> Other (Specify)	Large Item Storage Area
<input checked="" type="checkbox"/> Other (Specify)	Construction & Demolition Recycling & Re-use Area	<input checked="" type="checkbox"/> Other (Specify)	Liquid Stabilization Area
<input checked="" type="checkbox"/> Other (Specify)	Bioremediation Treatment Pad		

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.

Permit amendment application for a horizontal expansion at the existing Skyline Landfill to provide long-term waste disposal capacity for the individuals, businesses, and communities in Dallas and Ellis counties in Texas and other surrounding areas.

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."

Alternative Language 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 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 an alternative language 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.

Signature Page

I, Steve Jacobs
(Operator)

Director of Disposal Operations
(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: [Handwritten Signature]

Date: 2-18-15

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.

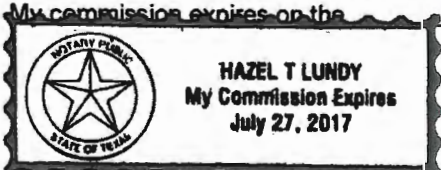
Not applicable
Printed or Typed Name of Operator or Principal Executive Officer

Not applicable when the owner and operator are the same entity.
Signature

SUBSCRIBED AND SWORN to before me by the said Steve Jacobs

On this 18th day of February, 2015.

My commission expires on the 27th day of July, 2017



[Handwritten Signature]
Notary Public in and for
Harris County, Texas

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

VOLUME 2

**SKYLINE LANDFILL
CITY OF FERRIS
DALLAS AND ELLIS COUNTIES, TEXAS
TCEQ PERMIT APPLICATION NO. MSW 42D**

PERMIT AMENDMENT APPLICATION

VOLUME 2 OF 5

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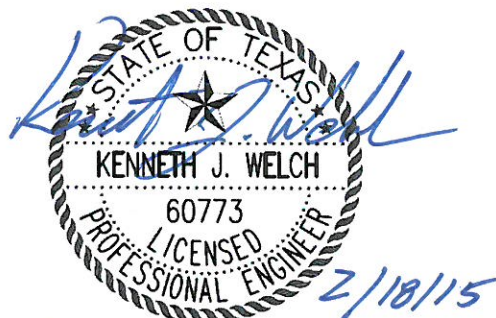
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- Attachment B – General Facility Design
- Attachment C – Facility Surface Water Drainage Report
- Attachment C1 – Drainage Analysis and Design
- Attachment C2 – Flood Control Analysis
- Attachment C3 – Drainage System Plans and Details



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PERMIT AMENDMENT APPLICATION

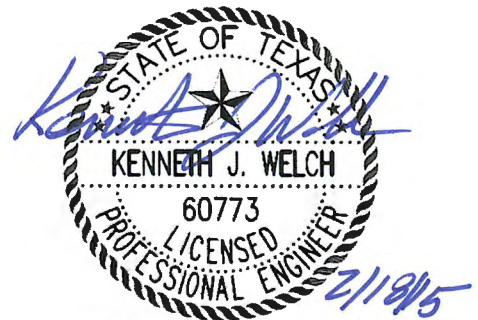
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FACILITY INVESTIGATION AND DESIGN
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Prepared for

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April 2012
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Prepared by

BIGGS & MATHEWS ENVIRONMENTAL

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**SKYLINE LANDFILL
CITY OF FERRIS
DALLAS AND ELLIS COUNTIES, TEXAS
TCEQ PERMIT NO. MSW 42D**

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**PART III – FACILITY INVESTIGATION AND DESIGN
ATTACHMENT C
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**SKYLINE LANDFILL
CITY OF FERRIS
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TCEQ PERMIT APPLICATION NO. MSW 42D**

PERMIT AMENDMENT APPLICATION

**PART III – FACILITY INVESTIGATION AND DESIGN
ATTACHMENT C1
DRAINAGE ANALYSIS AND DESIGN**

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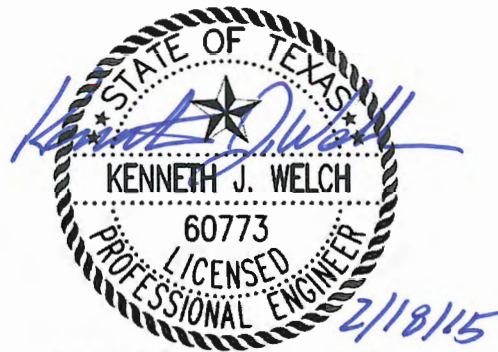
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Skyline Landfill
Table 2 – Postdeveloped Boundary Analysis Summary

Boundary Comparison Point	25-Year Flow Rate (cfs)	25-Year Volume (ac-ft)	25-Year Velocity (fps)	Runon / Runoff	Drainage Areas	Comparison Point Description
Points Contributing to the Northern Boundary and into Ten Mile Creek						
CP01	66.1	11.1	2.32	Runoff	DA01 contributes directly to CP01.	Surface water sheet flows into Ten Mile Creek.
CP02	15.4	1.9	2.46	Runoff	DA02 contributes directly to CP02.	Surface water sheet flows into Ten Mile Creek.
CP03	5.4	0.6	1.00	Runoff	DA03 contributes directly to CP03.	Surface water sheet flows into Ten Mile Creek.
CP04	465.4	96.7	19.35	Runoff	DA04, DA05, DA06, DA07, DA08, DA09, DA10, DA11, DA12, DA13, DA14, DA15, DA16, DA17.A, DA17.B, DA18, DA19, DA20.A, DA20.B, DA21.A, DA21.B, DA22.A and DA22.B contribute to CP04. CP04 has a complex drainage system that is described in the narrative following this table.	Surface water from DA04 sheet flows into Ten Mile Creek. Surface water from Pond 5 and the east perimeter drainage system flows into Ten Mile Creek via a defined channel.
CP05	93.7	20.1	2.02	Runoff	DA23 contributes directly to CP05. DA24, DA25, DA25A, and DA25B contribute to CP05 via Pond 24. Pond 24 has a two 30-inch culverts discharge and a spillway elevation of 434 <u>435</u> .	Surface water sheet flows into Ten Mile Creek.
CP06	80.0	13.6	1.25	Runoff	DA26 contributes directly to CP06.	Surface water sheet flows into Ten Mile Creek.
CP07	204.6	71.9	9.90	Runoff	DA28 contributes directly to CP07. DA29, DA30A, DA30B, DA31A, and DA31B contribute to CP07 via Pond 29. Pond 29 has a 36-inch culvert discharge and a spillway elevation of 419 <u>6422.5</u> . DA27, DA32A, DA32B, DA33A, DA33B, DA34A, and DA34B contribute to CP07 via Pond 27. Pond 27 has a 3042 -inch culvert discharge and a spillway elevation of 426 <u>428</u> .	Surface water from DA28, Pond 27, and Pond 29 flow into Ten Mile Creek via a defined natural channel.
CP08	5.4	0.6	1.62	Runoff	DA35 directly contributes to CP08.	Surface water sheet flows off of the permit boundary across OS03 into Ten Mile Creek.
CP09	15.0	1.6	8.53	Runoff	DA36 directly contributes to CP09.	Surface water primarily flows into Ten Mile Creek via a small shallow natural channel.

Skyline Landfill
Table 2 – Postdeveloped Boundary Analysis Summary
(continued)

Boundary Comparison Point	25-Year Flow Rate (cfs)	25-Year Volume (ac-ft)	25-Year Velocity (fps)	Runon / Runoff	Drainage Areas	Comparison Point Description
CP10	278.9	82.9	16.33	Runoff	DA37 directly contributes to CP10. CP11 routed through CA37 also contributes to CP10.	Surface water from DA37 and the west perimeter drainage system flows into Ten Mile creek via a defined natural channel.
CP11	249.2	74.1	2.79	Runon	OS06 contributes directly to CP11. CP12 routed through OS06 also contributes to CP11.	Surface water flows onto the permit boundary from OS6 and from the existing west perimeter drainage system across a wide area as sheet flow.
CP12	187.6	61.7	4.39	Runoff	DA40 contributes directly to CP12. DA41 and DA42 contribute to CP12. DA44, DA45, DA46.A, DA46.B, DA47, CP13, CP14, CP15, and CP16 contribute to CP12 via Pond 44. Pond 44 has a 24-inch culvert with headwall.	Surface water flows off of the permit boundary in a defined natural channel, in the existing west perimeter drainage system.
CP13	4.2	0.4	3.00	Runon	OS07.A-C directly contributes to CP13.	Surface water flows onto the permit boundary via a small shallow natural channel, and enters the existing west perimeter ditch.
CP14	4.2	0.4	2.83	Runon	OS07.B directly contributes to CP14.	Surface water flows onto the permit boundary via a small shallow natural channel, and enters the existing west perimeter ditch.
CP15	45.2	11.3	2.88	Runon	OS07.A directly and OS08 routed through OS07.A contribute to CP15.	Surface water flows onto the permit boundary via a defined natural waterway, and enters the existing west perimeter ditch.
CP16	129.3	11.4	13.33	Runon	OS09 directly and OS10 routed through OS09 contribute to CP16.	Surface water flows onto the permit boundary both as sheet flow and in a small shallow channel, and enters the existing Detention Pond 44.
Points Contributing to the Southern Boundary and to the Culverts under Ferris Avenue						
CP17	113.0	9.5	9.60	Runon	OS11 contributes directly to CP17.	Surface water flows over a small road onto the permit boundary as sheet flow.
CP18	124.8	32.4	4.88	Runoff	DA48 contributes directly to CP18, which discharges via a 48-inch culvert underneath Ferris Avenue. DA49 contributes to CP18 via two 36-inch culverts. CP17 also contributes to CP18.	Surface water flows off of the permit boundary through a culvert into a defined natural offsite channel.

**SKYLINE LANDFILL
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**PART III – FACILITY INVESTIGATION AND DESIGN
ATTACHMENT C3
DRAINAGE SYSTEM PLANS AND DETAILS**

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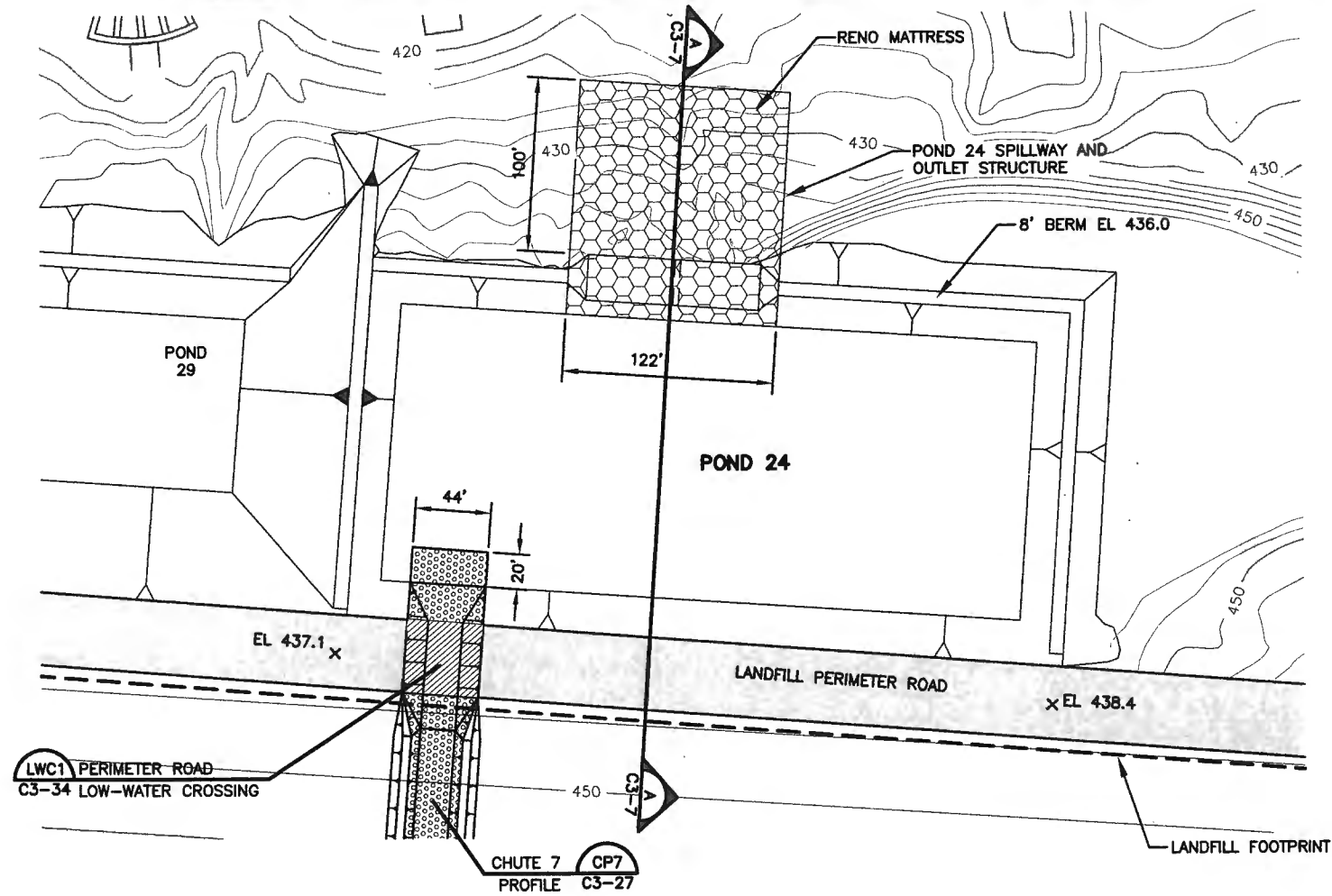
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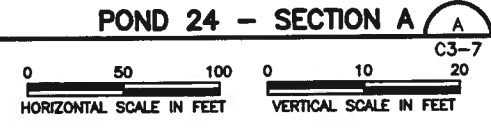
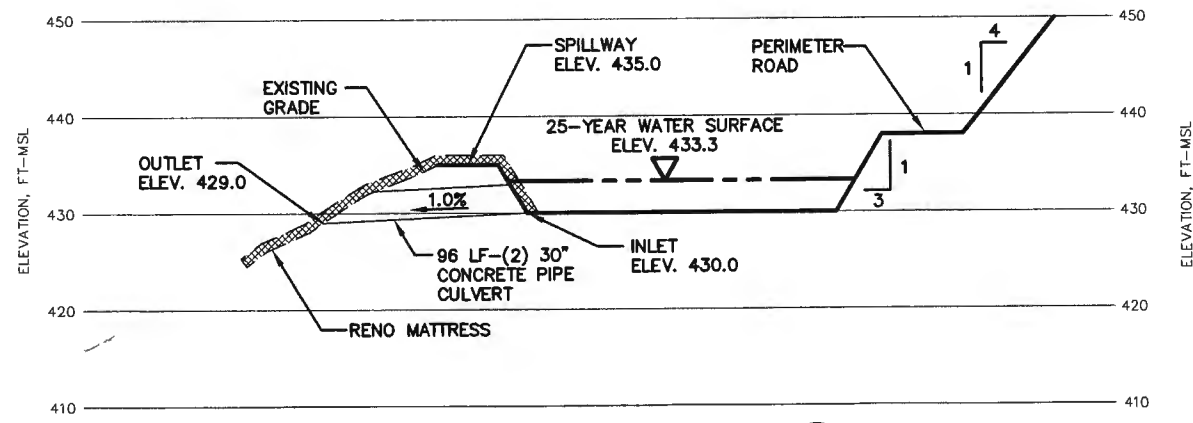
- LEGEND**
- PERMIT BOUNDARY
 - LANDFILL FOOTPRINT
 - 420 EXISTING 2' GROUND CONTOUR

- NOTE:**
1. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL SURVEY FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL.
 2. DETENTION POND 24 AND ITS SPILLWAY AND OUTLET STRUCTURE TO BE CONSTRUCTED AS PART OF THE DRAINAGE IMPROVEMENTS FOR MSW PERMIT NO. 42D.

POND 24 ELEVATION-STORAGE RELATIONSHIP

ELEVATION (FT)	VOLUME AT ELEVATION (AC-FT)
430	0
432	2.88
434	6.06
436	9.56

SUPPLEMENTAL REVISION:
1. REVISED OUTLET PIPE.



POND 24 (DETENTION POND)
WASTE MANAGEMENT OF TEXAS, INC.
SKYLINE LANDFILL
MAJOR PERMIT AMENDMENT

BIGGS & MATHEWS
ENVIRONMENTAL CONSULTING ENGINEERS
MANSFIELD DALLAS • WICHITA FALLS
817-563-1144

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REVISIONS							TBPE FIRM NO. F-256	TBPG FIRM NO. 50222
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VOLUME 4

**SKYLINE LANDFILL
CITY OF FERRIS
DALLAS AND ELLIS COUNTIES, TEXAS
TCEQ PERMIT APPLICATION NO. MSW 42D**

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VOLUME 4 OF 5

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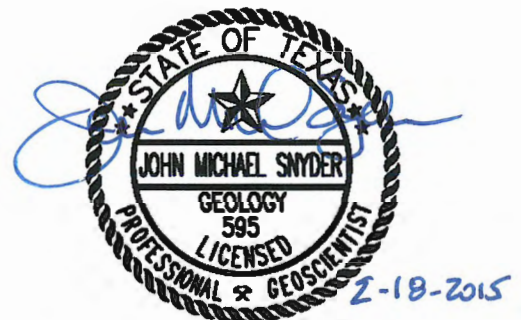
**PART III – SITE DEVELOPMENT PLAN
ATTACHMENT E
GEOLOGY REPORT**

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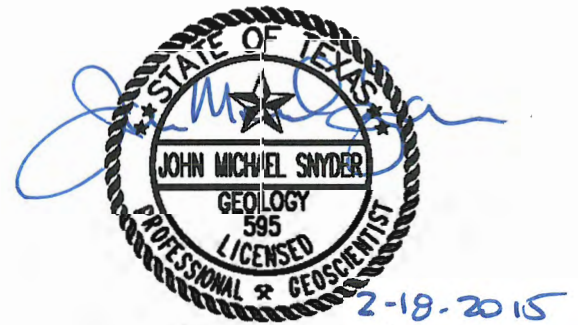
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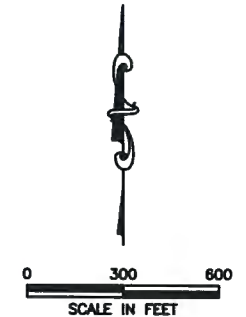
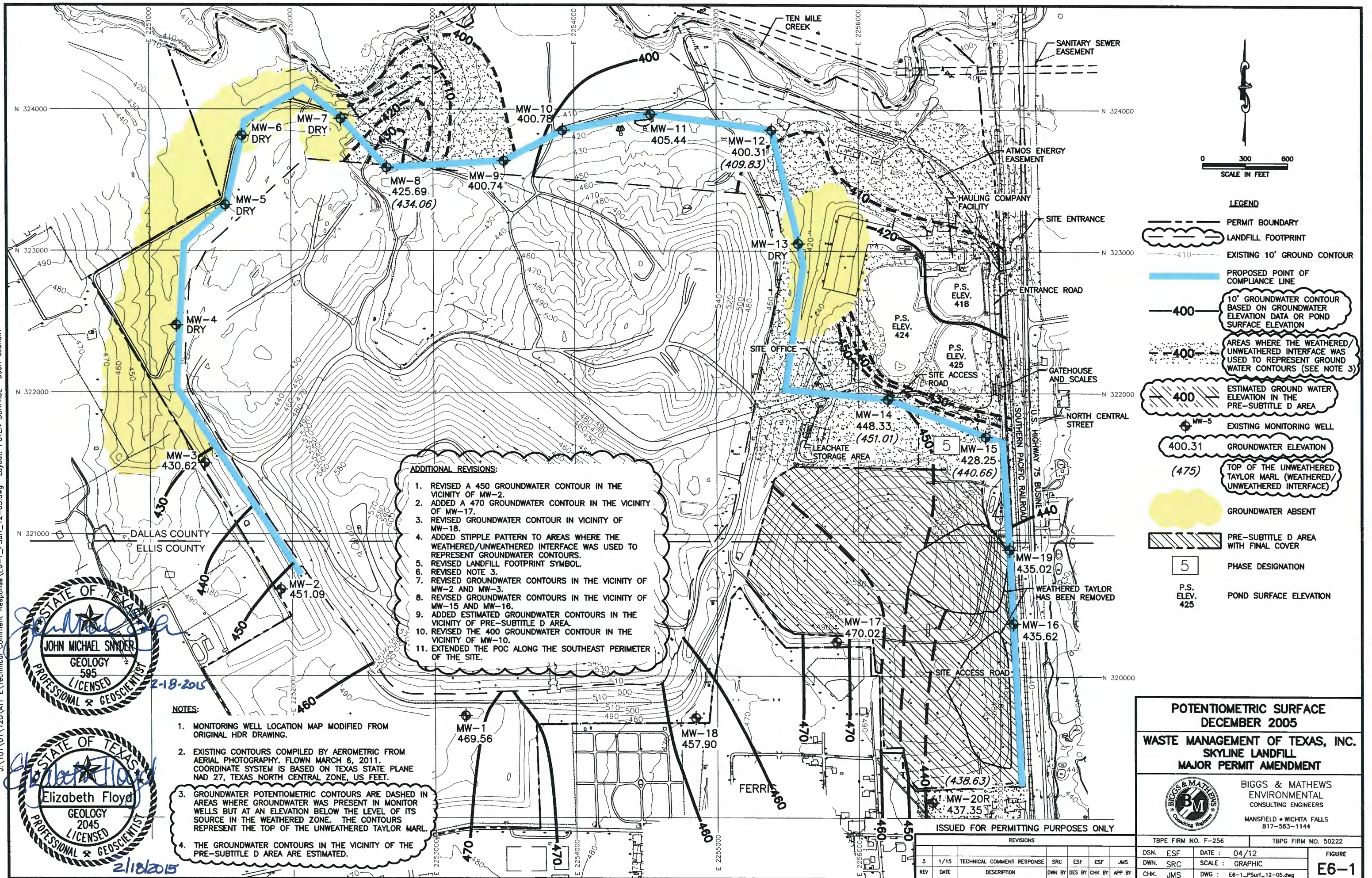
SKYLINE LANDFILL
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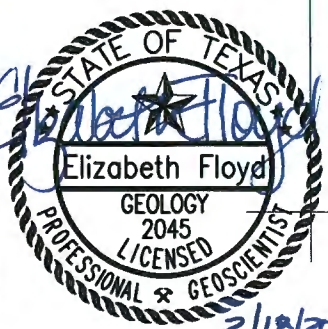
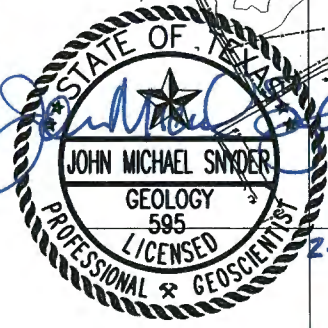
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- LEGEND**
- PERMIT BOUNDARY
 - LANDFILL FOOTPRINT
 - EXISTING 10' GROUND CONTOUR
 - PROPOSED POINT OF COMPLIANCE LINE
 - 10' GROUNDWATER CONTOUR BASED ON GROUNDWATER ELEVATION DATA OR POND SURFACE ELEVATION
 - AREAS WHERE THE WEATHERED/UNWEATHERED INTERFACE WAS USED TO REPRESENT GROUND WATER CONTOURS (SEE NOTE 3)
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 - GROUNDWATER ABSENT
 - PRE-SUBTITLE D AREA WITH FINAL COVER
 - PHASE DESIGNATION
 - P.S. ELEV. POND SURFACE ELEVATION

- ADDITIONAL REVISIONS:**
1. REVISED A 450 GROUNDWATER CONTOUR IN THE VICINITY OF MW-2.
 2. ADDED A 470 GROUNDWATER CONTOUR IN THE VICINITY OF MW-17.
 3. REVISED GROUNDWATER CONTOUR IN VICINITY OF MW-18.
 4. ADDED STIPPLE PATTERN TO AREAS WHERE THE WEATHERED/UNWEATHERED INTERFACE WAS USED TO REPRESENT GROUNDWATER CONTOURS.
 5. REVISED LANDFILL FOOTPRINT SYMBOL.
 6. REVISED NOTE 3.
 7. REVISED GROUNDWATER CONTOURS IN THE VICINITY OF MW-2 AND MW-3.
 8. REVISED GROUNDWATER CONTOURS IN THE VICINITY OF MW-15 AND MW-16.
 9. ADDED ESTIMATED GROUNDWATER CONTOURS IN THE VICINITY OF PRE-SUBTITLE D AREA.
 10. REVISED THE 400 GROUNDWATER CONTOUR IN THE VICINITY OF MW-10.
 11. EXTENDED THE POC ALONG THE SOUTHEAST PERIMETER OF THE SITE.

- NOTES:**
1. MONITORING WELL LOCATION MAP MODIFIED FROM ORIGINAL HDR DRAWING.
 2. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL PHOTOGRAPHY, FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL ZONE, US FEET.
 3. GROUNDWATER POTENTIOMETRIC CONTOURS ARE DASHED IN AREAS WHERE GROUNDWATER WAS PRESENT IN MONITOR WELLS BUT AT AN ELEVATION BELOW THE LEVEL OF ITS SOURCE IN THE WEATHERED ZONE. THE CONTOURS REPRESENT THE TOP OF THE UNWEATHERED TAYLOR MARL.
 4. THE GROUNDWATER CONTOURS IN THE VICINITY OF THE PRE-SUBTITLE D AREA ARE ESTIMATED.



**POTENTIOMETRIC SURFACE
DECEMBER 2005**

**WASTE MANAGEMENT OF TEXAS, INC.
SKYLINE LANDFILL
MAJOR PERMIT AMENDMENT**

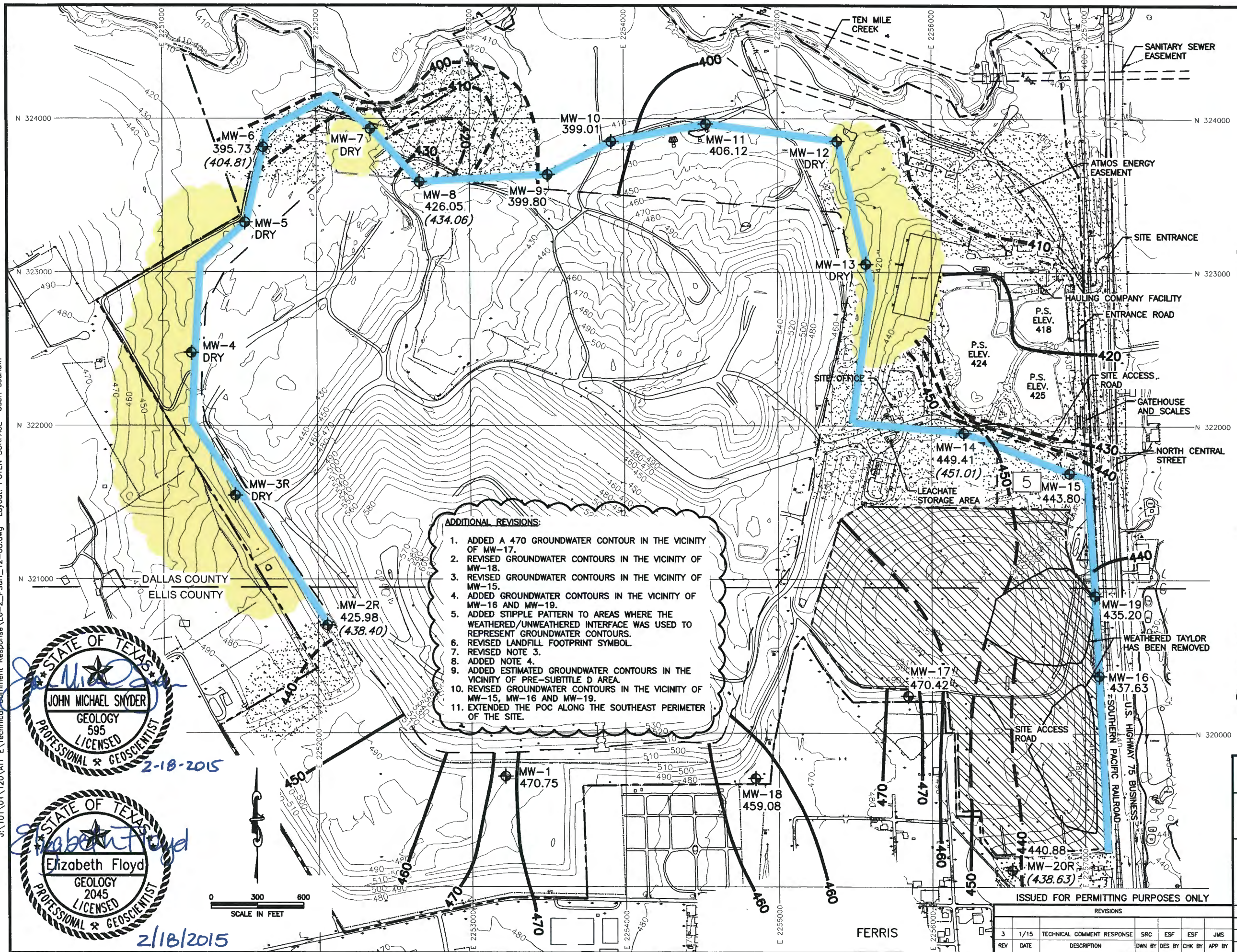
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REVISIONS		DSN.	ESF	DATE :	04/12	FIGURE
3	1/15	TECHNICAL COMMENT RESPONSE	SRC	ESF	JMS	E6-1
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	

TBPE FIRM NO. F-256 TBPG FIRM NO. 50222

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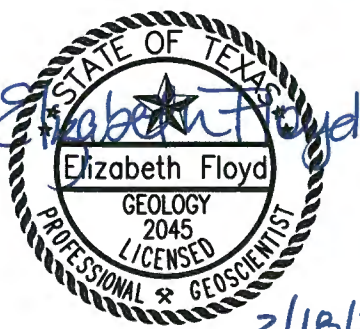
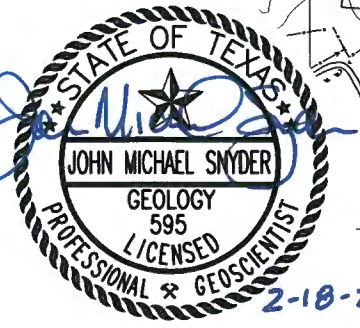


LEGEND

- PERMIT BOUNDARY
- LANDFILL FOOTPRINT
- EXISTING 10' GROUND CONTOUR
- PROPOSED POINT OF COMPLIANCE LINE
- 10' GROUNDWATER CONTOUR BASED ON GROUNDWATER ELEVATION DATA OR POND SURFACE ELEVATION
- AREAS WHERE THE WEATHERED/UNWEATHERED INTERFACE WAS USED TO REPRESENT GROUND WATER CONTOURS (SEE NOTE 3)
- ESTIMATED GROUND WATER ELEVATION IN THE PRE-SUBTITLE D AREA
- EXISTING MONITORING WELL
- GROUNDWATER ELEVATION
- TOP OF THE UNWEATHERED TAYLOR MARL (WEATHERED/UNWEATHERED INTERFACE)
- GROUNDWATER ABSENT
- PRE-SUBTITLE D AREA WITH FINAL COVER
- PHASE DESIGNATION
- P.S. ELEV.
- POND SURFACE ELEVATION

- ADDITIONAL REVISIONS:**
1. ADDED A 470 GROUNDWATER CONTOUR IN THE VICINITY OF MW-17.
 2. REVISED GROUNDWATER CONTOURS IN THE VICINITY OF MW-18.
 3. REVISED GROUNDWATER CONTOURS IN THE VICINITY OF MW-15.
 4. ADDED GROUNDWATER CONTOURS IN THE VICINITY OF MW-16 AND MW-19.
 5. ADDED STIPPLE PATTERN TO AREAS WHERE THE WEATHERED/UNWEATHERED INTERFACE WAS USED TO REPRESENT GROUNDWATER CONTOURS.
 6. REVISED LANDFILL FOOTPRINT SYMBOL.
 7. REVISED NOTE 3.
 8. ADDED NOTE 4.
 9. ADDED ESTIMATED GROUNDWATER CONTOURS IN THE VICINITY OF PRE-SUBTITLE D AREA.
 10. REVISED GROUNDWATER CONTOURS IN THE VICINITY OF MW-15, MW-16 AND MW-19.
 11. EXTENDED THE POC ALONG THE SOUTHEAST PERIMETER OF THE SITE.

- NOTES:**
1. MONITORING WELL LOCATION MAP MODIFIED FROM ORIGINAL HDR DRAWING.
 2. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL PHOTOGRAPHY, FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL ZONE, US FEET.
 3. GROUNDWATER POTENTIOMETRIC CONTOURS ARE DASHED IN AREAS WHERE GROUNDWATER WAS PRESENT IN MONITOR WELLS BUT AT AN ELEVATION BELOW THE LEVEL OF ITS SOURCE IN THE WEATHERED ZONE. THE CONTOURS REPRESENT THE TOP OF THE UNWEATHERED TAYLOR MARL.
 4. THE GROUNDWATER CONTOURS IN THE VICINITY OF THE PRE-SUBTITLE D AREA ARE ESTIMATED.



**POTENTIOMETRIC SURFACE
DECEMBER 2008**

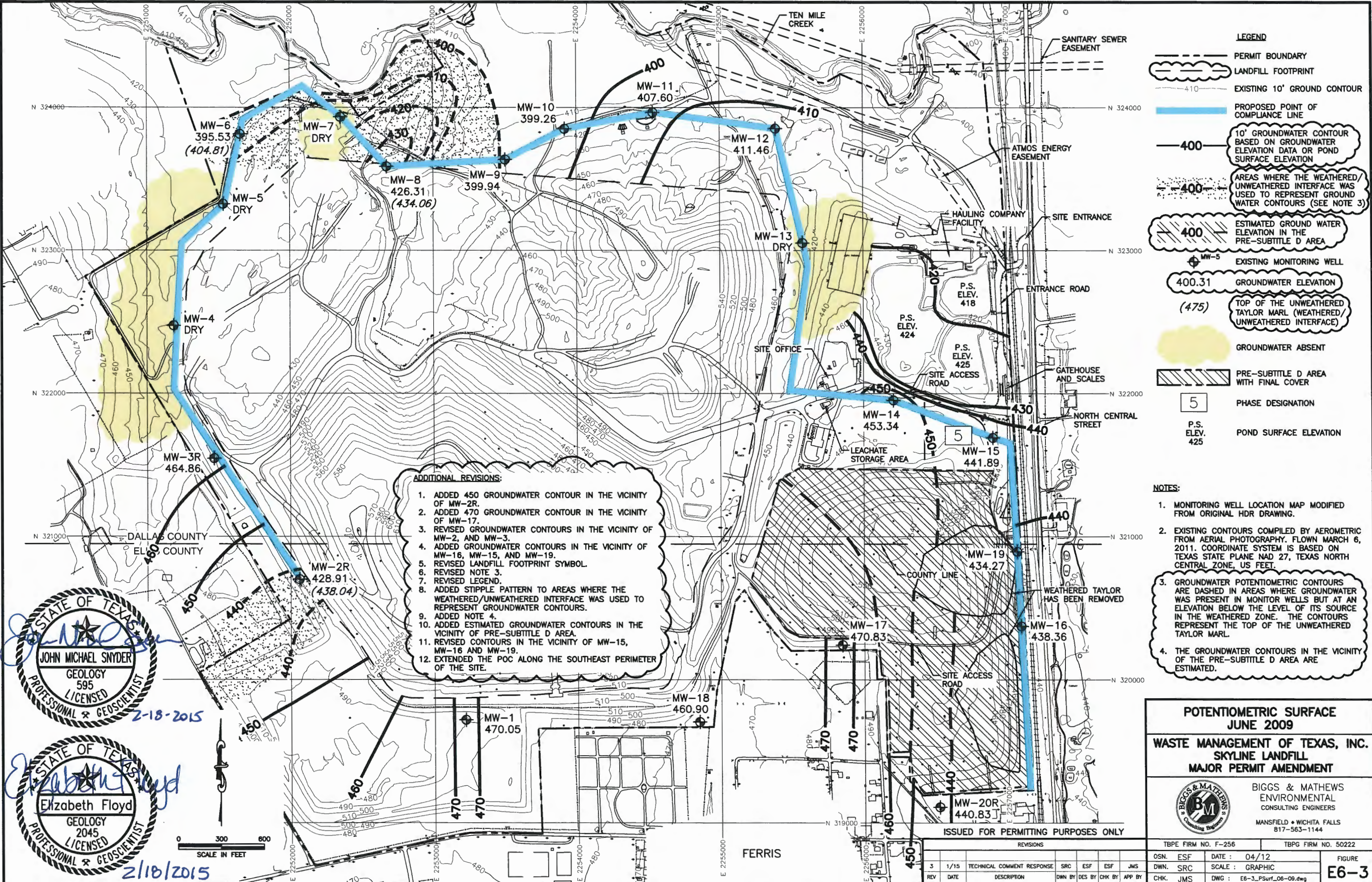
**WASTE MANAGEMENT OF TEXAS, INC.
SKYLINE LANDFILL
MAJOR PERMIT AMENDMENT**

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REVISIONS		DSN.	ESF	DATE	04/12	FIGURE
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
3	1/15	TECHNICAL COMMENT RESPONSE	SRC	ESF	ESF	JMS
DWN.	SRC	SCALE :	GRAPHIC			
CHK.	JMS	DWG :	E6-2_PSurf_12-08.dwg			

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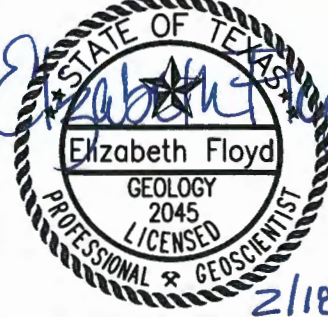
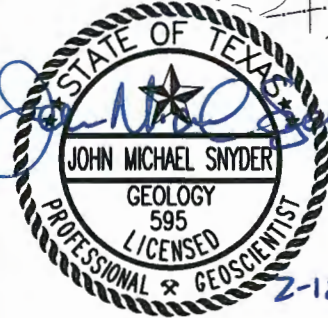


LEGEND

- PERMIT BOUNDARY
- LANDFILL FOOTPRINT
- EXISTING 10' GROUND CONTOUR
- PROPOSED POINT OF COMPLIANCE LINE
- 10' GROUNDWATER CONTOUR BASED ON GROUNDWATER ELEVATION DATA OR POND SURFACE ELEVATION
- AREAS WHERE THE WEATHERED/UNWEATHERED INTERFACE WAS USED TO REPRESENT GROUND WATER CONTOURS (SEE NOTE 3)
- ESTIMATED GROUND WATER ELEVATION IN THE PRE-SUBTITLE D AREA
- EXISTING MONITORING WELL
- GROUNDWATER ELEVATION
- TOP OF THE UNWEATHERED TAYLOR MARL (WEATHERED/UNWEATHERED INTERFACE)
- GROUNDWATER ABSENT
- PRE-SUBTITLE D AREA WITH FINAL COVER
- PHASE DESIGNATION
- POND SURFACE ELEVATION

- ADDITIONAL REVISIONS:**
1. ADDED 450 GROUNDWATER CONTOUR IN THE VICINITY OF MW-2R.
 2. ADDED 470 GROUNDWATER CONTOUR IN THE VICINITY OF MW-17.
 3. REVISED GROUNDWATER CONTOURS IN THE VICINITY OF MW-2, AND MW-3.
 4. ADDED GROUNDWATER CONTOURS IN THE VICINITY OF MW-16, MW-15, AND MW-19.
 5. REVISED LANDFILL FOOTPRINT SYMBOL.
 6. REVISED NOTE 3.
 7. REVISED LEGEND.
 8. ADDED STIPPLE PATTERN TO AREAS WHERE THE WEATHERED/UNWEATHERED INTERFACE WAS USED TO REPRESENT GROUNDWATER CONTOURS.
 9. ADDED NOTE 4.
 10. ADDED ESTIMATED GROUNDWATER CONTOURS IN THE VICINITY OF PRE-SUBTITLE D AREA.
 11. REVISED CONTOURS IN THE VICINITY OF MW-15, MW-16 AND MW-19.
 12. EXTENDED THE POC ALONG THE SOUTHEAST PERIMETER OF THE SITE.

- NOTES:**
1. MONITORING WELL LOCATION MAP MODIFIED FROM ORIGINAL HDR DRAWING.
 2. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL PHOTOGRAPHY. FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL ZONE, US FEET.
 3. GROUNDWATER POTENTIOMETRIC CONTOURS ARE DASHED IN AREAS WHERE GROUNDWATER WAS PRESENT IN MONITOR WELLS BUT AT AN ELEVATION BELOW THE LEVEL OF ITS SOURCE IN THE WEATHERED ZONE. THE CONTOURS REPRESENT THE TOP OF THE UNWEATHERED TAYLOR MARL.
 4. THE GROUNDWATER CONTOURS IN THE VICINITY OF THE PRE-SUBTITLE D AREA ARE ESTIMATED.



**POTENTIOMETRIC SURFACE
JUNE 2009**

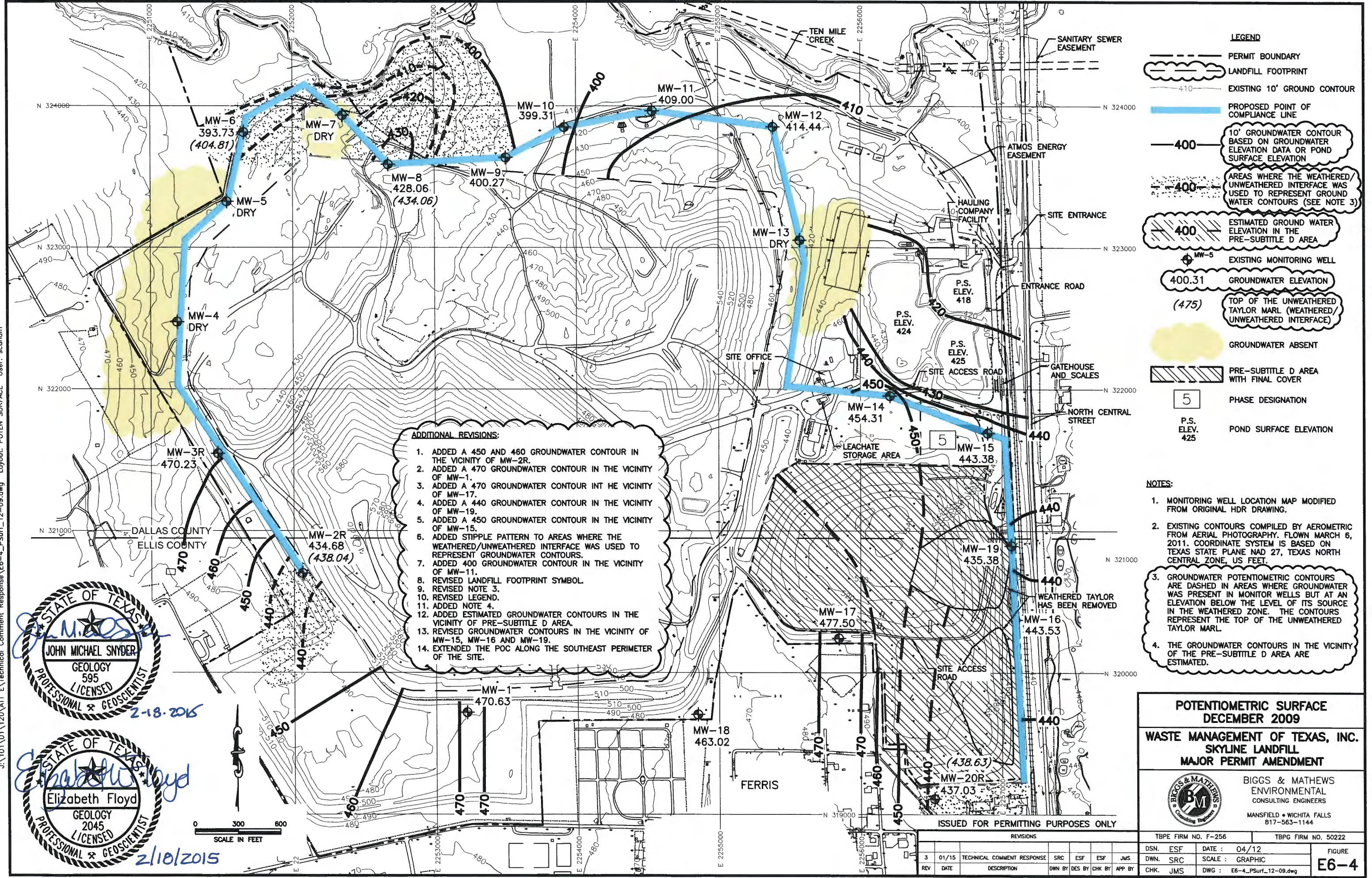
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SKYLINE LANDFILL
MAJOR PERMIT AMENDMENT**

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REVISIONS		OSN.	ESF	DATE	TBPE FIRM NO. F-256		TBPG FIRM NO. 50222	
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REV	DATE	DESCRIPTION	DWN	BY	CHK	SCALE		E6-3
			BY	BY	BY	GRAPHIC		
			CHK	JMS	DWG	E6-3_PSurf_06-09.dwg		

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LEGEND

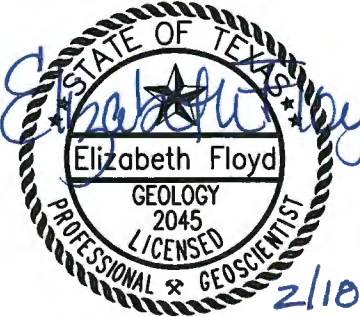
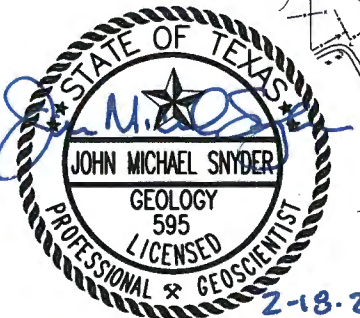
- PERMIT BOUNDARY
- LANDFILL FOOTPRINT
- EXISTING 10' GROUND CONTOUR
- PROPOSED POINT OF COMPLIANCE LINE
- 10' GROUNDWATER CONTOUR BASED ON GROUNDWATER ELEVATION DATA OR POND SURFACE ELEVATION
- AREAS WHERE THE WEATHERED/UNWEATHERED INTERFACE WAS USED TO REPRESENT GROUND WATER CONTOURS (SEE NOTE 3)
- ESTIMATED GROUND WATER ELEVATION IN THE PRE-SUBTITLE D AREA
- EXISTING MONITORING WELL
- GROUNDWATER ELEVATION
- TOP OF THE UNWEATHERED TAYLOR MARL (WEATHERED/UNWEATHERED INTERFACE)
- GROUNDWATER ABSENT
- PRE-SUBTITLE D AREA WITH FINAL COVER
- PHASE DESIGNATION
- P.S. ELEV.
- POND SURFACE ELEVATION

ADDITIONAL REVISIONS:

1. ADDED A 450 AND 460 GROUNDWATER CONTOUR IN THE VICINITY OF MW-2R.
2. ADDED A 470 GROUNDWATER CONTOUR IN THE VICINITY OF MW-1.
3. ADDED A 470 GROUNDWATER CONTOUR IN THE VICINITY OF MW-17.
4. ADDED A 440 GROUNDWATER CONTOUR IN THE VICINITY OF MW-19.
5. ADDED A 450 GROUNDWATER CONTOUR IN THE VICINITY OF MW-15.
6. ADDED STIPPLE PATTERN TO AREAS WHERE THE WEATHERED/UNWEATHERED INTERFACE WAS USED TO REPRESENT GROUNDWATER CONTOURS.
7. ADDED 400 GROUNDWATER CONTOUR IN THE VICINITY OF MW-11.
8. REVISED LANDFILL FOOTPRINT SYMBOL.
9. REVISED NOTE 3.
10. REVISED LEGEND.
11. ADDED NOTE 4.
12. ADDED ESTIMATED GROUNDWATER CONTOURS IN THE VICINITY OF PRE-SUBTITLE D AREA.
13. REVISED GROUNDWATER CONTOURS IN THE VICINITY OF MW-15, MW-16 AND MW-19.
14. EXTENDED THE POC ALONG THE SOUTHEAST PERIMETER OF THE SITE.

NOTES:

1. MONITORING WELL LOCATION MAP MODIFIED FROM ORIGINAL HDR DRAWING.
2. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL PHOTOGRAPHY, FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL ZONE, US FEET.
3. GROUNDWATER POTENTIOMETRIC CONTOURS ARE DASHED IN AREAS WHERE GROUNDWATER WAS PRESENT IN MONITOR WELLS BUT AT AN ELEVATION BELOW THE LEVEL OF ITS SOURCE IN THE WEATHERED ZONE. THE CONTOURS REPRESENT THE TOP OF THE UNWEATHERED TAYLOR MARL.
4. THE GROUNDWATER CONTOURS IN THE VICINITY OF THE PRE-SUBTITLE D AREA ARE ESTIMATED.



REVISIONS							TBPE FIRM NO. F-256		TBPG FIRM NO. 50222	
3	01/15	TECHNICAL COMMENT RESPONSE	SRC	ESF	ESF	JMS	DSN. ESF	DATE :	04/12	FIGURE
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY	DWN. SRC	SCALE :	GRAPHIC	
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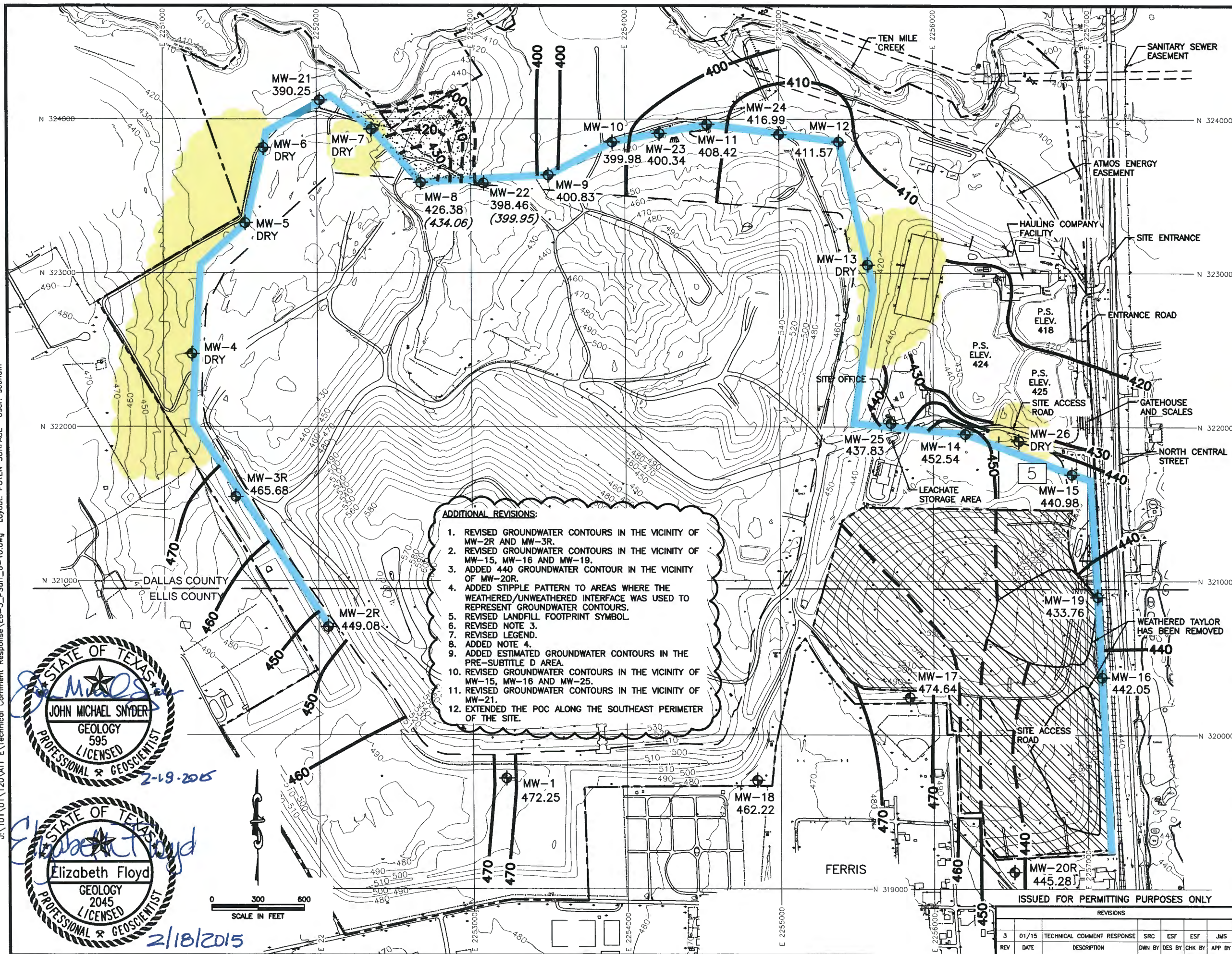
**POTENTIOMETRIC SURFACE
DECEMBER 2009**

**WASTE MANAGEMENT OF TEXAS, INC.
SKYLINE LANDFILL
MAJOR PERMIT AMENDMENT**

**BIGGS & MATHEWS
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LEGEND

- PERMIT BOUNDARY
- LANDFILL FOOTPRINT
- EXISTING 10' GROUND CONTOUR
- PROPOSED POINT OF COMPLIANCE LINE
- 10' GROUNDWATER CONTOUR BASED ON GROUNDWATER ELEVATION DATA OR POND SURFACE ELEVATION
- 400 AREAS WHERE THE WEATHERED/UNWEATHERED INTERFACE WAS USED TO REPRESENT GROUND WATER CONTOURS (SEE NOTE 3)
- 400 ESTIMATED GROUND WATER ELEVATION IN THE PRE-SUBTITLE D AREA
- MW-5 EXISTING MONITORING WELL
- 400.31 GROUNDWATER ELEVATION
- (475) TOP OF THE UNWEATHERED TAYLOR MARL (WEATHERED/UNWEATHERED INTERFACE)
- GROUNDWATER ABSENT
- PRE-SUBTITLE D AREA WITH FINAL COVER
- 5 PHASE DESIGNATION
- P.S. ELEV. 425 POND SURFACE ELEVATION

- ADDITIONAL REVISIONS:**
1. REVISED GROUNDWATER CONTOURS IN THE VICINITY OF MW-2R AND MW-3R.
 2. REVISED GROUNDWATER CONTOURS IN THE VICINITY OF MW-15, MW-16 AND MW-19.
 3. ADDED 440 GROUNDWATER CONTOUR IN THE VICINITY OF MW-20R.
 4. ADDED STIPPLE PATTERN TO AREAS WHERE THE WEATHERED/UNWEATHERED INTERFACE WAS USED TO REPRESENT GROUNDWATER CONTOURS.
 5. REVISED LANDFILL FOOTPRINT SYMBOL.
 6. REVISED NOTE 3.
 7. REVISED LEGEND.
 8. ADDED NOTE 4.
 9. ADDED ESTIMATED GROUNDWATER CONTOURS IN THE PRE-SUBTITLE D AREA.
 10. REVISED GROUNDWATER CONTOURS IN THE VICINITY OF MW-15, MW-16 AND MW-25.
 11. REVISED GROUNDWATER CONTOURS IN THE VICINITY OF MW-21.
 12. EXTENDED THE POC ALONG THE SOUTHEAST PERIMETER OF THE SITE.

- NOTES:**
1. MONITORING WELL LOCATION MAP MODIFIED FROM ORIGINAL HDR DRAWING.
 2. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL PHOTOGRAPHY, FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE MAD 27, TEXAS NORTH CENTRAL ZONE, US FEET.
 3. GROUNDWATER POTENTIOMETRIC CONTOURS ARE DASHED IN AREAS WHERE GROUNDWATER WAS PRESENT IN MONITOR WELLS BUT AT AN ELEVATION BELOW THE LEVEL OF ITS SOURCE IN THE WEATHERED ZONE. THE CONTOURS REPRESENT THE TOP OF THE UNWEATHERED TAYLOR MARL.
 4. THE GROUNDWATER CONTOURS IN THE VICINITY OF THE PRE-SUBTITLE D AREA ARE ESTIMATED.



SCALE IN FEET
0 300 600

**POTENTIOMETRIC SURFACE
JUNE 2010**

**WASTE MANAGEMENT OF TEXAS, INC.
SKYLINE LANDFILL
MAJOR PERMIT AMENDMENT**

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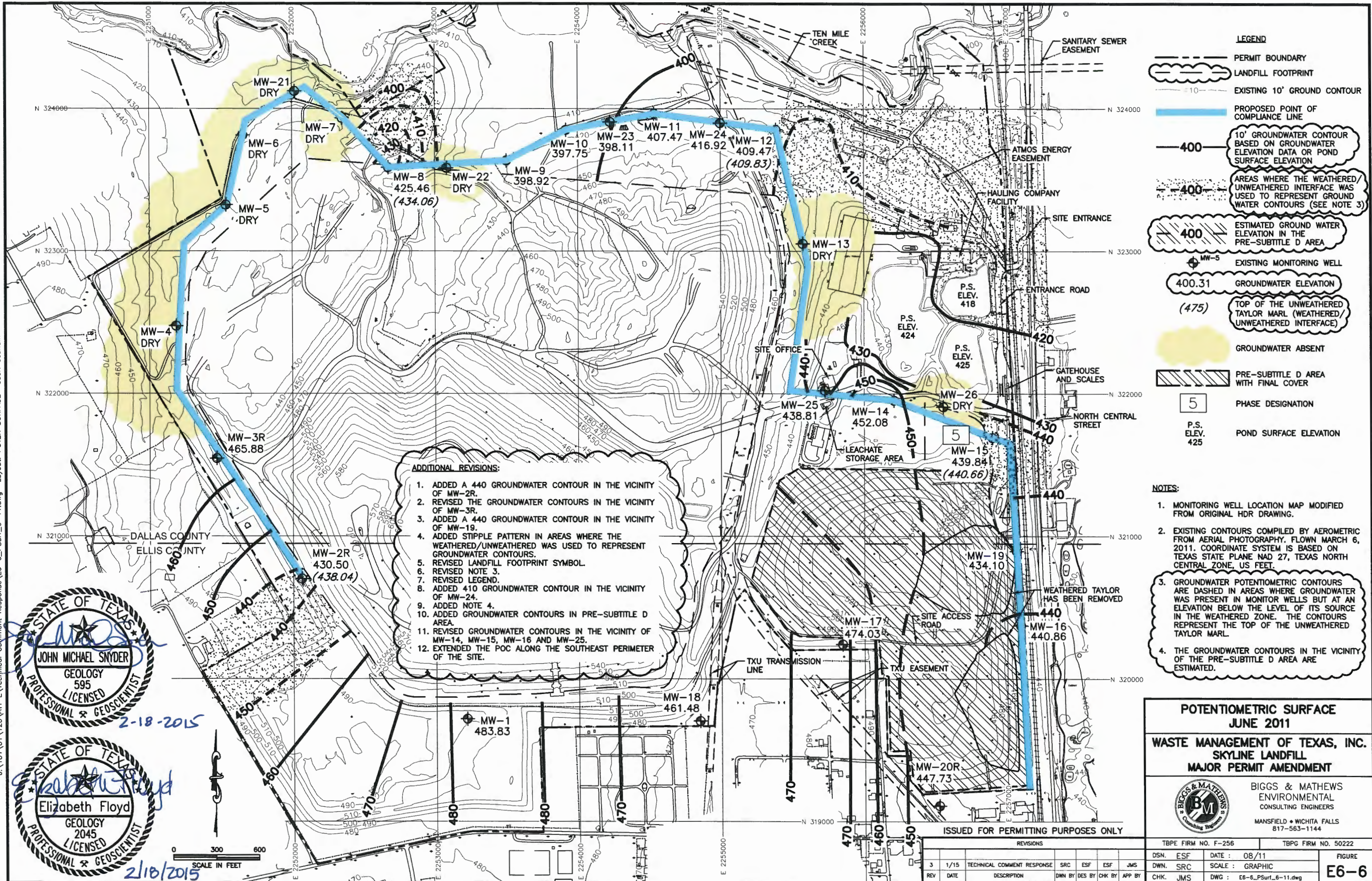
ISSUED FOR PERMITTING PURPOSES ONLY

REVISIONS		DSN.	ESF	DATE :	04/12	FIGURE
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
3	01/15	TECHNICAL COMMENT RESPONSE	SRC	ESF	ESF	JMS

DSN. ESF DATE : 04/12 FIGURE
DWN. SRC SCALE : GRAPHIC E6-5
CHK. JMS DWG : E6-5_PSurf_6-10.dwg

TBPE FIRM NO. F-256 TBPG FIRM NO. 50222

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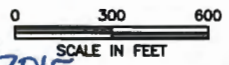
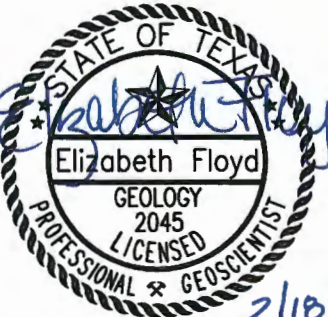
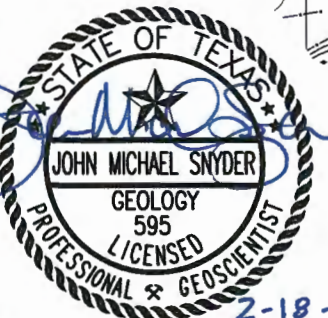


LEGEND

- PERMIT BOUNDARY
- LANDFILL FOOTPRINT
- EXISTING 10' GROUND CONTOUR
- PROPOSED POINT OF COMPLIANCE LINE
- 10' GROUNDWATER CONTOUR BASED ON GROUNDWATER ELEVATION DATA OR POND SURFACE ELEVATION
- AREAS WHERE THE WEATHERED/UNWEATHERED INTERFACE WAS USED TO REPRESENT GROUND WATER CONTOURS (SEE NOTE 3)
- 400 ESTIMATED GROUND WATER ELEVATION IN THE PRE-SUBTITLE D AREA
- EXISTING MONITORING WELL
- GROUNDWATER ELEVATION
- TOP OF THE UNWEATHERED TAYLOR MARL (WEATHERED/UNWEATHERED INTERFACE)
- GROUNDWATER ABSENT
- PRE-SUBTITLE D AREA WITH FINAL COVER
- PHASE DESIGNATION
- POND SURFACE ELEVATION

- ADDITIONAL REVISIONS:**
1. ADDED A 440 GROUNDWATER CONTOUR IN THE VICINITY OF MW-2R.
 2. REVISED THE GROUNDWATER CONTOURS IN THE VICINITY OF MW-3R.
 3. ADDED A 440 GROUNDWATER CONTOUR IN THE VICINITY OF MW-19.
 4. ADDED STIPPLE PATTERN IN AREAS WHERE THE WEATHERED/UNWEATHERED WAS USED TO REPRESENT GROUNDWATER CONTOURS.
 5. REVISED LANDFILL FOOTPRINT SYMBOL.
 6. REVISED NOTE 3.
 7. REVISED LEGEND.
 8. ADDED 410 GROUNDWATER CONTOUR IN THE VICINITY OF MW-24.
 9. ADDED NOTE 4.
 10. ADDED GROUNDWATER CONTOURS IN PRE-SUBTITLE D AREA.
 11. REVISED GROUNDWATER CONTOURS IN THE VICINITY OF MW-14, MW-15, MW-16 AND MW-25.
 12. EXTENDED THE POC ALONG THE SOUTHEAST PERIMETER OF THE SITE.

- NOTES:**
1. MONITORING WELL LOCATION MAP MODIFIED FROM ORIGINAL HDR DRAWING.
 2. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL PHOTOGRAPHY, FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL ZONE, US FEET.
 3. GROUNDWATER POTENTIOMETRIC CONTOURS ARE DASHED IN AREAS WHERE GROUNDWATER WAS PRESENT IN MONITOR WELLS BUT AT AN ELEVATION BELOW THE LEVEL OF ITS SOURCE IN THE WEATHERED ZONE. THE CONTOURS REPRESENT THE TOP OF THE UNWEATHERED TAYLOR MARL.
 4. THE GROUNDWATER CONTOURS IN THE VICINITY OF THE PRE-SUBTITLE D AREA ARE ESTIMATED.



REVISIONS						TBPE FIRM NO. F-256		TBPG FIRM NO. 50222		
3	1/15	TECHNICAL COMMENT RESPONSE	SRC	ESF	ESF	JMS	DSN, ESF	DATE :	08/11	FIGURE
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY	DWN, SRC	SCALE :	GRAPHIC	E6-6
							CHK, JMS	DWG :	E6-6_PSurf_6-11.dwg	

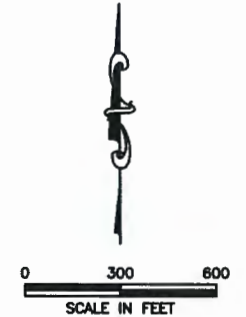
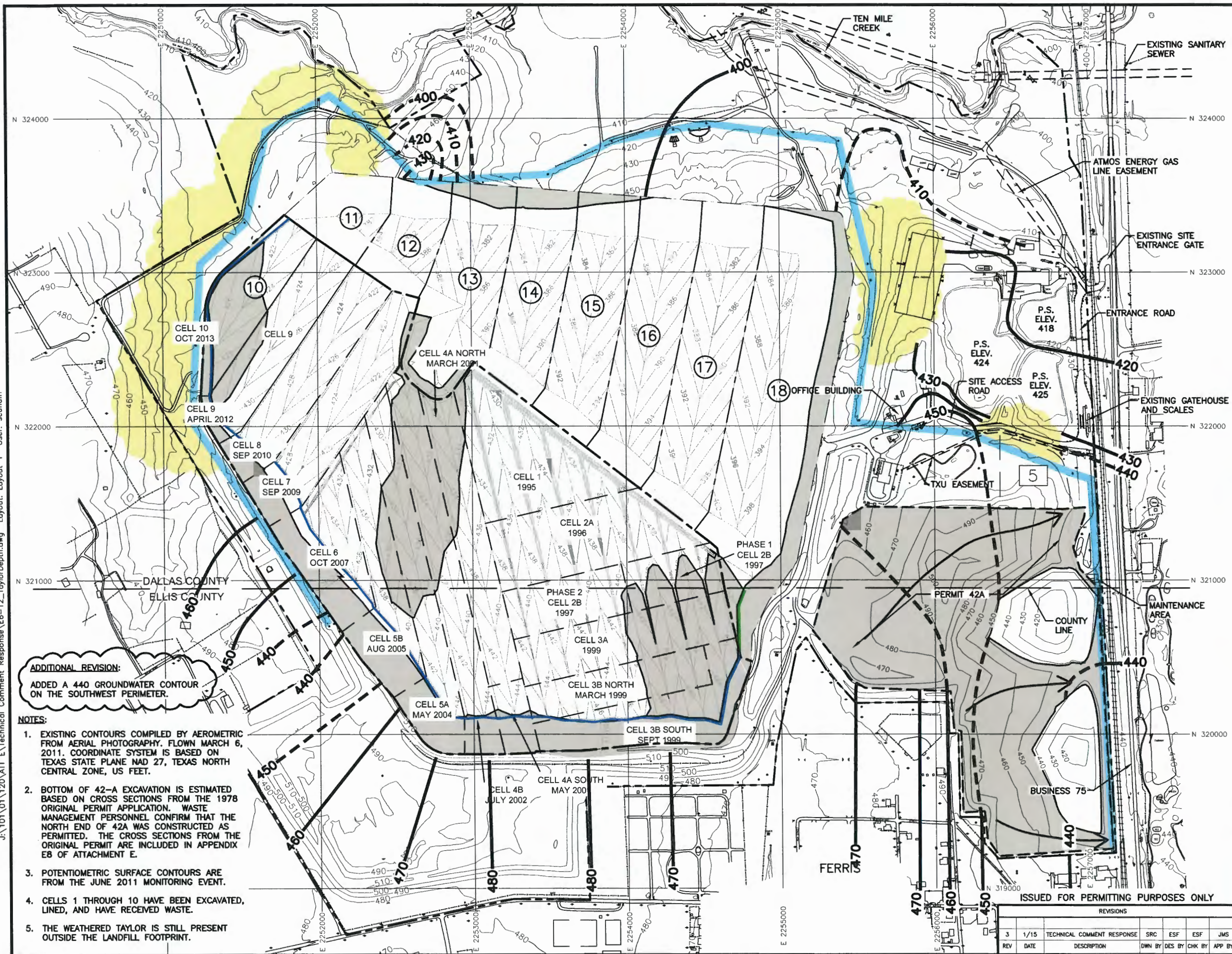
**POTENTIOMETRIC SURFACE
JUNE 2011**

**WASTE MANAGEMENT OF TEXAS, INC.
SKYLINE LANDFILL
MAJOR PERMIT AMENDMENT**

BIGGS & MATHEWS
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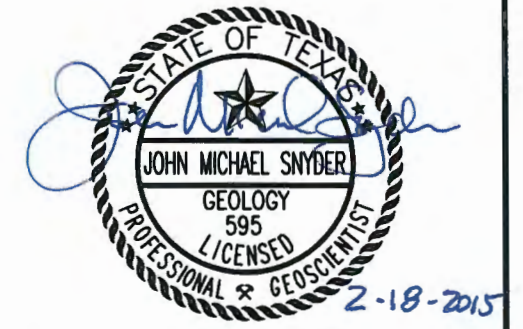
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- LEGEND**
- PERMIT BOUNDARY
 - LANDFILL FOOTPRINT
 - 410 EXISTING 10' GROUND CONTOUR
 - 392 2' EXCAVATION CONTOUR
 - DEVELOPED LIMIT OF WASTE
 - EXISTING UNDERDRAIN/KEYWAY COMPLEX
 - UNDERDRAIN/KEYWAY COMPLEX TO BE CONSTRUCTED
 - WEATHERED TAYLOR REMAINING BENEATH THE FOOTPRINT
 - PROPOSED POINT OF COMPLIANCE LINE
 - 400 10' GROUNDWATER CONTOUR
 - 400 THE WEATHERED/UNWEATHERED INTERFACE WAS USED TO INTERPRET GROUND WATER CONTOURS
 - GROUNDWATER ABSENT
 - 5 PHASE DESIGNATION
 - P.S. ELEV. 425 POND SURFACE ELEVATION
 - GROUNDWATER FLOW DIRECTION

ADDITIONAL REVISION:
 ADDED A 440 GROUNDWATER CONTOUR ON THE SOUTHWEST PERIMETER.

- NOTES:**
1. EXISTING CONTOURS COMPILED BY AEROMETRIC FROM AERIAL PHOTOGRAPHY. FLOWN MARCH 6, 2011. COORDINATE SYSTEM IS BASED ON TEXAS STATE PLANE NAD 27, TEXAS NORTH CENTRAL ZONE, US FEET.
 2. BOTTOM OF 42-A EXCAVATION IS ESTIMATED BASED ON CROSS SECTIONS FROM THE 1978 ORIGINAL PERMIT APPLICATION. WASTE MANAGEMENT PERSONNEL CONFIRM THAT THE NORTH END OF 42A WAS CONSTRUCTED AS PERMITTED. THE CROSS SECTIONS FROM THE ORIGINAL PERMIT ARE INCLUDED IN APPENDIX E8 OF ATTACHMENT E.
 3. POTENTIOMETRIC SURFACE CONTOURS ARE FROM THE JUNE 2011 MONITORING EVENT.
 4. CELLS 1 THROUGH 10 HAVE BEEN EXCAVATED, LINED, AND HAVE RECEIVED WASTE.
 5. THE WEATHERED TAYLOR IS STILL PRESENT OUTSIDE THE LANDFILL FOOTPRINT.



EXCAVATION PLAN SHOWING REMAINING WEATHERED TAYLOR MARL
WASTE MANAGEMENT OF TEXAS, INC.
SKYLINE LANDFILL
MAJOR PERMIT AMENDMENT

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REVISIONS					TBPE FIRM NO. F-256		TBPG FIRM NO. 50222		
3	1/15	TECHNICAL COMMENT RESPONSE	SRC	ESF	ESF	JMS	DSN. ESF	DATE : 08/12	FIGURE
REV	DATE	DESCRIPTION	OWN BY	DES BY	CHK BY	APP BY	DWN. SRC	SCALE : GRAPHIC	E6-12
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