



**RAILROAD COMMISSION OF TEXAS**  
OIL AND GAS DIVISION  
PERMIT TO MAINTAIN AND USE A PIT

Pit Permit No. **P010469**  
**AMENDED, RENEWED,**  
**And TRANSFERRED**  
Supersedes permit dated  
February 27, 1996

Associated with: STF-0109, R9 08-1405,  
P002485, P002487, P002488, P002490,  
P002491, and P006192

BORDEN COUNTY WASTE DISPOSAL LTD  
P O BOX 3215  
ABILENE TX 79604-3215

Based on information contained in the initial application (Form H-11) received on July 2, 1985; the request to transfer authority from Williams Oil Field Disposal System to Borden County Waste Disposal Ltd., received on January 19, 1999; the permit amendment request received on October 9, 2015, and subsequent information received to date, you are hereby authorized to maintain and use the pit designated herein:

**Type of Pit: Commercial Solid Oil and Gas Waste Disposal Pit**  
Borden County Waste Disposal Gail Facility – “Landfill”  
Latitude and Longitude: 32.758493°, -101.265920°  
Borden County, Texas  
RRC District 8A, Midland

Authority is granted to maintain and use the pit in accordance with Texas Administrative Code (TAC) Title 16, Part 1, Chapter 3.8 (Statewide Rule 8) and is subject to the following conditions:

**I. GENERAL PERMIT CONDITIONS:**

- A. Technical Permitting in Austin and the appropriate District Office must be notified in writing upon final completion of construction of the pit or any expansions of the pit. The permittee may not begin receiving waste into the pit until the appropriate Railroad Commission of Texas (RRC) District Office has completed an inspection of the pit and verified that the pit is constructed in accordance with the application and permit.
- B. The effective date of this permit is March 4, 2016.
- C. The permit expires March 3, 2021.

- D. Cell 1 has exceeded its original permitted capacity of 248,500 cubic yards and no more waste may be disposed of in Cell 1. The useable capacity of Cell 2 may not exceed 97,828 cubic yards of oil and gas solid waste.
- E. This permit is not transferable without the consent of the RRC. Any request for permit transfer should be filed with Technical Permitting in Austin.
- F. The permittee shall maintain financial security in the amount of \$154,000.00 until this pit (P010469) and all associated permits (R9 08-1405, P002485, P002487, P002488, P002490, P002491, and P006192) have been closed in accordance with their respective permits. Technical Permitting reserves the right to revise this amount, as necessary. Prior to any modification of this facility that would require increased financial security, an updated closure cost estimate must be submitted to Technical Permitting in Austin, and any additional financial security must be filed with and approved by the RRC prior to making that modification.
- G. This permit does not authorize the discharge of any oil and gas waste from the pit.
- H. Unless otherwise required by the conditions of this permit, construction, use, maintenance, and closure of the pit shall be in accordance with the information represented on the application (Form H-11) and the attachments thereto.
- I. An independent National Environmental Laboratory Accreditation Program (NELAP) certified laboratory neither owned nor operated by the permittee shall perform all chemical laboratory analyses required by this permit using Environmental Protection Agency (EPA) methods or Standard Methods as specified in 40 CFR Part 136. All geotechnical testing must be performed by a laboratory certified to conduct geotechnical testing according to the standards specified by ASTM International (ASTM).
- J. Safety Data Sheets (SDS) must be submitted to Technical Permitting in Austin for any chemical or bioaccelerator proposed to be used in the treatment of waste at the facility. Use of the compound is contingent upon RRC approval.
- K. Any deviation from this permit must be approved by amendment from Technical Permitting in Austin before implementation.
- L. The permittee shall submit a Quarterly Report according to the following:
  - 1. The report shall contain applicable information as required in Conditions IV., V. and VI. of this permit.
  - 2. The quarterly reporting periods shall be January 1 through March 31, April 1 through June 30, July 1 through September 30, and October 1 through December 31 of each year.
  - 3. The reports shall be submitted to Technical Permitting in Austin and the appropriate District Office no later than the 31<sup>st</sup> day of the month following each reporting period, or each April 30<sup>th</sup>, July 31<sup>st</sup>, October 31<sup>st</sup>, and January 31<sup>st</sup>, respectively.
  - 4. An Executive Summary shall be included that describes facility operations and relevant activities that occurred during the specific quarter.

5. Data tables presenting volumes or amounts of received waste shall be included.
  6. The laboratory analytical reports and the corresponding chain of custody shall be provided for all laboratory analyses performed.
- M. Failure to comply with any provision of this permit shall be cause for modification, suspension or termination of this permit.

## **II. AUTHORIZED WASTES:**

- A. Only Resource Conservation and Recovery Act (RCRA) exempt and/or non-hazardous wastes subject to the jurisdiction of the RRC may be received or disposed of in this pit. This permit authorizes the receipt and disposal of the following oil and gas wastes:
1. Water based drilling fluids and associated cuttings;
  2. Cuttings generated from the use of oil based drilling fluid;
  3. Iron sulfide, which has been fully oxidized;
  4. Contaminated soils from crude oil spills, pipeline and saltwater spills;
  5. Absorbent pads from crude oil spills;
  6. Formation sands and other solids from saltwater storage tanks or vessels and saltwater pits;
  7. Solid waste from gas dehydration and sweetening (spent filters and filter media, molecular sieves, precipitated amine sludge, iron sponge, and hydrogen sulfide scrubber sludge);
  8. Waste solids resulting from crude oil reclamation;
  9. Liners from reserve pits.
- B. No hazardous waste as defined by the EPA in 40 CFR Part 261 or industrial waste may be received or disposed of at the facility. No produced water or free oil may be disposed of in this pit.
- C. No iron sulfide waste may be received or disposed of at the facility unless the waste has been fully oxidized.
- D. No asbestos-containing material regulated under the Clean Air Act or polychlorinated biphenyls (PCB) material regulated under the Toxic Substances Control Act may be accepted for disposal at this facility.
- E. No oil and gas Naturally Occurring Radioactive Material (NORM) waste as defined in 16 TAC §4.603 or waste from a facility that is licensed by the Texas Department of State Health Services (DSHS) to process or treat oil and gas NORM waste may be received at this facility.

### III. GENERAL SITE CONSTRUCTION:

- A. The general layout and arrangement of the facility shall be consistent with the "Site Location" schematic attached to and incorporated into this permit as **Permit Appendix A**. The exterior dimensions of Cell 1 and Cell 2 should be consistent and not exceed the dimensions shown in the "Proposed Solids Pit Expansion Area" schematic attached to and incorporated into this permit as **Permit Appendix B**. The interior dimensions of Cell 2 should be consistent with the "Proposed Solids Pit Expansion Details" attached to and incorporated into this permit as **Permit Appendix C**.
- B. The facility shall maintain security to prevent unauthorized access. Access shall be secured by a 24-hour attendant or a six foot high security fence and locked gate when unattended. Fencing shall be required unless terrain or vegetation prevents truck access except through entrances with lockable gates.
- C. The pit must be constructed in accordance with the liner installation methods included in the application and consist of four 6-inch lifts of compacted clay with a combined thickness of at least two feet and a hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec or less.
- D. The expansion on the northwest corner of the pit (Cell 2) must be tied into the existing pit (Cell 1) on the east side, and be surrounded by dike walls at least 10 feet tall on the north, west, and south sides. The interior dimensions of the extension (including two feet of freeboard) must not exceed 573 feet by 443 feet. The slope of the dike wall may not exceed a 1:3 (height: width) ratio and must be compacted or constructed of material that meets or exceeds 95% Standard Proctor (ASTM D698) or 90%-92% Modified Proctor (ASTM D1557). Dikes must be used to divert non-contact storm water around the waste management areas and contain and isolate storm water within the waste management units. The construction of Cell 2 shall be consistent with the "Proposed Solids Pit Expansion Details" attached to and incorporated into this permit as **Permit Appendix C**.
- E. A minimum buffer distance of 50 feet must be maintained between the outer edge or foot of the dike wall or berm and the property boundary.
- F. Cell 1 has reached capacity (248,500 cubic yards) and must be closed in accordance with Permit Condition VII.
- G. A sign shall be posted at the pit (P010469) that shows the pit permit number in numerals at least three inches in height.

### IV. GENERAL OPERATING REQUIREMENTS:

- A. At least two feet of freeboard must be maintained at all times between the level of waste in Cell 2 and the top of the pit dikes.
- B. No oil may be allowed to accumulate on top of the waste stored in the pit. Any oil on top of the waste must be skimmed off and handled in accordance with RRC rules.

- C. Any spill of waste, waste treatment chemicals, or any other waste material shall be promptly cleaned up and the resulting waste disposed of in an authorized manner.
- D. All waste shall pass the Paint Filter Test (EPA Method 9095) prior to disposal in a disposal cell. Test results from each Paint Filter Test must be submitted to Technical Permitting in Austin as part of the Quarterly Report required in Condition I.L. of this permit.
- E. All waste received at the site which does not pass the Paint Filter Test must be processed through the on-site dewatering equipment (i.e.: centrifuges, shakers, mechanical spreaders, and collecting pits) prior to its placement in Cell 2. The liquid fraction resulting from the dewatering process must be disposed of in an authorized manner.
- F. No freestanding fluids may accumulate in the pit. Any fluids must be removed within 72 hours of discovery and disposed of in an authorized manner.

**V. RECORD KEEPING AND TESTING REQUIREMENTS:**

- A. For the purposes of this permit, a representative sample of incoming waste is defined as a four-part composite sample comprising one grab sample from each 50 cubic yards of waste material from each 200 cubic yard lot (e.g., from each pit, spill location, tank bottom, or facility).
- B. Prior to receipt at the site, representative samples of waste from commercial oil and gas facilities and reclamation plants must be analyzed and may not exceed the limit on the following parameter:

<u>PARAMETER</u>	<u>LIMITATION</u>
Total Organic Halides (TOX) (EPA Method 9020B)	100 mg/L
<i>or</i>	
Extractable Organic Halides (EOX) (EPA Method 9023)	100 mg/kg

For TOX and EOX analyses, a representative sample is defined as one grab sample from each 50 cubic yards of waste material from each job. Special authorization for disposal of waste with a TOX or EOX >100 parts per million (ppm) may be considered. Authority must be obtained from Technical Permitting in Austin.

- C. Prior to receipt at the site, representative samples of incoming RCRA non-exempt waste must be analyzed for the following parameters and may not exceed the following:

<b><u>PARAMETER</u></b>	<b><u>LIMITATION</u></b>
Corrosivity	No materials exhibiting the characteristics of corrosivity as defined by RCRA
Reactivity	No materials exhibiting the characteristics of reactivity as defined by RCRA
Ignitability	No materials exhibiting the characteristics of ignitability as defined by RCRA
Toxicity	No materials exhibiting the characteristics of toxicity as defined by RCRA
Toxicity Characteristic Leaching Procedure (TCLP) ( <i>EPA Method 1311</i> ):	
Benzene ( <i>EPA Method 1311/8021/8260B</i> )	< 0.5 mg/L
Metals ( <i>EPA Method 1311/6010/6020/7471A</i> )	
Arsenic	< 5.0 mg/L
Barium	< 100.0 mg/L
Cadmium	< 1.0 mg/L
Chromium	< 5.0 mg/L
Lead	< 5.0 mg/L
Mercury	< 0.2 mg/L
Selenium	< 1.0 mg/L
Silver	< 5.0 mg/L

- D. Each load of incoming waste, other than water base drilling fluid and the associated cuttings, or oil base drilling fluid and the associated cuttings, must be scanned for the presence of NORM using a scintillation meter with a sodium iodide detector. Any load with a maximum reading of 50 microrentgens per hour or more may not be unloaded or processed at the facility unless further analysis of the waste demonstrates that the waste does not exceed 30 picocuries per gram Radium-226 combined with Radium-228 or 150 picocuries per gram of any other radionuclide.
- E. The permittee shall not accept waste from a waste hauler unless the waste hauler has an RRC issued waste hauler permit and is authorized to deposit waste at this facility.
- F. The permittee shall keep the following records for three years from the date the waste is received at the facility:
1. Description of the site where the waste was generated, including:
    - a. Generator name;
    - b. Lease name and number or gas ID or American Petroleum Institute (API) Well Number;
    - c. County;

2. Transporter Name;
  3. Amount of waste material received (specify units);
  4. Description of the waste material, including a detailed description of the type of waste and any analyses required by Permit Conditions IV.D., V.B., V.C., or V.D. above.
- G. A report of all records required by Condition V.F. above, as well as a summary of waste receipts including the volume of each type of waste received on a monthly basis shall be submitted to Technical Permitting as part of the Quarterly Report required in Condition I.L. of this permit.

## VI. GROUNDWATER MONITORING

- A. Sixteen (16) Groundwater Monitor wells must be installed and numbered as represented on the "Survey Plat of Monitor Wells" schematic attached to and incorporated into this permit as **Permit Appendix D**.
1. The wells must be completed by a certified water well driller in accordance with 16 TAC Part 4, Chapter 76 (Water Well Drillers and Water Well Pump Installers).
  2. The wells must be completed to penetrate the shallowest groundwater zone, or should be completed to approximately 25 to 35 feet below ground surface.
  3. Provision must be made to protect the well heads from damage by vehicles and heavy equipment.
  4. The wells must be water tight at the surface and fitted with a lockable water tight expansion cap.
  5. The following information must be submitted after the wells are completed:
    - a. A soil boring lithological log for each well, with the soils described using the Unified Soil Classification System (equivalent to ASTM D 2487 and ASTM D 2488). The log must also include the method of drilling, well specifications, slot size, riser and screen length, bentonite and cement intervals, total depth, and the top of the first encountered water or saturated soils. The sand pack size should be compatible with the well screen slot size, as well as the local lithology.
    - b. A well installation diagram detailing construction specifications for each well.
    - c. A survey elevation for each well head reference point (top of casing) relative to a real or arbitrary benchmark and mean sea level.
    - d. A potentiometric map showing static water levels, the estimated direction of groundwater flow, and the calculated gradient.

- B. The monitor wells must be sampled or monitored for the following parameters after installation and quarterly thereafter:
- |                                      |                |
|--------------------------------------|----------------|
| 1. Static water level.               | 8. Sulfates    |
| 2. pH                                | 9. Nitrates    |
| 3. Benzene                           | 10. Carbonates |
| 4. Total Petroleum Hydrocarbon (TPH) | 11. Calcium    |
| 5. Total Dissolved Solids (TDS)      | 12. Magnesium  |
| 6. Chlorides                         | 13. Sodium     |
| 7. Bromides                          | 14. Potassium  |
- C. Copies of the laboratory analytical results and chain of custody must be filed with Technical Permitting as part of the Quarterly Report required in Condition I.L. of this permit.

## VII. CLOSURE:

- A. Technical Permitting and the Midland District Office must be notified in writing at least 45 days prior to commencement of closure activities. Final closure of the pit must be accomplished in such a manner that rainfall will not collect at the pit location after pit closure.
- B. Once each disposal cell of the pit has achieved its capacity, the disposal cell shall be covered with a cap. The cell cap shall consist of a minimum two-foot thick compacted clay layer placed on top of the compacted waste. The compacted clay layer will be installed in six inch lifts to a dry density of at least 95% Standard Proctor or 90%-92% Modified Proctor and a permeability of  $1 \times 10^{-7}$  cm/sec or less. The top of the clay cap shall be contoured to conform to the natural contour of the surrounding land. A minimum 30-mil high-density polyethylene (HDPE) geomembrane liner shall be placed on top of and keyed into the bottom compacted clay layer. Lastly, a soil layer with a thickness of at least 18 inches shall be placed on top of the HDPE liner. The soil shall be seeded with vegetation appropriate for the geographic region. Refer to the "Closure Cap Cover System Detail" schematic attached to and incorporated into this permit as **Permit Appendix E**.
- C. Any areas showing signs of erosion must be contoured and backfilled or reseeded as necessary.

## VIII. POST-CLOSURE MONITORING

- A. The site must be monitored for a period of no less than five years after final closure of the pit.
- B. Post-closure care must include the quarterly inspections of the pit by a registered Professional Engineer currently registered in the State of Texas for signs of deterioration.

- C. A summary of the results of the post-closure monitoring activity must be submitted to Technical Permitting in Austin as part of the Annual Report, which must be submitted annually for five years after the pit has been closed.
- D. The permittee must request in writing permission to cease post-closure monitoring. Post-closure monitoring requirements may be extended by Technical Permitting based on the monitoring results.

This authorization is granted subject to review and cancellation should investigation show that such authorization is being abused.

APPROVED AND ISSUED ON March 4, 2016



Grant Chambless, P.G.  
Manager, Environmental Permits & Support  
Technical Permitting

Notes:

1. Transfers authority from Williams Oil Field Disposal System to Borden County Waste Disposal Ltd.
2. Amends size and capacity of pit from 248,500 cubic yards by changing overall pit dimensions to reflect actual dimensions of Cell 1, and adding a 573-foot by 443-foot (interior dimensions) extension (Cell 2) on the western side of the pit, which may receive an additional 97,828 cubic yards of oil and gas waste.
3. Specified requirements for record keeping and quarterly reports.
4. Added groundwater monitoring requirements for facility. Note that groundwater monitoring requirements included in this permit supersede monitoring requirements from the Final Order dated October 20, 1986, which approved operation of four unlined earthen collecting pits and two unlined earthen saltwater storage pits at the Gail Facility. These changes include quarterly reporting rather than semi-annual reporting. In addition, sampling parameters were updated and analytes specified in the 1986 permit that have not been consistently detected in the monitoring results for the facility were removed.
5. Changed closure requirements from a minimum of three feet of compacted clay to a cap consisting of at least two feet of compacted clay, a 30-mil HDPE liner, and 18 inches of topsoil.
6. Added requirements for post-closure care.
7. Changes made for formatting or consistency with standard permit language.

cc: RRC-District 08, Midland

RRC-Reporting Log, Austin

# Appendix A

## Site Location



Date  
February 26, 2016

Drawn By  
DD

Scale  
1"=500'



Borden County Waste Disposal, Ltd.

P.O. Box 3215  
Abilene, TX 79604

Site Location (REVISED 2/26/16)

BCWD-1

# Appendix B

Proposed Solids Pit Expansion Area

EXISTING LANDFILL AREA:  
5.06 acres

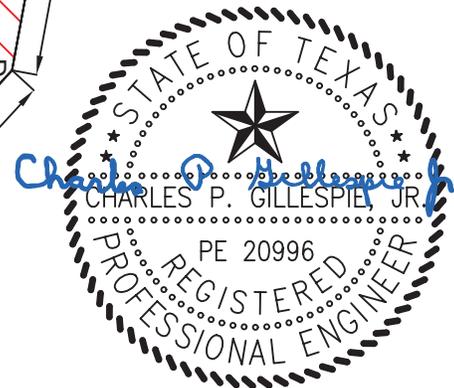
PROPOSED EXPANSION AREA:  
17.36 acres

TOTAL PROPOSED AREA:  
22.42 acres



Cell 2  
FOOTPRINT  
INCLUDES  
DIKES

Cell 1



P.E.

02/26/2016

Date  
February 26, 2016

Drawn By  
DD

Scale  
1"=200'

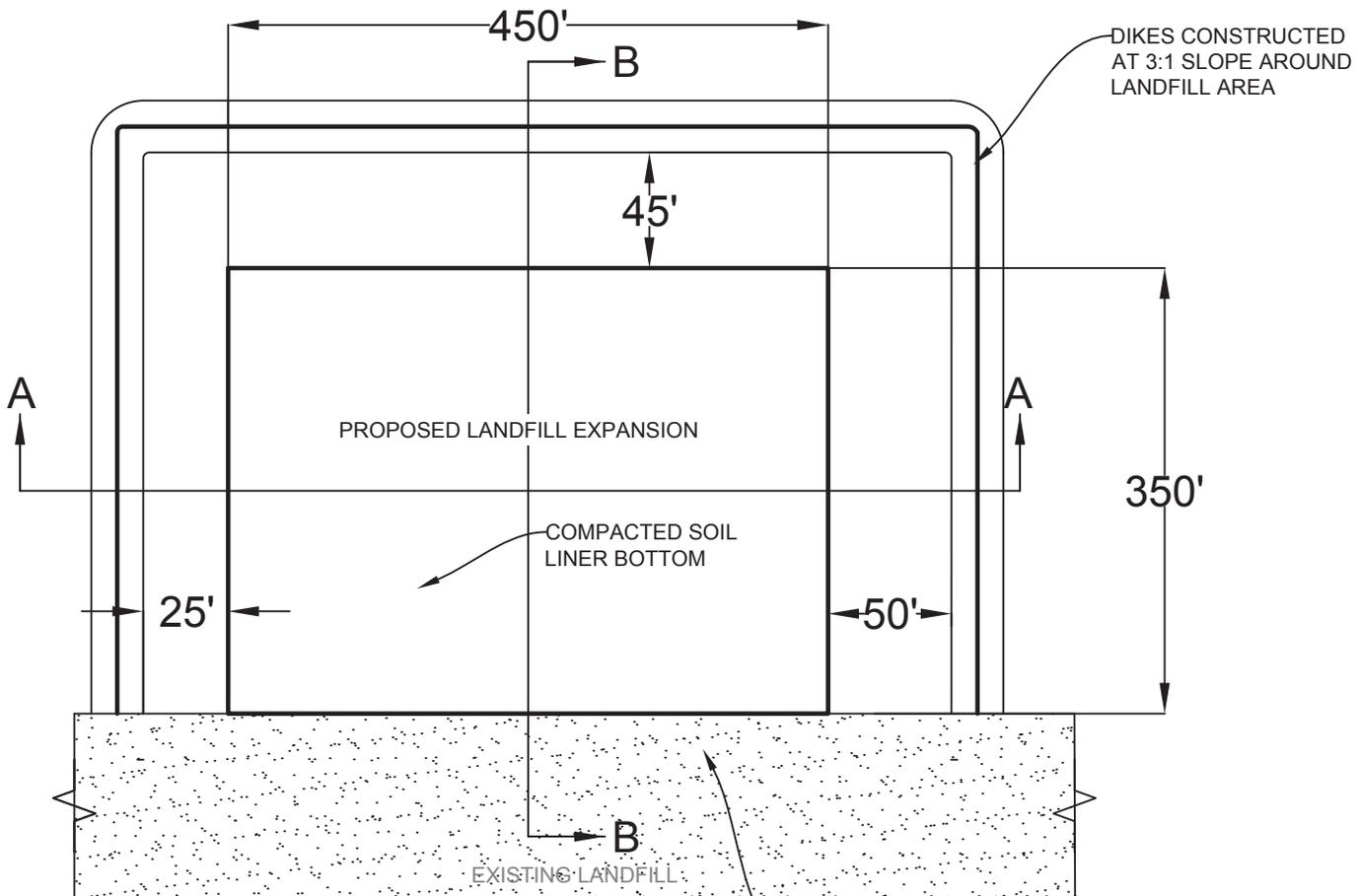


Borden County Waste Disposal, Ltd.  
P.O. Box 3215  
Abilene, TX 79604  
Proposed Solids Pit Expansion Area (REVISED 2/26/16)

BCWD-2

# Appendix C

## Proposed Solids Pit Expansion Details



NOTES:

1) Compacted soil liner should have a thickness of two feet or more and a hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec or less. Compaction to 95% standard Proctor at a soil moisture content of 2 to 3% wet of optimum is appropriate.

2) Dikes surrounding pit to be constructed of soil material capable of achieving a permeability of  $1 \times 10^{-7}$  cm/sec or less when compacted. Successive lifts should not exceed nine inches in thickness, and the surface between lifts should be scarified to achieve a good seal.

LANDFILL ADDITION AREA TO BE TIED INTO EXISTING LANDFILL AT 3:1 SLOPE

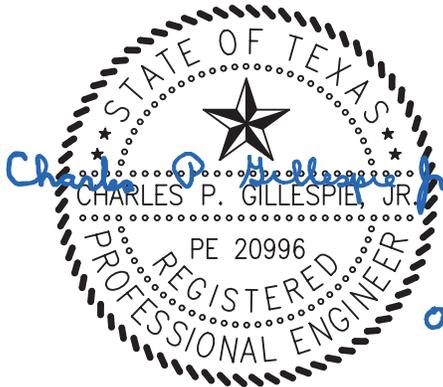
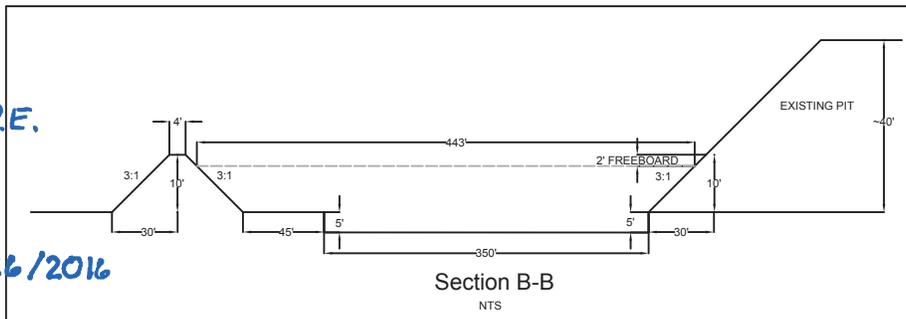
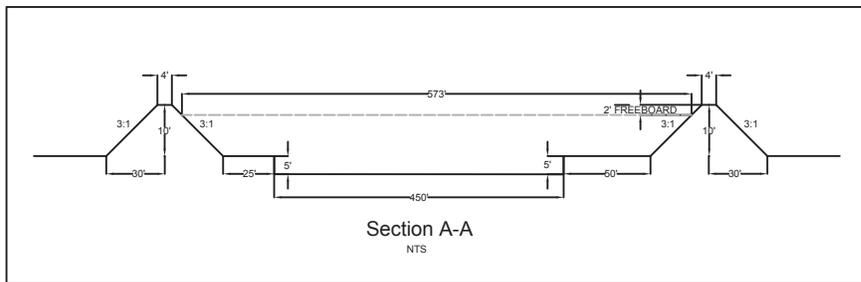


PROPOSED VOLUME:

97,828 cubic yards  
470,881 barrels

PROPOSED AREA:

4.8 acres



Date  
February 26, 2016

Drawn By  
DD

Scale  
NTS



consulting environmental engineers, inc.  
150 n. harbor drive - suite 408 • stephenville, tx 76401  
(254)968-8130 fax: (254)968-8134 email: ceengine@ceeinc.org  
registered firm: #F-2323

Borden County Waste Disposal, Ltd.  
P.O. Box 3215  
Abilene, TX 79604

Proposed Solids Pit Expansion Details (REVISED 2/26/16)

BCWD-3

# Appendix D

## Survey Plat of Monitor Wells

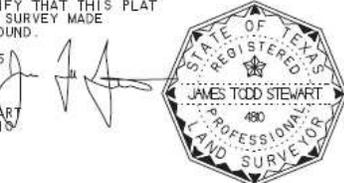


WELL NUMBER	FEET FROM NORTH LINE	FEET FROM EAST LINE	ELEV	NAD 83 LATITUDE	NAD 83 LONGITUDE
#1	2393'	2522'	2482'	32 45 13.000673 N	101 15 49.960725 W
#2	2748'	2896'	2468'	32 45 9.559160 N	101 15 54.417180 W
#3	2284'	3322'	2466'	32 45 14.232048 N	101 15 59.290117 W
#4	2034'	3129'	2476'	32 45 16.665310 N	101 15 56.974794 W
#5	1704'	3317'	2464'	32 45 19.965597 N	101 15 59.104209 W
#6	774'	2572'	2503'	32 45 29.024744 N	101 15 50.162540 W
#7	861'	4166'	2455'	32 45 28.460909 N	101 16 8.840090 W
#8	172'	4154'	2459'	32 45 35.269477 N	101 16 8.535066 W
#9	107'	3565'	2479'	32 45 35.802706 N	101 16 1.630228 W
#10	1174'	3738'	2459'	32 45 25.280234 N	101 16 3.900095 W
#11	1948'	4039'	2445'	32 45 17.679187 N	101 16 7.607377 W
#12	1943'	3062'	2476'	32 45 17.558113 N	101 15 56.175092 W
#13	1775'	2224'	2499'	32 45 19.059709 N	101 15 46.319983 W
#14	1749'	1683'	2487'	32 45 19.221915 N	101 15 39.982654 W
#15	1359'	1337'	2468'	32 45 23.011818 N	101 15 35.841674 W
#16	794'	1561'	2492'	32 45 28.644220 N	101 15 38.327065 W

THIS IS TO CERTIFY THAT THIS PLAT IS OF AN ACTUAL SURVEY MADE BY ME ON THE GROUND.

NOVEMBER 4, 2015

JAMES TODD STEWART  
R.P.L.S. NO. 4815  
STATE OF TEXAS



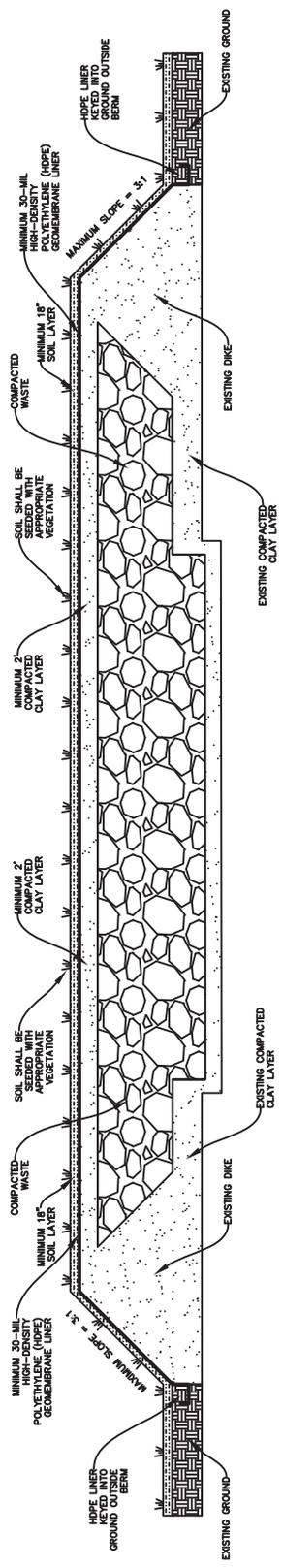
SURVEY PLAT  
OF  
MONITOR WELLS  
IN  
SECTION 268, BLOCK 97  
H. & T. C. RR. CO. SURVEY  
BORDEN COUNTY, TEXAS

STEWART SURVEYING COMPANY  
P.O. BOX 776 SNYDER, TEXAS 79550  
325-573-2492  
STEWARTSURVEY@YAHOO.COM FIRM NO. 10115100

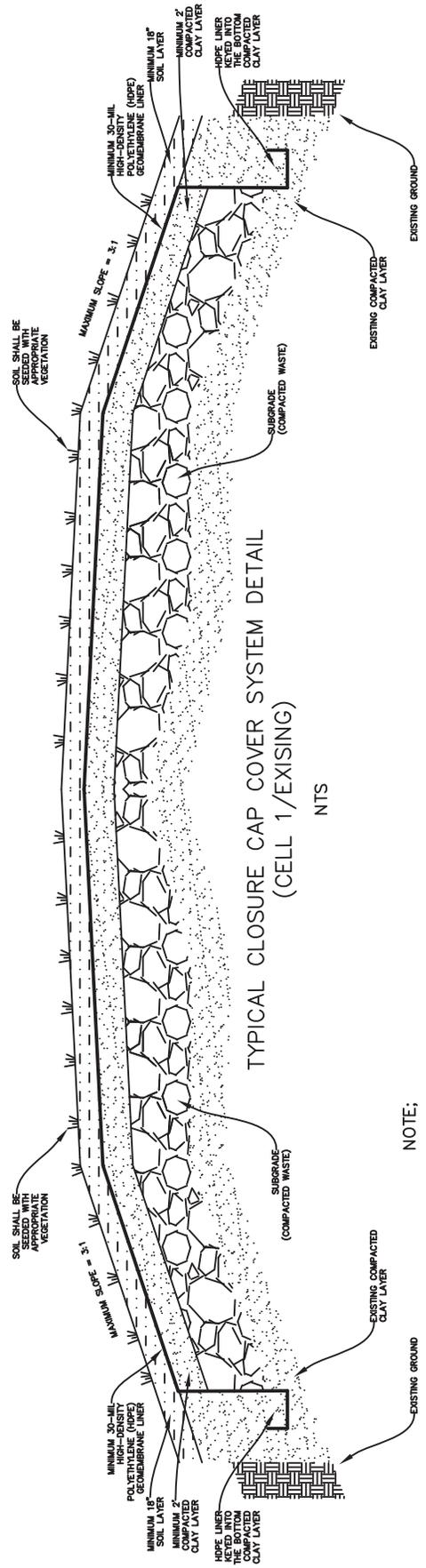
GXD: 80003-0/INTC  
10-11-2014  
DATE: 11-4-2015

# Appendix E

## Closure Cap Cover System Detail



TYPICAL CLOSURE CAP COVER SYSTEM DETAIL  
(CELL 2/EXPANSION)  
NTS



TYPICAL CLOSURE CAP COVER SYSTEM DETAIL  
(CELL 1/EXISTING)  
NTS

NOTE;  
 THE TWO-FOOT THICK COMPACTED CLAY LAYER SHALL BE PLACED ON TOP OF THE COMPACTED WASTE.  
 THE COMPACTED CLAY LAYER WILL BE INSTALLED IN SIX INCH LIFTS TO A DRY DENSITY OF AT LEAST 95% STANDARD PROCTOR OR 90%-92% MODIFIED PROCTOR AND A PERMEABILITY OF  $1 \times 10^{-7}$  CM/SEC OR LESS.  
 THE TOP OF THE CLAY CAP SHALL BE CONTOURED TO CONFORM TO THE NATURAL CONTOUR OF THE SURROUNDING LAND.  
 A MINIMUM 30-MIL HIGH-DENSITY POLYETHYLENE (HDPE) GEOMEMBRANE LINER SHALL BE PLACED ON TOP OF AND KEYED INTO THE COMPACTED CLAY LAYER.  
 SOIL LAYER WITH A THICKNESS OF AT LEAST 18 INCHES SHALL BE PLACED ON TOP OF THE HDPE LINER.

Date  
 March 3, 2016  
 Drawn By  
 DD  
 Scale  
 NTS



Borden County Waste Disposal, Ltd.  
 P.O. Box 3215  
 Abilene, TX 79604  
 Closure Cap Cover System Detail

BCWD-4