



July 18, 2016

North Carolina Department of Environmental Quality  
Division of Waste Management - Solid Waste Section  
217 West Jones Street  
Raleigh, North Carolina 27603

Attention: Mr. Ming-Tai Chao, P.E.

Reference: **Response to Comments on Landfill Permit Application**  
Edgecombe County C&D Landfill (Permit No. 33-01) Document ID No. 26274  
S&ME Project No. 1054-13-277A



Dear Mr. Chao:

S&ME, Inc. (S&ME), on behalf of Edgecombe County, is submitting the following responses to the comments made in the June 17, 2016 letter from the North Carolina Department of Environmental Quality (NCDEQ), Division of Waste Management (DWM), Solid Waste Section (SWS). In the June 17, 2016 letter, the SWS commented on the issuance of a 5-year permit rather than a 10-year permit; the Water Quality Monitoring Plan and the Financial Assurance documentation portions of the permit application for continuing operation of the C&D Landfill. The SWS comments are stated in *italics* below. S&ME's response to the SWS comments are provided in **bold**.

Facility Plan

*The Section A – Facility Plan of the permit application (Page #2) requests the SWS for an approval of issuing a 10-year permit to continue operating the Edgecombe County C&D Landfill, Permit No. 33-01-CDLF-1997. The SWS denies this request, but may issue Edgecombe County (the County) a 5-year Permit to Operate for a continued operation of the Edgecombe County C&DLF – Phases 1, 2, 3 & 4. This permit decision is made of the following considerations.*

- a. *The Corrective Action Plan (CAP) is not completed and the CAP effectiveness is subjected to reevaluation. The CAP (DIN 9206) and the amendment (DIN 11254) were originally approved in January 2009 and August 2010, respectively. The proposed hydraulic barrier wall (a major component of the CAP has not been constructed) is schedule to construct in December 2017 according to the approved Interim Corrective Action Evaluation Report dated May 24, 2016 (DIN 26122). The issuance of a 5-year permit will allow SWS to assist the County in implementation and completion of the hydraulic barrier wall.*
- b. *The permit fee associated with a 10-year permit of the C&DLF shall be \$18,000. The County has paid the 5-year permit fee of \$9,000 on September 29, 2014. The current permit of the landfill expired on March 31, 2015. The new 5-year permit, if approved and issued, will (i) allow the County to regain the valid current permit status which makes the County eligible to obtain a Life-Of-Site Permit when the new permit expires on March 31, 2020 and (ii) save the County in not paying for the additional fee.*
- c. *According to the Facility Plan, the 5-year permit for the C&D LF – Phases 1, 2, 3 & 4 will have available waste capacity of 182,867 cubic yards which has the service life of more than 5 years.*

Please revise the Section A – Facility Plan (page #2) accordingly.



**Edgecombe County has revised page #2 of the Facility Plan to reflect a 5-year renewal request and the accumulated airspace at the end of the 5-year permitting period. The revised page is attached.**

Water Quality Monitoring Plan (Appendix II-C)

The following monitoring wells should also function as Corrective Measures: MW-5 and MW-12. Please revise the summary table in Section 2.2.1.3 on Page 11 of the Water Quality Monitoring Plan.

**The Water Quality Monitoring Network Groundwater Sampling Locations table in Section 2.2.13 has been modified to reflect the addition of MW-5 and MW-12 as wells to be used for Corrective Measures. The revised pages are attached.**

Financial Assurance

The revised financial assurance (FA) document are provided in Section D-8 and Appendix XI-E and the revised cost estimates for closure and post-closure activities are stated in Section E of the permit application. It is evident that the April 29, 2016 FA provided by the County is not sufficient, The side-by-side cost comparison is summarized in the following table:

County FA Letter 4/29/2016		Permit Application (DIN 26114)		
Item	Amount	Item	Amount	Reference
Closure Cost	870,806	Closure Cost	1,290,727	Appendix III-E
Post-Closure Cost	2,044,626	Post-Closure Cost	2,245,294	Appendix V-E
Corrective Measures	2,342,000	Corrective Measures	1,782,737	Section D-5
PACA	-	PACA	2,000,000	NCGS 130A-295.2(h)
<b>TOTAL</b>	<b>5,257,432</b>		<b>7,318,758</b>	

Please revise the FA document accordingly. Please also submit the copy of the FA letter to Ms. Sarah Rice who can be reached at 919-707-8287 or [sara.rice@ncdenr.gov](mailto:sara.rice@ncdenr.gov) and 1646 Mail Service Center, Raleigh, NC 27699-1646.

**Edgecombe County is reissuing the FA document and it will be submitted to Ms. Sarah Rice at NCDEQ.**

Drawings

Phase 9 of the C&D Landfill is proposed in the Facility Plan and shown on the cross section on drawing, Drawing 7 of 13 in Section C- Operational and Waste Acceptance Plan. However, the Phase 9 waste footprint is not available on any other plan drawings. Please add the Phase 9 to the applicable drawings throughout the permit application document.

**The following drawings contained in the permit application have been revised to reflect Phase 9:**

**Section A - Facility Plan, Figure 5 of 8 – added plan view of Phase 9.**

**Section C - Operational and Waste Acceptance Plan, Title Sheet – revised title of Figure 6 of 13, Figure 6 of 13 – added plan view of Phase 9.**



## Closure

A hard copy of the revised portions of the application and the revised drawings are enclosed to be exchanged with the corresponding sections in the original permit application. An electronic copy (.pdf) of the revised permit is included on the enclosed CD. Should you have any questions regarding the enclosed application, please contact the undersigned by phone at (919) 872-2660.

Sincerely,

**S&ME, Inc.**

Claudia B. Irvin, E.I.T.  
Staff Professional  
[cirvin@smeinc.com](mailto:cirvin@smeinc.com)

Samuel P. Watts, P.G.  
Senior Project Manager  
[swatts@smeinc.com](mailto:swatts@smeinc.com)

cc: Mr. Eric Evans – Edgecombe County Manager

Attachments

T:\Projects\2013\ENV\13-277A Edgecombe Permit Applications\Report\C&D PERMIT RENEWAL\Task 5 - Renewal Application for C&D\PERMIT APPLICATION\Correspondence related to Permit\2016-7-15 Comment Response Letter.docx

mass) will be 35.34 acres. Phases 5, 6, 7 and 8 will be added vertically, so the overall footprint acreage will be the same as Phase 1 through 4.

The purpose of this permit application is to begin construction and operation of Phase 3 of the C&D landfill and to obtain a permit to operate for the next 5+0 years. On March 31, 2010, Permit No. 33-01 was issued for the operation of Phases 1 and 2 of the C&D landfill for a total consumption of 717,000 cubic yards (cy) of air space.

The 2012-2013 Annual Facility Report stated that the landfill had consumed 766,361 cy (49,361 cy greater than the permitted amount) of air space as of June 30, 2013. Edgecombe verified the consumption volume by two methods as described below:

- The 2013 topography was compared with the final closure grading plan to get a volume of airspace remaining in the final landfill buildout. A remaining volume of 965,423 cy in the landfill was calculated compared to the 933,639 cy reported in the 2013 Annual Facility Report. This number was deducted from the permitted airspace for Phases 2 – 9 (1,094,500 cy), which gave a remainder of 129,077 cy of airspace used from 2008 through 2013. This volume was added to the airspace volume used from 1997 through 2008 (605,500 cy) to get a total of 734,577 cy of airspace used from 1997 through 2013. This volume was less than the original determination of 766,361 cy, but still greater than the 717,000 cy of permitted airspace for Phases 1 and 2.
- The 2008 topography was compared to the 2013 topography to get a volume of airspace used between these dates. A volume of 129,987 cy was calculated. This volume was added to the airspace volume used from 1997 through 2008 (605,500 cy) to get a total of 735,487 cy used from 1997 through 2013. This was less than the original determination of 766,361 cy, but still greater than the 717,000 cy of permitted airspace for Phases 1 and 2.

Based on the original calculation or the other two methods of determining the consumed landfill space, Edgecombe was operating in Phase 3 prior to their permit expiration of March 31, 2015, based on airspace filled.

The planned accumulative airspace through Phase 3 is 829,000 cy (28.08 acres), through Phase 4 is 944,000 cy (35.34 acres) and through Phase 5 is 1,111,500 cy, is presented in **Table 1** in **Section 3.2** of this Facility Plan. The average fill rate for the previous five years as of June 2015 was 19,419 cy/year. Therefore, at the end of a 5+0 year permitting period, the accumulated airspace would be 877,647,992,703 cy and the landfill would be operating in Phase 45 as calculated below.

19,419 cy/yr (Avg. fill rate) x 6 yrs = 116,514 cy (Estimated fill for next five years - through 6/30/2021)

761,133 cy (gross airspace filled as of 6/23/2015)

+ 116,514 cy (Estimated fill for next 5 years – through 6/30/2021)  
877,647 cy (Estimated gross airspace filled in next 5 years- through 6/2021)

Operations on the facility property located west of Colonial Road (State Route 1601) include:

- C&D Landfill which operates under Permit No. 33-01;
- Tire Collection Area;
- Mercury Containing Products Facility;
- Electronics and Oil Filter Collection Building;
- Storage Buildings, and
- Employee Break Trailer.

Operations on the facility property located east of Colonial Road (State Route 1601) include:

- MSW Transfer Facility operated under Permit No. 33-02T;
- Convenience Center;
- Concrete Disposal Area;
- Pesticide Container Storage Building;
- Yard Waste Processing Area;
- White Goods Staging Area;
- Wood Pallet Staging Area;
- Borrow areas for landfill cover soils;
- Scale and Scale House; and,
- Employee Break Trailer.

These operations are shown on **Figure 2** in the Facility Plan.

A water supply well is located on-site at the County-owned property on the east side of Colonial Road; however, this well is only used for irrigation. Potable water for the facility is supplied from the County-wide municipal water distribution system.

### **1.3 Buffers**

The existing C&D waste placement maintains a minimum 50-foot buffer from the property line. Proposed C&D waste placement shall be no closer than 200 feet from the property line. The limit of C&D waste shall be a minimum 500 feet from existing residential structures and wells. There is a minimum 50-foot buffer between the C&D waste and any stream, lake, pond, or other waters of the state as defined in G.S. 143-121. See **Figure 2** for buffer locations.

The newly constructed monitor well monitor well MW-13 will monitor groundwater corrective measures central to the north boundary of the landfill, approximately 350 feet west of MW-5 and approximately 175 feet south of Jerry's Creek. Monitor well MW-13 is approximately 120 feet north of the waste boundary and will monitor water quality, MNA parameters, and groundwater levels.

Monitor well 14 is located central to the north boundary of the landfill site approximately 20 feet south of Jerry's Creek, approximately 170 feet north and 90 feet west of MW-5, and approximately 265 feet north of the waste boundary. The well location is expected to monitor groundwater corrective measures and water quality for constituents previously detected in MW-5, MNA parameters and groundwater levels.

Monitor well MW-15 is located central to the north boundary of the landfill site approximately 30 feet south of Jerry's Creek, approximately 10 feet north and 135 feet east of MW-5, and approximately 130 feet north of the waste boundary. The well location is expected to monitor groundwater corrective measures and groundwater levels.

Monitor well MW-16 is positioned near the northeast corner of the landfill facility approximately 35 feet north and 250 feet east of MW-1A. The well will be used as a temporary compliance well until monitor well MW-1A is replaced after final grading is performed for the corrective measures. MW-16 will monitor groundwater corrective measures MNA parameters, and groundwater levels south of Jerry's Creek. This proposed well location is approximately 250 feet northeast of the waste boundary.

The monitor well network including the installation date and the company who installed the well is summarized below:

**Water Quality Monitoring Network Groundwater Sampling Locations**

Well ID	Date Installed	Total Depth (ft-bgs)	Screen Interval (ft-bgs)	Well Status/Purpose	Installed By
MW-1A	9/15/94	17.5	2.5-17.5	Abandoned/Compliance	Law Engineering
MW-1B	Proposed	17.5	2.5-17.5	Replace MW-1A for Compliance	Proposed
MW-3B	2/5/04	20.5	5.5-20.5	Groundwater Corrective Measures / Water <del>Levels</del> Levels	S&ME, Inc.
MW-4	9/9/94	18	3-18	Background	Law Engineering
MW-5	9/16/94	22	7-22	<del>Corrective Measures</del> / Compliance	Law Engineering
MW-6	9/16/94	17.5	2.5-17.5	Compliance	Law Engineering
MW-7A	11/13/99	25	15-25	Groundwater Corrective Measures / Water Levels	Geotek
MW-11	Proposed	25	10-25	Groundwater Corrective Measures / Water Levels	Proposed
MW-9	2/26/02	15	5-15	Temporary Background / Water Levels	S&ME, Inc.

Well ID	Date Installed	Total Depth (ft-bgs)	Screen Interval (ft-bgs)	Well Status/Purpose	Installed By
MW-9A	Proposed	15	5-15	Replace MW-9 for Background / Water Levels	Proposed
MW-12	7/22/08	10	5-10	<u>Corrective Measures / Compliance</u>	S&ME, Inc.
MW-13	10/14/08	20	10-20	Corrective Measures / Water Levels	S&ME, Inc.
MW-14	10/14/08	12	7-12	Corrective Measures / Water Levels	S&ME, Inc.
MW-15	10/14/08	11.6	6.6-11.6	Corrective Measures / Water levels	S&ME, Inc.
MW-16	10/15/08	17	7-17	Corrective Measures / Interim Compliance	S&ME, Inc.

Monitor wells were installed in general accordance with 15A NCAC 2C Well Construction Standards. Monitor wells construction details are included in Table 1.

### 2.2.2 Well Installation Procedures – New Monitor Wells

Future monitor wells designed to monitor the surficial aquifer, will be constructed into Type II wells in general accordance with the North Carolina Well Construction Standards (15A NCAC 2C .0108) and the requirements of the North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities. A North Carolina licensed well driller will be responsible for drilling boreholes and constructing monitor wells. A typical monitoring well construction detail is presented on **Figure 3**. The final screened intervals will be selected based on site conditions encountered during the drilling. Monitor wells that penetrate a confining layer or that pass through a contaminated aquifer zone to monitor depths below the first occurrence of groundwater will be installed as Type III double-cased monitor wells.

#### 2.2.2.1 Monitor Well Installation Equipment

Equipment used for drilling and completing monitor wells will be cleaned before drilling and monitoring well installation. At a minimum, the cleaning will consist of high pressure hot-water cleaning of the down-hole drilling equipment prior to performing each boring. Boreholes for the wells will be drilled using rotary drilling methods or other typical drilling methods as site conditions dictate.

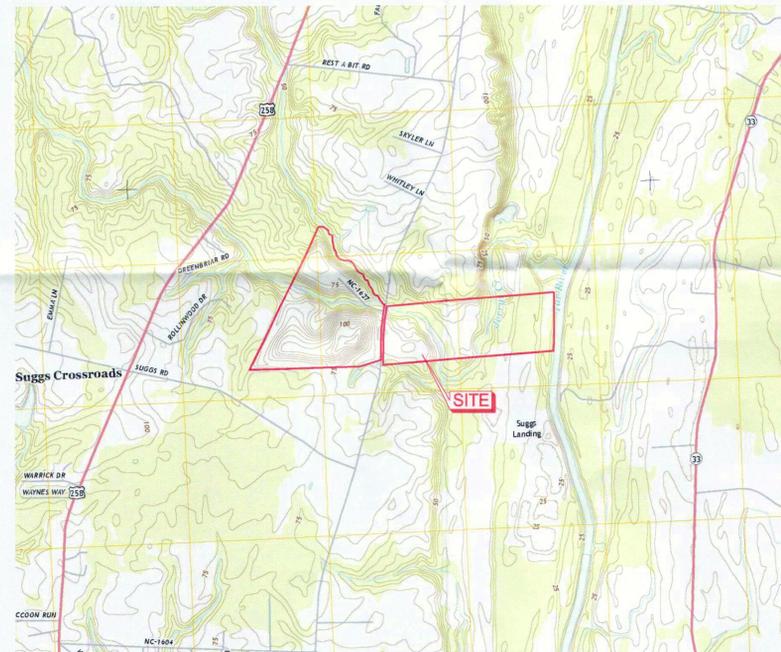
Lithologic samples will be collected during advancement of new borings for visual classification of the stratigraphy and recorded onto boring log forms. Soil samples will be collected using split-barrel sampling equipment with samples taken at 2.5-foot intervals first 10 feet and 5-foot intervals below 10 feet, or at continuous intervals with direct push hydraulic sampling procedures.

Monitor wells will be constructed through hollow stem augers or drill casing, if required. Monitor well riser and well screen will be flush joint threaded Schedule 40 PVC two inch inside diameter NSF Grade (meeting ASTM D-178S and F480 requirements). The well screen will be .01-inch machine slotted screen. Only casing with water-tight joints will

# OPERATION AND WASTE ACCEPTANCE PLAN EDGECOMBE COUNTY C&D LANDFILL PERMIT # 33-01

EDGECOMBE COUNTY  
TARBORO, NORTH CAROLINA

AUGUST 2014



SITE VICINITY MAP  
NOT TO SCALE

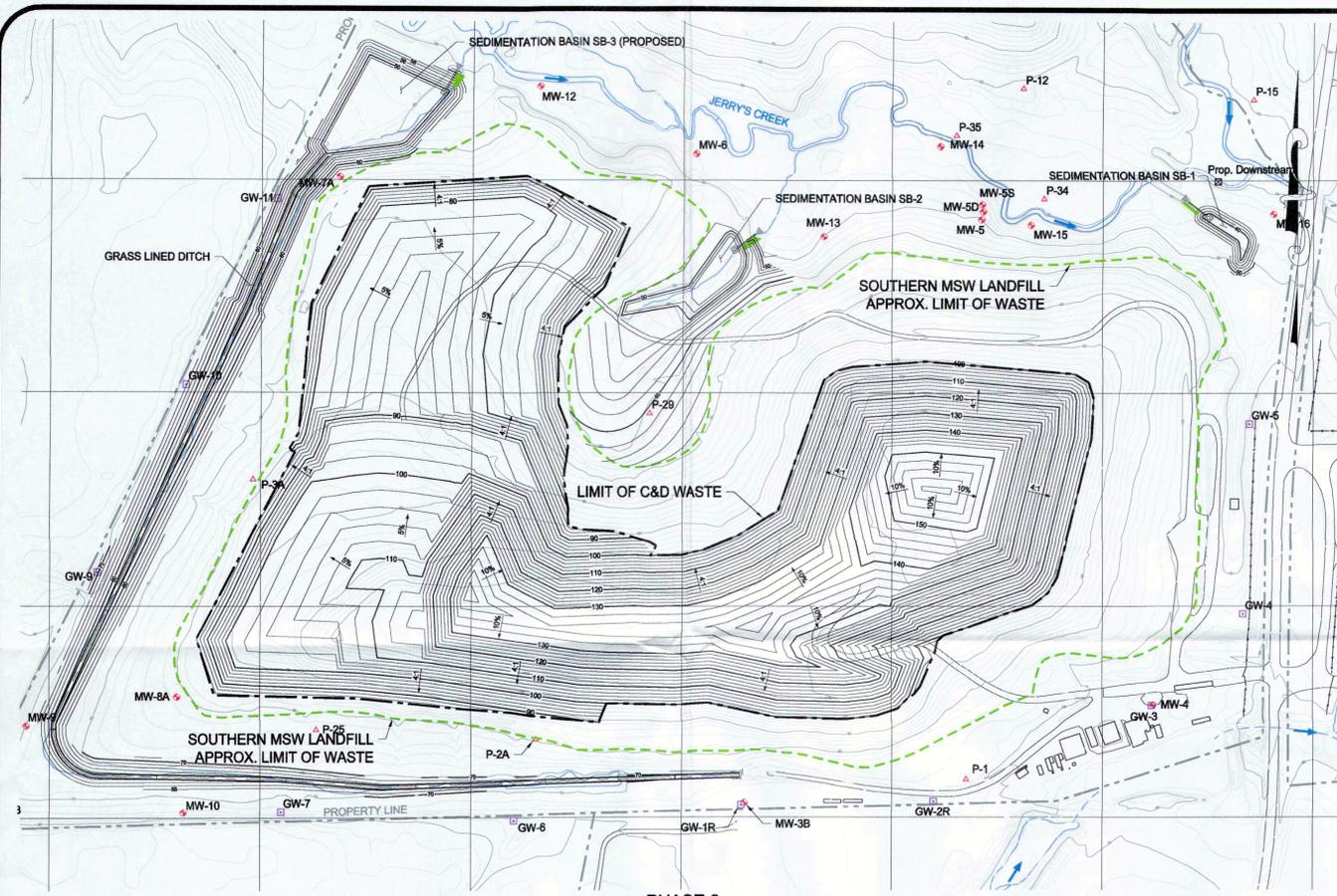
## INDEX OF DRAWINGS

DRAWING	TITLE
1.	TITLE SHEET
2.	EXISTING CONDITIONS
3.	PROPOSED FINAL GRADING
4.	FILLING PLAN - YEARS 1 THROUGH 4
5.	FILLING PLAN - PHASES 1 & 2, 3, 4, AND 5
6.	FILLING PLAN - PHASES 6, 7, 8, AND 9
7.	LANDFILL CROSS-SECTIONS
8.	BORROW AREA PLAN
9.	FINAL COVER AND GAS WELL DETAILS
10.	STORMWATER MANAGEMENT/EROSION AND SEDIMENT CONTROL DETAILS I
11.	STORMWATER MANAGEMENT/EROSION AND SEDIMENT CONTROL DETAILS II
12.	STORMWATER MANAGEMENT/EROSION AND SEDIMENT CONTROL DETAILS III
13.	STORMWATER MANAGEMENT/EROSION AND SEDIMENT CONTROL DETAILS IV

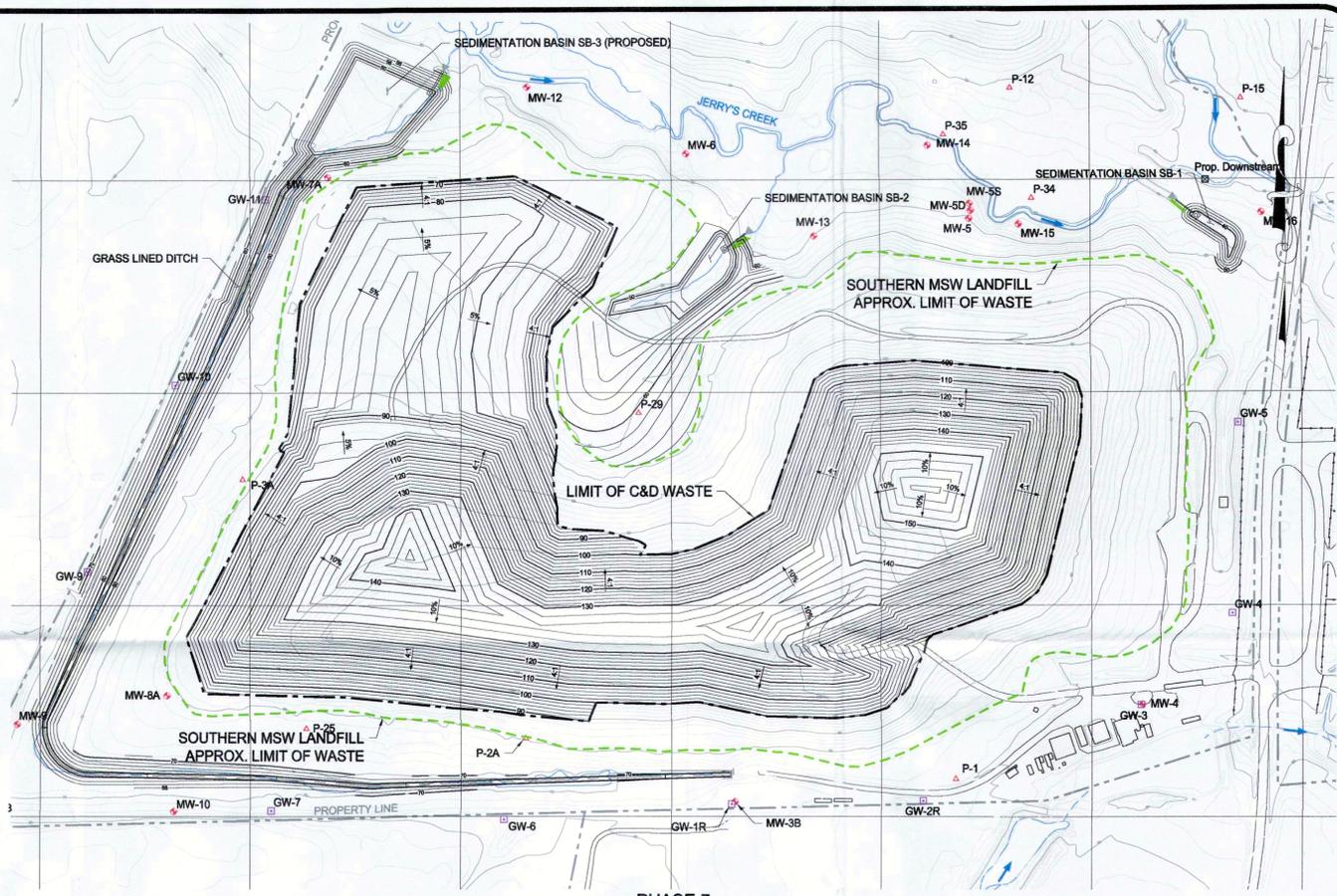
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1	8-8-2014	Change titles of Drawings 4, 5, and 6	KSO

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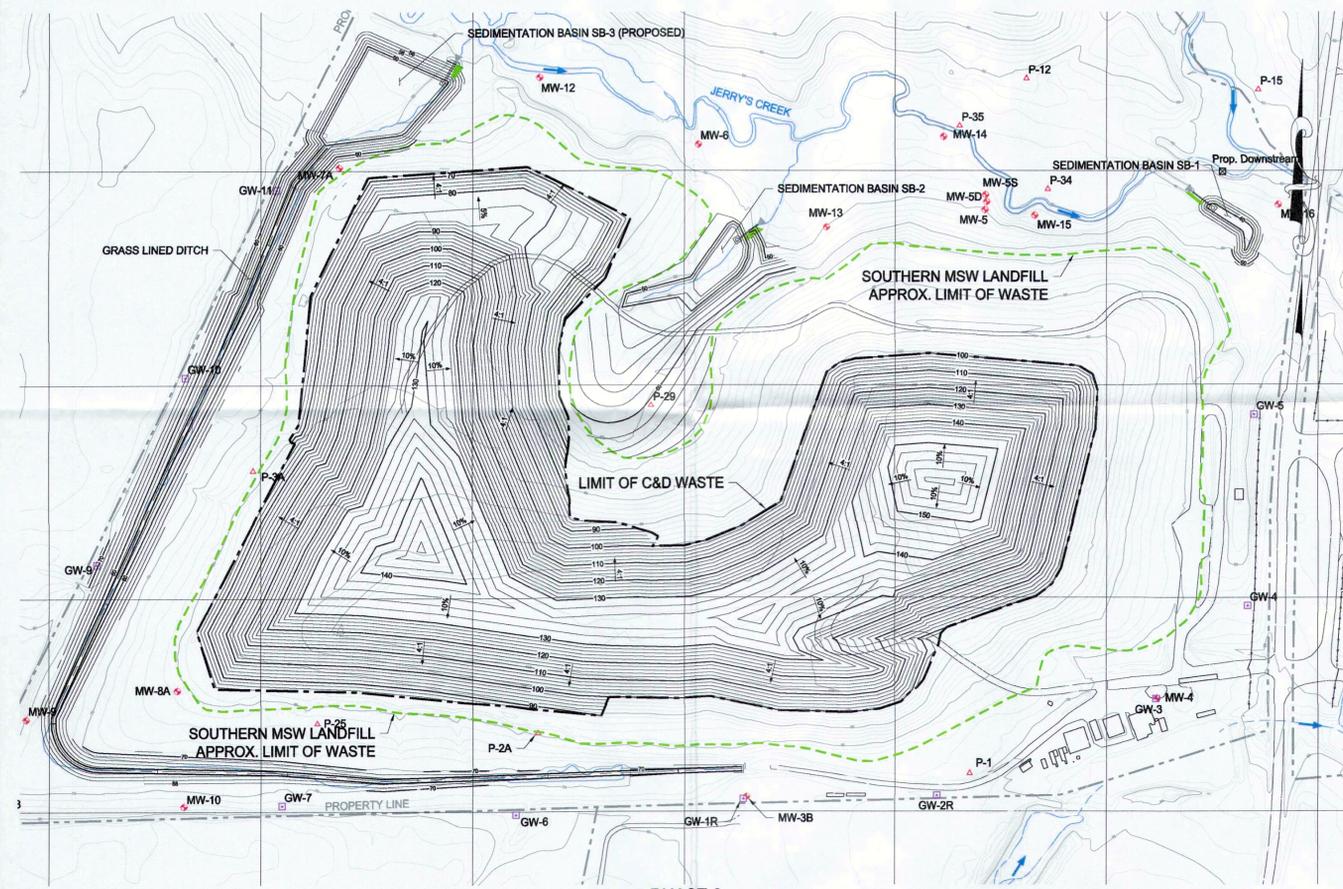
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DRAWING: 1	OF: 13



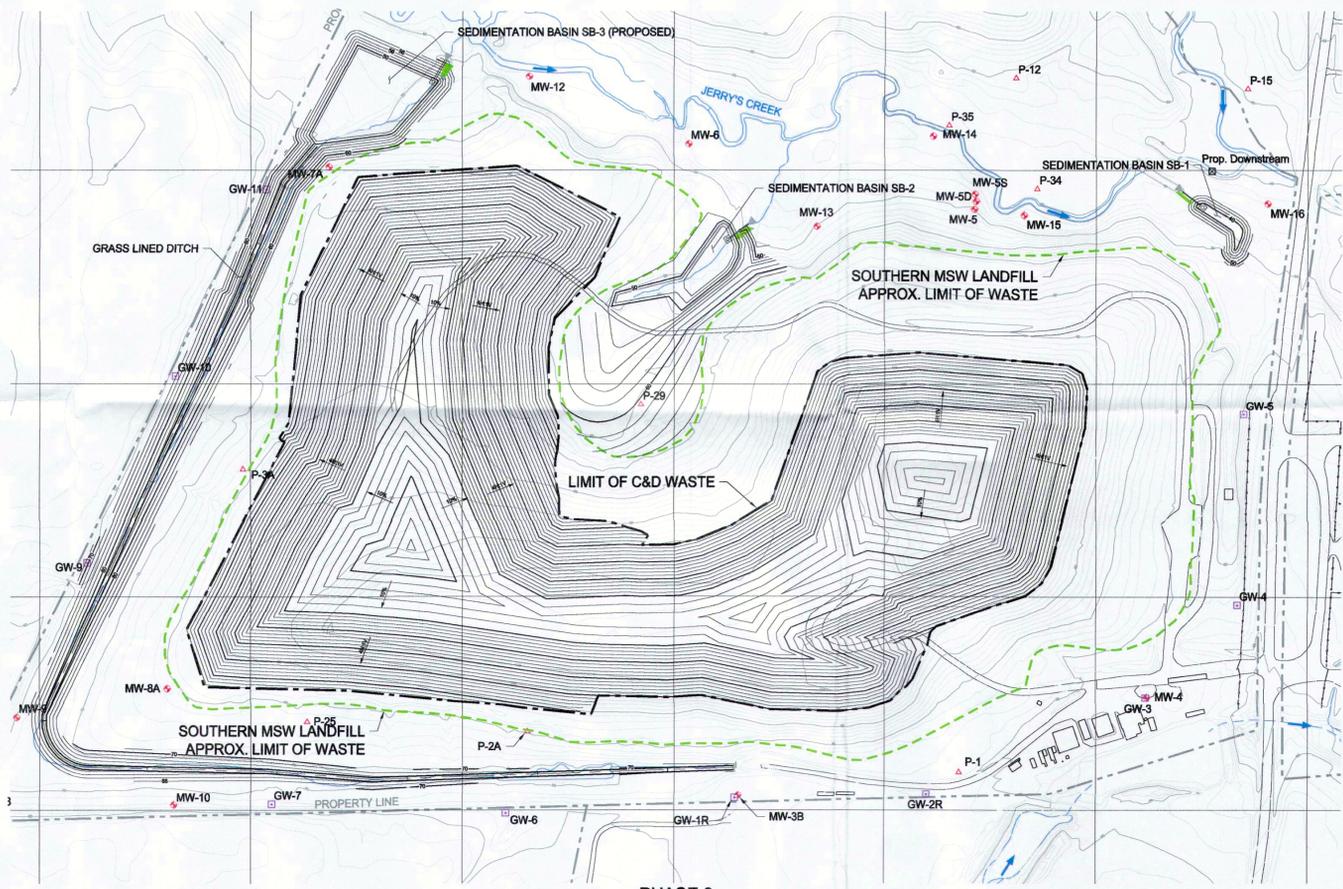
PHASE 6



PHASE 7



PHASE 8

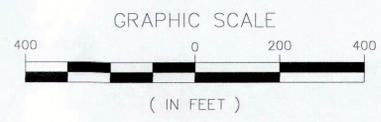


PHASE 9

- NOTES:**
- TOPOGRAPHIC MAP DEVELOPED BY GEODATA CORPORATION OF ZEBULON, NC USING PHOTOGRAMETRIC METHODS FROM AERIAL PHOTOGRAPHY FLOWN ON FEBRUARY 5, 2007.
  - GROUNDWATER MONITOR WELL, PIEZOMETER, AND METHANE GAS MONITOR WELL LOCATIONS SURVEYED BY SPRULL & ASSOCIATES ON MAY 26, 2002, DECEMBER 23, 2004, AND SEPTEMBER 4, 2007 AND BY BATEMAN CIVIL SURVEY COMPANY, PC, ON OCTOBER 26, 2008.
  - TOPOGRAPHIC MAP UPDATED WITH GROUND SURVEY BY BATEMAN CIVIL SURVEY COMPANY, PC OF HOLLY SPRINGS, NC ON JULY 2011, JUNE 2012, & JUNE 2013.
  - PROPERTY BOUNDARY OBTAINED FROM EDGECOMBE COUNTY GIS DEPARTMENT.

- LEGEND**
- METHANE GAS MONITOR WELL
  - PIEZOMETER
  - GROUNDWATER MONITOR WELL
  - LIMIT OF MSW WASTE
  - LIMIT OF C&D WASTE PLACEMENT
  - PROPERTY LINE

- PROPOSED C&D ELEVATION CONTOUR - 10-FOOT INTERVAL
- PROPOSED C&D ELEVATION CONTOUR - 2-FOOT INTERVAL
- GROUND SURFACE ELEVATION CONTOUR - 10-FOOT INTERVAL
- GROUND SURFACE ELEVATION CONTOUR - 2-FOOT INTERVAL
- FENCE



**S&ME**  
 WWW.SMEINC.COM  
 NC ENG. LICENSE #E-0176 PHONE: (919) 872-2660  
 3201 SPRING FOREST ROAD, RALEIGH, NC 27616

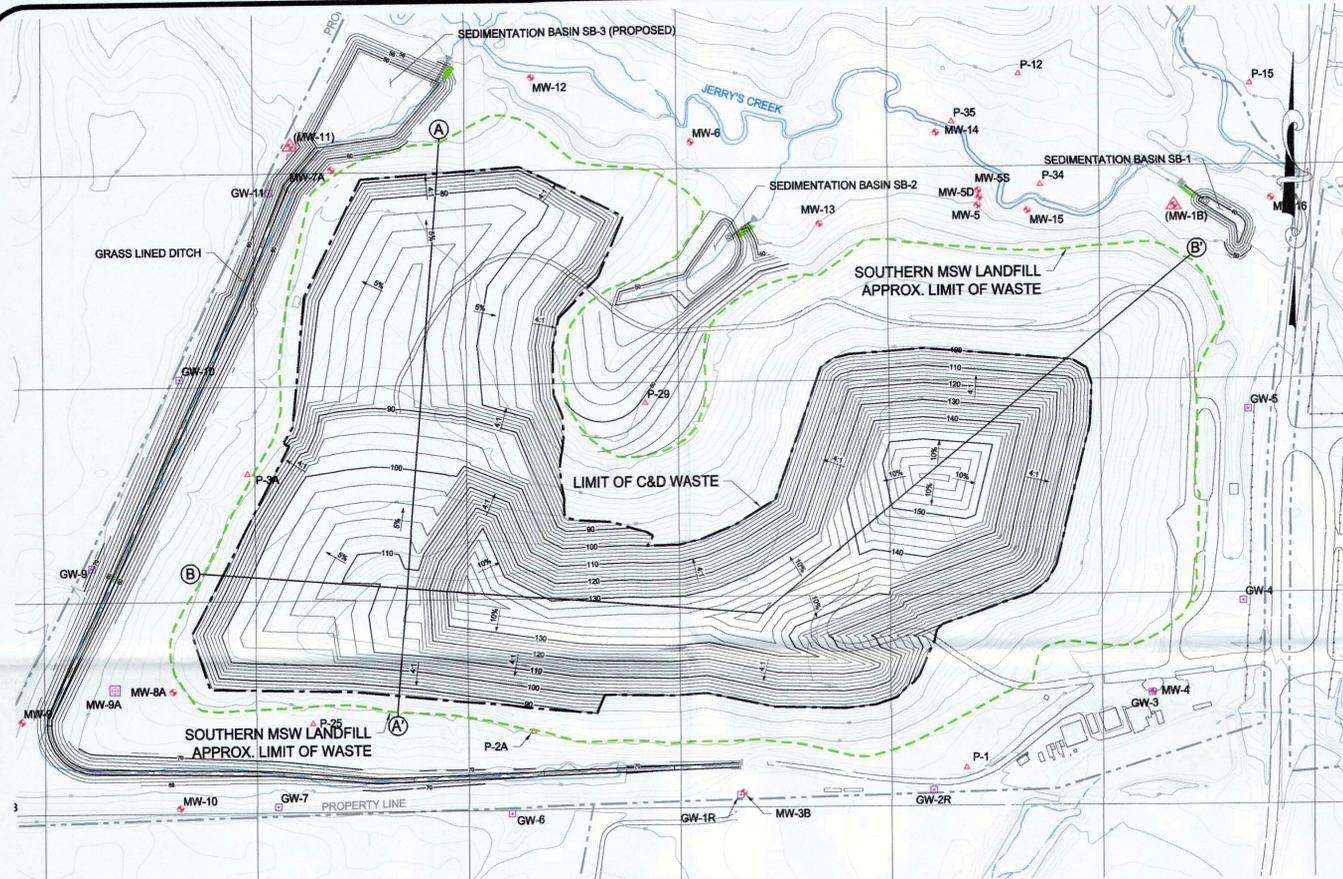
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1	6-30-2014	Indicate Phases	

FILLING PLAN - PHASES 6, 7, 8 AND 9

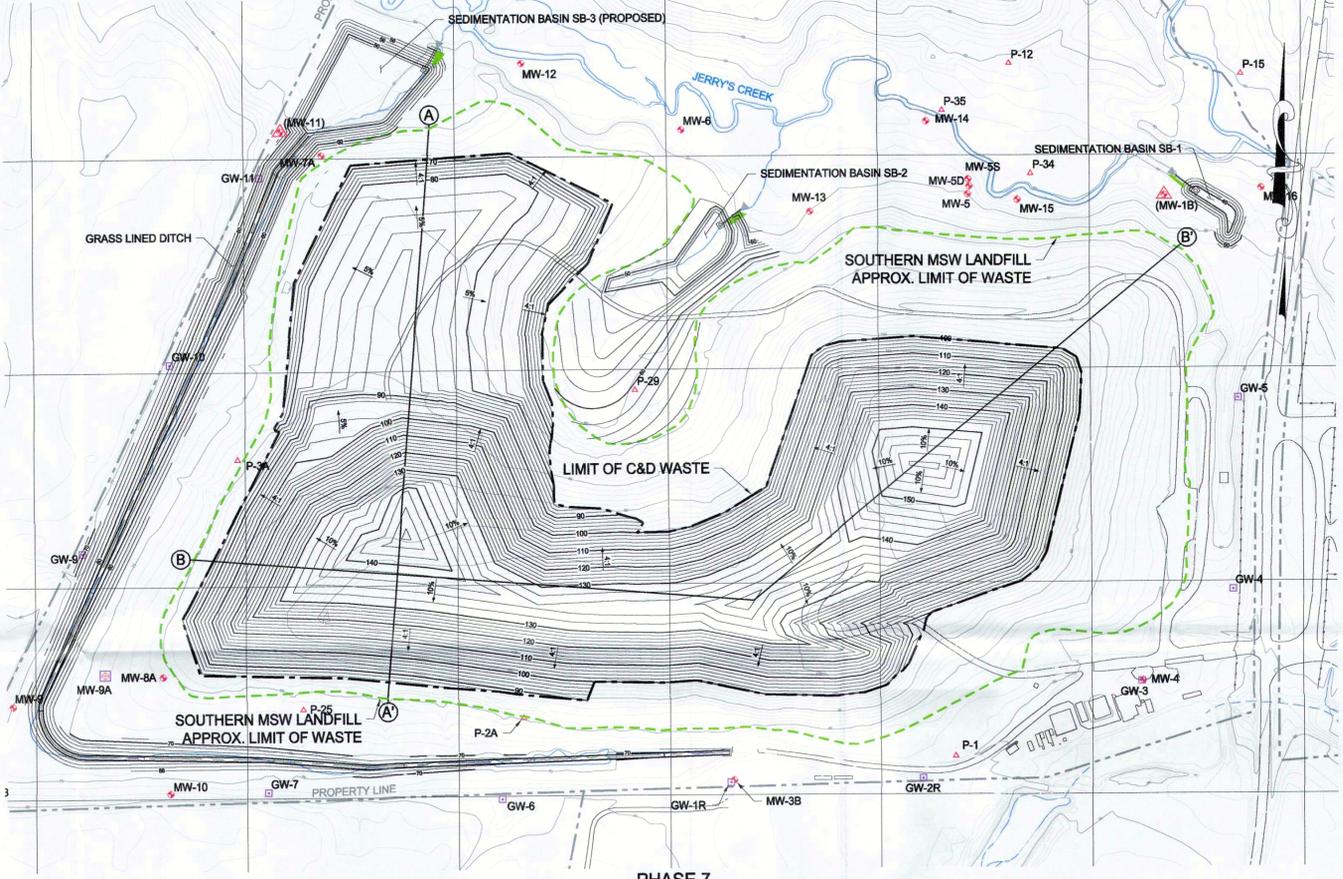
FACILITY PLAN  
 EDGECOMBE COUNTY C&D LANDFILL  
 TARBORO, NORTH CAROLINA

DRAWN BY: BTR CHECKED BY: SPW  
 DESIGNED BY: DBW APPROVED BY: KSO

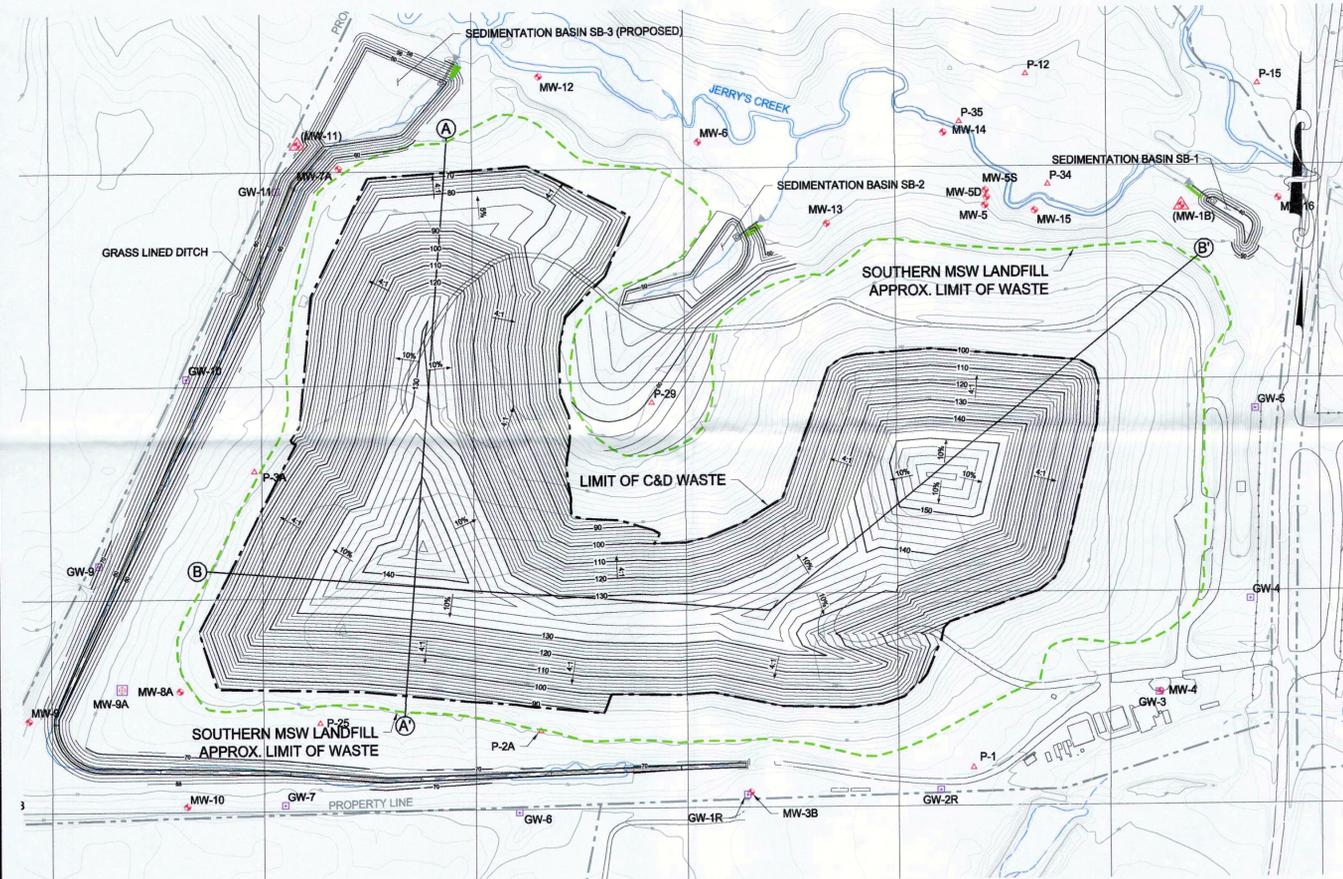
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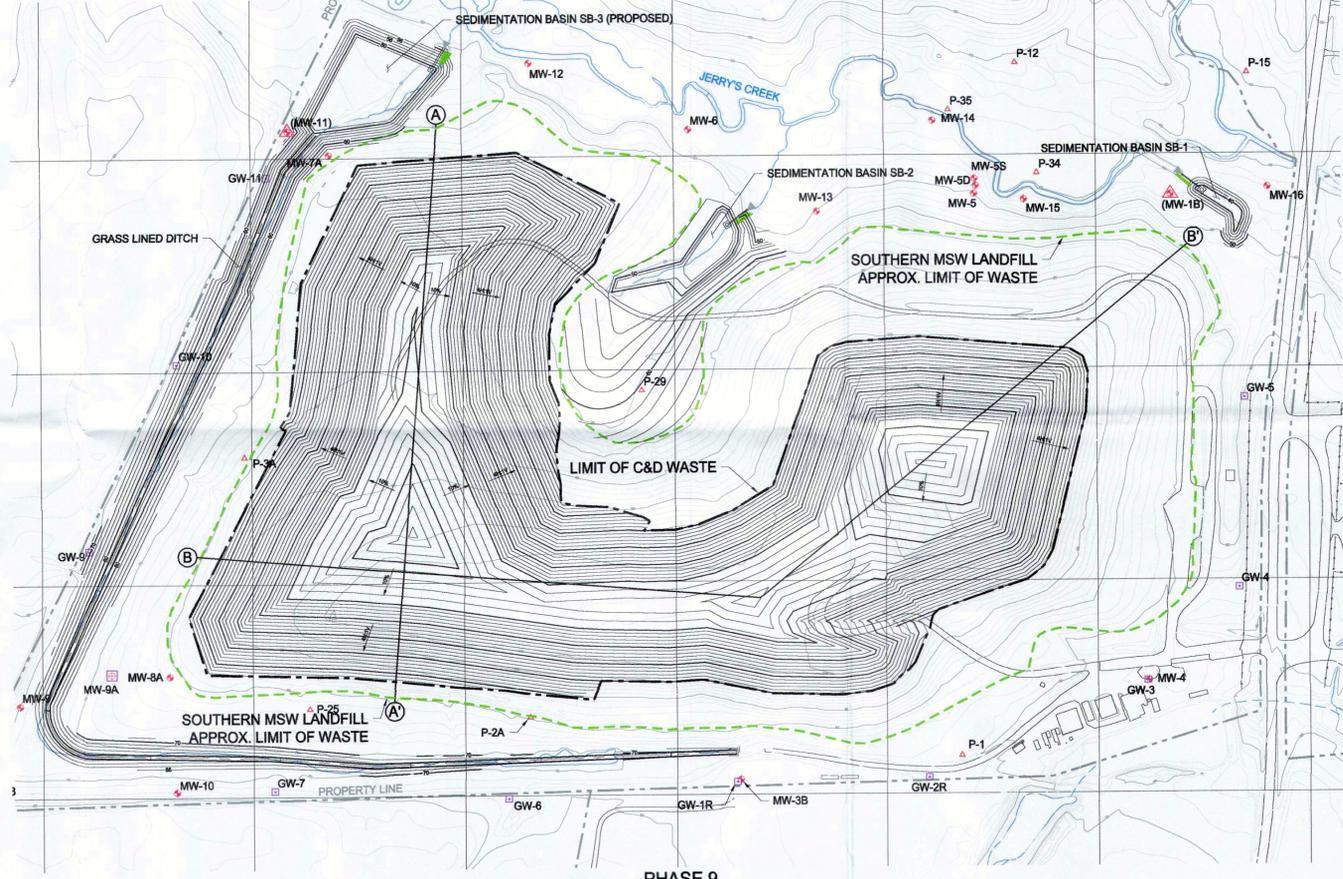
PHASE 6



PHASE 7



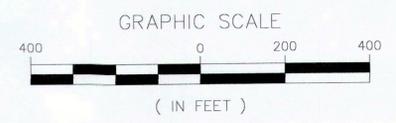
PHASE 8



PHASE 9

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  - PIEZOMETER
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  - PROPOSED BACKGROUND NETWORK MONITOR WELL (MW-11)
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  - LIMIT OF C&D WASTE PLACEMENT
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  - CROSS SECTION LOCATION (SEE DRAWING 7 OF 13)
  - PROPOSED C&D ELEVATION CONTOUR - 10-FOOT INTERVAL
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  - GROUND SURFACE ELEVATION CONTOUR - 10-FOOT INTERVAL
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**S&ME**  
 WWW.SMEINC.COM  
 NC ENG. LICENSE #F-0176 PHONE: (919) 872-2660  
 3201 SPRING FOREST ROAD, RALEIGH, NC 27616

NO.	DATE	DESCRIPTION	BY	KSO
1	8-8-2014			

FILLING PLAN - PHASES 6, 7, 8 AND 9  
 OPERATION PLAN  
 EDGECOMBE COUNTY C&D LANDFILL  
 TARBORO, NORTH CAROLINA

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