McCARTY ROAD LANDFILL
CITY OF HOUSTON, HARRIS COUNTY, TEXAS
TCEQ PERMIT NO. MSW-261B

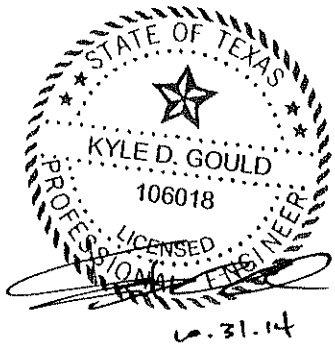
PERMIT MODIFICATION

REMOVAL OF SEMI-CIRCULAR SLURRY WALL

Prepared for

McCarty Road Landfill TX, LP

October 2014



Prepared by

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WBC Project No. 0120-439-11-166-01

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October 31, 2014
Project No. 0120-439-11-166-01

Mr. Chance Goodin
MC 124
Municipal Solid Waste Permits Section
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, Texas 78711-3087

Re: Permit Modification
Removal of Semi-Circular Slurry Wall
McCarty Road Landfill – Permit No. MSW-261B
Harris County, Texas

Dear Mr. Goodin:

The purpose of this permit modification, submitted on behalf of McCarty Road Landfill TX, LP, is to update the currently permitted Site Development Plan (SDP) to remove the semi-circular slurry wall that was recently permitted for the site. The semi-circular slurry wall was permitted as part of a settlement agreement that was completed prior to the approval of the permit amendment application, Texas Commission on Environmental Quality (TCEQ) Permit No. 261B, on August 25, 2008.

A detailed discussion of the proposed update is provided in the attached permit modification. It is requested that this permit be processed per Title 30 Texas Administrative Code (TAC) §305.70(l), with public notice. A detailed permit modification justification is included in the permit modification narrative.

One original and one copy are provided for your use and distribution. Consistent with Title 30 TAC §305.70(f), a copy of this submittal was sent to the TCEQ regional office. A copy of this submittal was placed in the site operating record for this facility.

Additionally, TCEQ Form 20650 which includes the applicant's signature page on page 5, is included in Appendix D. In accordance with Title 30 TAC §330.59(h)(1), a $150 application fee has been submitted to the TCEQ, as documented on page 1 of the Form 20650.

During the course of your review, if you need additional information or have any questions, please call.

Sincerely,
Weaver Boos Consultants, LLC–Southwest

Kyle D. Gould, P.E.
Senior Project Engineer

Attachments: Permit Modification (1 original and 1 copy)

cc: TCEQ Region 12 Office
Mike Wehr, Harris County Public Health & Environmental Services
Sarah Utley, Harris County Attorney's Office
John Q. Hargrove, P.E., McCarty Road Landfill TX, LP

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PERMIT MODIFICATION NARRATIVE

Introduction

The purpose of this permit modification is to update the Site Development Plan (SDP) to remove the semi-circular slurry wall that was permitted as part of a permit modification approved by the Texas Commission on Environmental Quality (TCEQ) on September 20, 2011. The semi-circular slurry wall was part of a settlement agreement that was negotiated with Harris County prior to the approval of the permit amendment application (TCEQ Permit No. 261B) on August 25, 2008.

Background

Prior to the issuance of Permit No. 261B, a settlement agreement was reached with Harris County. The settlement agreement was completed and executed on December 4, 2007, while TCEQ Permit No. 261B was pending with the State Office of Hearing Examiners (SOAH) – SOAH Docket No. 582-07-24-85. The SOAH referred the case back to the TCEQ and the permit was issued on August 25, 2008. Although the settlement agreement was completed prior to the issuance of the permit, the slurry walls were not part of the permit conditions and were not included as part of the permit until after its issuance.

The "Addition of Slurry Walls and Observation Wells" permit modification, which was approved by the TCEQ on September 20, 2011, added the semi-circular slurry wall to the SDP. The semi-circular slurry wall was not included in the modification for the east slurry wall southern extension, which was approved on October 26, 2009, because the Settlement Agreement allowed for additional time to (1) study the slurry walls to verify that they would function as designed and confirm that there would be no unintended consequences and (2) complete the design and permitting of the semi-circular slurry wall. The final design and configuration of the slurry walls was a function of detailed discussions with Harris County following the issuance of the permit. The reason for the removal of the semi-circular slurry wall from the SDP is discussed in the following section.

Semi-Circular Slurry Wall

As shown on Figures 1 and 2, the semi-circular slurry wall is currently permitted to be located in the northeast portion of the site. The intended purpose of the semi-circular slurry wall was to isolate groundwater in the area of groundwater wells MW-17 and MW-28.

However, both Harris County and McCarty Road Landfill have agreed that the semi-circular slurry wall is no longer necessary. The operation of the bioremediation efforts at the facility along with the installation of the east slurry wall and natural attenuation have shown decreased levels of COC's over the past several years. In addition, the constructability of the semi-circular slurry wall is not favorable due to its location within the floodplain, the removal of dense vegetation (natural barrier), and possible damage to the existing east slurry wall.

The two parties have coordinated to complete an amendment to the settlement agreement to remove the semi-circular slurry wall from the agreement and the permit. The amended settlement agreement was executed on March 11, 2014. Additionally, the semi-circular slurry wall is not required by regulation. Therefore, the semi-circular slurry wall will not be constructed.

SDP Replacement Pages

Consistent with Title 30 Texas Administrative Code (TAC) §305.70(e)(3), applicable drawings and text within the currently permitted SDP that are affected by the changes in this modification are included in Appendix A (redline/strikeout version) and Appendix B (clean version). The table included in Appendix A contains the list of replacement pages.

Permit Modification Justification

It is requested that this application be processed per Title 30 TAC §305.70(l). The slurry wall being removed by this permit modification was added consistent with the December 4, 2007 Harris County Settlement Agreement and was not required by regulation. The SDP updates included in this permit modification are minor in nature, do not substantially alter the currently permitted conditions, and do not reduce the capability of the facility to protect human health and the environment. However, per the outcome of a meeting with the TCEQ on October 6, 2014, this modification will be processed as a noticed modification per §305.70(l). A list and map of adjacent landowners have been included in Appendix C per §330.59(c)(3).

STATE OF TEXAS
KYLE D. GOULD
106018
PROFESSIONAL LICENSED ENGINEER
1-31-14

HCFCD DITCH (P116-00-00)
HCFCD EASEMENT
LEY ROAD
FORMER SOIL BORROW AREA
HOUSTON PIPE LINE COMPANY EASEMENT
REFER TO FIGURE 2
HCFCD EASEMENT
GREENS BAYOU (P100-00-00)
SUBTITLE D AREA
UNION PACIFIC RAILROAD SPUR EASEMENT
HCFCD DITCH (P114-00-00)
HCFCD EASEMENT
EXISTING FLARE FACILITY
EXISTING MAINTENANCE AND PAINT FACILITY
EXISTING SCALEHOUSE
EXISTING OFFICE BUILDING
EXISTING SITE ACCESS ROAD (OATES ROAD)
RECYCLING PLANT
SITE ENTRANCE FROM McCARTY ROAD
CITY OF HOUSTON ROAD EASEMENT
FORMER LANDFILL
EXISTING LEACHATE STORAGE TANK
HL&P EASEMENT
SITE ENTRANCE
HL&P EASEMENT
UNION PACIFIC RAILROAD
U.S. HIGHWAY 90 (McCARTY ROAD)

LEGEND

- PERMIT BOUNDARY (MSW PERMIT NO. 26IB)
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- EXISTING 10' CONTOUR
- PERMITTED EAST SLURRY WALL EXTENSION (SEE NOTE 8)
- PERMITTED NORTHERN EAST SLURRY WALL EXTENSION
- PERMITTED SEMI-CIRCULAR SLURRY WALL (TO BE REMOVED)
- PROPOSED SLURRY WALL EXTENSION OF GWRT COMPACTED CLAY CUTOFF WALL
- CLAY CUTOFF WALL
- EXISTING COMPACTED CLAY SLOPE LINER (SEE NOTE 3)
- EXISTING 1988 SLURRY WALL (SEE NOTE 3 AND 4)
- EXISTING 1999 DEEP SLURRY WALL (SEE NOTE 5)
- MW-4UB — EXISTING DETECTION GROUNDWATER MONITORING WELL
- OW7-UB — AAWWE OBSERVATION WELL
- OW-1 — HARRIS COUNTY OBSERVATION WELL
- GMP-M — EXISTING LANDFILL GAS MONITORING PROBE
- GMP-K — EXISTING LANDFILL GAS MONITORING PROBE TO BE DECOMMISSIONED
- GMP-K(R) — LANDFILL GAS MONITORING PROBE
- EXISTING GROUNDWATER MONITOR WELL/ PERIODIC EXTRACTION WELL (CORRECTIVE ACTION)
- EXTRACTION WELL (CORRECTIVE ACTION)
- OBSERVATION WELL (CORRECTIVE ACTION)
- PIEZOMETER (CORRECTIVE ACTION)
- BORING
- PIEZOMETER
- EASEMENT BOUNDARY
- GROUND WATER RECOVERY TRENCH (SEE NOTE 6)
- SUMP 2 — GROUND WATER RECOVERY TRENCH SUMP (SEE NOTE 6)

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
2. PERMIT BOUNDARY AND EASEMENTS WERE REPRODUCED FROM COSTELLO, INC. STANDARD LAND SURVEY DRAWING, DATED MARCH 2004.
3. THE LOCATIONS OF THE 1988 SLURRY WALLS, COMPACTED CLAY SLOPE LINER, AND TRENCH LINER WERE REPRODUCED FROM A DECEMBER 1992 DRAWING PREPARED BY HALL SOUTHWEST.
4. THE SLURRY WALL WAS CONSTRUCTED IN 1988 AS DETAILED IN THE WOODWARD-CLYDE CONSULTANT AS-BUILT REPORT, DATED MAY 1988.
5. DEEP SLURRY WALL LOCATION REPRODUCED FROM MARCH 2000 SLURRY WALL CONSTRUCTION QUALITY ASSURANCE REPORT PREPARED BY ENVIRONMENTAL RESOURCES MANAGEMENT.
6. REFER TO PARTS I/II, FIGURE I/II-3.3-CORRECTIVE MEASURES PLAN FOR FURTHER INFORMATION REGARDING THE GROUNDWATER RECOVERY TRENCH AND SUMP.
7. THE EAST SLURRY WALL EXTENSION WAS APPROVED BY THE TCEQ ON OCTOBER 29, 2009. CONSTRUCTION OF EAST SLURRY WALL EXTENSION IS EXPECTED TO BEGIN IN EARLY 2011.

0 300 600
SCALE IN FEET

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 10/2014
FILE: 0120-439-11
CAD: FIG 1-SITE PLAN.DWG
DRAWN BY: SRF
DESIGN BY: DOL
REVIEWED BY: JPY

PREPARED FOR
MCCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION

PERMIT MODIFICATION SITE PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
WWW.WEAVERBOOS.COM

FIGURE 1

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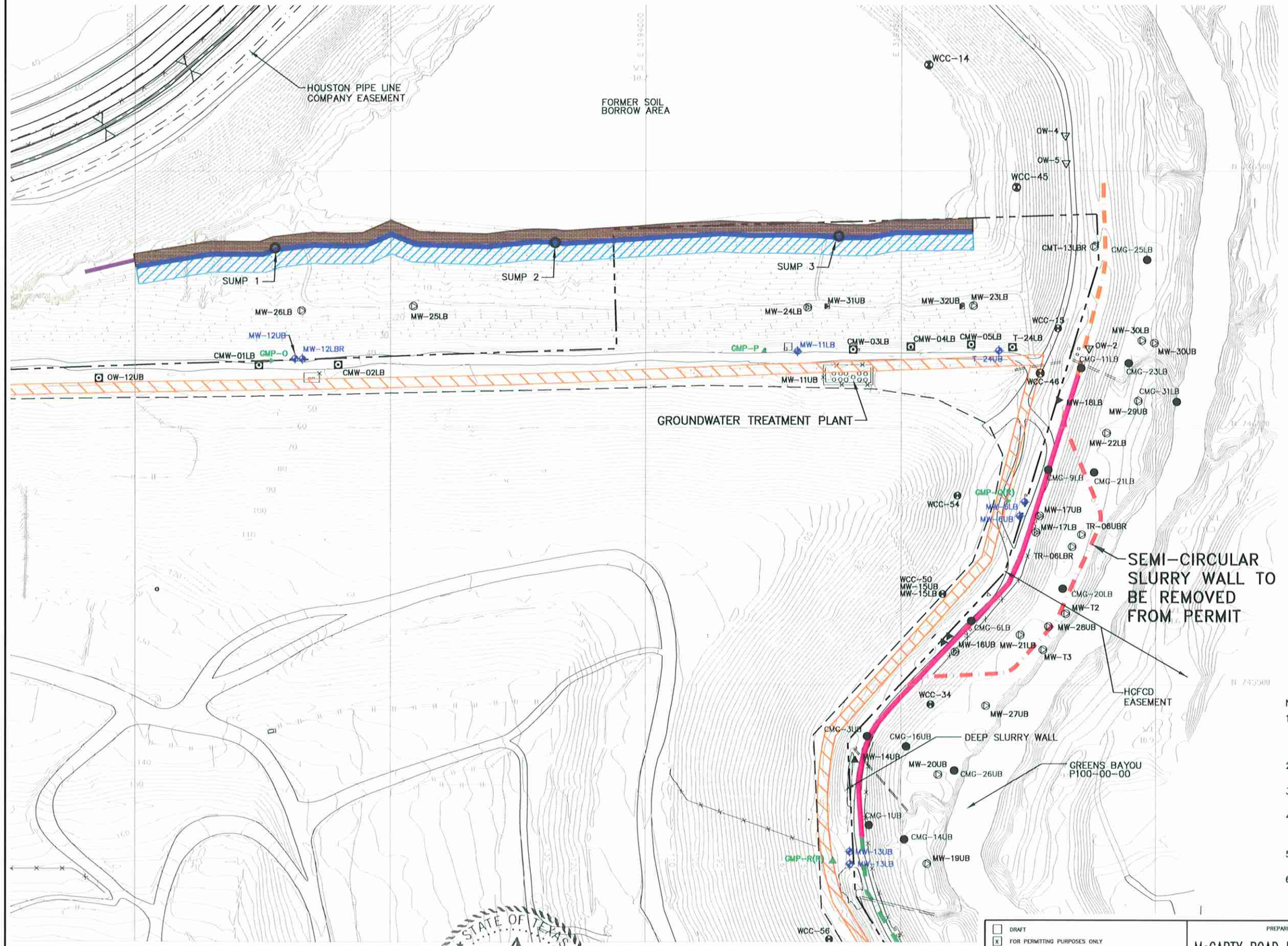
G:\0120\439\SLURRY WALL REMOVAL MOD\FIGURE 1-SITE PLAN.dwg, 10/22/2014 12:52:49 P.M. rsellers, 1:2



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STATE OF TEXAS
KYLE D. GOULD
106018
LICENSED
PROFESSIONAL ENGINEER
1-31-14

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DATE: 10/2014
FILE: 0120-439-11
CAD: FIG 2-SLURRY WALL LOCS.DWG

DRAWN BY: SRF
DESIGN BY: DOL
REVIEWED BY: JPY

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PREPARED FOR
McCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION

PERMIT MODIFICATION SLURRY WALL LOCATIONS

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
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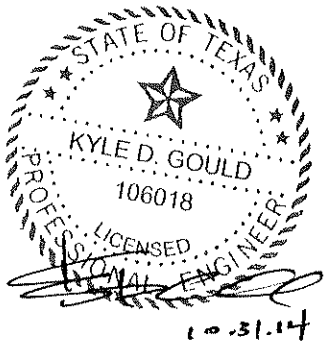
FIGURE 2

O:\0120\439\SLURRY WALL REMOVAL MOD\FIGURE 2-SLURRY WALL LOCATIONS.dwg, 10/20/2014 1:13:26 PM, rsellers, 1:2

APPENDIX A

SDP REPLACEMENT PAGES

(REDLINE/STRIKEOUT COPY)



INTRODUCTION

The following replacement pages have been developed to replace applicable sections of the Major Permit Amendment prepared by Weaver Boos Consultants, LLC–Southwest (WBC) and approved by the TCEQ on August 25, 2008 and subsequent permit modifications prepared by WBC and approved by the TCEQ in October 2009 and September 2011. The following table summarizes the proposed replacement pages for the currently approved plans.

Site Development Plan Replacement Pages

Replacement or Additional Page Number	Explanation
Part III – SDP, Cover Page and Table of Contents	Pages have been signed and sealed for updated SDP.
Attachment 1 – Cover Page	Page has been signed and sealed for updated SDP.
Attachment 1 – Attachment 1A – General Site Plan	Removed semi-circular slurry wall.
Attachment 1 – Attachment 1I – Existing Bottom of Waste Plan	Removed semi-circular slurry wall.
Attachment 2 – Cover Page	Page has been signed and sealed for updated SDP.
Attachment 2 – Attachment 2A – Typical Section Site Plan	Removed semi-circular slurry wall.
Attachment 2 – Attachment 2A.1 – Existing Bottom of Waste Plan	Removed semi-circular slurry wall.
Attachment 2 – Attachment 2A.2 – Separatory Overliner System Plan	Removed semi-circular slurry wall.
Attachment 6 – Cover Page	Page has been signed and sealed for updated SDP.
Attachment 6 – Attachment 6D – Cover Page and Table of Contents	Pages have been signed and sealed for updated SDP.
Attachment 6 – Attachment 6D – Page 6D-6	Page updated to remove text regarding the semi-circular slurry wall.
Attachment 6 – Attachment 6D – Attachment 6D.9	Updated to show the proposed slurry walls.
Attachment 6 – Attachment 6D – Attachment 6D.10	Updated to remove the semi-circular slurry wall.
Attachment 6 – Attachment 6D – Attachment 6D.13	Attachments updated to remove details of the semi-circular slurry walls.
Attachment 6 – Attachment 6D – Attachment 6D.16	Semi-circular wall plan has been deleted.
Attachment 6 – Attachment 6D – Attachment 6D.17	Semi-circular slurry wall profile has been deleted.

Site Development Plan Replacement Pages (Continued)

Replacement or Additional Page Number	Explanation
Attachment 6 – Attachment 6D – Attachment 6D.18	Page has been updated to revise page numbers referenced on the details and to update the attachment number to Attachment 6D.16.
Attachment 8 – Cover Page	Page has been signed and sealed for updated SDP.
Attachment 8 – Figure 8.1 – Largest Area to Require Final Cover	Removed semi-circular slurry wall.

McCARTY ROAD LANDFILL
CITY OF HOUSTON, HARRIS COUNTY, TEXAS
TCEQ PERMIT NO. MSW-261B

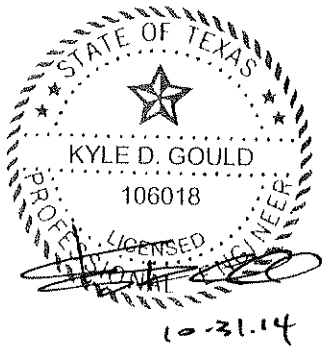
PART III – SITE DEVELOPMENT PLAN
SITE DEVELOPMENT PLAN NARRATIVE

Prepared for

McCarty Road Landfill TX, LP

Approved Site Development Plan
August 2008
Revised June 2009
Revised October 2009
Revised February 2010
Revised December 2010

Revised October 2014



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WBC Project No. 0120-439-11-166-01

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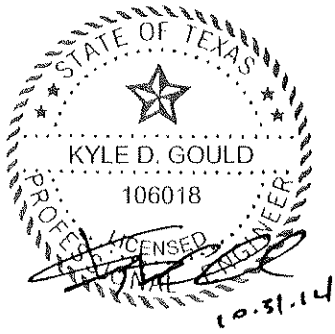

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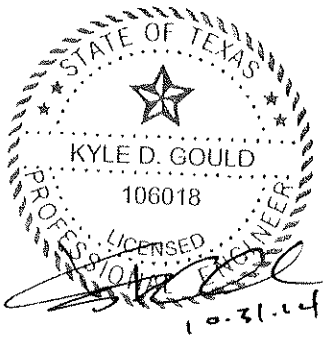

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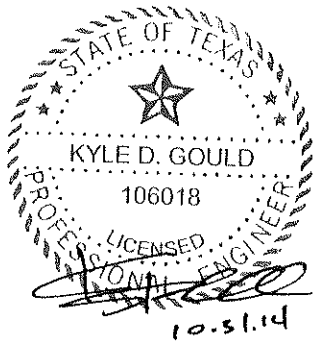
6A.28 Pond Outlet Structure Details
6A.29 Pond Outlet Structure Details
6A.30 Pond Outlet Structure Details



Attachment 6B Harris County Flood Control District Information

Attachment 6C Floodplain Information

Attachment 6D Liner System, Separatory Overliner System, and Final Cover System Details

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~~6D.16 Semi-Circular Slurry Wall Plan~~
~~6D.17 Semi-Circular Slurry Wall Profile~~
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Attachment 9 Applicant's Statement

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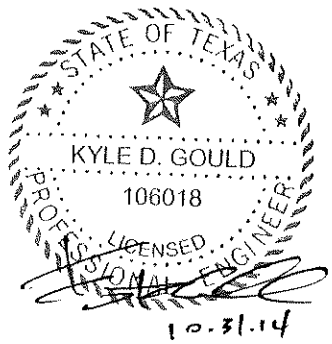
Attachment 11 Groundwater Sampling and Analysis Plan (GWSAP)

Attachment 12 Final Closure Plan

Attachment 13 Postclosure Care Plan

Attachment 14 Landfill Gas Management Plan

Attachment 15 Leachate and Contaminated Water Plan



McCARTY ROAD LANDFILL
CITY OF HOUSTON, HARRIS COUNTY, TEXAS
TCEQ PERMIT NO. MSW-261B

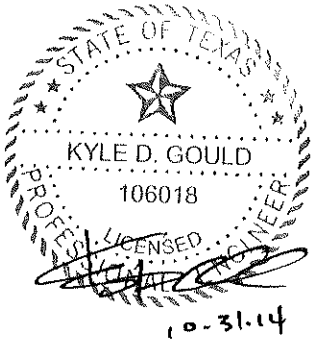
PART III – SITE DEVELOPMENT PLAN
ATTACHMENT 1
SITE LAYOUT PLANS

Prepared for

McCarty Road Landfill TX, LP

Approved Site Development Plan
August 2008
Revised June 2009
Revised October 2009
Revised December 2010

Revised October 2014



Prepared by

Weaver Boos Consultants, LLC–Southwest
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6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WBC Project No. 0120-439-11-84-01

CONTENTS

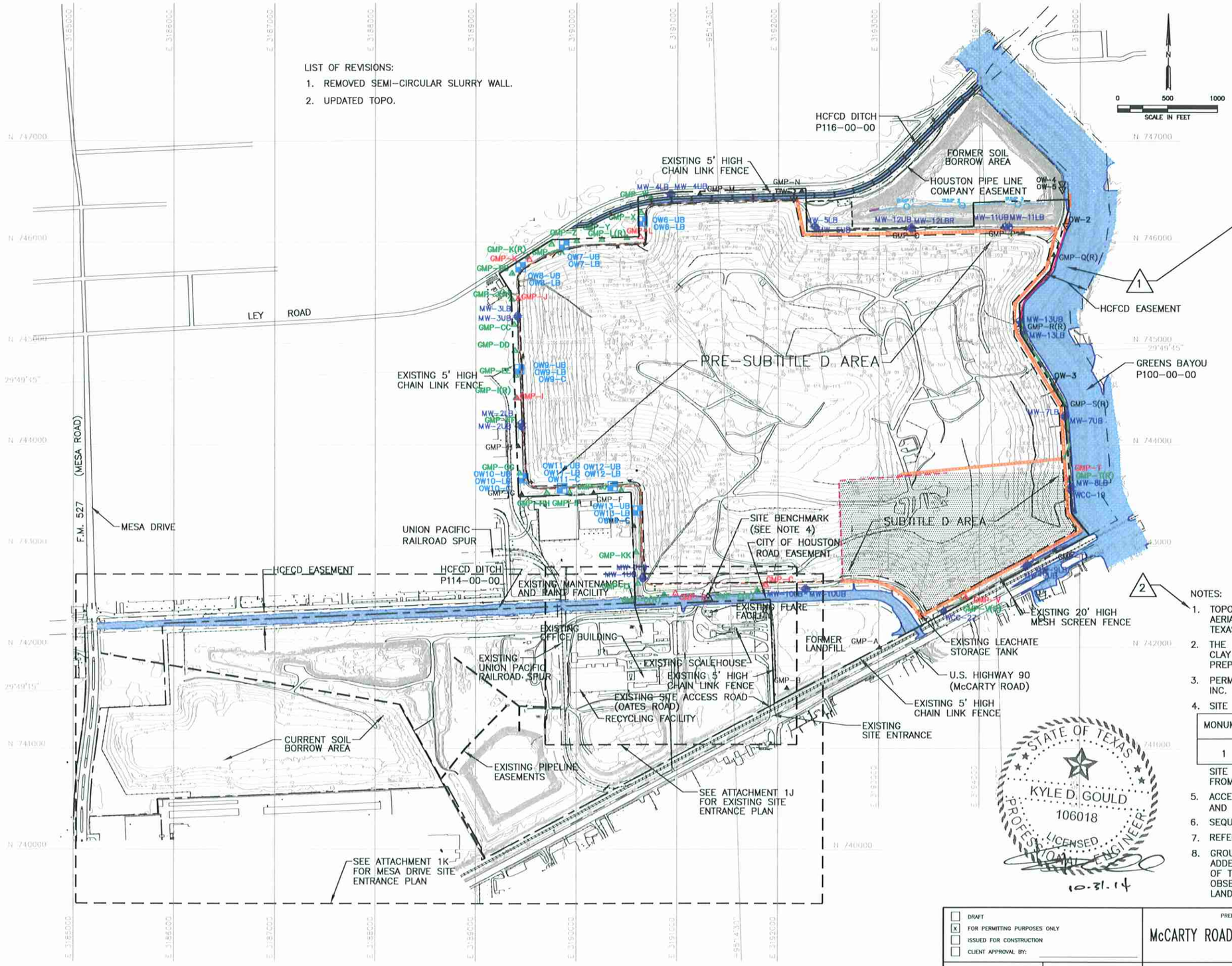
1A General Site Plan
1B Sector Development Sequence
1B.1 Access Control Plan
1C Typical Section A
1D Sector Development Plan I
1E Sector Development Plan II
1F Sector Development Plan III
1G Sector Development Plan IV
1H Landfill Completion Plan
1I Existing Bottom of Waste Plan
1I.1 Separatory Overliner System Plan
1J Existing Site Entrance Plan
1K Mesa Drive Site Entrance Plan

This attachment addresses §330.56(a).

10.31.14

LIST OF REVISIONS:

1. REMOVED SEMI-CIRCULAR SLURRY WALL.
2. UPDATED TOPO.



LEGEND

- PERMIT BOUNDARY
- PROPERTY BOUNDARY
- LIMITS OF WASTE
- DEED RESTRICTION BOUNDARY (SEE NOTE 7)
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- EXISTING 10' CONTOUR
- COMPACTED CLAY SLOPE LINER
- CLAY CUTOFF WALL
- SLURRY WALL
- DEEP SLURRY WALL
- NORTHERN EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- SLURRY WALL EXTENSION OF GWRT (REFER TO ATT. 6D)
- EXISTING GAS EXTRACTION WELL
- EXISTING GAS HEADER
- MW-4UB — EXISTING DETECTION GROUNDWATER MONITORING WELL
- OW7-UB — PROPOSED OBSERVATION WELL (SEE NOTE 8)
- OW-1 — OBSERVATION WELL (SEE NOTE 8)
- GMP-M — EXISTING LANDFILL GAS MONITORING PROBE
- GMP-J — EXISTING LANDFILL GAS MONITORING PROBE TO BE DECOMMISSIONED
- GMP-J(R) — PROPOSED LANDFILL GAS MONITORING PROBE (SEE NOTE 9)
- PERIMETER FENCE
- EASEMENT BOUNDARY
- SITE BENCHMARK (SEE NOTE 4)
- EXISTING SUBTITLE D COMPOSITE LINER AREA
- 100-YR FLOODPLAIN (REFER TO ATTACHMENT 6C)
- EXISTING PIPELINE EASEMENTS
- GROUND WATER RECOVERY TRENCH
- SUMP 2 — GROUND WATER RECOVERY TRENCH SUMP
- 1 — INDICATES REVISION (SEE LIST OF REVISIONS)

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
2. THE LOCATIONS OF THE SLURRY WALLS, COMPACTED CLAY SLOPE LINER, AND CLAY CUTOFF WALL WERE REPRODUCED FROM A DECEMBER 1992 DRAWING PREPARED BY HALL SOUTHWEST.
3. PERMIT BOUNDARY AND EASEMENTS WERE REPRODUCED FROM COSTELLO, INC. STANDARD LAND SURVEY DRAWING, DATED MARCH 2004.
4. SITE BENCHMARK INFORMATION IS LISTED BELOW.

MONUMENT	NORTHING	EASTING	ELEVATION
1	29°49'22"	-95°14'33"	43.53

SITE BENCHMARK ELEVATION INFORMATION TAKEN FROM NGVD 1929, 1973 AD3.

5. ACCESS TO THE SITE IS CONTROLLED BY EXISTING PERIMETER FENCE AND NATURAL BARRIERS (E.G., GREENS BAYOU).
6. SEQUENCE OF SITE DEVELOPMENT IS PROVIDED ON ATTACHMENTS 1D THROUGH 1G.
7. REFER TO ATTACHMENT 6, APPENDIX 6A-F FOR DEED RESTRICTION INFORMATION.
8. GROUNDWATER OBSERVATION WELLS OW-1, OW-2, OW-3, OW-4 AND OW-5 WERE ADDED ALONG THE NORTHERN AND EASTERN PERIMETER OF THE LANDFILL AS PART OF THE HARRIS COUNTY SETTLEMENT AGREEMENT. ADDITIONAL PROPOSED OBSERVATION WELLS WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.
9. PROPOSED PROBES DESIGNATED WITH "(R)" ARE REPLACEMENT PROBES. PROPOSED PROBES GMP-W THROUGH GMP-LL WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.

STATE OF TEXAS
KYLE D. GOULD
106018
PROFESSIONAL LICENSED ENGINEER
10-31-14

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY:

DATE: 08/2008
FILE: 0120-439-11
CAD: 1A-GEN_SITE_PLAN.DWG
DRAWN BY: JDW
DESIGN BY: SAN
REVIEWED BY: JPY

PREPARED FOR
McCARTY ROAD LANDFILL TX, LP

NO.	DATE	DESCRIPTION
1	02/2009	REMOVED MESA DRIVE ENTRANCE ROAD
2	10/2009	UPDATED GROUNDWATER OBSERVATION WELLS, LANDFILL GAS MONITORING PROBES, AND ADDED EAST SLURRY WALL.
3	12/2010	PERMIT MODIFICATION
4	10/2014	SEE LIST OF REVISIONS

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GENERAL SITE PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

WWW.WEAVERBOOS.COM

ATTACHMENT 1A

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O:\0120\439\SLURRY WALL REMOVAL MOD\1A-Gen_Site_Plan.dwg, 10/28/2014 2:32:12 PM, rsellers, 1:2

LIST OF REVISIONS:

1. REMOVED SEMI-CIRCULAR SLURRY WALL.
2. UPDATED TOPO.

STATE OF TEXAS
KYLE D. GOULD
106018
LICENSED
PROFESSIONAL ENGINEER
10.21.14

HCFCD DITCH P116-00-00
LEY ROAD
EXISTING 5' HIGH CHAIN LINK FENCE
FORMER SOIL BORROW AREA
HOUSTON PIPE LINE COMPANY EASEMENT
GREENS BAYOU P100-00-00
EXISTING 20' HIGH MESH SCREENING FENCE
UNION PACIFIC RAILROAD SPUR EASEMENT
HCFCD DITCH P114-00-00
EXISTING MAINTENANCE AND PAINT FACILITY
EXISTING FLARE FACILITY
EXISTING SCALEHOUSE
EXISTING OFFICE BUILDING
EXISTING SITE ACCESS ROAD (OATES ROAD)
SITE ENTRANCE FROM McCARTY ROAD
CITY OF HOUSTON ROAD EASEMENT
FORMER LANDFILL
HL&P EASEMENT
U.S. HIGHWAY 90 (McCARTY ROAD)
UNION PACIFIC RAILROAD
EXISTING 5' HIGH CHAIN LINK FENCE

0 300 600
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- EXISTING CONTOUR
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- COMPACTED CLAY SLOPE LINER
- CLAY CUTOFF WALL
- SLURRY WALL
- DEEP SLURRY WALL
- EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- NORTHERN EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- PROPOSED SLURRY WALL EXTENSION OF GWRT COMPACTED CLAY CUTOFF WALL (REFER TO ATT. 6D)
- 20 BOTTOM OF WASTE ELEVATION (FT-MSL) (SEE NOTE 4)
- 18 BOTTOM OF WASTE CONTOUR (SEE NOTE 5)
- PERIMETER FENCE
- EASEMENT BOUNDARY
- 100-YR FLOODPLAIN (REFER TO ATTACHMENT 6C)
- MW-4UB EXISTING DETECTION GROUNDWATER MONITORING WELL
- GMP-M EXISTING LANDFILL GAS MONITORING PROBE
- SUMP AND LEACHATE LINE
- GROUND WATER RECOVERY TRENCH
- SUMP 2 GROUND WATER RECOVERY TRENCH SUMP
- 1 INDICATES REVISION (SEE LIST OF REVISIONS)

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
2. THE LOCATIONS OF THE SLURRY WALLS, COMPACTED CLAY SLOPE LINER, AND CLAY CUTOFF WALL WERE REPRODUCED FROM A DECEMBER 1992 DRAWING PREPARED BY HALL SOUTHWEST.
3. SEE ATTACHMENT 15 FOR LEACHATE FORCEMAIN AND STORAGE TANK INFORMATION.
4. BOTTOM OF WASTE INFORMATION COMPILED FROM AVAILABLE SLER REPORTS FOR THE PRE-SUBTITLE D AREA.
5. SUMPS, LEACHATE COLLECTION PIPE AND BOTTOM OF WASTE ELEVATIONS FOR THE SUBTITLE D AREA WERE REPRODUCED FROM AN AS-BUILT SURVEY BY COSTELLO, INC.
6. SEQUENCE OF SITE DEVELOPMENT IS PROVIDED ON ATTACHMENTS 1D THROUGH 1G.
7. PERMIT BOUNDARY AND EASEMENTS WERE REPRODUCED FROM COSTELLO, INC. STANDARD LAND SURVEY DRAWING, DATED MARCH 2004.

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 08/2008
FILE: 0120-439-11
CAD: 11-TOP OF LINER.DWG
DRAWN BY: SRF
DESIGN BY: DOL
REVIEWED BY: JPY

PREPARED FOR
McCARTY ROAD LANDFILL TX, LP

REVISIONS		
NO.	DATE	DESCRIPTION
1	09/2008	ADDED EAST SLURRY WALL
2	12/2010	PERMIT MODIFICATION
3	10/2014	SEE LIST OF REVISIONS

EXISTING BOTTOM OF WASTE PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
WWW.WEAVERBOOS.COM

ATTACHMENT 1I

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O:\0120\439\SLURRY WALL REMOVAL MOD\11-TOP OF LINER.dwg, 10/28/2014 2:34:51 PM, rsellers, 1:2

McCARTY ROAD LANDFILL
CITY OF HOUSTON, HARRIS COUNTY, TEXAS
TCEQ PERMIT NO. MSW-261B

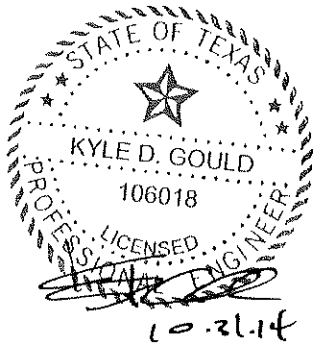
PART III – SITE DEVELOPMENT PLAN
ATTACHMENT 2
FILL CROSS SECTIONS

Prepared for

McCarty Road Landfill TX, LP

Approved Site Development Plan
August 2008
Revised October 2009
Revised December 2010

Revised October 2014



Prepared by

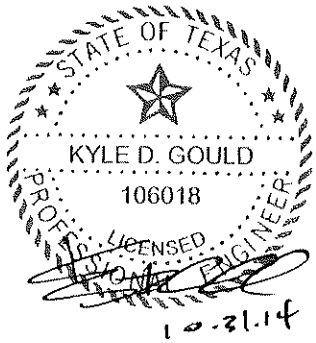
Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WBC Project No. 0120-439-11-84-01

CONTENTS

2A Typical Section Site Plan
2A.1 Bottom of Waste Plan
2A.2 Separatory Overliner Plan
2B Typical Section A
2C Typical Section B
2D Typical Section C
2E Typical Section D
2F Typical Section E
2G Typical Section F

This attachment addresses §330.56(b).



STATE OF TEXAS
KYLE D. GOULD
106018
PROFESSIONAL ENGINEER
LICENSED

10-21-14

LIST OF REVISIONS:

1. REMOVED SEMI-CIRCULAR SLURRY WALL.
2. UPDATED TOPO.

HCFCD DITCH P116-00-00

FORMER SOIL BORROW AREA

LEY ROAD

HOUSTON PIPE LINE COMPANY EASEMENT

GREENS BAYOU P100-00-00

UNION PACIFIC RAILROAD SPUR EASEMENT

HCFCD DITCH P114-00-00

EXISTING FLARE FACILITY

EXISTING MAINTENANCE AND PAINT FACILITY

EXISTING SCALEHOUSE

EXISTING SITE ACCESS ROAD (OATES ROAD)

EXISTING OFFICE BUILDING

CITY OF HOUSTON ROAD EASEMENT

FORMER LANDFILL

HL&P EASEMENT

U.S. HIGHWAY 90 (McCARTY ROAD)

UNION PACIFIC RAILROAD

HL&P EASEMENT

SCALE IN FEET: 0, 300, 600

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- DEED RESTRICTION BOUNDARY (SEE NOTE 5)
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- EXISTING CONTOUR
- FINAL CONTOURS
- COMPACTED CLAY SLOPE LINER
- CLAY CUTOFF WALL
- SLURRY WALL
- DEEP SLURRY WALL
- NORTHERN EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- SLURRY WALL EXTENSION OF GWRT (REFER TO ATT. 6D)
- MW-4UB — EXISTING DETECTION GROUNDWATER MONITORING WELL
- OW7-UB — PROPOSED OBSERVATION WELL CLUSTERS (SEE NOTE 7)
- OW-1 — EXISTING OBSERVATION WELL (SEE NOTE 7)
- GMP-M — EXISTING LANDFILL GAS MONITORING PROBE
- GMP-K — EXISTING LANDFILL GAS MONITORING PROBE TO BE DECOMMISSIONED
- GMP-J(R) — PROPOSED LANDFILL GAS MONITORING PROBE (SEE NOTE 6)
- EASEMENT BOUNDARY
- S-5 — SOUTHWEST LAB SOIL BORING
- WCC-51 — WOODWARD CLYDE SOIL BORING
- GABIONS
- PROPOSED DRAINAGE SWALE
- PROPOSED DRAINAGE LETDOWN
- GROUND WATER RECOVERY TRENCH
- SUMP 2 — GROUND WATER RECOVERY TRENCH SUMP
- 1 — INDICATES REVISION (SEE LIST OF REVISIONS)

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
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4. REFER TO ATTACHMENT 1H FOR THE FINAL CONTOUR PLAN AND 1I FOR THE BOTTOM OF WASTE PLAN.
5. REFER TO ATTACHMENT 6, APPENDIX 6A-F FOR DEED RESTRICTION INFORMATION.
6. PROPOSED PROBES DESIGNATED WITH "(R)" ARE REPLACEMENT PROBES. PROPOSED PROBES GMP-W THROUGH GMP-LL WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.
7. GROUNDWATER OBSERVATION WELLS OW-1, OW-2, OW-3, OW-4 AND OW-5 WERE ADDED ALONG THE NORTHERN AND EASTERN PERIMETER OF THE LANDFILL AS PART OF THE HARRIS COUNTY SETTLEMENT AGREEMENT. ADDITIONAL PROPOSED OBSERVATION WELLS WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.

- [ ] DRAFT
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- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 08/2008
FILE: 0120-439-11
CAD: 2A-SITE PLAN.DWG
DRAWN BY: SRF
DESIGN BY: DOL
REVIEWED BY: JPY

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PREPARED FOR
McCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	09/2008	UPDATED LANDFILL GAS MONITORING PROBES AND ADDED EAST SLURRY WALL.
2	12/2010	PERMIT MODIFICATION
3	10/2014	SEE LIST OF REVISIONS.

TYPICAL SECTION SITE PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
WWW.WEAVERBOOS.COM

ATTACHMENT 2A

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O:\0120\439\SLURRY WALL REMOVAL MOD\2A-SITE PLAN.dwg, 10/28/2014 2:36:36 PM, rsellers, 1:2

LIST OF REVISIONS:
1. REMOVED SEMI-CIRCULAR SLURRY WALL.
2. UPDATED TOPO.

STATE OF TEXAS
KYLE D. GOULD
106018
PROFESSIONAL ENGINEER
10.31.14

LEY ROAD
EXISTING 5' HIGH CHAIN LINK FENCE
HCFCD DITCH P116-00-00
FORMER SOIL BORROW AREA
HOUSTON PIPE LINE COMPANY EASEMENT
PRE-SUBTITLE D AREA
SUBTITLE D AREA
GREENS BAYOU P100-00-00
UNION PACIFIC RAILROAD SPUR EASEMENT
HCFCD DITCH P114-00-00
EXISTING MAINTENANCE AND PAINT FACILITY
EXISTING FLARE FACILITY
EXISTING SCALEHOUSE
EXISTING SITE ACCESS ROAD (OATES ROAD)
EXISTING OFFICE BUILDING
SITE ENTRANCE FROM McCARTY ROAD
CITY OF HOUSTON ROAD EASEMENT
FORMER LANDFILL
U.S. HIGHWAY 90 (McCARTY ROAD)
UNION PACIFIC RAILROAD
EXISTING 5' HIGH CHAIN LINK FENCE
HL&P EASEMENT
EXISTING 20' HIGH MESH SCREENING FENCE

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- EXISTING CONTOUR
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- COMPACTED CLAY SLOPE LINER
- CLAY CUTOFF WALL
- SLURRY WALL
- DEEP SLURRY WALL
- NORTHERN EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- SLURRY WALL EXTENSION OF GWRT (REFER TO ATT. 6D)
- 20 BOTTOM OF WASTE ELEVATION (FT-MSL) (SEE NOTE 4)
- 18 BOTTOM OF WASTE CONTOUR (SEE NOTE 5)
- PERIMETER FENCE
- MW-4UB EXISTING DETECTION GROUNDWATER
- GMP-M EXISTING LANDFILL GAS MONITORING PROBE
- EASEMENT BOUNDARY
- S-5 SOUTHWEST LAB SOIL BORING
- WCC-51 WOODWARD CLYDE SOIL BORING
- SUMP AND LEACHATE LINE
- GROUND WATER RECOVERY TRENCH
- SUMP 2 GROUND WATER RECOVERY TRENCH SUMP
- 1 INDICATES REVISION (SEE LIST OF REVISIONS)

0 300 600 SCALE IN FEET

NOTES:
1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
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4. REFER TO ATTACHMENT 1H FOR THE FINAL CONTOUR PLAN AND 1I FOR THE BOTTOM OF WASTE PLAN.
5. REFER TO ATTACHMENT 6, APPENDIX 6A-F FOR DEED RESTRICTION INFORMATION.
6. GROUNDWATER OBSERVATION WELLS OW-1, OW-2, OW-3, OW-4 AND OW-5 WERE ADDED ALONG THE NORTHERN AND EASTERN PERIMETER OF THE LANDFILL AS PART OF THE HARRIS COUNTY SETTLEMENT AGREEMENT. ADDITIONAL PROPOSED OBSERVATION WELLS WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.
7. PROPOSED PROBES DESIGNATED WITH "(R)" ARE REPLACEMENT PROBES. PROPOSED PROBES GMP-W THROUGH GMP-LL ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 08/2008 | DRAWN BY: SRF
FILE: 0120-439-11 | DESIGN BY: DOL
CAD: 2A.1-BOTTOM-WASTE.DWG | REVIEWED BY: JPY

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PREPARED FOR
McCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	09/2008	ADDED EAST SLURRY WALL.
2	12/2010	PERMIT MODIFICATION
3	10/2014	SEE LIST OF REVISIONS.

EXISTING BOTTOM OF WASTE PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
WWW.WEAVERBOOS.COM

ATTACHMENT 2A.1

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LIST OF REVISIONS:

1. REMOVED SEMI-CIRCULAR SLURRY WALL.
2. UPDATED TOPO.

STATE OF TEXAS
KYLE D. GOULD
106018
PROFESSIONAL ENGINEER
10.31.14

HCFCD DITCH P116-00-00

LEY ROAD

HCFCD EASEMENT

FORMER SOIL BORROW AREA

HOUSTON PIPE LINE COMPANY EASEMENT

20-ACRE AREA IN WHICH FINAL COVER HAS BEEN PLACED

HCFCD EASEMENT

GREENS BAYOU P100-00-00

UNION PACIFIC RAILROAD SPUR EASEMENT

SUBTITLE D AREA (COMPOSITE LINER SYSTEM)

HCFCD DITCH P114-00-00

EXISTING FLARE FACILITY

HCFCD EASEMENT CITY OF HOUSTON ROAD EASEMENT

FORMER LANDFILL

EXISTING MAINTENANCE AND PAINT FACILITY

EXISTING SCALEHOUSE

EXISTING SITE ACCESS ROAD (OATES ROAD)

EXISTING OFFICE BUILDING

SITE ENTRANCE FROM McCARTY ROAD

HL&P EASEMENT

U.S. HIGHWAY 90 (McCARTY ROAD)

UNION PACIFIC RAILROAD

HL&P EASEMENT

0 300 600
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- EXISTING CONTOUR
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- COMPACTED CLAY SLOPE LINER
- CLAY CUTOFF WALL
- SLURRY WALL
- DEEP SLURRY WALL
- NORTHERN EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- SLURRY WALL EXTENSION OF GWRT (REFER TO ATT. 6D)
- EXPEDITED FINAL COVER AREA (SEE NOTE 5)
- LIMITS OF SEPARATORY OVERLINER SYSTEM
- PROPOSED SEPARATORY OVERLINER SYSTEM TOP OF LINER CONTOUR
- PROPOSED SEPARATORY OVERLINER SYSTEM LEACHATE COLLECTION PIPE (SEE NOTE 4)
- PRPOSED SEPARATORY OVERLINER SYSTEM LEACHATE COLLECTION SUMP (SEE NOTE 4)
- LIMITS OF THE PRE-SUBTITLE D/ SUBTITLE D AREA
- PERIMETER FENCE
- EXISTING DETECTION GROUNDWATER MONITORING WELL
- PROPOSED OBSERVATION WELL (SEE NOTE 7)
- OBSERVATION WELL (SEE NOTE 7)
- EXISTING LANDFILL GAS MONITORING PROBE
- EXISTING LANDFILL GAS MONITORING PROBE TO BE DECOMMISSIONED
- PROPOSED LANDFILL GAS MONITORING PROBE (SEE NOTE 6)
- EASEMENT BOUNDARY
- GROUND WATER RECOVERY TRENCH
- GROUND WATER RECOVERY TRENCH SUMP
- INDICATES REVISION (SEE LIST OF REVISIONS)

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
2. PERMIT BOUNDARY AND EASEMENTS WERE REPRODUCED FROM COSTELLO, INC. STANDARD LAND SURVEY DRAWING, DATED MARCH 2004.
3. BORING LOCATIONS HAVE BEEN REPRODUCED FROM VARIOUS SUBSURFACE INVESTIGATIONS PREVIOUSLY COMPLETED AND ARE APPROXIMATE. ONLY BORINGS SHOWN ON SECTIONS ARE PRESENTED ON THIS DRAWING. PLEASE REFER TO ATTACHMENT 4, FIGURE 4B.2 FOR A FIGURE THAT SHOWS ALL THE BORINGS COMPLETED AT THE SITE.
4. REFER TO ATTACHMENT 6D FOR SEPARATORY OVERLINER SYSTEM DETAILS.
5. AS INDICATED IN ATTACHMENT 12-FINAL CLOSURE PLAN, McCARTY ROAD LANDFILL TX, LP WILL CONSTRUCT FINAL COVER AS THE SITE IS DEVELOPED. ONCE ANY 20-ACRE SIDESLOPE AREA, LOCATED IN THE EXPEDITED FINAL COVER AREA SHOWN ON FIGURE 12.1A IN ATTACHMENT 12, REACHES THE PERMITTED FINAL ELEVATION, THE LANDFILL WILL COMMENCE PLACEMENT OF FINAL COVER OVER THE 20-ACRE AREA WITHIN 12 MONTHS OF BRINGING THE 20-ACRE AREA TO THE FINAL PERMITTED WASTE FILL GRADE. THIS REQUIREMENT IS CONSISTENT WITH THE DECEMBER 4, 2007 MEDIATED SETTLEMENT AGREEMENT BETWEEN McCARTY ROAD LANDFILL TX, LP AND HARRIS COUNTY.
6. PROPOSED PROBES DESIGNATED WITH "(R)" ARE REPLACEMENT PROBES. PROPOSED PROBES GMP-W THROUGH GMP-LL WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT SETTLEMENT AGREEMENT.
7. GROUNDWATER OBSERVATION WELLS OW-1, OW-2, OW-3, OW-4 AND OW-5 WERE ADDED ALONG THE NORTHERN AND EASTERN PERIMETER OF THE LANDFILL AS PART OF THE HARRIS COUNTY SETTLEMENT AGREEMENT. ADDITIONAL PROPOSED OBSERVATION WELLS WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.

- [ ] DRAFT
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- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 08/2008
FILE: 0120-439-11
CAD: 2A.2-SEPARATORY OVERLINER.DWG

DRAWN BY: SRF
DESIGN BY: DOL
REVIEWED BY: JPY

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PREPARED FOR
McCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	09/2008	UPDATED GROUNDWATER OBSERVATION WELLS, LANDFILL GAS MONITORING PROBES AND ADDED EAST SLURRY WALL.
2	12/2010	PERMIT MODIFICATION
3	10/2014	SEE LIST OF REVISIONS.

SEPARATORY OVERLINER SYSTEM PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
WWW.WEAVERBOOS.COM

ATTACHMENT 2A.2

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McCARTY ROAD LANDFILL
CITY OF HOUSTON, HARRIS COUNTY, TEXAS
TCEQ PERMIT NO. MSW-261B

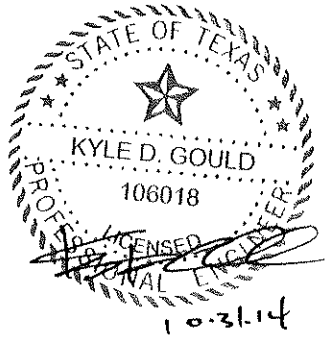
PART III – SITE DEVELOPMENT PLAN
ATTACHMENT 6
GROUNDWATER AND SURFACE WATER PROTECTION PLAN

Prepared for

McCarty Road Landfill TX, LP

Approved Site Development Plan
August 2008
Revised October 2009
Revised August 2010
Revised December 2010

Revised October 2014



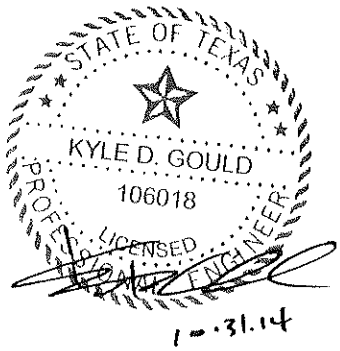
Prepared by

Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WBC Project No. 0120-439-11-84-01

CONTENTS

6A Drainage Design Report
6B Harris County Flood Control District Information
6C Floodplain Information
6D Liner System, Separatory Overliner System, and Final Cover System Details



McCARTY ROAD LANDFILL
CITY OF HOUSTON, HARRIS COUNTY, TEXAS
TCEQ PERMIT NO. MSW-261B

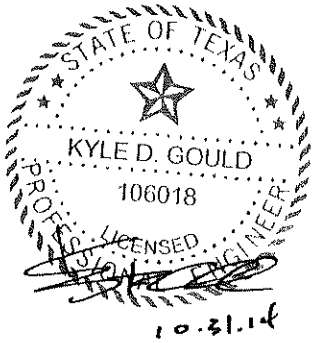
PART III – SITE DEVELOPMENT PLAN
ATTACHMENT 6D
LINER SYSTEM, SEPARATORY OVERLINER SYSTEM, AND FINAL COVER SYSTEM DETAILS

Prepared for

McCarty Road Landfill TX, LP

Approved Site Development Plan
August 2008
Revised October 2009
Revised December 2010

Revised October 2014



Prepared by

Weaver Boos Consultants, LLC–Southwest
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6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WBC Project No. 0120-439-11-84-01

CONTENTS

Groundwater Protection Design Summary 6D-1

ATTACHMENT 6D.1
Landfill Completion Plan

ATTACHMENT 6D.1A
Bottom of Waste Plan

ATTACHMENT 6D.1B
Separatory Overliner System Site Plan

ATTACHMENT 6D.2
Final Cover Details

ATTACHMENT 6D.3
Final Cover Details

ATTACHMENT 6D.4
Final Cover Details

ATTACHMENT 6D.5
Separatory Overliner System Typical Section

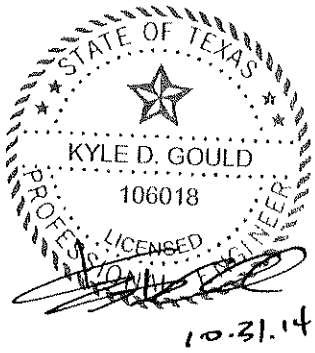
ATTACHMENT 6D.6
Separatory Overliner System Details

ATTACHMENT 6D.7
Separatory Overliner System Details

ATTACHMENT 6D.8
Separatory Overliner System Typical LFG Extraction Well Details

ATTACHMENT 6D.9
Slurry Wall Site Plan

ATTACHMENT 6D.10
East Area Site Plan



CONTENTS

ATTACHMENT 6D.11
East Slurry Wall Profile

ATTACHMENT 6D.12
East Slurry Wall Details

ATTACHMENT 6D.13
Northern East Slurry Wall Extension and Slurry Wall Extension of GWRT Clay Cut-off Wall Plan

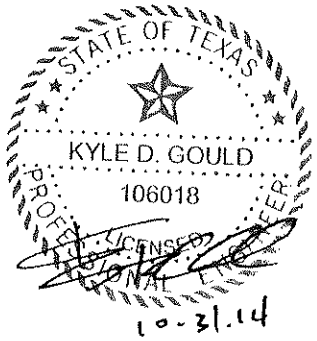
ATTACHMENT 6D.14
Northern East Slurry Wall Extension Profile

ATTACHMENT 6D.15
Slurry Wall Extension of GWRT Clay Cut-off Wall Profile

~~**ATTACHMENT 6D.16**~~
~~Semi-Circular Slurry Wall Plan~~

~~**ATTACHMENT 6D.17**~~
~~Semi-Circular Slurry Wall Profile~~

ATTACHMENT 6D.186
Northern East Slurry Wall Extension, Slurry Wall Extension of GWRT, and Semi-Circular Slurry Wall Details



- Attachment 6D.10 – East Area Site Plan. This plan shows a more detailed plan view of the East Slurry Wall as well as locations of soil borings used to develop the East Slurry Wall Profile shown on Attachment 6D.11.
- Attachment 6D.11 – East Slurry Wall Profile. The profile shown on this attachment includes the design of the East Slurry Wall and illustrates how the East Slurry Wall will be tied into the existing 1999 Slurry Wall on the northern portion of the site, the existing 1988 Slurry Wall on the southern portion of the site, and the clay aquiclude underlying the lower B sands.
- Attachment 6D.12 – East Slurry Wall Details. This attachment includes a typical section of the East Slurry Wall and provides a detail of the slurry wall cap.

Northern East Slurry Wall Extension, and Slurry Extension of GWRT Clay Cut-off Wall~~, and Semi-Circular Slurry Wall~~

The design of the slurry walls is consistent with the December 4, 2007 Harris County Settlement Agreement and is summarized on the following drawings.

- Attachment 6D.13 – Northern East Slurry Wall Extension and Slurry Wall Extension of GWRT Clay Cut-off Wall Plan. This plan shows a more detailed plan view of the Northern East Slurry Wall Extension as well as locations of soil borings used to develop the Northern East Slurry Wall Extension and Slurry Wall Extension of GWRT Clay Cut-off Wall profile shown on Attachment 6D.14 and 6D.15, respectively.
- Attachment 6D.14 – Northern East Slurry Wall Extension. The profile shown on this attachment includes the design of the Northern East Slurry Wall Extension and illustrates how the Northern East Slurry Wall Extension will be tied into the existing 1999 Slurry Wall on the northern portion of the site and the clay aquiclude underlying the upper B sands.
- Attachment 6D.15 – Slurry Wall Extension of GWRT Clay Cut-off Wall Profile. The profile shown on this attachment includes the design of the Slurry Wall Extension of GWRT Clay Cut-off Wall and illustrates how the Slurry Wall Extension of GWRT Clay Cut-off Wall will be tied into the existing GWRT clay cut-off wall and extend to the west 100 feet.
- ~~Attachment 6D.16 – Semi-Circular Slurry Wall Plan. This plan shows a more detailed plan view of the Semi-Circular Slurry Wall, as well as locations of soil borings used to develop the Semi-Circular Slurry Wall profile shown on Attachment 6D.17.~~
- ~~Attachment 6D.17 – Semi-Circular Slurry Wall Profile. The profile shown on this attachment includes the design of the Semi-Circular Slurry Wall and illustrates how the Semi-Circular Slurry Wall will be tied into the existing 1999 Slurry Wall on the northern portion of the site and the clay aquiclude underlying the upper B sands.~~
- Attachment 6D.1~~8~~6 – Northern East Slurry Wall Extension~~,~~ and Slurry Wall Extension of GWRT, ~~and Semi-Circular Slurry Wall Details~~. This attachment includes a typical section of the Northern East Slurry Wall Extension~~,~~ and Slurry Wall Extension of GWRT Clay Cut-off Wall~~, and Semi-Circular Slurry Wall~~, and provides a detail of the slurry wall cap.

STATE OF TEXAS
KYLE D. GOULD
106018
PROFESSIONAL ENGINEER
LICENSED
10.21.14

LIST OF REVISIONS:
1. REMOVED SEMI-CIRCULAR SLURRY WALL.
2. UPDATED TOPO.

HCFCD DITCH (P116-00-00)
EXISTING 36" CULVERT
LEY ROAD
EXISTING 36" CULVERT
FORMER SOIL BORROW AREA
HOUSTON PIPE LINE COMPANY EASEMENT
SLURRY CUT-OFF WALL CONSTRUCTED IN 1988.
REFER TO ATTACHMENT 6D.13
EXISTING 1999 SLURRY WALL WILL BE VERTICALLY EXTENDED IN THIS AREA (REFER TO DRAWING 5)
1999 DEEP SLURRY WALL
EAST SLURRY WALL
REFER TO ATTACHMENT 6D.10
REFER TO ATTACHMENT 6D.16
HCFCD EASEMENT
GREENS BAYOU (H100-00-00)
SUBTITLE D AREA
UNION PACIFIC RAILROAD SPUR EASEMENT
HCFCD DITCH (P114-00-00)
HCFCD EASEMENT
EXISTING FLARE FACILITY
EXISTING MAINTENANCE AND PAINT FACILITY
EXISTING SCALEHOUSE
EXISTING OFFICE BUILDING
EXISTING SITE ACCESS ROAD (OATES ROAD)
SITE ENTRANCE FROM McCARTY ROAD
RECYCLING PLANT
CITY OF HOUSTON ROAD EASEMENT
FORMER LANDFILL
EXISTING LEACHATE STORAGE TANK
HL&P EASEMENT
SITE ENTRANCE
HL&P EASEMENT
UNION PACIFIC RAILROAD
U.S. HIGHWAY 90 (McCARTY ROAD)

LEGEND
- PERMIT BOUNDARY (MSW PERMIT NO. 26IB)
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- EXISTING 10' CONTOUR
- NORTHERN EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D.13)
- EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D.10)
- SLURRY WALL EXTENSION OF GWRT (REFER TO ATT. 6D.13)
- CLAY CUTOFF WALL
- EXISTING COMPACTED CLAY SLOPE LINER (SEE NOTE 3)
- EXISTING 1988 SLURRY WALL (SEE NOTE 3 AND 4)
- EXISTING 1999 DEEP SLURRY WALL (SEE NOTE 4 AND 5)
- MW-4UB — EXISTING DETECTION GROUNDWATER MONITORING WELL
- OW7-UB — PROPOSED AAWWE OBSERVATION WELL (SEE NOTE 7)
- OW-1 — HARRIS COUNTY OBSERVATION WELL (SEE NOTE 7)
- GMP-M — EXISTING LANDFILL GAS MONITORING PROBE
- GMP-K — EXISTING LANDFILL GAS MONITORING PROBE TO BE DECOMMISSIONED
- GMP-K(R) — PROPOSED LANDFILL GAS MONITORING PROBE
- EXISTING GROUNDWATER MONITOR WELL/ PERIODIC EXTRACTION WELL (CORRECTIVE ACTION)
- EXTRACTION WELL (CORRECTIVE ACTION)
- OBSERVATION WELL (CORRECTIVE ACTION)
- PIEZOMETER (CORRECTIVE ACTION)
- BORING
- PIEZOMETER
- EASEMENT BOUNDARY
- GROUND WATER RECOVERY TRENCH (SEE NOTE 6)
- SUMP 2 — GROUND WATER RECOVERY TRENCH SUMP (SEE NOTE 6)
- 1 — INDICATES REVISION (SEE LIST OF REVISIONS)

NOTES:
1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
2. PERMIT BOUNDARY AND EASEMENTS WERE REPRODUCED FROM COSTELLO, INC. STANDARD LAND SURVEY DRAWING, DATED MARCH 2004.
3. THE LOCATIONS OF THE SLURRY WALLS, COMPACTED CLAY SLOPE LINER, AND TRENCH LINER WERE REPRODUCED FROM A DECEMBER 1992 DRAWING PREPARED BY HALL SOUTHWEST.
4. THE SLURRY WALL WAS CONSTRUCTED IN 1988 AS DETAILED IN THE WOODWARD-CLYDE CONSULTANT AS-BUILT REPORT, DATED MAY 1988.
5. DEEP SLURRY WALL LOCATION REPRODUCED FROM MARCH 2000 SLURRY WALL CONSTRUCTION QUALITY ASSURANCE REPORT PREPARED BY ENVIRONMENTAL RESOURCES MANAGEMENT.
6. REFER TO PARTS I/II, FIGURE I/II-3.3-CORRECTIVE MEASURES PLAN FOR FURTHER INFORMATION REGARDING THE GROUNDWATER RECOVERY TRENCH AND SUMP.
7. GROUNDWATER OBSERVATION WELLS OW-1, OW-2, OW-3, OW-4 AND OW-5 WERE ADDED ALONG THE NORTHERN AND EASTERN PERIMETER OF THE LANDFILL AS PART OF THE HARRIS COUNTY SETTLEMENT AGREEMENT. ADDITIONAL PROPOSED OBSERVATION WELLS WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.

0 300 600
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DATE: 09/2008
FILE: 0120-439-11
CAD: 6D.9-SITE PLAN.DWG
DRAWN BY: SRF
DESIGN BY: DOL
REVIEWED BY: JPY

PREPARED FOR
MCCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	09/2011	PERMIT MODIFICATION
2	10/2014	SEE LIST OF REVISIONS.

SLURRY WALL SITE PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
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ATTACHMENT 6D.9

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STATE OF TEXAS
KYLE D. GOULD
106018
PROFESSIONAL LICENSED CIVIL ENGINEER
10.31.14

SLURRY CUT-OFF WALL CONSTRUCTED IN 1988.

GREENS BAYOU (P100-00-00)

1999 DEEP SLURRY WALL

HCFCD EASEMENT

EAST SLURRY WALL EXTENSION/1988 SLURRY WALL TRANSITION ZONE

EAST SLURRY WALL

EXISTING 1999 SLURRY WALL WILL BE VERTICALY EXTENDED IN THIS AREA (REFER TO ATTACHMENT 6D.11)

SUBTITLE D AREA

HOUSTON PIPE LINE COMPANY EASEMENT

SCALE IN FEET: 0 150 300

LEGEND

- PERMIT BOUNDARY (MSW PERMIT NO. 261B)
- STATE PLANE COORDINATE SYSTEM
- EXISTING 10' CONTOUR
- TOP OF PROTECTIVE COVER
- NORTHERN EAST SLURRY WALL EXTENSION
- EAST SLURRY WALL EXTENSION
- EXISTING 1988 SLURRY WALL (SEE NOTE 3 AND 4)
- EXISTING 1999 DEEP SLURRY WALL (SEE NOTE 4 AND 5)
- CLAY CUTOFF WALL
- EXISTING GROUNDWATER MONITORING WELL
- EXISTING LANDFILL GAS MONITORING PROBE
- EXISTING GROUNDWATER MONITOR WELL/ PERIODIC EXTRACTION WELL (CORRECTIVE ACTION)
- HARRIS COUNTY OBSERVATION WELL
- EXTRACTION WELL (CORRECTIVE ACTION)
- OBSERVATION WELL (CORRECTIVE ACTION)
- PIEZOMETER (CORRECTIVE ACTION)
- BORING
- BORING
- PIEZOMETER
- EASEMENT BOUNDARY
- GROUND WATER RECOVERY TRENCH (SEE NOTE 6)
- GROUND WATER RECOVERY TRENCH SUMP (SEE NOTE 6)
- INDICATES REVISION (SEE LIST OF REVISIONS)

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
2. PERMIT BOUNDARY AND EASEMENTS WERE REPRODUCED FROM COSTELLO, INC. STANDARD LAND SURVEY DRAWING, DATED MARCH 2004.
3. THE LOCATIONS OF THE SLURRY WALLS AND TRENCH LINER WERE REPRODUCED FROM A DECEMBER 1992 DRAWNG PREPARED BY HALL SOUTHWEST.
4. THE SLURRY WALL WAS CONSTRUCTED IN 1988 AS DETAILED IN THE WOODWARD-CLYDE CONSULTANT AS-BUILT REPORT, DATED MAY 1988.
5. DEEP SLURRY WALL LOCATION REPRODUCED FROM MARCH 2000 SLURRY WALL CONSTRUCTION QUALITY ASSURANCE REPORT PREPARED BY ENVIRONMENTAL RESOURCES MANAGEMENT.
6. REFER TO PARTS I/II, FIGURE I/II-3.3-CORRECTIVE MEASURES PLAN FOR FURTHER INFORMATION REGARDING THE GROUNDWATER RECOVERY TRENCH AND SUMP.

LIST OF REVISIONS:

1. REMOVED SEMI-CIRCULAR SLURRY WALL.
2. UPDATED TOPO.

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DATE: 09/2008
FILE: 0120-439-11
CAD: 02-EAST SITE PLAN.DWG

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DESIGN BY: DOL
REVIEWED BY: JPY

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PREPARED FOR

MCCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	09/2011	PERMIT MODIFICATION
2	10/2014	SEE LIST OF REVISIONS.

PERMIT MODIFICATION
EAST AREA SITE PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

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ATTACHMENT 6D.10

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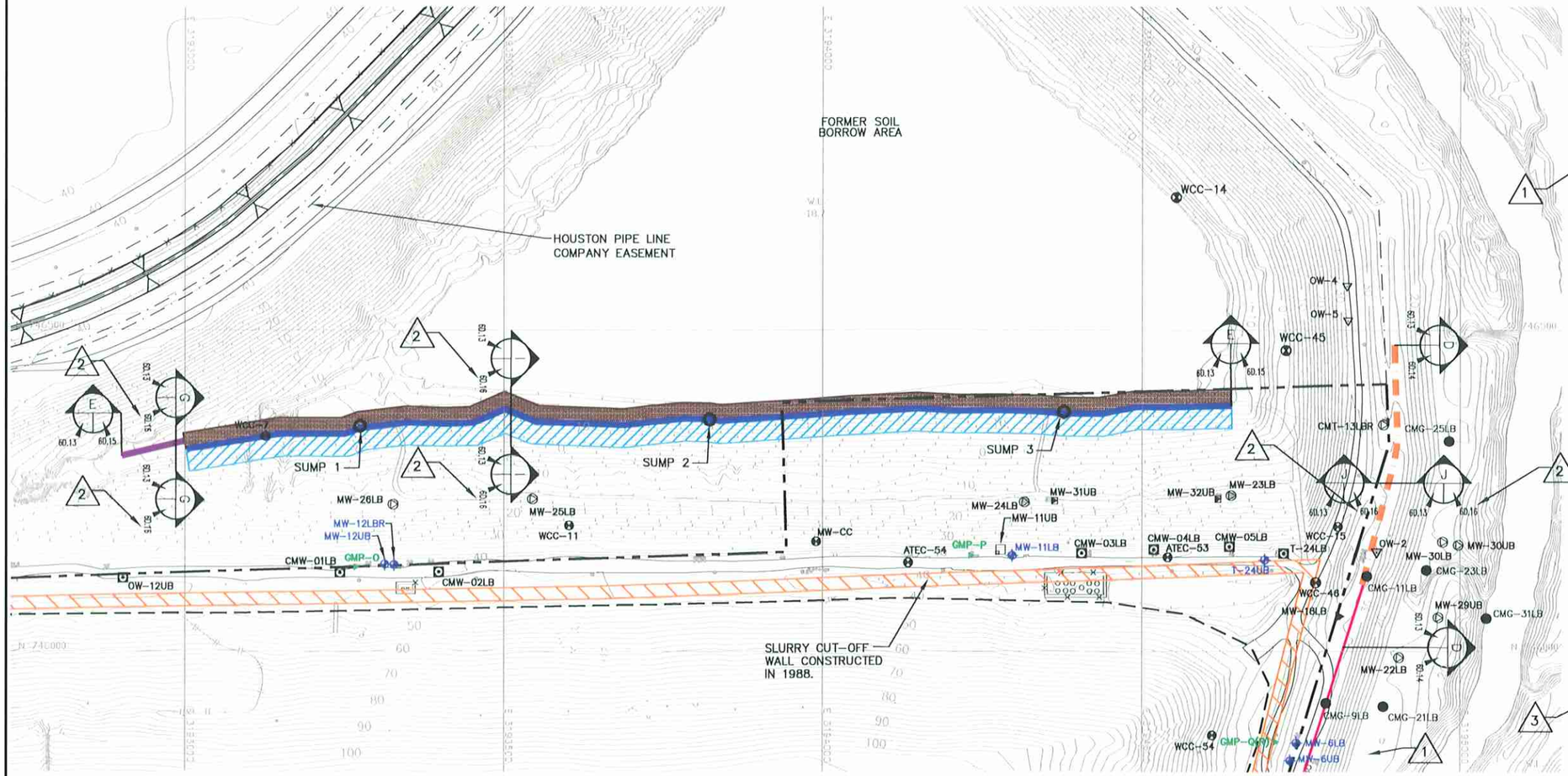

LEGEND

- PERMIT BOUNDARY (MSW PERMIT NO. 26IB)
- 745000 N — STATE PLANE COORDINATE SYSTEM
- 20 — EXISTING 10' CONTOUR
- NORTHERN EAST SLURRY WALL EXTENSION
- SLURRY WALL EXTENSION OF GWRT COMPACTED CLAY CUTOFF WALL
- EXISTING 1988 SLURRY WALL (SEE NOTE 3 AND 4)
- EXISTING 1999 DEEP SLURRY WALL (SEE NOTE 4 AND 5)
- GROUNDWATER RECOVERY TRENCH AND COMPACTED CLAY BACKFILL
- SUMP 3 — GROUNDWATER RECOVERY TRENCH SUMP
- MW-4UB — EXISTING GROUNDWATER MONITORING WELL
- GMP-M — EXISTING LANDFILL GAS MONITORING PROBE
- EXISTING GROUNDWATER MONITOR WELL/ PERIODIC EXTRACTION WELL (CORRECTIVE ACTION)
- OW-2 — HARRIS COUNTY OBSERVATION WELL
- EXTRACTION WELL (CORRECTIVE ACTION)
- OBSERVATION WELL (CORRECTIVE ACTION)
- PIEZOMETER (CORRECTIVE ACTION)
- BORING
- CMG-26UG — BORING
- PIEZOMETER
- EASEMENT BOUNDARY
- 1 — INDICATES REVISION (SEE LIST OF REVISIONS)

0 100 200
SCALE IN FEET

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
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3. THE LOCATIONS OF THE SLURRY WALLS AND TRENCH LINER WERE REPRODUCED FROM A DECEMBER 1992 DRAWING PREPARED BY HALL SOUTHWEST.
4. THE SLURRY WALL WAS CONSTRUCTED IN 1988 AS DETAILED IN THE WOODWARD-CLYDE CONSULTANT AS-BUILT REPORT, DATED MAY 1988.
5. DEEP SLURRY WALL LOCATION REPRODUCED FROM MARCH 2000 SLURRY WALL CONSTRUCTION QUALITY ASSURANCE REPORT PREPARED BY ENVIRONMENTAL RESOURCES MANAGEMENT.
6. REFER TO PARTS I/II, FIGURE I/II-3.3-CORRECTIVE MEASURES PLAN FOR FURTHER INFORMATION REGARDING THE GROUNDWATER RECOVERY TRENCH AND SUMP.

LIST OF REVISIONS:

1. REMOVED SEMI-CIRCULAR SLURRY WALL.
2. UPDATED DETAIL CALLOUT PAGE NUMBER.
3. UPDATED TOPO.

STATE OF TEXAS
KYLE D. GOULD
106018
LICENSED PROFESSIONAL ENGINEER
10.31.14

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DATE: 12/2010
FILE: 0120-439-11
CAD: 60.13-NORTH SITE PLAN.DWG
DRAWN BY: SRF
DESIGN BY: DOL
REVIEWED BY: JPY

PREPARED FOR
MCCARTY ROAD LANDFILL TX, LP

REVISIONS		
NO.	DATE	DESCRIPTION
1	09/2011	PERMIT MODIFICATION
2	10/2014	SEE LIST OF REVISIONS.

NORTHERN EAST SLURRY WALL EXTENSION AND SLURRY WALL EXTENSION OF GWRT CLAY CUTOFF WALL PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

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ATTACHMENT 6D.13

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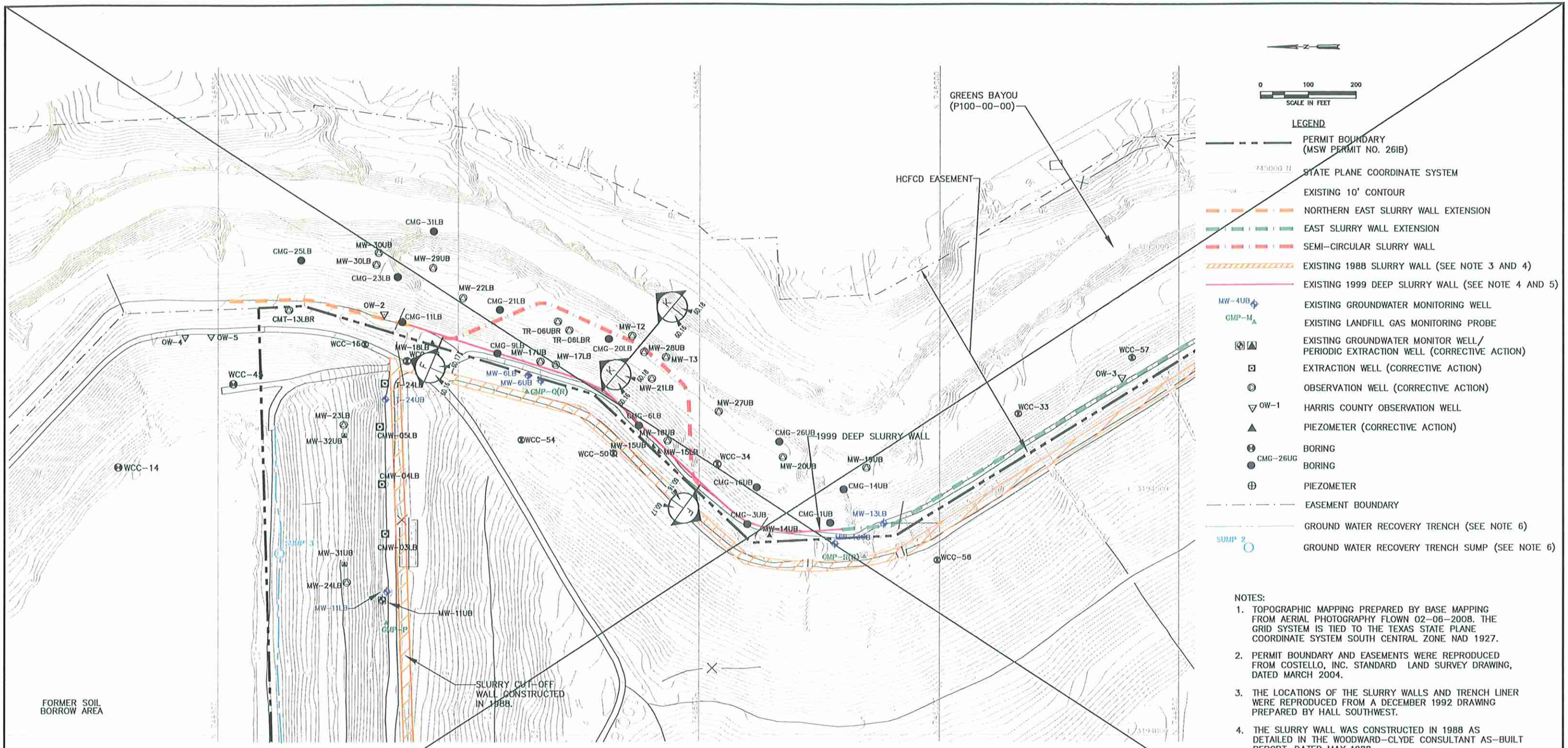

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY BASE MAPPING FROM AERIAL PHOTOGRAPHY FLOWN 02-06-2008. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
2. PERMIT BOUNDARY AND EASEMENTS WERE REPRODUCED FROM COSTELLO, INC. STANDARD LAND SURVEY DRAWING, DATED MARCH 2004.
3. THE LOCATIONS OF THE SLURRY WALLS AND TRENCH LINER WERE REPRODUCED FROM A DECEMBER 1992 DRAWING PREPARED BY HALL SOUTHWEST.
4. THE SLURRY WALL WAS CONSTRUCTED IN 1988 AS DETAILED IN THE WOODWARD-CLYDE CONSULTANT AS-BUILT REPORT, DATED MAY 1988.
5. DEEP SLURRY WALL LOCATION REPRODUCED FROM MARCH 2000 SLURRY WALL CONSTRUCTION QUALITY ASSURANCE REPORT PREPARED BY ENVIRONMENTAL RESOURCES MANAGEMENT.
6. REFER TO PARTS I/II, FIGURE I/II-3.3-CORRECTIVE MEASURES PLAN FOR FURTHER INFORMATION REGARDING THE GROUNDWATER RECOVERY TRENCH AND SUMP.

LIST OF REVISIONS:

1. DELETED DRAWING.

STATE OF TEXAS
DANIEL O. LANDRUM
107481
PROFESSIONAL ENGINEER
LICENSED
1-14-14

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- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 0120-439-11
CAD: 60.16-SEMI-CIR SLURRY.DWG
DRAWN BY: SRF
DESIGN BY: DOL
REVIEWED BY: JPY

PREPARED FOR
MCCARTY ROAD LANDFILL TX, LP

REVISIONS		
NO.	DATE	DESCRIPTION
1	01/2014	SEE LIST OF REVISIONS.

SEMI-CIRCULAR SLURRY WALL PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
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GRIFFITH, IN · SOUTH BEND, IN · SPRINGFIELD, IL · ST. LOUIS, MO

ATTACHMENT 60.16

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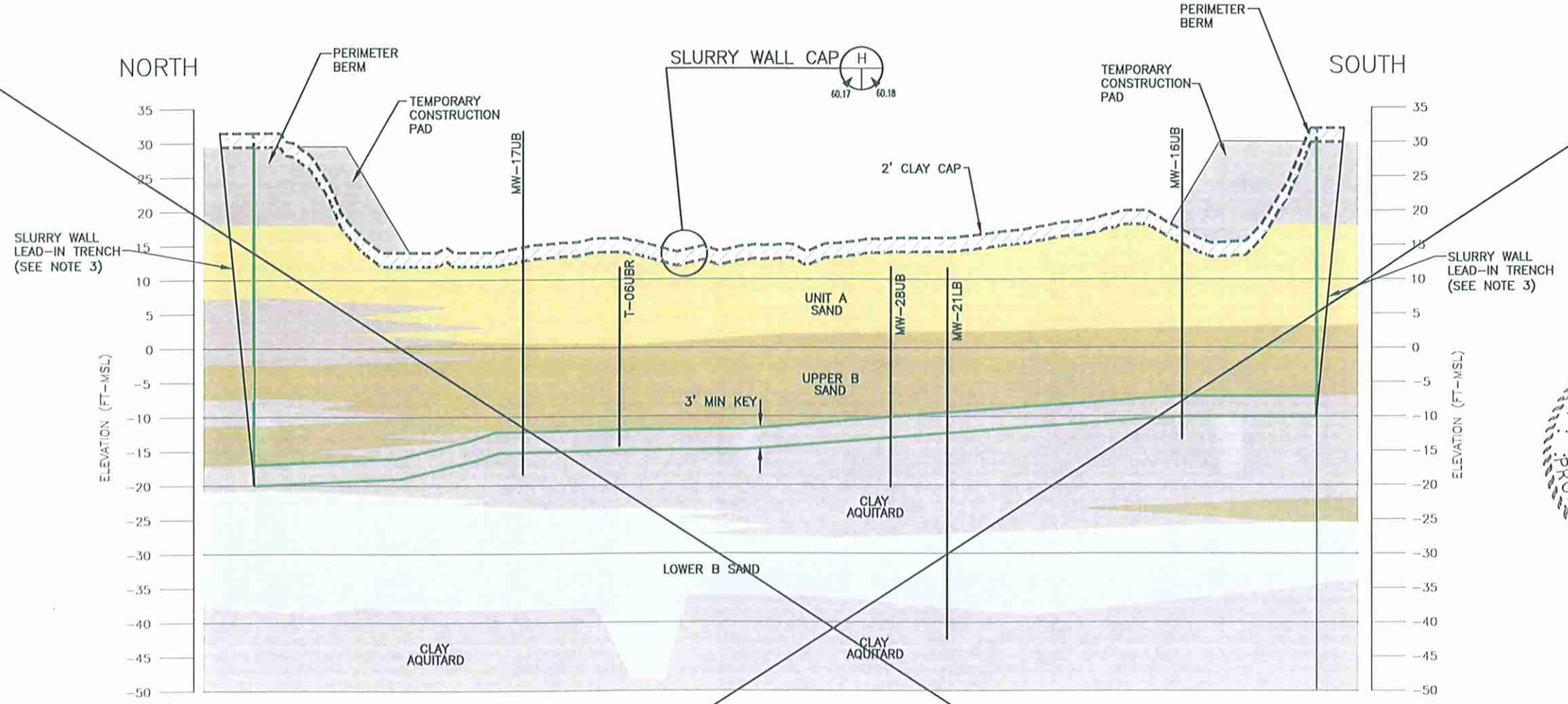

SEMI-CIRCULAR SLURRY WALL

F

60.16 60.17

0 50 100
HORIZONTAL SCALE IN FEET

0 10 20
VERTICAL SCALE IN FEET

LEGEND

SEMI-CIRCULAR SLURRY WALL LIMITS

SLURRY WALL CAP

CMG-6LB BORING

NOTES:

1. BOTTOM OF SLURRY WALL WILL EXTEND 3 FEET INTO CLAY AQUITARD BELOW UPPER B SAND. IF THERE IS LESS THAN 3 FEET OF CLAY AQUITARD BELOW THE UPPER B SAND, THE SLURRY WALL WILL BE EXTENDED DOWNWARD AND KEYED INTO THE AQUITARD BELOW THE LOWER B SAND A MINIMUM OF 3-FEET.
2. GEOLOGIC CROSS-SECTION REPRODUCED FROM GEOLOGIC CROSS-SECTION D-D' INCLUDED ON FIGURE 4C.3 IN ATTACHMENT 4.
3. THE EXCAVATION OF THE SEMI-CIRCULAR WALL WILL EXTEND THROUGH THE 1999 SLURRY WALL IN ORDER TO TIE THE SEMI-CIRCULAR SLURRY WALL TO THE EXISTING 1999 SLURRY WALL.

LIST OF REVISIONS:

1. DELETED DRAWING.

STATE OF TEXAS
DANIEL O. LANDRUM
107481
LICENSED PROFESSIONAL ENGINEER

1-14-14

1

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DATE: 12/2010
FILE: 0120-439-11
CAD: 60.17-SLURRY WALL PROFILE.DWG

DRAWN BY: SRF
DESIGN BY: DOL
REVIEWED BY: JPY

PREPARED FOR

MCCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	01/2014	SEE LIST OF REVISIONS.

SEMI CIRCULAR SLURRY WALL PROFILE

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

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ATTACHMENT 6B.17

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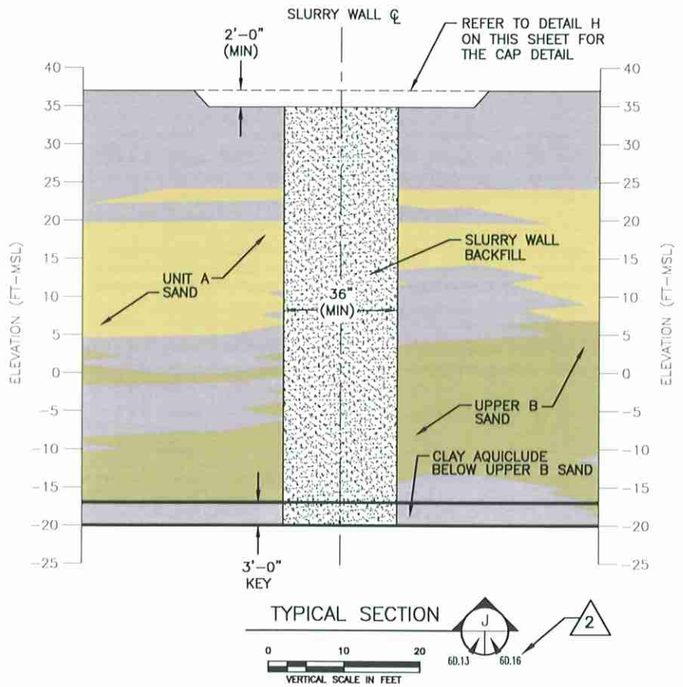

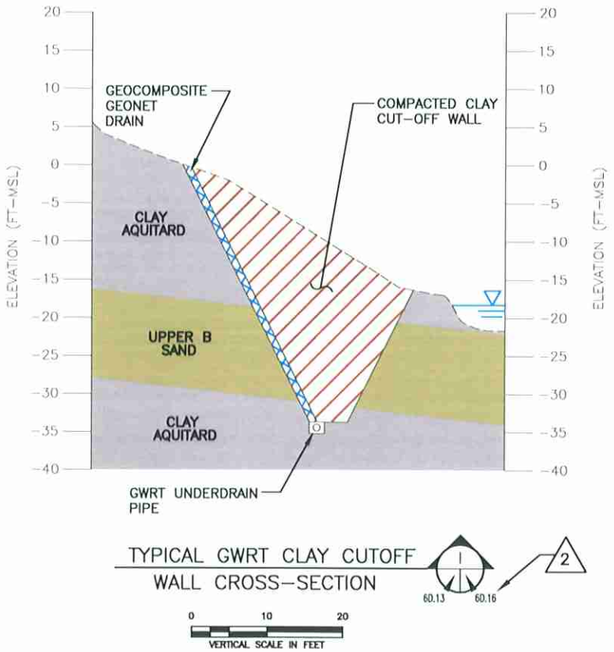

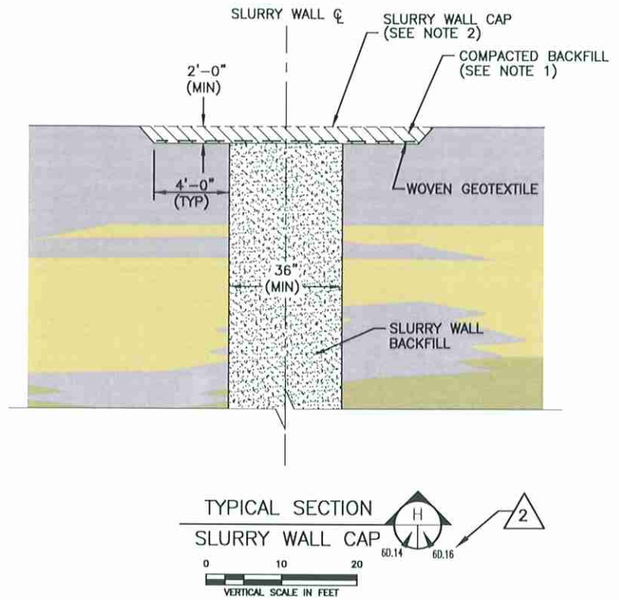

NOTE:

1. COMPACT BACKFILL TO <90% STANDARD PROCTOR DENSITY AT 0% TO 4% WET OF THE OPTIMUM MOISTURE CONTENT.
2. WOVEN GEOTEXTILE SHALL MEET THE FOLLOWING CRITERIA:

APPARENT OPENING	<0.21 MM
GRAB TENSILE STRENGTH	>157 LBS
ELONGATION	≥50%
PUNCTURE STRENGTH	>56 LBS
TRAPEZOID TEAR	>56 LBS

LIST OF REVISIONS:

1. UPDATED PAGE NUMBER.
2. UPDATED DETAIL CALLOUT PAGE NUMBER.

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REVIEWED BY: JPY

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PREPARED FOR
MCCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	09/2011	PERMIT MODIFICATION
2	10/2014	SEE LIST OF REVISIONS.

SLURRY WALL DETAILS

1

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727

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ATTACHMENT 6D.16

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McCARTY ROAD LANDFILL
CITY OF HOUSTON, HARRIS COUNTY, TEXAS
TCEQ PERMIT NO. MSW-261B

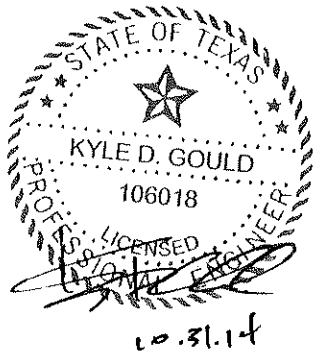
PART III – SITE DEVELOPMENT PLAN
ATTACHMENT 8
COST ESTIMATE FOR CLOSURE & POSTCLOSURE CARE

Prepared for

McCarty Road Landfill TX, LP

Approved Site Development Plan
August 2008
Revised October 2009
Revised December 2010

Revised October 2014



Prepared by

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Fort Worth, Texas 76109
817-735-9770

WBC Project No. 0120-439-11-03-13

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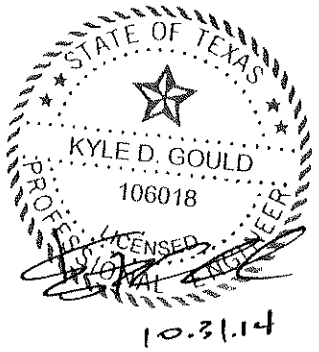
4	**CORRECTIVE ACTION COST ESTIMATE**	8-7
5	**COST ESTIMATE ADJUSTMENTS**	8-9



LARGEST AREA TO REQUIRE FINAL COVER – 321.8 ACRES
SUBTITLE D FINAL COVER – 53.0 ACRES
PRE–SUBTITLE D FINAL COVER – 268.7 ACRES

LIST OF REVISIONS:

1. REMOVED SEMI–CIRCULAR SLURRY WALL.
2. UPDATED TOPO.

HCFCD DITCH P116–00–00
LEY ROAD
EXISTING 36" CULVERT
EXISTING 36" CULVERT
FORMER SOIL BORROW AREA
HOUSTON PIPE LINE COMPANY EASEMENT
SUMP 1
SUMP 2
SUMP 3
MW–4LB MW–4UB
MW–5LB MW–5UB
MW–12UB MW–12LBR
MW–11UB MW–11LB
OW–1
OW–2
OW–4
OW–5
EXISTING 36" CULVERT
HCFCD EASEMENT
EXISTING 36" CULVERT
EXISTING 48" CULVERT
GREENS BAYOU P100–00–00
EXISTING 36" CULVERT
EXISTING 36" CULVERT
PRE–SUBTITLE D AREA
SUBTITLE D AREA
66.3–ACRE FINAL COVER AREA COMPLETED IN 2011
UNION PACIFIC RAILROAD SPUR EASEMENT
HCFCD DITCH P114–00–00
HCFCD EASEMENT
EXISTING SPILLWAYS
EXISTING SPILLWAYS
EXISTING MAINTENANCE AND PAINT FACILITY
EXISTING FLARE FACILITY
EXISTING LEACHATE STORAGE TANK
CITY OF HOUSTON ROAD EASEMENT
FORMER LANDFILL
HL&P EASEMENT
EXISTING SCALEHOUSE
EXISTING OFFICE BUILDING
EXISTING SITE ACCESS ROAD (OATES ROAD)
U.S. HIGHWAY 90 (McCARTY ROAD)
UNION PACIFIC RAILROAD
SITE ENTRANCE FROM McCARTY ROAD
RECYCLING PLANT
HL&P EASEMENT

N 747000
N 746000
N 745000
29°49'45"
N 744000
N 743000
E 3195000
E 3196000
E 3197000
E 3198000
E 3199000
E 3200000
E 3201000
E 3202000
E 3203000
E 3204000

0 300 600
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- DEED RESTRICTION (SEE NOTE 4)
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- EXISTING 10' CONTOUR
- COMPACTED CLAY SLOPE LINER
- CLAY CUTOFF WALL
- SLURRY WALL
- DEEP SLURRY WALL
- NORTHERN EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- SLURRY WALL EXTENSION OF GWRT (REFER TO ATT. 6D)
- MW–4UB — EXISTING DETECTION GROUNDWATER MONITORING WELL
- OW7–UB — PROPOSED OBSERVATION WELL (SEE NOTE 5)
- OW–1 — OBSERVATION WELL (SEE NOTE 5)
- GMP–M — EXISTING LANDFILL GAS MONITORING PROBE
- GMP–K — EXISTING LANDFILL GAS MONITORING PROBE TO BE DECOMMISSIONED
- GMP–K(R) — PROPOSED LANDFILL GAS MONITORING PROBE (SEE NOTE 6)
- EASEMENT BOUNDARY
- LIMITS OF PRE–SUBTITLE D FINAL COVER
- 100–YR FLOODPLAIN (REFER TO ATTACHMENT 6C)
- GROUND WATER RECOVERY TRENCH
- SUMP 2 — GROUND WATER RECOVERY TRENCH SUMP
- 1 — INDICATES REVISION (SEE LIST OF REVISIONS)

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03–12–2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
2. PERMIT BOUNDARY AND EASEMENTS WERE PREPARED BY COSTELLO INC. IN MARCH 2004.
3. REFER TO ATTACHMENT 14–LANDFILL GAS MANAGEMENT PLAN FOR LFG SYSTEM DESIGN.
4. REFER TO ATTACHMENT 6, APPENDIX 6A–F FOR DEED RESTRICTION INFORMATION.
5. GROUNDWATER OBSERVATION WELLS OW–1, OW–2, OW–3, OW–4 AND OW–5 WERE ADDED ALONG THE NORTHERN AND EASTERN PERIMETER OF THE LANDFILL AS PART OF THE HARRIS COUNTY SETTLEMENT AGREEMENT. ADDITIONAL PROPOSED OBSERVATION WELLS WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.
6. PROPOSED PROBES DESIGNATED WITH "(R)" ARE REPLACEMENT PROBES. PROPOSED PROBES GMP–W THROUGH GMP–LL WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.

STATE OF TEXAS
KYLE D. GOULD
106018
LICENSED PROFESSIONAL ENGINEER
10.31.14

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DATE: 08/2008
FILE: 0120–439–11
CAD: FIGURE 12.2.DWG
DRAWN BY: BBB
DESIGN BY: ALD
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McCARTY ROAD LANDFILL TX, LP

REVISIONS		
NO.	DATE	DESCRIPTION
1	09/2008	UPDATED GROUNDWATER OBSERVATION WELLS, LANDFILL GAS MONITORING PROBES, AND ADDED EAST SLURRY WALL.
2	09/2011	PERMIT MODIFICATION
3	10/2014	SEE LIST OF REVISIONS.

LARGEST AREA TO REQUIRE FINAL COVER

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F–3727
WWW.WEAVERBOOS.COM

FIGURE 8.1

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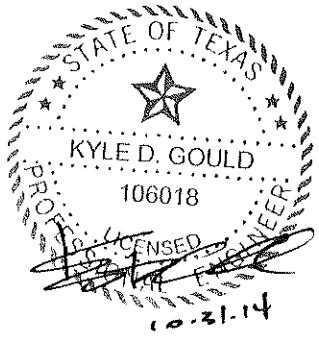
O:\0120439\SLURRY WALL REMOVAL MOD\FIGURE 8-1.dwg, 10/28/2014 2:51:44 PM, rsellers, 1:2

APPENDIX B

SDP REPLACEMENT PAGES
(CLEAN COPY)

McCARTY ROAD LANDFILL
CITY OF HOUSTON, HARRIS COUNTY, TEXAS
TCEQ PERMIT NO. MSW-261B

PART III – SITE DEVELOPMENT PLAN
SITE DEVELOPMENT PLAN NARRATIVE



Prepared for

McCarty Road Landfill TX, LP

Approved Site Development Plan
August 2008
Revised June 2009
Revised October 2009
Revised February 2010
Revised December 2010

Revised October 2014

Prepared by

Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WBC Project No. 0120-439-11-166-01

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1C	Typical Section A
1D	Sector Development Plan I
1E	Sector Development Plan II
1F	Sector Development Plan III
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1K Alternate Site Entrance Plan

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2A.2 Separatory Overliner System Plan
2B Typical Section A
2C Typical Section B
2D Typical Section C
2E Typical Section D
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2G Typical Section F

Attachment 3 Existing Contour Map
3A Existing Contour Map
3B Existing Permitted Drainage Areas

Attachment 4 Geology and Geotechnical Report

Attachment 5 Groundwater Characterization Report

Attachment 6 Groundwater and Surfacewater Protection Plan

Attachment 6A Drainage Design Report
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6A.2 Drainage Area Plan
6A.3 Perimeter Drainage Plan
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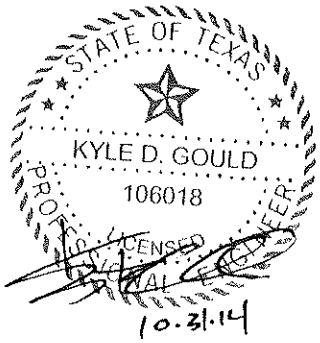
6A.5 Perimeter Channel "B" Profile
6A.6 Perimeter Channel "C" Profile
6A.7 Perimeter Channel "D" Profile
6A.8 Perimeter Channel "E" Profile
6A.9 Perimeter Channel "F" Profile
6A.10 Perimeter Channel "G" Profile
6A.11 Perimeter Channel "H" Profile
6A.12 Perimeter Channel "I" Profile



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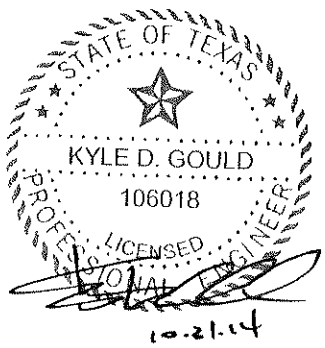

Attachment 6B Harris County Flood Control District Information

Attachment 6C Floodplain Information

Attachment 6D Liner System, Separatory Overliner System, and Final Cover System Details

6D.1 Landfill Completion Plan
6D.1A Bottom of Waste Plan
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6D.2 Final Cover Details
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6D.4 Final Cover Details
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6D.10 East Site Plan
6D.11 East Slurry Wall Profile

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6D.14 Northern East Slurry Wall Extension Profile
6D.15 Slurry Wall Extension of GWRT Clay Cut-off Wall Profile
6D.16 Northern East Slurry Wall Extension, Slurry Wall Extension of GWRT, and Semi-Circular Slurry Wall Details

Attachment 7 Landfill Completion Plan
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7B Post Development Drainage Plan

Attachment 8 Cost Estimate for Closure and Postclosure Care

Attachment 9 Applicant's Statement

Attachment 10 Soil and Liner Quality Control Plans
10A SLSQCP for the Separatory Overliner System (SOS)
10B SLQCP for the Existing Subtitle D Liner

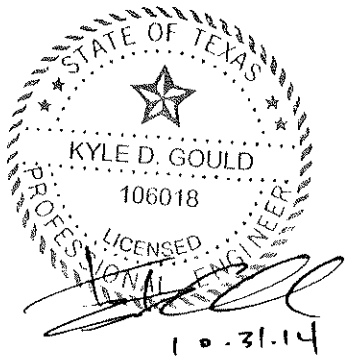
Attachment 11 Groundwater Sampling and Analysis Plan (GWSAP)

Attachment 12 Final Closure Plan

Attachment 13 Postclosure Care Plan

Attachment 14 Landfill Gas Management Plan

Attachment 15 Leachate and Contaminated Water Plan



McCARTY ROAD LANDFILL
CITY OF HOUSTON, HARRIS COUNTY, TEXAS
TCEQ PERMIT NO. MSW-261B

PART III – SITE DEVELOPMENT PLAN
ATTACHMENT 1
SITE LAYOUT PLANS

Prepared for

McCarty Road Landfill TX, LP

Approved Site Development Plan
August 2008
Revised June 2009
Revised October 2009
Revised December 2010

Revised October 2014

Prepared by

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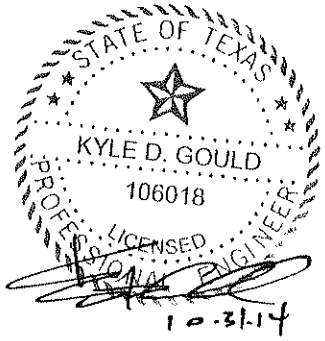
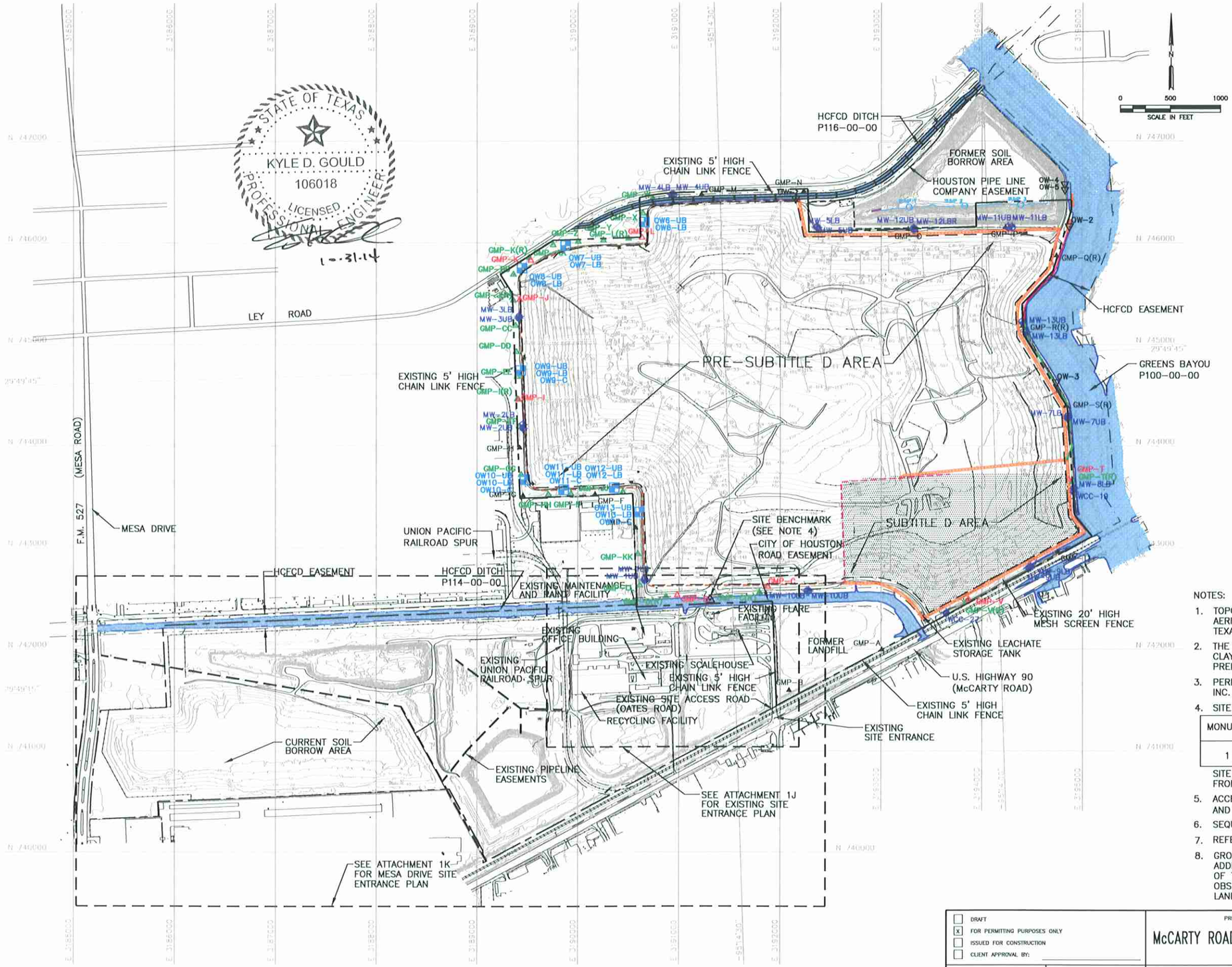
WBC Project No. 0120-439-11-84-01

CONTENTS

1A General Site Plan
1B Sector Development Sequence
1B.1 Access Control Plan
1C Typical Section A
1D Sector Development Plan I
1E Sector Development Plan II
1F Sector Development Plan III
1G Sector Development Plan IV
1H Landfill Completion Plan
1I Existing Bottom of Waste Plan
1I.1 Separatory Overliner System Plan
1J Existing Site Entrance Plan
1K Mesa Drive Site Entrance Plan

This attachment addresses §330.56(a).





STATE OF TEXAS
KYLE D. GOULD
106018
PROFESSIONAL ENGINEER
LICENSED
10-31-14

LEGEND

- PERMIT BOUNDARY
- PROPERTY BOUNDARY
- LIMITS OF WASTE
- DEED RESTRICTION BOUNDARY (SEE NOTE 7)
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- EXISTING 10' CONTOUR
- COMPACTED CLAY SLOPE LINER
- CLAY CUTOFF WALL
- SLURRY WALL
- DEEP SLURRY WALL
- NORTHERN EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- SLURRY WALL EXTENSION OF GWRT (REFER TO ATT. 6D)
- EXISTING GAS EXTRACTION WELL
- EXISTING GAS HEADER
- MW-4UB — EXISTING DETECTION GROUNDWATER MONITORING WELL
- OW7-UB — PROPOSED OBSERVATION WELL (SEE NOTE 8)
- OW-1 — OBSERVATION WELL (SEE NOTE 8)
- GMP-M — EXISTING LANDFILL GAS MONITORING PROBE
- GMP-J — EXISTING LANDFILL GAS MONITORING PROBE TO BE DECOMMISSIONED
- GMP-J(R) — PROPOSED LANDFILL GAS MONITORING PROBE (SEE NOTE 9)
- PERIMETER FENCE
- EASEMENT BOUNDARY
- SITE BENCHMARK (SEE NOTE 4)
- EXISTING SUBTITLE D COMPOSITE LINER AREA
- 100-YR FLOODPLAIN (REFER TO ATTACHMENT 6C)
- EXISTING PIPELINE EASEMENTS
- GROUND WATER RECOVERY TRENCH
- SUMP 2 — GROUND WATER RECOVERY TRENCH SUMP

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
2. THE LOCATIONS OF THE SLURRY WALLS, COMPACTED CLAY SLOPE LINER, AND CLAY CUTOFF WALL WERE REPRODUCED FROM A DECEMBER 1992 DRAWING PREPARED BY HALL SOUTHWEST.
3. PERMIT BOUNDARY AND EASEMENTS WERE REPRODUCED FROM COSTELLO, INC. STANDARD LAND SURVEY DRAWING, DATED MARCH 2004.
4. SITE BENCHMARK INFORMATION IS LISTED BELOW.

MONUMENT	NORTHING	EASTING	ELEVATION
1	29°49'22"	-95°14'33"	43.53

SITE BENCHMARK ELEVATION INFORMATION TAKEN FROM NGVD 1929, 1973 AD3.

5. ACCESS TO THE SITE IS CONTROLLED BY EXISTING PERIMETER FENCE AND NATURAL BARRIERS (E.G., GREENS BAYOU).
6. SEQUENCE OF SITE DEVELOPMENT IS PROVIDED ON ATTACHMENTS 1D THROUGH 1G.
7. REFER TO ATTACHMENT 6, APPENDIX 6A-F FOR DEED RESTRICTION INFORMATION.
8. GROUNDWATER OBSERVATION WELLS OW-1, OW-2, OW-3, OW-4 AND OW-5 WERE ADDED ALONG THE NORTHERN AND EASTERN PERIMETER OF THE LANDFILL AS PART OF THE HARRIS COUNTY SETTLEMENT AGREEMENT. ADDITIONAL PROPOSED OBSERVATION WELLS WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.
9. PROPOSED PROBES DESIGNATED WITH "(R)" ARE REPLACEMENT PROBES. PROPOSED PROBES GMP-W THROUGH GMP-LL WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.

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- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 08/2008 | DRAWN BY: JDW
FILE: 0120-439-11 | DESIGN BY: SAN
CAD: 1A-GEN_SITE_PLAN.DWG | REVIEWED BY: JPY

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PREPARED FOR
McCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	02/2009	REMOVED MESA DRIVE ENTRANCE ROAD
2	10/2009	UPDATED GROUNDWATER OBSERVATION WELLS, LANDFILL GAS MONITORING PROBES, AND ADDED EAST SLURRY WALL.
3	12/2010	PERMIT MODIFICATION
4	10/2014	PERMIT MODIFICATION

GENERAL SITE PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
WWW.WEAVERBOOS.COM

ATTACHMENT 1A

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O:\0120\439\SLURRY WALL REMOVAL MOD\CLEAN\1A-Gen_Site_Plan.dwg, 10/23/2014 9:39:20 AM, rsellers, 1:2

STATE OF TEXAS
KYLE D. GOULD
106018
PROFESSIONAL ENGINEER
LICENSED
1-31-14

HCFCD DITCH P116-00-00
LEY ROAD
EXISTING 5' HIGH CHAIN LINK FENCE
FORMER SOIL BORROW AREA
HOUSTON PIPE LINE COMPANY EASEMENT
SUMP 1
SUMP 2
SUMP 3
MW-4LB MW-4UB GMP-M
MW-5LB MW-5UB
MW-12UB MW-12LBR GMP-O
MW-11UB MW-11LB GMP-P
GMP-Q(R)
MW-3LB MW-3UB
MW-13UB GMP-R(R) MW-13LB
GREENS BAYOU P100-00-00
GMP-S(R) MW-7LB MW-7UB
MW-2LB MW-2UB
GMP-H
GMP-G
GMP-F
GMP-E
MW-8LB MW-8UB MW-9LB MW-9UB MW-10LB MW-10UB
MW-1LB MW-1UB
HCFCD DITCH P114-00-00
UNION PACIFIC RAILROAD SPUR EASEMENT
EXISTING 20' HIGH MESH SCREENING FENCE
EXISTING FLARE FACILITY
EXISTING MAINTENANCE AND PAINT FACILITY
CITY OF HOUSTON ROAD EASEMENT
FORMER LANDFILL
HL&P EASEMENT
EXISTING OFFICE BUILDING
EXISTING SCALEHOUSE
EXISTING SITE ACCESS ROAD (OATES ROAD)
U.S. HIGHWAY 90 (McCARTY ROAD)
UNION PACIFIC RAILROAD
EXISTING 5' HIGH CHAIN LINK FENCE
SITE ENTRANCE FROM McCARTY ROAD
GMP-A
GMP-B
HL&P EASEMENT
EXISTING 5' HIGH CHAIN LINK FENCE

N
0 300 600
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- EXISTING CONTOUR
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- COMPACTED CLAY SLOPE LINER
- CLAY CUTOFF WALL
- SLURRY WALL
- DEEP SLURRY WALL
- EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- NORTHERN EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- PROPOSED SLURRY WALL EXTENSION OF GWRT COMPACTED CLAY CUTOFF WALL (REFER TO ATT. 6D)
- 20 BOTTOM OF WASTE ELEVATION (FT-MSL) (SEE NOTE 4)
- 18 BOTTOM OF WASTE CONTOUR (SEE NOTE 5)
- PERIMETER FENCE
- EASEMENT BOUNDARY
- 100-YR FLOODPLAIN (REFER TO ATTACHMENT 6C)
- MW-4UB EXISTING DETECTION GROUNDWATER MONITORING WELL
- GMP-M EXISTING LANDFILL GAS MONITORING PROBE
- SUMP AND LEACHATE LINE
- GROUND WATER RECOVERY TRENCH
- SUMP 2 GROUND WATER RECOVERY TRENCH SUMP

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
2. THE LOCATIONS OF THE SLURRY WALLS, COMPACTED CLAY SLOPE LINER, AND CLAY CUTOFF WALL WERE REPRODUCED FROM A DECEMBER 1992 DRAWING PREPARED BY HALL SOUTHWEST.
3. SEE ATTACHMENT 15 FOR LEACHATE FORCEMAIN AND STORAGE TANK INFORMATION.
4. BOTTOM OF WASTE INFORMATION COMPILED FROM AVAILABLE SLER REPORTS FOR THE PRE-SUBTITLE D AREA.
5. SUMPS, LEACHATE COLLECTION PIPE AND BOTTOM OF WASTE ELEVATIONS FOR THE SUBTITLE D AREA WERE REPRODUCED FROM AN AS-BUILT SURVEY BY COSTELLO, INC.
6. SEQUENCE OF SITE DEVELOPMENT IS PROVIDED ON ATTACHMENTS 1D THROUGH 1G.
7. PERMIT BOUNDARY AND EASEMENTS WERE REPRODUCED FROM COSTELLO, INC. STANDARD LAND SURVEY DRAWING, DATED MARCH 2004.

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 08/2008
FILE: 0120-439-11
CAD: 11-TOP OF LINER.DWG
DRAWN BY: SRF
DESIGN BY: DOL
REVIEWED BY: JPY

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PREPARED FOR
McCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	09/2008	ADDED EAST SLURRY WALL
2	12/2010	PERMIT MODIFICATION
3	10/2014	PERMIT MODIFICATION

EXISTING BOTTOM OF WASTE PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

WWW.WEAVERBOOS.COM

ATTACHMENT 1I

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O:\0120\439\SLURRY WALL REMOVAL MOD\CLEAN\11-TOP OF LINER.dwg, 10/24/2014 1:32:06 PM, rsellers, 1:2

McCARTY ROAD LANDFILL
CITY OF HOUSTON, HARRIS COUNTY, TEXAS
TCEQ PERMIT NO. MSW-261B

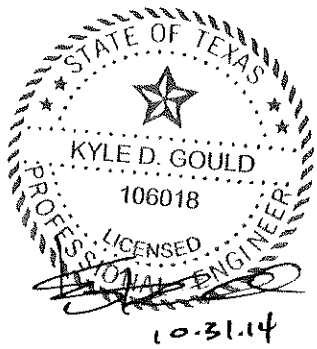
PART III – SITE DEVELOPMENT PLAN
ATTACHMENT 2
FILL CROSS SECTIONS

Prepared for

McCarty Road Landfill TX, LP

Approved Site Development Plan
August 2008
Revised October 2009
Revised December 2010

Revised October 2014



Prepared by

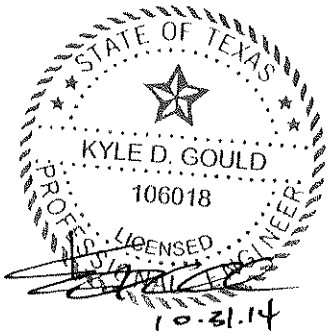
Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WBC Project No. 0120-439-11-84-01

CONTENTS

2A Typical Section Site Plan
2A.1 Bottom of Waste Plan
2A.2 Separatory Overliner Plan
2B Typical Section A
2C Typical Section B
2D Typical Section C
2E Typical Section D
2F Typical Section E
2G Typical Section F

This attachment addresses §330.56(b).



STATE OF TEXAS
KYLE D. GOULD
106018
PROFESSIONAL ENGINEER
LICENSED
10-31-14

HCFCD DITCH P116-00-00
FORMER SOIL BORROW AREA
LEY ROAD
HOUSTON PIPE LINE COMPANY EASEMENT
GREENS BAYOU P100-00-00
UNION PACIFIC RAILROAD SPUR EASEMENT
HCFCD DITCH P114-00-00
EXISTING FLARE FACILITY
EXISTING MAINTENANCE AND PAINT FACILITY
EXISTING SCALEHOUSE
EXISTING SITE ACCESS ROAD (OATES ROAD)
EXISTING OFFICE BUILDING
CITY OF HOUSTON ROAD EASEMENT
FORMER LANDFILL
HL&P EASEMENT
U.S. HIGHWAY 90 (McCARTY ROAD)
UNION PACIFIC RAILROAD
HL&P EASEMENT

0 300 600
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- DEED RESTRICTION BOUNDARY (SEE NOTE 5)
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- EXISTING CONTOUR
- FINAL CONTOURS
- COMPACTED CLAY SLOPE LINER
- CLAY CUTOFF WALL
- SLURRY WALL
- DEEP SLURRY WALL
- NORTHERN EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- SLURRY WALL EXTENSION OF GWRT (REFER TO ATT. 6D)
- MW-4UB — EXISTING DETECTION GROUNDWATER MONITORING WELL
- OW7-UB — PROPOSED OBSERVATION WELL CLUSTERS (SEE NOTE 7)
- OW-1 — EXISTING OBSERVATION WELL (SEE NOTE 7)
- GMP-M — EXISTING LANDFILL GAS MONITORING PROBE
- GMP-K — EXISTING LANDFILL GAS MONITORING PROBE TO BE DECOMMISSIONED
- GMP-J(R) — PROPOSED LANDFILL GAS MONITORING PROBE (SEE NOTE 6)
- EASEMENT BOUNDARY
- S-5 — SOUTHWEST LAB SOIL BORING
- WCC-51 — WOODWARD CLYDE SOIL BORING
- GABIONS
- PROPOSED DRAINAGE SWALE
- PROPOSED DRAINAGE LETDOWN
- GROUND WATER RECOVERY TRENCH
- SUMP 2 — GROUND WATER RECOVERY TRENCH SUMP

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
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3. BORING LOCATIONS HAVE BEEN REPRODUCED FROM VARIOUS SUBSURFACE INVESTIGATIONS PREVIOUSLY COMPLETED AND ARE APPROXIMATE. ONLY BORINGS SHOWN ON SECTIONS ARE PRESENTED ON THIS DRAWING. PLEASE REFER TO ATTACHMENT 4, FIGURE 4B.2 FOR A FIGURE THAT SHOWS ALL THE BORINGS COMPLETED AT THE SITE.
4. REFER TO ATTACHMENT 1H FOR THE FINAL CONTOUR PLAN AND 1I FOR THE BOTTOM OF WASTE PLAN.
5. REFER TO ATTACHMENT 6, APPENDIX 6A-F FOR DEED RESTRICTION INFORMATION.
6. PROPOSED PROBES DESIGNATED WITH "(R)" ARE REPLACEMENT PROBES. PROPOSED PROBES GMP-W THROUGH GMP-LL WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.
7. GROUNDWATER OBSERVATION WELLS OW-1, OW-2, OW-3, OW-4 AND OW-5 WERE ADDED ALONG THE NORTHERN AND EASTERN PERIMETER OF THE LANDFILL AS PART OF THE HARRIS COUNTY SETTLEMENT AGREEMENT. ADDITIONAL PROPOSED OBSERVATION WELLS WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.

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- [ ] CLIENT APPROVAL BY: _____

DATE: 08/2008
FILE: 0120-439-11
CAD: 2A-SITE PLAN.DWG
DRAWN BY: SRF
DESIGN BY: DOL
REVIEWED BY: JPY

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PREPARED FOR
McCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	09/2008	UPDATED LANDFILL GAS MONITORING PROBES AND ADDED EAST SLURRY WALL.
2	12/2010	PERMIT MODIFICATION
3	10/2014	PERMIT MODIFICATION

TYPICAL SECTION SITE PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
WWW.WEAVERBOOS.COM

ATTACHMENT 2A

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O:\0120\439\SLURRY WALL REMOVAL MOD\CLEAN\2A-SITE PLAN.dwg, 10/24/2014 1:42:29 PM, rsellers, 1:2

STATE OF TEXAS
KYLE D. GOULD
106018
LICENSED
PROFESSIONAL ENGINEER
10-31-14

HCFCD DITCH P116-00-00
LEY ROAD
EXISTING 5' HIGH CHAIN LINK FENCE
FORMER SOIL BORROW AREA
HOUSTON PIPE LINE COMPANY EASEMENT
PRE-SUBTITLE D AREA
SUBTITLE D AREA
GREENS BAYOU P100-00-00
UNION PACIFIC RAILROAD SPUR EASEMENT
HCFCD DITCH P114-00-00
EXISTING FLARE FACILITY
EXISTING MAINTENANCE AND PAINT FACILITY
EXISTING SCALEHOUSE
EXISTING SITE ACCESS ROAD (OATES ROAD)
EXISTING OFFICE BUILDING
SITE ENTRANCE FROM McCARTY ROAD
CITY OF HOUSTON ROAD EASEMENT
FORMER LANDFILL
HL&P EASEMENT
UNION PACIFIC RAILROAD
EXISTING 5' HIGH CHAIN LINK FENCE
EXISTING 20' HIGH MESH SCREENING FENCE
U.S. HIGHWAY 90 (McCARTY ROAD)

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- EXISTING CONTOUR
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- COMPACTED CLAY SLOPE LINER
- CLAY CUTOFF WALL
- SLURRY WALL
- DEEP SLURRY WALL
- NORTHERN EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- SLURRY WALL EXTENSION OF GWRT (REFER TO ATT. 6D)
- 20 BOTTOM OF WASTE ELEVATION (FT-MSL) (SEE NOTE 4)
- 18 BOTTOM OF WASTE CONTOUR (SEE NOTE 5)
- PERIMETER FENCE
- MW-4UB EXISTING DETECTION GROUNDWATER
- GMP-M EXISTING LANDFILL GAS MONITORING PROBE
- EASEMENT BOUNDARY
- S-5 SOUTHWEST LAB SOIL BORING
- WCC-51 WOODWARD CLYDE SOIL BORING
- SUMP AND LEACHATE LINE
- GROUND WATER RECOVERY TRENCH
- SUMP 2 GROUND WATER RECOVERY TRENCH SUMP

N
0 300 600
SCALE IN FEET

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
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4. REFER TO ATTACHMENT 1H FOR THE FINAL CONTOUR PLAN AND 1I FOR THE BOTTOM OF WASTE PLAN.
5. REFER TO ATTACHMENT 6, APPENDIX 6A-F FOR DEED RESTRICTION INFORMATION.
6. GROUNDWATER OBSERVATION WELLS OW-1, OW-2, OW-3, OW-4 AND OW-5 WERE ADDED ALONG THE NORTHERN AND EASTERN PERIMETER OF THE LANDFILL AS PART OF THE HARRIS COUNTY SETTLEMENT AGREEMENT. ADDITIONAL PROPOSED OBSERVATION WELLS WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.
7. PROPOSED PROBES DESIGNATED WITH "(R)" ARE REPLACEMENT PROBES. PROPOSED PROBES GMP-W THROUGH GMP-LL ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 08/2008 | DRAWN BY: SRF
FILE: 0120-439-11 | DESIGN BY: DOL
CAD: 2A.1-BOTTOM-WASTE.DWG | REVIEWED BY: JPY

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PREPARED FOR
McCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	09/2008	ADDED EAST SLURRY WALL.
2	12/2010	PERMIT MODIFICATION
3	10/2014	PERMIT MODIFICATION

EXISTING BOTTOM OF WASTE PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
WWW.WEAVERBOOS.COM

ATTACHMENT 2A.1

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G:\0120\439\SLURRY WALL REMOVAL MOD\CLEAN\2A.1-BOTTOM-WASTE.dwg, 10/31/2014 3:11:55 PM, rsellers, 1:2

STATE OF TEXAS
KYLE D. GOULD
106018
LICENSED
PROFESSIONAL ENGINEER
10-21-14

20-ACRE AREA IN WHICH FINAL COVER HAS BEEN PLACED

HCFCD DITCH P116-00-00

LEY ROAD

HCFCD EASEMENT

FORMER SOIL BORROW AREA

HOUSTON PIPE LINE COMPANY EASEMENT

GREENS BAYOU P100-00-00

HCFCD EASEMENT

UNION PACIFIC RAILROAD SPUR EASEMENT

HCFCD DITCH P114-00-00

SUBTITLE D AREA (COMPOSITE LINER SYSTEM)

EXISTING FLARE FACILITY

HCFCD EASEMENT
CITY OF HOUSTON ROAD EASEMENT

EXISTING MAINTENANCE AND PAINT FACILITY

FORMER LANDFILL

EXISTING SCALEHOUSE

EXISTING SITE ACCESS ROAD (OATES ROAD)

EXISTING OFFICE BUILDING

SITE ENTRANCE FROM McCARTY ROAD

HL&P EASEMENT

U.S. HIGHWAY 90 (McCARTY ROAD)

UNION PACIFIC RAILROAD

HL&P EASEMENT

SCALE IN FEET: 0, 300, 600

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- EXISTING CONTOUR
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- COMPACTED CLAY SLOPE LINER
- CLAY CUTOFF WALL
- SLURRY WALL
- DEEP SLURRY WALL
- NORTHERN EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- SLURRY WALL EXTENSION OF GWRT (REFER TO ATT. 6D)
- EXPEDITED FINAL COVER AREA (SEE NOTE 5)
- LIMITS OF SEPARATORY OVERLINER SYSTEM
- PROPOSED SEPARATORY OVERLINER SYSTEM TOP OF LINER CONTOUR
- PROPOSED SEPARATORY OVERLINER SYSTEM LEACHATE COLLECTION PIPE (SEE NOTE 4)
- PRPOSED SEPARATORY OVERLINER SYSTEM LEACHATE COLLECTION SUMP (SEE NOTE 4)
- LIMITS OF THE PRE-SUBTITLE D/ SUBTITLE D AREA
- PERIMETER FENCE
- MW-4UB — EXISTING DETECTION GROUNDWATER MONITORING WELL
- OW7-UB — PROPOSED OBSERVATION WELL (SEE NOTE 7)
- OW-1 — OBSERVATION WELL (SEE NOTE 7)
- GMP-M — EXISTING LANDFILL GAS MONITORING PROBE
- GMP-K — EXISTING LANDFILL GAS MONITORING PROBE TO BE DECOMMISSIONED
- GMP-J(R) — PROPOSED LANDFILL GAS MONITORING PROBE (SEE NOTE 6)
- EASEMENT BOUNDARY
- GROUND WATER RECOVERY TRENCH
- SUMP 2 — GROUND WATER RECOVERY TRENCH SUMP

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
2. PERMIT BOUNDARY AND EASEMENTS WERE REPRODUCED FROM COSTELLO, INC. STANDARD LAND SURVEY DRAWING, DATED MARCH 2004.
3. BORING LOCATIONS HAVE BEEN REPRODUCED FROM VARIOUS SUBSURFACE INVESTIGATIONS PREVIOUSLY COMPLETED AND ARE APPROXIMATE. ONLY BORINGS SHOWN ON SECTIONS ARE PRESENTED ON THIS DRAWING. PLEASE REFER TO ATTACHMENT 4, FIGURE 4B.2 FOR A FIGURE THAT SHOWS ALL THE BORINGS COMPLETED AT THE SITE.
4. REFER TO ATTACHMENT 6D FOR SEPARATORY OVERLINER SYSTEM DETAILS.
5. AS INDICATED IN ATTACHMENT 12-FINAL CLOSURE PLAN, McCARTY ROAD LANDFILL TX, LP WILL CONSTRUCT FINAL COVER AS THE SITE IS DEVELOPED. ONCE ANY 20-ACRE SIDESLOPE AREA, LOCATED IN THE EXPEDITED FINAL COVER AREA SHOWN ON FIGURE 12.1A IN ATTACHMENT 12, REACHES THE PERMITTED FINAL ELEVATION, THE LANDFILL WILL COMMENCE PLACEMENT OF FINAL COVER OVER THE 20-ACRE AREA WITHIN 12 MONTHS OF BRINGING THE 20-ACRE AREA TO THE FINAL PERMITTED WASTE FILL GRADE. THIS REQUIREMENT IS CONSISTENT WITH THE DECEMBER 4, 2007 MEDIATED SETTLEMENT AGREEMENT BETWEEN McCARTY ROAD LANDFILL TX, LP AND HARRIS COUNTY.
6. PROPOSED PROBES DESIGNATED WITH "(R)" ARE REPLACEMENT PROBES. PROPOSED PROBES GMP-W THROUGH GMP-LL WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT SETTLEMENT AGREEMENT.
7. GROUNDWATER OBSERVATION WELLS OW-1, OW-2, OW-3, OW-4 AND OW-5 WERE ADDED ALONG THE NORTHERN AND EASTERN PERIMETER OF THE LANDFILL AS PART OF THE HARRIS COUNTY SETTLEMENT AGREEMENT. ADDITIONAL PROPOSED OBSERVATION WELLS WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.

- [ ] DRAFT
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- [ ] CLIENT APPROVAL BY: _____

DATE: 08/2008
FILE: 0120-439-11
CAD: 2A.2-SEPARATORY OVERLINER.DWG
DRAWN BY: SRF
DESIGN BY: DOL
REVIEWED BY: JPY

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PREPARED FOR

McCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	09/2008	UPDATED GROUNDWATER OBSERVATION WELLS, LANDFILL GAS MONITORING PROBES AND ADDED EAST SLURRY WALL.
2	12/2010	PERMIT MODIFICATION
3	10/2014	PERMIT MODIFICATION

SEPARATORY OVERLINER SYSTEM PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

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ATTACHMENT 2A.2

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McCARTY ROAD LANDFILL
CITY OF HOUSTON, HARRIS COUNTY, TEXAS
TCEQ PERMIT NO. MSW-261B

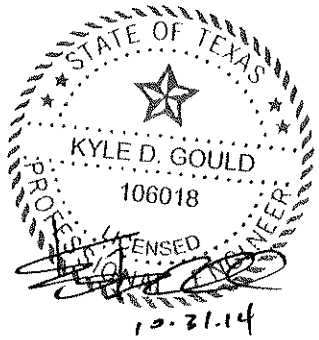
PART III – SITE DEVELOPMENT PLAN
ATTACHMENT 6
GROUNDWATER AND SURFACE WATER PROTECTION PLAN

Prepared for

McCarty Road Landfill TX, LP

Approved Site Development Plan
August 2008
Revised October 2009
Revised August 2010
Revised December 2010

Revised October 2014



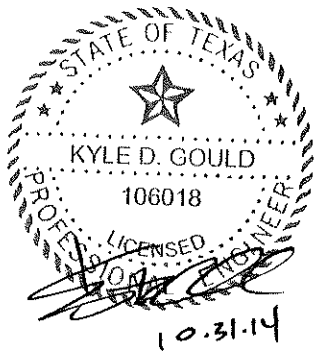
Prepared by

Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WBC Project No. 0120-439-11-84-01

CONTENTS

6A Drainage Design Report
6B Harris County Flood Control District Information
6C Floodplain Information
6D Liner System, Separatory Overliner System, and Final Cover System Details



McCARTY ROAD LANDFILL
CITY OF HOUSTON, HARRIS COUNTY, TEXAS
TCEQ PERMIT NO. MSW-261B

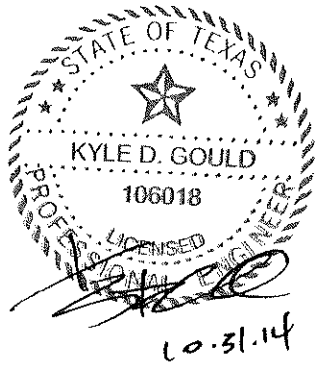
PART III – SITE DEVELOPMENT PLAN
ATTACHMENT 6D
LINER SYSTEM, SEPARATORY OVERLINER SYSTEM, AND FINAL COVER SYSTEM DETAILS

Prepared for

McCarty Road Landfill TX, LP

Approved Site Development Plan
August 2008
Revised October 2009
Revised December 2010

Revised October 2014



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TBPE Registration No. F-3727
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Fort Worth, Texas 76109
817-735-9770

WBC Project No. 0120-439-11-84-01

CONTENTS

Groundwater Protection Design Summary 6D-1

ATTACHMENT 6D.1
Landfill Completion Plan

ATTACHMENT 6D.1A
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ATTACHMENT 6D.1B
Separatory Overliner System Site Plan

ATTACHMENT 6D.2
Final Cover Details

ATTACHMENT 6D.3
Final Cover Details

ATTACHMENT 6D.4
Final Cover Details

ATTACHMENT 6D.5
Separatory Overliner System Typical Section

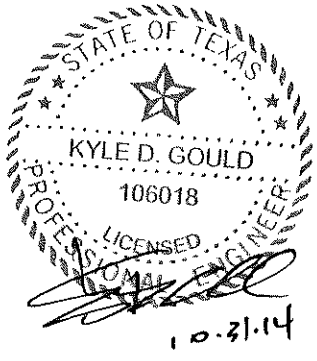
ATTACHMENT 6D.6
Separatory Overliner System Details

ATTACHMENT 6D.7
Separatory Overliner System Details

ATTACHMENT 6D.8
Separatory Overliner System Typical LFG Extraction Well Details

ATTACHMENT 6D.9
Slurry Wall Site Plan

ATTACHMENT 6D.10
East Area Site Plan



CONTENTS

ATTACHMENT 6D.11
East Slurry Wall Profile

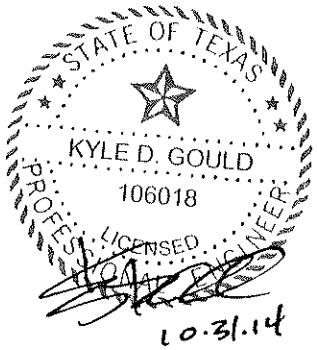
ATTACHMENT 6D.12
East Slurry Wall Details

ATTACHMENT 6D.13
Northern East Slurry Wall Extension and Slurry Wall Extension of GWRT Clay Cut-off Wall Plan

ATTACHMENT 6D.14
Northern East Slurry Wall Extension Profile

ATTACHMENT 6D.15
Slurry Wall Extension of GWRT Clay Cut-off Wall Profile

ATTACHMENT 6D.16
Northern East Slurry Wall Extension, Slurry Wall Extension of GWRT, and Semi-Circular Slurry Wall Details



- Attachment 6D.10 – East Area Site Plan. This plan shows a more detailed plan view of the East Slurry Wall as well as locations of soil borings used to develop the East Slurry Wall Profile shown on Attachment 6D.11.
- Attachment 6D.11 – East Slurry Wall Profile. The profile shown on this attachment includes the design of the East Slurry Wall and illustrates how the East Slurry Wall will be tied into the existing 1999 Slurry Wall on the northern portion of the site, the existing 1988 Slurry Wall on the southern portion of the site, and the clay aquiclude underlying the lower B sands.
- Attachment 6D.12 – East Slurry Wall Details. This attachment includes a typical section of the East Slurry Wall and provides a detail of the slurry wall cap.

Northern East Slurry Wall Extension, and Slurry Extension of GWRT Clay Cut-off Wall

The design of the slurry walls is consistent with the December 4, 2007 Harris County Settlement Agreement and is summarized on the following drawings.

- Attachment 6D.13 – Northern East Slurry Wall Extension and Slurry Wall Extension of GWRT Clay Cut-off Wall Plan. This plan shows a more detailed plan view of the Northern East Slurry Wall Extension as well as locations of soil borings used to develop the Northern East Slurry Wall Extension and Slurry Wall Extension of GWRT Clay Cut-off Wall profile shown on Attachment 6D.14 and 6D.15, respectively.
- Attachment 6D.14 – Northern East Slurry Wall Extension. The profile shown on this attachment includes the design of the Northern East Slurry Wall Extension and illustrates how the Northern East Slurry Wall Extension will be tied into the existing 1999 Slurry Wall on the northern portion of the site and the clay aquiclude underlying the upper B sands.
- Attachment 6D.15 – Slurry Wall Extension of GWRT Clay Cut-off Wall Profile. The profile shown on this attachment includes the design of the Slurry Wall Extension of GWRT Clay Cut-off Wall and illustrates how the Slurry Wall Extension of GWRT Clay Cut-off Wall will be tied into the existing GWRT clay cut-off wall and extend to the west 100 feet.
- Attachment 6D.16 – Northern East Slurry Wall Extension and Slurry Wall Extension of GWRT. This attachment includes a typical section of the Northern East Slurry Wall Extension and Slurry Wall Extension of GWRT Clay Cut-off Wall, and provides a detail of the slurry wall cap.

STATE OF TEXAS
KYLE D. GOULD
106018
LICENSED
PROFESSIONAL ENGINEER
10.31.14

HCFCD DITCH (P116-00-00)
EXISTING 36" CULVERT
LEY ROAD
EXISTING 36" CULVERT
FORMER SOIL BORROW AREA
HOUSTON PIPE LINE COMPANY EASEMENT
SLURRY CUT-OFF WALL CONSTRUCTED IN 1988.
REFER TO ATTACHMENT 6D.13
EXISTING 1999 SLURRY WALL WILL BE VERTICALLY EXTENDED IN THIS AREA (REFER TO DRAWING 5)
1999 DEEP SLURRY WALL
EAST SLURRY WALL
REFER TO ATTACHMENT 6D.10
REFER TO ATTACHMENT 6D.16
SUBTITLE D AREA
HCFCD EASEMENT
GREENS BAYOU (H100-00-00)
UNION PACIFIC RAILROAD SPUR EASEMENT
HCFCD DITCH (P114-00-00)
HCFCD EASEMENT
EXISTING FLARE FACILITY
EXISTING MAINTENANCE AND PAINT FACILITY
EXISTING SCALEHOUSE
EXISTING OFFICE BUILDING
EXISTING SITE ACCESS ROAD (OATES ROAD)
SITE ENTRANCE FROM McCARTY ROAD
REGYCLING PLANT
CITY OF HOUSTON ROAD EASEMENT
FORMER LANDFILL
EXISTING LEACHATE STORAGE TANK
HL&P EASEMENT
SITE ENTRANCE
HL&P EASEMENT
UNION PACIFIC RAILROAD
U.S. HIGHWAY 90 (McCARTY ROAD)

LEGEND

- PERMIT BOUNDARY (MSW PERMIT NO. 26IB)
- STATE PLANE COORDINATE SYSTEM
- GEODETIC COORDINATE SYSTEM
- EXISTING 10' CONTOUR
- NORTHERN EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D.13)
- EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D.10)
- SLURRY WALL EXTENSION OF GWRT (REFER TO ATT. 6D.13)
- CLAY CUTOFF WALL
- EXISTING COMPACTED CLAY SLOPE LINER (SEE NOTE 3)
- EXISTING 1988 SLURRY WALL (SEE NOTE 3 AND 4)
- EXISTING 1999 DEEP SLURRY WALL (SEE NOTE 4 AND 5)
- MW-4UB — EXISTING DETECTION GROUNDWATER MONITORING WELL
- OW7-UB — PROPOSED AAWWE OBSERVATION WELL (SEE NOTE 7)
- OW-1 — HARRIS COUNTY OBSERVATION WELL (SEE NOTE 7)
- GMP-M — EXISTING LANDFILL GAS MONITORING PROBE
- GMP-K — EXISTING LANDFILL GAS MONITORING PROBE TO BE DECOMMISSIONED
- GMP-K(R) — PROPOSED LANDFILL GAS MONITORING PROBE
- EXISTING GROUNDWATER MONITOR WELL/ PERIODIC EXTRACTION WELL (CORRECTIVE ACTION)
- EXTRACTION WELL (CORRECTIVE ACTION)
- OBSERVATION WELL (CORRECTIVE ACTION)
- PIEZOMETER (CORRECTIVE ACTION)
- BORING
- PIEZOMETER
- EASEMENT BOUNDARY
- GROUND WATER RECOVERY TRENCH (SEE NOTE 6)
- SUMP 2 — GROUND WATER RECOVERY TRENCH SUMP (SEE NOTE 6)

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
2. PERMIT BOUNDARY AND EASEMENTS WERE REPRODUCED FROM COSTELLO, INC. STANDARD LAND SURVEY DRAWING, DATED MARCH 2004.
3. THE LOCATIONS OF THE SLURRY WALLS, COMPACTED CLAY SLOPE LINER, AND TRENCH LINER WERE REPRODUCED FROM A DECEMBER 1992 DRAWING PREPARED BY HALL SOUTHWEST.
4. THE SLURRY WALL WAS CONSTRUCTED IN 1988 AS DETAILED IN THE WOODWARD-CLYDE CONSULTANT AS-BUILT REPORT, DATED MAY 1988.
5. DEEP SLURRY WALL LOCATION REPRODUCED FROM MARCH 2000 SLURRY WALL CONSTRUCTION QUALITY ASSURANCE REPORT PREPARED BY ENVIRONMENTAL RESOURCES MANAGEMENT.
6. REFER TO PARTS I/II, FIGURE I/II-3.3-CORRECTIVE MEASURES PLAN FOR FURTHER INFORMATION REGARDING THE GROUNDWATER RECOVERY TRENCH AND SUMP.
7. GROUNDWATER OBSERVATION WELLS OW-1, OW-2, OW-3, OW-4 AND OW-5 WERE ADDED ALONG THE NORTHERN AND EASTERN PERIMETER OF THE LANDFILL AS PART OF THE HARRIS COUNTY SETTLEMENT AGREEMENT. ADDITIONAL PROPOSED OBSERVATION WELLS WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.

0 300 600
SCALE IN FEET

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DATE: 09/2008
FILE: 0120-439-11
CAD: 6D.9-SITE PLAN.DWG
DRAWN BY: SRF
DESIGN BY: DOL
REVIEWED BY: JPY

PREPARED FOR
MCCARTY ROAD LANDFILL TX, LP

REVISIONS		
NO.	DATE	DESCRIPTION
1	09/2011	PERMIT MODIFICATION
2	10/2014	PERMIT MODIFICATION

SLURRY WALL SITE PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
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ATTACHMENT 6D.9

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STATE OF TEXAS
KYLE D. GOULD
106018
LICENSED PROFESSIONAL ENGINEER
10-31-14

SLURRY CUT-OFF WALL CONSTRUCTED IN 1988.

GREENS BAYOU (P100-00-00)

1999 DEEP SLURRY WALL

HCFCD EASEMENT

EAST SLURRY WALL EXTENSION/1988 SLURRY WALL TRANSITION ZONE

EAST SLURRY WALL

EXISTING 1999 SLURRY WALL WILL BE VERTICALY EXTENDED IN THIS AREA (REFER TO ATTACHMENT 6D.11)

SUBTITLE D AREA

HOUSTON PIPE LINE COMPANY EASEMENT

SCALE IN FEET: 0 150 300

LEGEND

- PERMIT BOUNDARY (MSW PERMIT NO. 26IB)
- 745000 N — STATE PLANE COORDINATE SYSTEM
- 20 — EXISTING 10' CONTOUR
- 22 — TOP OF PROTECTIVE COVER
- NORTHERN EAST SLURRY WALL EXTENSION
- EAST SLURRY WALL EXTENSION
- EXISTING 1988 SLURRY WALL (SEE NOTE 3 AND 4)
- EXISTING 1999 DEEP SLURRY WALL (SEE NOTE 4 AND 5)
- CLAY CUTOFF WALL
- MW-4UB — EXISTING GROUNDWATER MONITORING WELL
- GMP-M — EXISTING LANDFILL GAS MONITORING PROBE
- EXISTING GROUNDWATER MONITOR WELL/ PERIODIC EXTRACTION WELL (CORRECTIVE ACTION)
- OW-2 — HARRIS COUNTY OBSERVATION WELL
- EXTRACTION WELL (CORRECTIVE ACTION)
- OBSERVATION WELL (CORRECTIVE ACTION)
- PIEZOMETER (CORRECTIVE ACTION)
- BORING
- CMG-26UG — BORING
- PIEZOMETER
- EASEMENT BOUNDARY
- GROUND WATER RECOVERY TRENCH (SEE NOTE 6)
- SUMP 2 — GROUND WATER RECOVERY TRENCH SUMP (SEE NOTE 6)

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
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3. THE LOCATIONS OF THE SLURRY WALLS AND TRENCH LINER WERE REPRODUCED FROM A DECEMBER 1992 DRAWING PREPARED BY HALL SOUTHWEST.
4. THE SLURRY WALL WAS CONSTRUCTED IN 1988 AS DETAILED IN THE WOODWARD-CLYDE CONSULTANT AS-BUILT REPORT, DATED MAY 1988.
5. DEEP SLURRY WALL LOCATION REPRODUCED FROM MARCH 2000 SLURRY WALL CONSTRUCTION QUALITY ASSURANCE REPORT PREPARED BY ENVIRONMENTAL RESOURCES MANAGEMENT.
6. REFER TO PARTS I/II, FIGURE I/II-3.3-CORRECTIVE MEASURES PLAN FOR FURTHER INFORMATION REGARDING THE GROUNDWATER RECOVERY TRENCH AND SUMP.

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DATE: 09/2008
FILE: 0120-439-11
CAD: 02-EAST SITE PLAN.DWG

DRAWN BY: CC
DESIGN BY: DOL
REVIEWED BY: JPY

PREPARED FOR
MCCARTY ROAD LANDFILL TX, LP

REVISIONS		
NO.	DATE	DESCRIPTION
1	09/2011	PERMIT MODIFICATION
2	10/2014	PERMIT MODIFICATION

PERMIT MODIFICATION
EAST AREA SITE PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

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ATTACHMENT 6D.10

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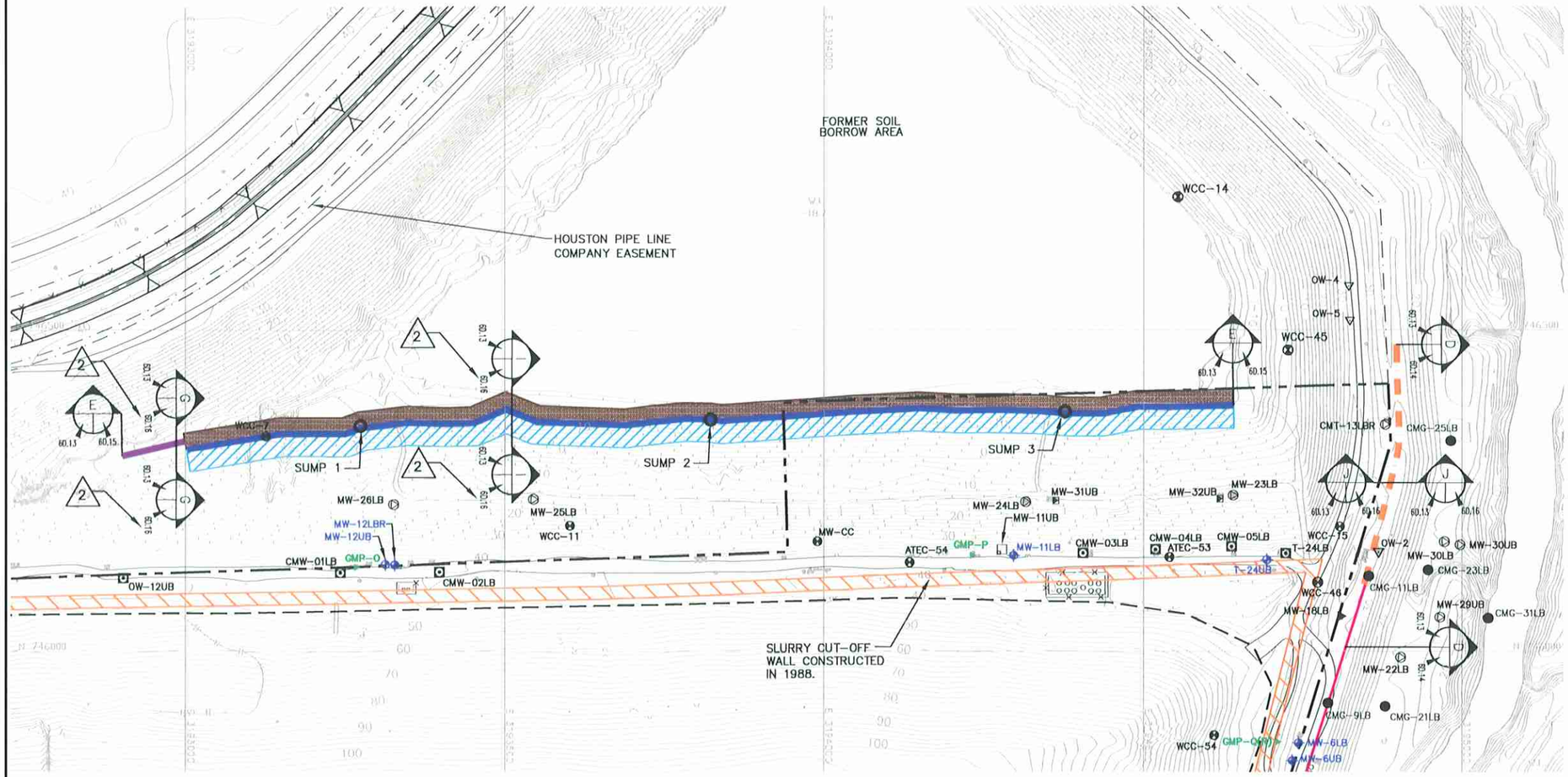

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SCALE IN FEET

LEGEND

- PERMIT BOUNDARY (MSW PERMIT NO. 26IB)
- STATE PLANE COORDINATE SYSTEM
- EXISTING 10' CONTOUR
- NORTHERN EAST SLURRY WALL EXTENSION
- SLURRY WALL EXTENSION OF GWRT COMPACTED CLAY CUTOFF WALL
- EXISTING 1988 SLURRY WALL (SEE NOTE 3 AND 4)
- EXISTING 1999 DEEP SLURRY WALL (SEE NOTE 4 AND 5)
- GROUNDWATER RECOVERY TRENCH AND COMPACTED CLAY BACKFILL
- SUMP 3 — GROUNDWATER RECOVERY TRENCH SUMP
- MW-4UB — EXISTING GROUNDWATER MONITORING WELL
- CMP-M — EXISTING LANDFILL GAS MONITORING PROBE
- EXISTING GROUNDWATER MONITOR WELL/ PERIODIC EXTRACTION WELL (CORRECTIVE ACTION)
- OW-2 — HARRIS COUNTY OBSERVATION WELL
- EXTRACTION WELL (CORRECTIVE ACTION)
- OBSERVATION WELL (CORRECTIVE ACTION)
- PIEZOMETER (CORRECTIVE ACTION)
- BORING
- CMG-26UG — BORING
- PIEZOMETER
- EASEMENT BOUNDARY

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
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6. REFER TO PARTS I/II, FIGURE I/II-3.3-CORRECTIVE MEASURES PLAN FOR FURTHER INFORMATION REGARDING THE GROUNDWATER RECOVERY TRENCH AND SUMP.

STATE OF TEXAS
KYLE D. GOULD
106018
PROFESSIONAL ENGINEER
LICENSED
10.31.14

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CAD: 60.13-NORTH SITE PLAN.DWG

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DESIGN BY: DOL
REVIEWED BY: JPY

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PREPARED FOR
MCCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	09/2011	PERMIT MODIFICATION
2	10/2014	PERMIT MODIFICATION

NORTHERN EAST SLURRY WALL EXTENSION AND SLURRY WALL EXTENSION OF GWRT CLAY CUTOFF WALL PLAN

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

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ATTACHMENT 6D.13

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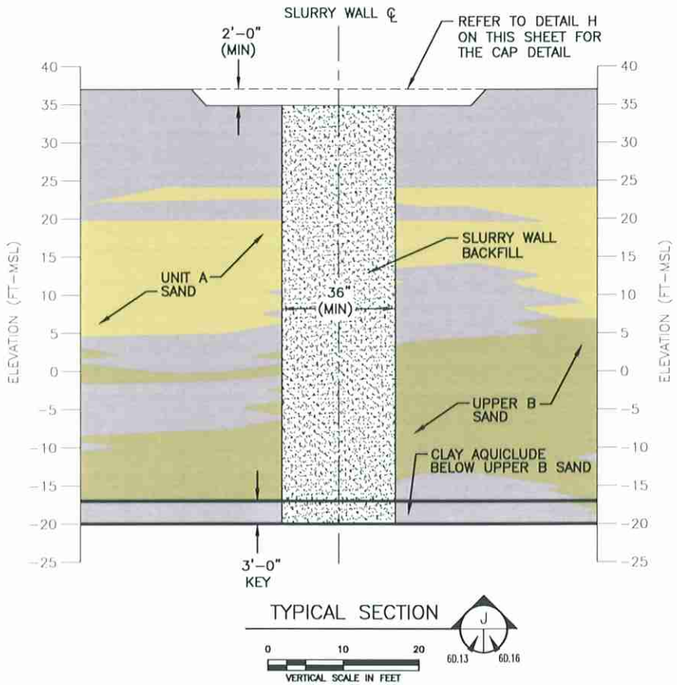
O:\0120439\SLURRY WALL REMOVAL MOD\CLEAN\6D.13-NORTH SITE PLAN-NEW.dwg, \\wbc-ftw-fs1\FTWFS1 - CU 5550 - HP Universal Printing PS



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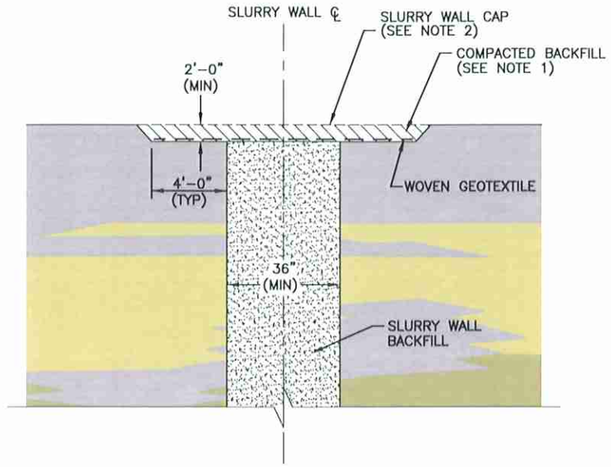
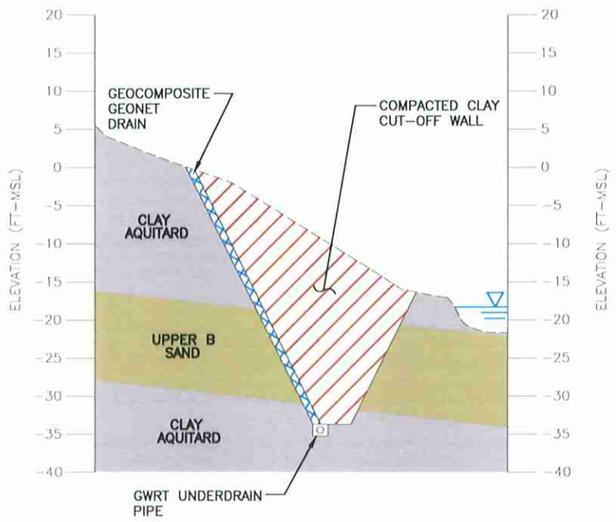


TYPICAL SECTION H 60.14 60.16

SLURRY WALL CAP

0 10 20

VERTICAL SCALE IN FEET



TYPICAL GWRT CLAY CUTOFF WALL CROSS–SECTION 60.13 60.16

0 10 20

VERTICAL SCALE IN FEET

NOTE:

1. COMPACT BACKFILL TO <90% STANDARD PROCTOR DENSITY AT 0% TO 4% WET OF THE OPTIMUM MOISTURE CONTENT.
2. WOVEN GEOTEXTILE SHALL MEET THE FOLLOWING CRITERIA:

APPARENT OPENING	<0.21 MM
GRAB TENSILE STRENGTH	>157 LBS
ELONGATION	≥50%
PUNCTURE STRENGTH	>56 LBS
TRAPEZOID TEAR	>56 LBS

STATE OF TEXAS
KYLE D. GOULD
106018
PROFESSIONAL ENGINEER
LICENSED
10-31-14

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 12/2010
FILE: 0120-439-11
CAD: 60.16-SLURRY WALL.DWG

DRAWN BY: SRF
DESIGN BY: DOL
REVIEWED BY: JPY

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PREPARED FOR

MCCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	09/2011	PERMIT MODIFICATION
2	10/2014	PERMIT MODIFICATION

SLURRY WALL DETAILS

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

WWW.WEAVERBOOS.COM

ATTACHMENT 6D.16

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O:\0120\439\SLURRY WALL REMOVAL MOD\CLEAY\6D.16-NORTH SLURRY WALL DETAILS.dwg, 10/24/2014 2:26:44 PM, rsellers, 1:2

McCARTY ROAD LANDFILL
CITY OF HOUSTON, HARRIS COUNTY, TEXAS
TCEQ PERMIT NO. MSW-261B

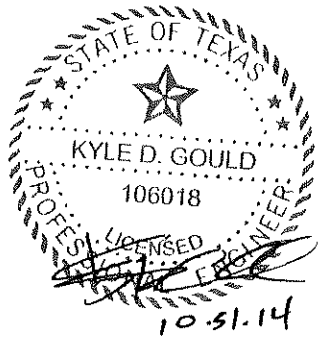
PART III – SITE DEVELOPMENT PLAN
ATTACHMENT 8
COST ESTIMATE FOR CLOSURE & POSTCLOSURE CARE

Prepared for

McCarty Road Landfill TX, LP

Approved Site Development Plan
August 2008
Revised October 2009
Revised December 2010

Revised October 2014



Prepared by

Weaver Boos Consultants, LLC–Southwest
TBPE Registration No. F-3727
6420 Southwest Blvd., Suite 206
Fort Worth, Texas 76109
817-735-9770

WBC Project No. 0120-439-11-03-13

CONTENTS

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LARGEST AREA TO REQUIRE FINAL COVER – 321.8 ACRES
SUBTITLE D FINAL COVER – 53.0 ACRES
PRE-SUBTITLE D FINAL COVER – 268.7 ACRES

STATE OF TEXAS
KYLE D. GOULD
106018
LICENSED PROFESSIONAL ENGINEER
10-31-14

HCFCD DITCH P116-00-00
EXISTING 36" CULVERT
LEY ROAD
EXISTING 36" CULVERT
FORMER SOIL BORROW AREA
HOUSTON PIPE LINE COMPANY EASEMENT
EXISTING 36" CULVERT
HCFCD EASEMENT
EXISTING 36" CULVERT
EXISTING 48" CULVERT
GREENS BAYOU P100-00-00
EXISTING 36" CULVERT
EXISTING 36" CULVERT
PRE-SUBTITLE D AREA
66.3-ACRE FINAL COVER AREA COMPLETED IN 2011
SUBTITLE D AREA
UNION PACIFIC RAILROAD SPUR EASEMENT
HCFCD DITCH P114-00-00
HCFCD EASEMENT
EXISTING SPILLWAYS
EXISTING SPILLWAYS
EXISTING MAINTENANCE AND PAINT FACILITY
EXISTING FLARE FACILITY
EXISTING LEACHATE STORAGE TANK
CITY OF HOUSTON ROAD EASEMENT
FORMER LANDFILL
HL&P EASEMENT
EXISTING SCALEHOUSE
EXISTING OFFICE BUILDING
EXISTING SITE ACCESS ROAD (OATES ROAD)
U.S. HIGHWAY 90 (McCARTY ROAD)
UNION PACIFIC RAILROAD
SITE ENTRANCE FROM McCARTY ROAD
HL&P EASEMENT
RECYCLING PLANT

0 300 600
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- DEED RESTRICTION (SEE NOTE 4)
- N 745000 STATE PLANE COORDINATE SYSTEM
- 29°49'45" GEODETIC COORDINATE SYSTEM
- EXISTING 10' CONTOUR
- COMPACTED CLAY SLOPE LINER
- CLAY CUTOFF WALL
- SLURRY WALL
- DEEP SLURRY WALL
- NORTHERN EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- EAST SLURRY WALL EXTENSION (REFER TO ATT. 6D)
- SLURRY WALL EXTENSION OF GWRT (REFER TO ATT. 6D)
- MW-4UB — EXISTING DETECTION GROUNDWATER MONITORING WELL
- OW7-UB — PROPOSED OBSERVATION WELL (SEE NOTE 5)
- OW-1 — OBSERVATION WELL (SEE NOTE 5)
- GMP-M — EXISTING LANDFILL GAS MONITORING PROBE
- GMP-K — EXISTING LANDFILL GAS MONITORING PROBE TO BE DECOMMISSIONED
- GMP-K(R) — PROPOSED LANDFILL GAS MONITORING PROBE (SEE NOTE 6)
- EASEMENT BOUNDARY
- LIMITS OF PRE-SUBTITLE D FINAL COVER
- 100-YR FLOODPLAIN (REFER TO ATTACHMENT 6C)
- GROUND WATER RECOVERY TRENCH
- SUMP 2 — GROUND WATER RECOVERY TRENCH SUMP

NOTES:

1. TOPOGRAPHIC MAPPING PREPARED BY COOPER AERIAL SURVEYS CO. FROM AERIAL PHOTOGRAPHY FLOWN 03-12-2014. THE GRID SYSTEM IS TIED TO THE TEXAS STATE PLANE COORDINATE SYSTEM SOUTH CENTRAL ZONE NAD 1927.
2. PERMIT BOUNDARY AND EASEMENTS WERE PREPARED BY COSTELLO INC. IN MARCH 2004.
3. REFER TO ATTACHMENT 14-LANDFILL GAS MANAGEMENT PLAN FOR LFG SYSTEM DESIGN.
4. REFER TO ATTACHMENT 6, APPENDIX 6A-F FOR DEED RESTRICTION INFORMATION.
5. GROUNDWATER OBSERVATION WELLS OW-1, OW-2, OW-3, OW-4 AND OW-5 WERE ADDED ALONG THE NORTHERN AND EASTERN PERIMETER OF THE LANDFILL AS PART OF THE HARRIS COUNTY SETTLEMENT AGREEMENT. ADDITIONAL PROPOSED OBSERVATION WELLS WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.
6. PROPOSED PROBES DESIGNATED WITH "(R)" ARE REPLACEMENT PROBES. PROPOSED PROBES GMP-W THROUGH GMP-LL WERE ADDED ALONG THE WESTERN PERIMETER OF THE LANDFILL AS PART OF THE AAWWE SETTLEMENT AGREEMENT.

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY:

DATE: 08/2008
FILE: 0120-439-11
CAD: FIGURE 12.2.DWG
DRAWN BY: BBB
DESIGN BY: ALD
REVIEWED BY: JPY

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PREPARED FOR
McCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION
1	09/2008	UPDATED GROUNDWATER OBSERVATION WELLS, LANDFILL GAS MONITORING PROBES, AND ADDED EAST SLURRY WALL.
2	09/2011	PERMIT MODIFICATION
3	10/2014	PERMIT MODIFICATION

LARGEST AREA TO REQUIRE FINAL COVER

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
WWW.WEAVERBOOS.COM

FIGURE 8.1

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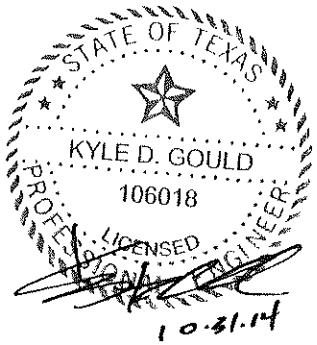
O:\0120\439\SLURRY WALL REMOVAL MOD\CLEAN\FIGURE 8-1.dwg, 10/24/2014 1:58:04 PM, rsellers, 1:2

APPENDIX C

ADJACENT LANDOWNER INFORMATION



LANDOWNERS AND MINERAL RIGHTS OWNERS LIST*

1. MCCARTY ROAD LANDFILL TX
11013 BEAUMONT HWY
HOUSTON TX 77078

2. BROWNING FERRIS
PO BOX 29246
PHOENIX AZ 85038-9246

3. HERRERA GUILLERMO
12226 TICONDEROGA RD
HOUSTON TX 77044-2222

4. DEMAROTO LESBIA JUDITH PROTILLO
7703 JOHN RALSTON RD
HOUSTON TX 77044-2633

5. BLAKE DARRELL & MICHELLE
7601 JOHN RALSTON RD
HOUSTON TX 77044-2631

6. FLORES JOSE A & NOHEMY A
7521 JOHN RALSTON RD
HOUSTON TX 77044-2629

7. STANLEY ROBERT L & PEGGY A
7409 JOHN RALSTON RD
HOUSTON TX 77044-2641

8. BLANN ELIZABETH CAROL
1208 EVERGREEN DR
HOUSTON TX 77087-1714

9. GONZALEZ VICTORIA N
13810 BRIGHTON PARK DR
HOUSTON TX 77044-4996

10. VELEZ SERGIO
PO BOX 24764
HOUSTON TX 77229-4764

11. MEDELLIN ALFREDO C JR & MARCIELA
7209 JOH RALSTON RD
HOUSTON TX 77044

12. GARCIA RAUL
7125 JOHN RALSTON RD
HOUSTON TX 77044-2621

13. VELEZ SERGIO & MAYRA
7125 JOHN RALSON RD STE B
HOUSTON TX 77044-2686

14. LWR ENTERPRISES INC
2119 LAKE VILLAGE DR
KINGWOOD TX 77339-3346

15. LETT STEPHEN C
7101 JOHN RALSTON RD
HOUSTON TX 77044-2621

16. RAYON RAE D & WANDA
6915 JOHN RALSTON RD
HOUSTON TX 77044-2617

17. SOUTHERN PACIFIC RR CO RR
UNION PACIFIC RAILROAD CO
1400 DOUGLAS ST STOP 1640
OMAHA NE 68179-1640

18. HURGOIU DUMITRU
11831 LYNDA DR
HOUSTON TX 77038-3431

19. SCHOLL J H MRS
12 EDGEFIELD LN
ALLEN TX 75002-7724

20. RODAS ARNOLDO J
5021 E O ST DR
HOUSTON TX 77013-3024

*In accordance with 330.59(c)(3), the availability of mineral ownership beneath the facility has been investigated. Based on a conversation with the Harris County Appraisal District, their records do not include mineral ownership.

LANDOWNERS AND MINERAL RIGHTS OWNERS LIST*

21. WASTE CORP TEXAS OF LP
8515 HWY 65
HOUSTON TX 77083-5710

22. WASTE CORP TEXAS OF LP
8515 HWY 65
HOUSTON TX 77083-5710

23. EAST END EQUIPMENT SALES INC
3712 MARSHALL RD
CROSBY TX 77532-6083

24. RAHAIAN OCTAVIAN & VIRGINIA
5474 IMOGENE ST
HOUSTON TX 77096-2234

25. ISMAIL DADABHOY INC
4101 SAN JACINTO ST # 105
HOUSTON TX 77004-4856

26. REYES RAFAEL A
HERNANDEZ JOSE
7006 FOXSIDE LN
HUMBLE TX 77338-1434

27. HEPHZIBAH CORPORATION
11000 BEAUMONT HWY
HOUSTON TX 77078-4806

28. RAP BEAUMONT PROPERTIES LP
% MATLACK LEASING LLC
163 HOOTON RD
MOUNT LAUREL NJ 08054-1353

29. MUNICIPAL CORRECTIONS
FINANCE LP
ATTN: TAX DEPARTMENT
4444 BELL ST STE 210
KANSAS CITY MO 64111-4348

30. WBP LEASING INC
ATTN: TAX DEPARTMENT
621 NW 53 RD ST STE 700
BOCA RATON FL 33487-8242

31. HARRIS COUNTY FLOOD CONTRL
PROPERTY MGMT
9900 NORTHWEST FWY OFC 220
HOUSTON TX 77092-8601

32. ARGUETA LUIS
GONZALEZ TERESA
% TRIPLE 7 PROPERTIES INC
3622 PARKSHIRE DR
PEARLAND TX 77584-9451

33. JAM CAR PARTNERS
2003 WILSON RD
HUMBLE TX 77396-1540

34. CCP LTD
PO BOX 42262
HOUSTON TX 77242-2262

35. EAGLE IND LP
2525 S SHORE BLVD STE 207
LEAGUE CITY TX 77573-2988

36. 7080 EXPRESS LANE LLC
1 CAMPNELLI DR
BRAINTREE MA 02184-5215

37. AN WRI PARTNERHSIP LTD
2600 CITADEL PLAZA DR STE 300
HOUSTON TX 77008-1315

38. G&I VII
RAILWOOD INDUSTRIAL LP
220 42ND ST
NEW YORK NY 10017-5806

39. SAIA MOTOR FREIGHT LINE INC
11465 JOHNS CREEK PKWY
DULUTH GA 30097-1574

40. AN/WRI DEV CO #1 LTD
% WEINGARTEN REALTY INV
% EXTERIOR PROP GRP
9525 KATY FWY
HOUSTON TX 77024-1407

*In accordance with 330.59(c)(3), the availability of mineral ownership beneath the facility has been investigated. Based on a conversation with the Harris County Appraisal District, their records do not include mineral ownership.

LANDOWNERS AND MINERAL RIGHTS OWNERS LIST*

41. GSF ENERGY LLC
FOSTER PLAZA #10 5TH FLOOR
680 ANDERSEN DR
PITTSBURGH PA 15220

42. MAJESTIC STEEL PROPERTIES TEXAS LLC
31099 CHAGRIN BLVD STE 150
CLEVELAND OH 44124-5930

43. POWER TRUCKING LIMITED LIABILITY COMPANY
15146 GRASSINGTON DR
CHANNELVIEW TX 77530-2400

44. HOUSTIN ISD
4400 W 18TH ST
HOUSTON TX 77092-8501

45. RAJGURU PROPERTIES INC
9942 DRIFTWOOD PARK DR
HOUSTON TX 77095-2378

46. MOHEB LLC
11607 APPLEWOOD ST
HOUSTON TX 77024-7202

47. MAYFIELD LTD
1616 S VOSS RD STE 618
HOUSTON TX 77057-2620

48. ST JOHN'S SCHOOL
2401 CLAREMONT LN
HOUSTON TX 77019-5811

49. METHODIST HOSPITAL SYSTEMS
6565 FANNIN ST
HOUSTON TX 77030-2703

50. BAYLOR COLLEGE OF MEDICINE
1 BAYLOR PLZ STE T100
HOUSTON TX 77030-3411

51. SALTMINE INVESTMENT PRTNR
712 MAIN ST STE 3310
HOUSTON TX 77002-3215

52. TAUB JOHN BEN EST
PO BOX 27423
HOUSTON TX 77227-7423

53. HUGHES MARVIN
9406 PALO BLANCO RD
HOUSTON TX 77078-4426

54. JOHNSON CHARLOTTE R & BENJAMIN
7901 PALO ALTO ST
HOUSTON TX 77078-4117

55. BIG TEX AIR CONDITIONING LP
PO BOX 23296
HOUSTON TX 77228-3296

56. PENA EUGENIO & REBECCA
9410 PALO BLANCO RD
HOUSTON TX 77078-4426

57. LONG G A
9418 PALO BLANCO RD
HOUSTON TX 77078-4426

58. TEXAN LAND AND CATTLE II LTD
333 WEST LOOP N FL 4
HOUSTON TX 77024-7767

59. SOUTHERN METHODIST UNIV
PO BOX 750193
DALLAS TX 75275-0193

60. MENDEZ ERNEST & EMILIA
326 KELLWAY DR
HOUSTON TX 77015-2119

*In accordance with 330.59(c)(3), the availability of mineral ownership beneath the facility has been investigated. Based on a conversation with the Harris County Appraisal District, their records do not include mineral ownership.

LANDOWNERS AND MINERAL RIGHTS OWNERS LIST*

61. EAST HOUSTON BAPTIST
9425 N GREEN RIVER DR
HOUSTON TX 77078-4125

62. THE DEBAKEY MEDICAL FOUNDATION
TEXAS BLDG 4TH FLR
333 WEST LOOP N
HOUSTON TX 77024-7767

63. MENIL FOUNDATION
1427 BRANARD ST
HOUSTON TX 77006-4803

64. INTERNATIONAL DISPOSAL COR
PO BOX 3151
HOUSTON TX 77253-3151

65. CITY OF HOUSTON
PO BOX 1562
HOUSTON TX 77251-1562

66. FIRST UNITED METHODIST CHURCH
1320 MAIN ST
HOUSTON TX 77002-6803

67. BOY SCOUTS OF AMERICA
C/O THOMAS O VARNELL
PO BOX 924528
HOUSTON TX 77292-4528

68. HOUSTON PARKS BOARD
2001 KIRBY DR STE 814
HOUSTON TX 77019-6033

69. GRAHAM CRAIG K
511 VISTA AVE
BAYTOWN TX 77520-3159

70. ZERAI TEDDY & TIBE
16603 CHURCHHILL FALLS CT
SPRING TX 77379-5077

71. CHAPA PABLO
11514 N SPICEWOOD LN
HOUSTON TX 77044-2606

72. GAMBOA JOSE & LETTICIA
11518 SPICEWOOD LN
HOUSTON TX 77044

73. MONTOYA JUAN REYNA IRASEMA
11526 S SPICEWOOD LN
HOUSTON TX 77044-2610

74. GONZALEZ JUAN M
GALLON PEDRO M
1414 RICHEY ST STE 15
PASADENA TX 77502-1852

75. ALVARADO SERGIO
11527 N SPICEWOOD LN
HOUSTON TX 77044-2605

76. HERRERA GULLERMO
12226 TICONDEROGA RD
HOUSTON TX 77044-2222

77. PEREZ FRANCISCO &
11542 S SPICEWOOD LN
HOUSTON TX 77044-2610

78. COBOS HERIBERTO
7918 CYRL LN
HOUSTON TX 77044-2602

79. BOWLING KELLEY
2733 BERWOOD LN
HEBRON KY 41048-8206

80. DEMAROTO LESBIA JUDITH
PROTILLO
7703 JOHN RALSTON RD
HOUSTON TX 77044-2633

*In accordance with 330.59(e)(3), the availability of mineral ownership beneath the facility has been investigated. Based on a conversation with the Harris County Appraisal District, their records do not include mineral ownership.

LANDOWNERS AND MINERAL RIGHTS OWNERS LIST*

81. MAGALLON G SALVADOR
DEMAGALLON MARIA C
7701 JOHN RALSTON RD
HOUSTON TX 77044-2633

82. MARTIN JAMES E
7706 JOHN RALSTON RD
HOUSTON TX 77044-2634

83. HERRERA GUILLERMO
HERRERA SILVA
12226 TICONDEROGA RD
HOUSTON TX 77044-2222

84. HERRERA GUILLERMO
HERRERA SILVA
12226 TICONDEROGA RD
HOUSTON TX 77044-22228

85. HAWKINS INEZ ESTATE OF
FRANCES L JONES
7618 JOHN RALSTON RD
HOUSTON TX 77044-2632

86. HETZEL JAMES D
MELBA E
7610 JOHN RALSTON RD
HOUSTON TX 77044-2632

87. GARZA VERONICA M
7526 JOHN RALSTON RD
HOUSTON TX 77044-2630

88. DAVIS JO ANN
15530 VICTORIAS WAY DR
MONTGOMERY TX 77316-2268

89. MCDONALD TIMOTHY & KAREN
6902 JOHN RALSTON RD
HOUSTON TX 77044-2618

90. TEXAS DEPARTMENT OF
TRANSPORTATION
PO BOX 1386
HOUSTON TX 77251-1386

91. NATURAL GASOLINE SALES INC
PO BOX 163469
FORT WORTH TX 76161-3469

92. HARRIS COUNTY

93. LUM REBECCA S
7941 KATY FWY STE 331
HOUSTON TX 77024-1924

94. BLUE BIRD FOUNDATION
% SECRETARY/TREASURER
615 W ALABAMA ST
HOUSTON TX 77006-5003

95. YOUNG MENS CHRISTIAN ASSOC
PO BOX 3007
HOUSTON TX 77253-3007

96. ST THOMAS UNIVERSITY
3812 MONTROSE BLVD
HOUSTON TX 77006-4626

97. LOPEZ HERMENEGILDO
LOPEZ MARIA G
9234 N GREEN RIVER DR
HOUSTON TX 77078-4230

98. GONZALEZ PLACIDO ANGELITA
4725 CLAY ST
HOUSTON TX 77023-1213

99. MOONEYHAM DORIS
9401 N GREEN RIVER DR
HOUSTON TX 77078-4125

100. LENDELL MARTIN & ROGER M
PO BOX 23296
HOUSTON TX 77228-3296

*In accordance with 330.59(e)(3), the availability of mineral ownership beneath the facility has been investigated. Based on a conversation with the Harris County Appraisal District, their records do not include mineral ownership.

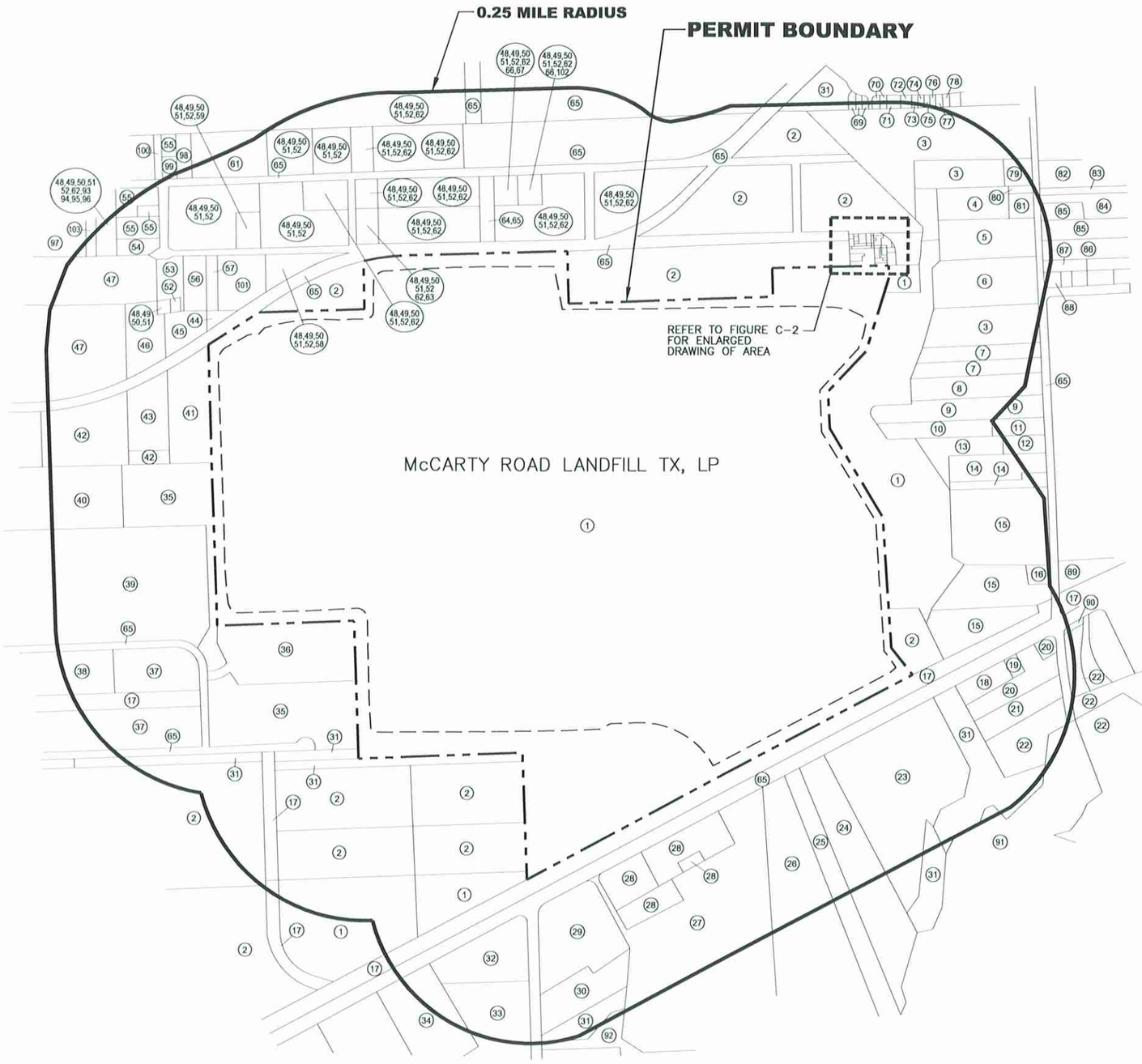
LANDOWNERS AND MINERAL RIGHTS OWNERS LIST*

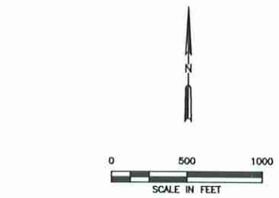
101. LONG GARLAND A & VIVIAN G
9418 PALO BLANCO RD
HOUSTON TX 77078-4426

102. ST LUKES UNITED METHODIST
CHURCH
PO BOX 22013
HOUSTON TX 77227-2013

103. VALDEZ NORMA L
9304 N GREEN RIVER DR
HOUSTON TX 77078-4124

*In accordance with 330.59(c)(3), the availability of mineral ownership beneath the facility has been investigated. Based on a conversation with the Harris County Appraisal District, their records do not include mineral ownership.





LEGEND

- LANDFILL PERMIT BOUNDARY
- LIMITS OF WASTE
- (1) PROPERTY OWNER NUMBER REFERENCES OWNER IN LANDOWNER LIST

NOTES:

1. PERMIT BOUNDARY REPRODUCED FROM COSTELLO, INC. STANDARD LAND SURVEY DRAWING, DATED MARCH 2004.
2. PROPERTY OWNERS WITHIN 0.25 MILES OF THE PROPERTY BOUNDARY ARE SHOWN.
3. PROPERTY OWNERS LIST OBTAINED FROM HARRIS COUNTY APPRAISAL DISTRICT RECORDS IN OCTOBER 2014.

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 10/2014 | DRAWN BY: SRF
FILE: 0120-439-11 | DESIGN BY: KDG
CAD: FIG C-1-LANDOWNER.DWG | REVIEWED BY: JPY

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PREPARED FOR
McCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION

LAND OWNERSHIP MAP

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727
WWW.WEAVERBOOS.COM

FIGURE C-1

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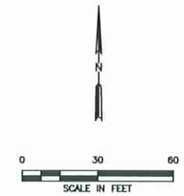
G:\0120\439\SLURRY WALL REMOVAL MOD\FIG C-1-LANDOWNER MAP 0.25 MILE RADIUS.dwg, 10/31/2014 3:34:29 PM, rsellers, 1:2



LEGEND

LANDFILL PERMIT BOUNDARY

(1) PROPERTY OWNER NUMBER REFERENCES OWNER IN LANDOWNER LIST

NOTES:

1. PERMIT BOUNDARY REPRODUCED FROM COSTELLO, INC. STANDARD LAND SURVEY DRAWING, DATED MARCH 2004.
2. PROPERTY OWNERS WITHIN 0.25 MILES OF THE PROPERTY BOUNDARY ARE SHOWN.
3. PROPERTY OWNERS LIST OBTAINED FROM HARRIS COUNTY APPRAISAL DISTRICT RECORDS IN OCTOBER 2014.

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION
- [ ] CLIENT APPROVAL BY: _____

DATE: 10/2014 | DRAWN BY: SRF
FILE: 0120-439-11 | DESIGN BY: KDG
CAD: FIG C-2-LANDOWNER.DWG | REVIEWED BY: JPY

REUSE OF DOCUMENTS

THIS DOCUMENT, AND THE DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF WEAVER BOOS CONSULTANTS, LLC – SOUTHWEST AND IS NOT TO BE USED IN WHOLE OR IN PART, WITHOUT THE WRITTEN AUTHORIZATION OF WEAVER BOOS CONSULTANTS, LLC – SOUTHWEST.

PREPARED FOR

McCARTY ROAD LANDFILL TX, LP

REVISIONS

NO.	DATE	DESCRIPTION

LAND OWNERSHIP MAP NORTHEAST CORNER

McCARTY ROAD LANDFILL
HARRIS COUNTY, TEXAS

Weaver Boos Consultants
TBPE REGISTRATION NO. F-3727

WWW.WEAVERBOOS.COM | FIGURE C-2

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O:\0120\439\SLURRY WALL REMOVAL MOD\FIG C-2-LANDOWNER MAP NORTHEAST CORNER.dwg, 10/20/2014 4:04:06 PM, rsellers, 1:2

APPENDIX D

PERMIT MODIFICATION FORM TCEQ 20650

Facility Name: McCarty Road Landfill
Permittee/Registrant Name: McCarty Road Landfill TX, LP
MSW Authorization #: 261B
Initial Submittal Date: 10/31/2014
Revision Date:

Texas Commission on Environmental Quality

Permit/Registration Modification and Temporary Authorization Application Form for an MSW Facility

1. Reason for Submittal

☒ Initial Submittal ☐ Notice of Deficiency (NOD) Response

2. Authorization Type

☒ Permit ☐ Registration

3. Application Type

☒ Modification with Public Notice ☐ Modification without Public Notice
☐ Temporary Authorization (TA) ☐ Modification for Name Change/Transfer

4. Application Fees

☐ Pay by Check ☒ Online Payment

If paid online, e-Pay Confirmation Number: **582EA000177813**

5. Application URL

Is the application submitted for a permit/registration modification with public notice?

☒ Yes ☐ No

If the answer is "Yes", enter the URL address of a publicly accessible internet web site where the application and all revisions to that application will be posted in the space provided: http://**www.ftwweaverboos.com**

6. Confidential Documents

Does the application contain confidential documents?

☐ Yes ☒ No

If "Yes", cross-reference the confidential documents throughout the application and submit as a separate attachment in a binder clearly marked "CONFIDENTIAL."

7. General Facility Information

Facility Name: **McCarty Road Landfill**

MSW Authorization No.: **261B**

Regulated Entity Reference No.: **RN100213602**

Physical or Street Address (if available): **5757A Oates Road**

City: **Houston** County: **Harris** State: **Texas** Zip Code: **77078**

(Area code) Telephone Number: **713-675-6101**

Latitude: **29° 49′ 22″ N** Longitude: **95° 14′ 33″ W**

8. Facility Type(s)

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

9. Description of the Revisions to the Facility

Provide a brief description of all revisions to the permit/registration conditions and supporting documents referred by the permit/registration, and a reference to the specific provisions under which the modification/temporary authorization application is being made. Also, provide an explanation of why the modification/temporary authorization is requested: **The purpose of this permit modification is to update the Site Development Plan (SDP) to remove the semi-circular slurry wall that was permitted on September 20, 2011 as part of the settlement agreement that was completed prior to the approval of the permit amendment application (TCEQ Permit No. 261B) on August 25, 2008.**

This section is intentionally left blank; please continue to the next page.

10. Facility Contact Information

Site Operator (Permittee/Registrant) Name: McCarty Road Landfill TX, LP

Customer Reference No. (if issued)*: CN**601559222**

Mailing Address: **5757A Oates Road**

City: **Houston** County: **Harris** State: **Texas** Zip Code: **77078**

(Area Code) Telephone Number: **713-675-6101**

Email Address: **jhargrove@republicservices.com**

TX Secretary of State (SOS) Filing Number: **800036028**

*If the Site Operator (Permittee/Registrant) does not have this number, complete a TCEQ Core Data Form (TCEQ-10400) and submit it with this application. List the Site Operator (Permittee/Registrant) as the Customer.

Operator Name[1]: Same as Site Operator (Permittee/Registrant)

Customer Reference No. (if issued)*:

Mailing Address:

City: County: State: Zip Code:

(Area Code) Telephone Number:

Email Address:

Charter Number:

[1]If the Operator is the same as Site Operator/Permittee type "Same as "Site Operator (Permittee/Registrant)".
*If the Operator does not have this number, complete a TCEQ Core Data Form (TCEQ-10400) and submit it with this application. List the Operator as the customer.

Consultant Name (if applicable): Weaver Boos Consultants, LLC–Southwest

Texas Board of Professional Engineers Firm Registration Number: **F-3727**

Mailing Address: **6420 Southwest Boulevard, Suite 206**

City: **Fort Worth** County: **Tarrant** State: **Texas** Zip Code: **76109**

(Area Code) Telephone Number: **817-735-9770**

E-Mail Address: **kgould@weaverboos.com**

Agent in Service Name (required only for out-of-state):

Mailing Address:

City: County: State: Zip Code:

(Area Code) Telephone Number:

E-Mail Address:

11. Ownership Status of the Facility

Is this a modification that changes the legal description, the property owner, or the Site Operator (Permittee/Registrant)?

☐ Yes ☒ No

If the answer is "No", skip this section.

Does the Site Operator (Permittee/Registrant) own all the facility units and all the facility property?

☐ Yes ☐ No

If "No", provide the information requested below for any additional ownership.

Owner Name:

Street or P.O. Box:

City: County: State: Zip Code:

(Area Code) Telephone Number:

Email Address (optional):

Charter Number:

Signature Page

I, John Hargrove, Environmental Manager,
(Site Operator (Permittee/Registrant)'s Authorized Signatory) (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: John Hargrove Date: 10/31/2014

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 John Hargrove
On this 31st day of October, 2014.
My commission expires on the 17th day of May, 2017.

Helen M. Hanson
Notary Public in and for
Tarrant County, Texas
(Note: Application Must Bear Signature & Seal of Notary Public)

HELEN M HANSON
My Commission Expires
May 17, 2017

Permit/Registration Modification with Public Notice

(See Instructions for P.E. seal requirements.)

Required Attachments	Attachment No.
Land Ownership Map	**Appendix C**
Land Ownership List	**Appendix C**
Marked (Redline/Strikeout) Pages	**Appendix A**
Unmarked Revised Pages	**Appendix B**

Additional Attachments as Applicable- Select all those apply and add as necessary

- ☐ Signatory Authority
- ☐ Fee Payment Receipt
- ☐ Confidential Documents

Permit/Registration Modification without Public Notice or TA

(See Instructions for P.E. seal requirements.)

Required Attachments (for Modifications only) **Attachment No.**

Marked (Redline/Strikeout) Pages

Unmarked Revised Pages

Additional Attachments as Applicable- Select all those apply and add as necessary

- ☐ Signatory Authority
- ☐ Fee Payment Receipt
- ☐ Confidential Documents

Permit/Registration Name Change/Transfer Modification

(See Instructions for P.E. seal requirements.)

Required Attachments	**Attachment No.**
TCEQ Core Data Form(s)	
Property Legal Description	
Property Metes and Bounds Description	
Metes and Bounds Drawings	
On-Site Easements Drawing	
Land Ownership List	
Land Ownership Map	
Property Owner Affidavit	
Verification of Legal Status	
Evidence of Competency	

Additional Attachments as Applicable- Select all those apply and add as necessary

- ☐ Signatory Authority
- ☐ Fee Payment Receipt
- ☐ Confidential Documents
- ☐ Final Plat Record of Property, if platted
- ☐ Assumed Name Certificate